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Factors affecting parents' satisfaction with online learning during COVID-19: A study on parents of young children

Lamees Abdulrahman Alaulamie

Faculty of Educational Technology, Imam Abdulrahman bin Faisal University, Saudi Arabia.
Email: laalaulamie@iau.edu.sa

Abstract

The transition to online learning during the COVID-19 pandemic was a new experience for parents of young children who were obliged to deal with various factors that had an impact on their level of satisfaction. It was essential to address these issues if their children were to continue receiving an education. This research investigates the factors affecting parents' satisfaction (PS) with their children's online learning experience during the pandemic. These factors comprised technical support (TS), instructional support (IS), the quality of the online curriculum program (CP) and social interaction (SI). A mixed-methods approach was adopted using a sequential explanatory design. The population sampled for this study comprised parents of young children in Saudi Arabia. The total number of survey respondents was 307 and 12 parents volunteered to be interviewed. The results demonstrated that almost 69% of the variance in parents' overall satisfaction was predicted by a combination of the aforementioned characteristics. However, SI was found to be the only significant predictor of PS. Overall, the parents' satisfaction with online learning appeared to be moderate but there were significant differences in PS that related to the parents' age or the child's educational level. This study offers insights into online learning experiences and parental satisfaction during the COVID-19 pandemic. Practitioners in the education sector should take this satisfaction into consideration given that parents are an essential element in the success of their children's online learning experience. Moreover, parents received beneficial information during the pandemic which could help develop the implementation of online learning for future use.

Keywords: COVID-19, Kindergarten, Online learning, Parents' satisfaction, Primary school, Social interaction.

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Contents

Contribution of this paper to the literature
This research highlights factors affecting parents' satisfaction (PS) with their children's online learning experience during the COVID-19 pandemic. The literature has focused more on factors affecting PS in relation to technical and instructional domains while neglecting children's social interaction. Hence, the study investigates this factor as it could potentially affect PS.

1. Introduction

On March 11, 2020, the World Health Organization (WHO) announced that the whole world should prepare itself for a new pandemic caused by the COVID-19 virus (World Health Organization, 2020). This pandemic gave rise to a global shock as countries were unprepared for it but nevertheless had to find a way to survive. Several sectors have been impacted globally since the pandemic's inception. In particular, the journey of the education sector during the crisis was challenging. A shift towards online learning (OL) ensued during the measures to contain the spread of the virus. This ensured that children continued to learn through virtual platforms which replaced the formal learning environment (Lau, Li, & Lee, 2021).

Particular challenges experienced by parents during the COVID-19 pandemic included dealing with their children's online learning (OL) experience which was novel for schools. Thus, parents' lives changed dramatically during the pandemic with greater responsibility placed on their shoulders for their children's current and future education (Lau & Lee, 2021; Misirli & Ergulec, 2021; Spinelli, Lionetti, Pastore, & Fasolo, 2020). This is confirmed by Stites, Sonneschein, and Galczyk (2021) who showed in their study that 89% of a sample of 122 parents reported negative effects of the pandemic on daily life. For example, parents have found it difficult to teach their school-age children. In a nutshell, parents take on the entire responsibility of teaching their children throughout the pandemic often combining this role with their regular employment (Lau & Lee, 2021; Misirli & Ergulec, 2021; Spinelli et al., 2020; Stites et al., 2021).

Parents were completely in control of monitoring their children while they accessed online teaching materials, completed their homework and engaged in other school-related activities during the lockdown procedures and suspension of classroom instruction (Lau et al., 2021). According to Lau and Lee (2021), leaving parents to fulfil this role without any support presented a significant hurdle for many families. Moreover, some parents expressed concerns over their children endeavoring to learn remotely, outside a formal classroom and behind a screen. Others experienced difficulties in supporting their children' education and these parents were considered to be the most likely to suffer stress as a result which then further exacerbated their children's emotional and behavioral issues (Spinelli et al., 2020).

The reality is that no one was prepared for the sudden and rapid transition to OL (Misirli & Ergulec, 2021). Therefore, this lack of preparation presented an obstacle to children's education as they attempted to learn online at home (Misirli & Ergulec, 2021). The parents who most commonly expressed positive opinions of OL were those who spent very little time and whose children received tasks that were easy to accomplish (Stites et al., 2021). However, during the lockdown measures, parents were generally expecting more support and communication from schools in order to be able to maintain their children's education and overcome the obstacles since this learning mode was unfamiliar to them and their children.

The parents who failed to receive the support they needed were most likely to show low satisfaction with OL (Lau & Lee, 2021). Furthermore, parents showed less satisfaction with their children' OL when they felt they were too involved in the process and were called upon to spend a large proportion of their time in this way (Stites et al., 2021). It is clear from the previous literature that dealing with OL during the pandemic was not easy for parents, students and parents who were exposed to various obstacles that demanded their attention in the process of attempting to sustain their children' education.

Although a small number of recent studies have discussed parents' satisfaction with OL during the pandemic, no studies have hitherto been conducted on this topic in the Saudi context. According to Lau et al. (2021), it is necessary to explore parents' satisfaction (PS) with this learning experience due to the importance of the parents' role in supervising their children's OL. Hence, this study aims to fill a gap in the literature by highlighting the factors that could affect PS with OL giving specific research attention to the parents of young children.

This target group was chosen since some studies have found that parents were most satisfied with OL when their children were able to learn independently (Lau et al., 2021; Stites et al., 2021). Consequently, the parents of older children were found to be more satisfied with their children' OL provision compared to the parents of young children (Sharma & Kiran, 2021). The reason for this is that younger children generally need more parental support while learning, only gaining independence as they get older. Consequently, this study will especially concentrate on the parents of pre-school, kindergarten and primary school students as these are the parents who were obliged to assume most responsibility for their children' learning due to the age groups. In this study, the following research questions were constructed to fill the gap in the literature:

1. What is the overall level of parents' satisfaction (PS) with their children' online learning experience during the COVID-19 pandemic?
2. Is there a difference between the overall level of PS in relation to factors such as age, educational level, technology skills, the gender and educational level of a child and the type of school attended by the child?
3. Is there a relationship between the overall level of satisfaction among parents of primary schoolchildren and how they perceived technical support (TS), instructional support (IS), the quality of the online curriculum program (CP) and social interaction (SI)?
4. What are the factors that help explain the overall level of PS with TS, IS, CP and SI?

2. Literature Review

2.1. Online Learning in Saudi Arabia during the Pandemic

The Saudi Ministry of Education strived to implement the best solutions to the problems posed to the education sector by the pandemic so that students could continue to receive suitable educational instruction. All

countries were not prepared for the pandemic or the steps required containing its spread. Therefore, it was not a smooth or effortless period for anyone. Online learning was entirely new in Saudi Arabia's mainstream schools although Saudi university students had become used to it and some private schools had included homework assignments and online activities in the curriculum before the pandemic. Thus, the Saudi education literature does not include a fully online experience that preceded what was experienced by students during the pandemic.

The Saudi Ministry of Health reported the first case of COVID-19 on 28 February 2020 (Saudi Ministry of Health, 2020) shortly after which the decision was made to transfer Saudi schooling online. Thus, on 8 March 2020, the Saudi Ministry of Education ordered the closure of schools and universities across the Kingdom, reflecting the actions taken across the world in response to the new and unpredictable nature of COVID-19 (Al-Tawfiq & Memish, 2020). Initially, Saudi schools struggled to find appropriate solutions for their students. In some cases, teachers began sending curriculum materials to parents through WhatsApp in the hope that this would deliver the content effectively. At that time, the majority of parents accepted the situation with the limited resources available, considering the situation to be purely temporary and short-lived. Nevertheless, it soon became clear that a longer-term solution was required and schools began introducing OL using video-conference platforms, free Web service tools and learning management systems.

The Saudi Ministry of Education made significant efforts during the pandemic that were clearly noticed and appreciated. One of the ministry's achievements was the launch of a new online platform called 'Madrasati', constituting a learning management system for students in mainstream public-sector education. Madrasati enabled teachers to conduct synchronous online lessons through the Microsoft Teams platform, communicate with students through email and upload assignments, lesson materials and exam papers (Almaiah et al., 2022). In addition, the Ministry supported students by diffusing lessons through Ien, a TV channel that broadcast lessons live by satellite and recorded them for future use (Saudi Ministry of Education, 2021).

Online learning resolved the educational dilemma that arose during the COVID-19 lockdowns, replacing formal classrooms with a virtual classroom and electronically based in-class or homework activities that students could access from anywhere (Sharma & Kiran, 2021). However, this use of OL as the sole type of learning available during the suspension of school education was new and sudden for both students and teachers across most of the world including Saudi Arabia (Aldossry, 2021). It forced learners to take more responsibility for their own learning which exerted pressure on both the children and their parents as parental involvement was usually necessary (Sharma & Kiran, 2021).

2.2. Parents' Satisfaction with Online Learning during the COVID-19 Pandemic

In the education literature, it is reported that the involvement of parents tends to improve learners' attitudes and behavior, motivate them to attend school, promote their mental health and lead to better relationships between students and teachers (Hornby, 2011). It can have a positive impact on learners' achievement and development (Mahamood et al., 2012). According to Mahmood et al. (2012), parents are often expected to engage in their children' learning by supervising and teaching them whenever this is required which usually means giving a child direction and guidance, providing materials and arranging a suitable learning environment in the home (Flynn, 2007). During the pandemic, hopes were universally pinned on the effective involvement of parents in their children' learning at home.

Some studies have explored parents' perceptions, attitudes or satisfaction around the world in relation to OL during the pandemic (see Table 1). Even though the topic of OL was already covered by a body of literature prior to the pandemic, it is now necessary to explore these variables within the new context of essential OL. The literature that is specifically dedicated to PS with OL during the pandemic is relatively limited with only six studies found at the time of writing this article (see Table 1).

Table 1. Recent studies that have investigated parental factors in relation to children' online learning.

Study	Topic covered	Country
Dong, Cao, and Li (2020)	Parents' beliefs and attitudes	China
Kumar and Kumar (2020)	Parents' satisfaction	India
Lau and Lee (2021)	Parents' views and experience	Hong Kong
Bokayev, Torebekova, Davletbayeva, and Zhakypova (2021)	Parents' satisfaction	Kazakhstan
Cui et al. (2021)	Parents' and students' satisfaction and attitudes	China
Lau et al. (2021)	Parents' satisfaction	Hong Kong
Misirli and Ergulec (2021)	Parents' views and experience	Turkey
Sharma and Kiran (2021)	Parents' satisfaction	India
Stites et al. (2021)	Parents' views and experience	US
Deepthi and Jayathilaka (2022)	Parents' satisfaction	Sri Lanka

Bokayev et al. (2021) examined 31,300 parents to determine how satisfied they were with OL. PS was found to be positively correlated with parents' age and family income but negatively correlated with the number of children in the family. Furthermore, regression analysis revealed a positive correlation between PS and the quality of the children' online experience, their perceptions of the teachers' competency and the government' readiness to launch OL. These survey data were similarly supported by data derived from interviews with 65 parents.

Cui et al. (2021) studied the attitudes of parents and school-age students and their satisfaction with OL during the pandemic surveying the participants in two stages. The first stage involved 867 parents and their children. Subsequently, the second stage involved 141 sets of parents and their children. In terms of PS, the results of the second stage showed a drop in the level of PS with their children' learning. Overall, 77.9% of the parents appeared to be satisfied with the OL although 94.9% were clear that they hoped to return to formal learning soon. It is also worth mentioning that 38.5% of the parents sampled in the above study believed OL to be effective and 65.1% had a positive view of the abundance of OL that was provided.

Conversely, in India, Kumar and Kumar (2020) studied the factors that could determine PS with OL provision by sampling 136 parents of primary school children. They found that 55.70% of the parents studied were dissatisfied with the outcome of OL and 75% were dissatisfied with the availability of online-related equipment and the way it was managed. Ultimately, it was found that the PS had a significant relationship with 10 factors: the willingness to learn online, timing, the output of online classes, equipment, syllabus content, health hazards, parental involvement, class activities, a preference for blended learning and disturbances to parents' work.

Meanwhile, Lau et al. (2021) surveyed 3,381 parents of primary school children using a larger sample. Out of this sample, 53.1% stated that they were satisfied with their children' OL experience. Moreover, they found that the duration of the OL and the number of assignments was negatively associated with PS. However, this variable was positively correlated with children' skills in dealing with OL independently. This means that the parents were more satisfied with OL because their children showed greater competency in dealing with it on their own without having to seek help from their parents.

Similarly, Sharma and Kiran (2021) surveyed 115 parents of K-12 students conducting ANOVA and multiple regression analysis on the results. They examined five factors in relation to PS. The multiple regression analysis revealed that the effectiveness of handling queries, the learning environment and technical effectiveness had a positive effect on PS. In contrast, the effectiveness of course delivery and understanding the concepts had no impact on PS.

Finally, Deepthi and Jayathilaka (2022) examined the levels of satisfaction with OL among parents of primary school students during the pandemic surveying a sample of 102 participants. Regression analysis revealed that children' competency, the duration of OL and the number of assignments had a significant impact on PS while the occurrence of technical problems had no significant impact.

A review of the previous literature indicates that there were not numerous studies on PS with OL during the COVID-19 pandemic and none of them investigate Saudi parents' satisfaction with OL for children during this time. Therefore, the present study sheds light on the topic in the Saudi context exploring parental factors in relation to children' online learning. Moreover, previous studies have focused more on factors affecting PS in relation to technical and instructional domains while neglecting an essential factor which is children' social interaction in OL. The current study consequently attempts to fill the research gap by giving attention to this factor as it could potentially affect PS.

3. Methodology

3.1. Research Design

A mixed-methods approach was adopted in this study using a sequential explanatory design. According to Creswell, Plano Clark, Gutmann, and Hanson (2003), this research design must begin with quantitative data collection and analysis followed by the collection and analysis of qualitative data to obtain in-depth information. The entire analysis is then interpreted. The main purpose of adopting this approach was to gather additional information about parents' experiences and then triangulate the results. Hence, quantitative and non-experimental correlational research was first conducted to explore the relationship between the study variables and to identify any correlations between the dependent variable (parents' satisfaction) and the independent variables (TS, IS, CP and SI). Moreover, a multiple linear regression method was applied to ascertain whether the independent variables explained the variance in the dependent variable. The main results were subsequently chosen from this data and a semi-structured interview was conducted on that basis.

3.2. Participants

The sample consisted of parents of pre-school, kindergarten and primary school children as shown in Table 2. These parents were of different ages and educational levels and possessed varying levels of technological skills. Moreover, some were employees while others were full-time parents but all the participants were mothers.

Table 2. Demographic information (N = 307).

Measure	Items	Frequency	Percentage
Parents' educational level	Elementary, secondary and high school	63	20.5%
	Undergraduate education	207	67.4%
	Postgraduate education	37	12.1%
Parents' age (Years)	20-30	33	10.7%
	31-40	163	53.1%
	41-50	92	30.0%
	Over 50	19	6.2%
Parents' technology skills level	Beginner	8	2.9%
	Intermediate	121	39.4%
	Advanced	178	58.0%
Gender of the children	Female	168	54.7%
	Male	139	45.3%
Parents' job status	Unemployed	123	40.1%
	Employed	184	59.9%
A child' educational level	Pre-school and kindergarten	38	12.4%
	Primary school grades 1-3	134	43.6%
	Primary school grades 4-6	135	44.0%

3.3. Research Instrument

The survey instrument used in this study was adapted and translated into Arabic from a study by Butz (2004) which mainly examined the factors related to parents' and students' satisfaction with OL in elementary and secondary schools. The study by Butz (2004) involved developing and validating two questionnaires. The instrument was developed from a review of the online and distance-learning literature. Moreover, comments from

teachers and administrators who deal with OL were taken into consideration while developing the instrument. This current study only uses the scale relating to PS and the associated factors.

The original instrument contained 28 items but the translated and adapted version consisted of 29 items. This is due to the addition of two statements relating to the constructs, IS (item 11) and SI (item 22) based on expert review. Moreover, once the statements had been translated into Arabic, one item that measured the CP was deleted from the original scale. This was due to the item replicating the meaning of another item. The survey consisted of three sections, a consent form, demographic questions and 29 statements with the study constructs being measured using a five-point Likert scale. The responses for each statement ranged from "strongly agree" to "strongly disagree" with a scale value of 5 indicating strong agreement and 1 indicating strong disagreement. This participation was voluntary and the participants were free to withdraw from the survey at any time.

The translation procedure was conducted in systematic steps. The first step involved translating the original questionnaire and adapting the meaning to make it easier for the target participants to understand. Secondly, the Arabic version was reviewed by six experts and then the questionnaire was back-translated into English so that the two versions could be compared. It should be added here that the translator who translated the questionnaire into Arabic was bilingual (English and Arabic). The report showed that the Arabic version was similar in meaning to the original questionnaire and the items and terminology in the Arabic survey were suitable for the Saudi cultural context without affecting the meaning of the original survey questionnaire.

Meanwhile, the validity of the instrument was established through two types of evaluation: content validity and construct validity. Content validity was evaluated to determine whether the statements in the instrument were well constructed and relevant to the related constructs by introducing the raw Arabic form of the instrument to the six education experts. Shrotryia and Dhanda (2019) introduced the idea of presenting the raw instrument to 6 domain experts and not 6 education experts. These experts were asked to give their evaluation of the survey statements in terms of their clarity and appropriateness for the related constructs. The experts suggested improvements to the clarity of the items. After these adjustments had been made, the experts evaluated the statements indicating a rate of agreement that ranged from 80% to 100%. However, only item 14 from the original questionnaire had 33.3% of the experts stating that it was relevant to the construct. Therefore, this statement was deleted from the construct due to the low percentage of agreement. Conversely, the experts suggested the addition of two statements to the IS and SI scales in order to strengthen the constructs. These were added as items 11 and 22 relating to the constructs of IS and SI respectively. Thus, the translated and adapted instrument consisted of 29 statements. Appendix 1 presents the statements relating to the five main constructs in the current study written in English and based on Butz (2004) together with the demographic information requested from the participants.

The previous step was followed by a pilot study involving 100 participants. Construct validity was then examined using a factor analysis procedure applying a principal component analysis extraction method and a varimax rotation. According to Warner (2008), this rotation can be used to make a result more interpretable. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test of Sphericity were required to ensure that it was suitable to conduct factor analysis using these data. The KMO value was found to be .937 and the Bartlett's Test yielded a significant result ($\chi 2 = 5519.09$, $df = 231$, $p < .05$). This indicates that the data were appropriate for conducting the factor analysis. The results of the factor analysis revealed four factors that were retained. The communalities for all items ranged from .526 to .891 indicating reasonably high values that should be retained (Warner, 2008).

The factor analysis showed that four constructs explained 51.76 of the variances. Moreover, Table 3 illustrates that all the items loaded appropriately into their related constructs as expected. The four factors consisted of TS, IS, CP and SI. There were no cross-loading issues for any item of .5 or above. The item-loading values ranged from 0.508 to 0.833.

Table 3. Structure matrix on the scale factor after rotation.

	Structure matrix			
	Component			
Items	1	2	3	4
1	0.828			
2	0.822			
3	0.833			
4	0.796			
5		0.648		
6		0.756		
7		0.778		
8		0.771		
9		0.734		
10		0.702		
11		0.659		
12			0.518	
13			0.520	
14			0.812	
15			0.758	
16			0.613	
17				0.508
18				0.616
19				0.670
20				0.724
21				0.687
22				0.741

Cronbach's alpha was calculated to evaluate the reliability of the scale constructs. Table 4 illustrates that the scales exhibited good or excellent internal consistency with Cronbach's alpha values ranging from 0.847 to 0.94. According to George and Mallery (2003), a scale with a Cronbach's alpha value of 0.9 has excellent internal consistency and a scale with a Cronbach's alpha value of 0.8 has good internal consistency.

Table 4. Reliability of the instrument.

Construct	Item	Cronbach's alpha	No. of items
TS	1-4	0.943	4
IS	5-11	0.922	7
CP	12-16	0.847	5
SI	17-22	0.880	6
PS	23-29	0.917	7

The mean and standard deviation were calculated for the questionnaire statements. The mean values for the statements ranged from 2.44 to 4.07 taking into consideration that these values were classified as follows: low (1-2.39), moderate (2.40-3.69) and high (3.70-5.0). The mean value of 13 of the statements was considered high while the means for the remaining statements were moderate based on the above-mentioned classification.

3.4. Procedure

Ethical approval for conducting this study was applied for and obtained from the ethics committee of Imam bin Faisal University in Saudi Arabia on 14 November 2023 (Ref. No. 2023-15-510). The study began with an anonymously self-reported survey which was used to collect quantitative data from a sample of 307 participants during this stage followed by data analysis. The data was collected using Google Forms and the sampled parents were invited to complete the survey through WhatsApp.

Convenience and snowball sampling approaches were adopted for the collection of quantitative data. The main sample was drawn from parents who were known to the author and these parents were asked to distribute the survey to other parents from among their acquaintances. The inclusion criteria indicated that the participants should be parents of pre-school, kindergarten or primary schoolchildren receiving their schooling in Saudi Arabia. If the parents had more than one child who fulfilled these criteria, they were asked to report their perceptions of just one of their children. The purpose of the study was explained to the participants in the introduction section of the survey wherein they were informed that their participation was voluntary and they could withdraw from the study at any time.

In the second stage, key results from the quantitative data were chosen and a semi-structured interview was conducted on that basis. Twelve parents volunteered to participate in these qualitative interviews. The twelve interviewees were chosen from the same 307 parents who participated in the first stage (the survey). These parents were assured of the confidentiality and anonymity of any information that they might provide and reminded that they could withdraw from participation at any time. The interviews conducted gave insights into the participants' diverse experiences. Their interview responses were subsequently analyzed and coded, so that the main themes could be extracted. This process was carried out by the author while an independent researcher coded the themes separately and discussed them with the author. The interviewees were asked to express their opinions in response to the following questions with additional probes if necessary:

1. As a parent, are you satisfied with your children' online learning experience during the pandemic? How was your experience? Please elaborate.
2. Please try to explain the following result: "The overall level of PS with their children' online learning experience was moderate."
3. Please try to explain the following result: "There was a difference in PS with the OL undertaken by primary school children in grades 1-3 and 4-6."
4. Please try to explain the following result: "Among these four variables of TS, IS, CP and SI, SI was the only significant predictor of PS."

3.5. Data Analysis

The analysis of the quantitative data was performed using SPSS version 29.0 software. Data analyses were carried out through descriptive and inferential statistics. No missing data or outliers were found. First, the mean and standard deviation were calculated to answer the first research question. Second, an independent t-test and an analysis of variance (ANOVA) were performed and Pearson's correlation coefficient and multiple regressions were applied to answer the remaining research questions. In contrast, the qualitative data was analyzed by the author and an independent researcher as a result of which the interviewees' responses were coded and the main themes extracted separately. Inter-rater reliability was determined using Cohen's Kappa statistic to estimate the degree of agreement between the code raters. The Kappa value was calculated as 0.80. The threshold determined by Landis and Koch (1977) that a Kappa value of 0.61 to 0.80 is substantial.

4. Results

4.1. Quantitative Results

The mean and standard deviation were calculated in order to respond to the first question which asked parents to assess their overall level of happiness with their children' online learning experience. The results are displayed in Table 5. The following table demonstrates that parents' overall satisfaction with their children' online learning experience was moderate as the mean for this scale was 3.19.

Table 5. Mean and standard deviation of the study variables.

Construct	Mean	Std. deviation	Level
SI	3.52	0.94	High
CP	3.73	0.82	High
IS	3.81	0.85	High
TS	3.72	0.86	High
PS	3.19	1.04	Medium

To answer the second research question, two tests were performed: an independent t-test and an analysis of variance (ANOVA). The independent t-test was first required to compare the means of PS in relation to a child's gender. The assumption of homogeneity was assessed using Levene's test which revealed no violation of the equal variance assumption: $F = .410$, $p = .522$. The independent t-test indicated that there were no significant differences in satisfaction at the 0.05 level between parents with male ($M = 3.1$, $SD = 1.0$), female ($M = 3.2$, $SD = 1.05$; $t(305) = -.553$, $p = .581$, two-tailed) and children. Moreover, an independent t-test was required to assess differences in the mean values for parental satisfaction in relation to job status. Levene's test was hereby performed revealing no violation of the equal variance assumption ($F = .000$, $p = .996$). Moreover, an independent t-test indicated no significant differences in parental satisfaction between employed and unemployed parents $t(305) = -1.545$, $p = .123$, two-tailed). The mean and standard deviation for the satisfaction of employed parents were $M = 3.1$, $SD = 1.04$, and $M = 3.3$, $SD = 1.02$ for parents who were unemployed.

A one-way between-subject ANOVA at the 0.05 level was also carried out to compare the mean values for parental satisfaction with respect to the following variables: parents' educational level, parents' age, parents' level of technology skills and the child' educational level. First, the ANOVA test showed no statistically significant differences at the 0.05 level in PS across their level of education ($F(2, 304) = 2.45$, $p = .087$). Moreover, there were no statistically significant differences in PS in relation to their level of technology skills ($F(2, 304) = 1.18$, $p = .308$).

However, statistically significant differences were found in PS across the children' educational level ($F(2, 304) = 3.87$, $p = .022$). The Tukey HSD test revealed a difference in PS means, solely between the parents of primary school children in grades 1-3 ($M = 3.08$, $SD = 1.015$) and grades 4-6 ($M = 3.38$, $SD = 1.014$). Meanwhile, Levene's test indicated no violation of the equal variance assumption. This demonstrates that the parents of children in the higher primary school grades were more satisfied with OL than the parents of children in the lower primary school grades. Levene's test was similarly performed to determine whether there was a statistically significant difference in PS across the parents' age groups revealing a violation of the homogeneity assumption. On this basis, Welch's test was calculated resulting in $F(3, 69.788) = 9.068$, $p<.001$. The Tukey HSD test showed a difference in the PS means, solely between the age group 31-40 years ($M = 3.05$, $SD = 1.05$) and parents over the age of 50 ($M = 3.89$, $SD = 0.58$). This suggests that parents aged over 50 were more satisfied than parents aged 31-40 with their children' online learning experience.

To answer the third question, a Pearson's correlation coefficient was required to assess whether a correlation existed between the dependent variables (PS) and independent variables (TS, IS, CP and SI). The correlation between these variables was statistically significant at the 0.05 level (two-tailed). According to Table 6, Pearson's correlation values ranged from .584 to .817 indicating positive relationships between variables. This can be interpreted as the parents who reported high satisfaction also demonstrating highly positive perceptions of TS, IS, CP and SI.

Table 6. Correlations between constructs.

Construct	TS	IS	CP	SI	PS
TS	1	0.675**	0.627**	0.584**	0.559**
IS	0.675**	1	0.695**	0.683**	0.627**
CP	0.627**	0.695**	1	0.731**	0.657**
SI	0.584**	0.683**	0.731**	1	0.817**
PS	0.559**	0.627**	0.657**	0.817	1

Note: **Correlation is significant at the 0.05 level (two tailed).

To answer the fourth research question, multiple regression was performed to determine whether TS, IS, CP, and SI were significant predictors of PS. The dependent variable in this model was PS while the other variables mentioned above were independent variables. The regression assumptions were examined and all assumptions were met. When investigating the assumption of collinearity in the regression model, the result indicated no concerns over multicollinearity (tolerance ranged between .375 and .491; the variance inflation factor (VIF) ranged between 2.035 and 2.668). The histogram of values predicted by standardized regression against regression-standardized residuals showed that the residuals were normally distributed. Therefore, the normality assumption was met. Moreover, there were no extreme bivariate or multivariate outliers.

The overall regression model including all four independent variables demonstrated that $R = 0.830$ and $R^2 = 0.689$. This can be interpreted as the combination of TS, IS, CP and SI predicting approximately 69% of the variance in parents' overall satisfaction. The results of this regression model were statistically significant: $F(4,302) = 162.22$, $p<0.001$ (see Table 7).

Table 7. One-way analysis of variance in parents' overall satisfaction.

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	221.851	4	55.463	162.216	0.000
	Residual	103.256	302	0.342	-	-
	Total	325.107	306	-	-	-

The t-ratios for the individual regression slopes were calculated to examine the contribution of individual predictors. One of the four variables, SI was a significant predictor of PS: $t(28) = 13.27$, $p<.001$ as seen in Table 8. The positive sign for the slope of the SI factor indicated that higher scores for SI predicted higher scores for overall satisfaction (see Table 8).

Table 8. Table of coefficients.

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	-0.456	0.176	-	-2.584	0.010	-	-
	SI	0.758	0.057	0.679	13.274	0.000	0.402	2.487
	CP	0.089	0.068	0.069	1.303	0.193	0.375	2.668
	IS	0.078	0.064	0.063	1.218	0.224	0.387	2.582
	TS	0.093	0.057	0.076	1.647	0.101	0.491	2.035

4.2. Qualitative Results

Semi-structured interviews were carried out to obtain more in-depth information. Firstly, in relation to the parents' expressed satisfaction with their children' online learning experience during the pandemic, the interviewees were divided into two groups. One group (made up of 9 out of 12 participants) stated that they were moderately satisfied with this experience and the other group was dissatisfied with the online experience. The first group justified their moderate satisfaction on the basis that the online learning experience was the best solution at the time. One parent stated that she felt "calm during the pandemic" because her children were "at home and not at school where they might get infected with the virus". Another mother stated, "Teachers did their best and tried hard to transfer information to our children and there is no doubt that OL was the best idea during the time of the pandemic." In contrast, the second group believed that the online learning experience had not been good for their children. They justified this opinion by their observations that their children were unable to obtain important information from teachers because they were constantly distracted and teachers found it difficult to gain and hold the children' attention.

Another parents added that some parents worked during the day and were therefore unable to supervise their children' learning. They highlighted that one of the reasons they were dissatisfied with OL was because the teachers were not ready to use this approach in their teaching and their teaching skills needed improvement. According to another parents' perspective, "One of my child' teachers was talking very quickly and she was not patient or making any effort to teach. My child was overwhelmed with homework and required to do tasks on the Madrasati platform. I was overwhelmed with information that I needed to explain to my child again."

Regarding the second question, when asking the interviewees to explain the following result: 'Parents' overall satisfaction with their children' online learning experience was moderate'; all the interviewees seemed to understand that OL was the best available learning solution during the pandemic. For example, four parents mentioned that despite the perceived disadvantages of OL, it was preferable to leaving children with no learning at all. One parent replied: "Online learning during the pandemic was neither the optimal solution nor the worst. It was the only option that our children had, so we got used to it after a period of time." Another parent stated, "Parents were satisfied with OL at the beginning but after a while, they began to be frustrated and felt that their children were not learning as they hoped, so their level of satisfaction dropped."

To answer the third question, the interviewees were asked to explain the result. There were differences in satisfaction between the parents of children in primary school grades 1-3 and the parents of primary school children in grades 4-6. All 12 interviewees agreed that primary school children in grades 1-3 required more parental effort and attention. They believed that children in their early years needed more face-to-face interaction and to be with their peers in class in order to learn effectively. Conversely, they believed that older children had the essential learning skills such as the capacity for self-learning which younger children lack. Thus, younger children needed to be supervised during.

In response to the fourth question, the interviewees were asked to explain the reason for SI being the only significant predictor of PS in this study. All the interviewees agreed with the previous statement and explained that SI can affect their satisfaction with OL. One parents said,

We were able to overcome all the other obstacles but social interaction was the critical factor during the pandemic. Children were not able to go out due to the curfew and interaction with their peers was impossible. The only social interaction they had was during the online class. As parents, we appreciated the teachers who enabled an interactive experience by allowing cameras and microphones to be switched on during the online class.

Another parents mentioned:

Technical and instructional support as well as the quality of the online program was not an issue for me. I was worrying more about my kids' future communication skills. I was worried that they might not be able to overcome their isolation in the online class during the pandemic and I was upset that sometimes, I felt that my child did not have this interaction in the class.

It seemed that they were worried about their children' future communication skills being negatively affected based on the above parents' responses.

5. Discussion

The aim of this study was to investigate PS and their children's online learning experiences during the pandemic highlighting the factors that impacted their level of satisfaction. The study revealed that parents' overall satisfaction with their children' online learning experience was moderate. This result was explained by the interviewees as OL being the only real learning solution during the pandemic which was better than leaving their children with no learning provision. It was clear that the parents had no alternative learning options. Thus, this educational experience still met the minimum standards of learning that they hoped for during this difficult period despite any challenges that their children might have experienced with OL.

Moreover, the researcher found no statistically significant differences in PS in relation to their child' gender. It is therefore possible that Saudi parents gave their male and female children equal attention during the COVID-19 pandemic especially as it was a new learning situation. Consequently, their level of satisfaction was unaffected by their child' gender. Furthermore, there were no statistically significant differences in PS according to their job status because most of the parents were able to supervise their children at home during the pandemic due to an adjustment in school hours for elementary and kindergarten schoolchildren. As a result, there was no conflict with parents' working hours. Similarly, there were no statistically significant differences in PS in relation to their level of education or technology skills. One possible justification for this is the gradual transition undertaken by schools from the use of WhatsApp to learning platforms. This gave parents some time to adapt, strengthen their skills and learn how to manage the technology even though their knowledge was minimal.

However, the study revealed statistically significant differences in PS about their age and their children' educational level. Specifically, this study found that the parents of older children were more satisfied with their online learning experience compared to the parents of younger children. This finding is supported by Bokayev et al. (2021) and Sharma and Kiran (2021). However, Lau et al. (2021) reported different findings wherein the parents of older children were less satisfied with OL than those of young children. Lau et al. (2021) were of the view that parents of young children were more tolerant of their children' learning experience and had lower expectations of it compared to the parents of older children. There was undoubtedly more effort required from parents to support young children in their learning, since these children were more dependent on their parents during the pandemic to justify the findings in this present study. This could have impacted their satisfaction with OL as PS was found to be positively affected by a child's ability to learn independently (Deepthi & Jayathilaka, 2022; Lau et al., 2021). Therefore, the parents had a high level of satisfaction when their children' competence to learn independently was high which is more likely in older children. Moreover, the parents had a low level of satisfaction with online classes when their children were unable to deal with digital devices without their help (Kumar & Kumar, 2020). Additionally, the parents of young children during the pandemic were required to be involved in all learning activities assigned to their children and the children needed to be under their parents' supervision the entire time (Kumar & Kumar, 2020). This was a heavy load on parents which could have negatively affected their level of satisfaction.

Moreover, this study revealed that parents older than 50 were more satisfied with their children' online learning experience compared to younger parents aged between 31 and 40. This finding is supported by Bokayev et al.'s (2021) study which found a positive association between parental satisfaction, OL and parents' age. Therefore, the older the parents, the higher the level of satisfaction reported. This could be explained by older parents being more understanding of the situation and more tolerant of their children' learning experiences (Bokayev et al., 2021).

Furthermore, this study showed that there were positive relationships between satisfaction and other variables such as TS, IS, CP and SI. This means that parents who perceive high TS, IS, CP and SI will also have high satisfaction with OL. Moreover, this study found that when combined, TS, IS, CP and SI predicted approximately 69% of the variance in parents' overall satisfaction. Moreover, SI was found to be the only significant predictor of PS. This result was explained by the interviewees' comments that SI was necessary for encouraging their children to engage in OL. It is supported by Stites et al. (2021) who revealed that parents believe SI to be an essential activity that their children should experience while learning online. Moreover, Lau and Lee (2021) indicated that during the pandemic, parents desired more interactive OL for their children. In addition, the interviewees stated that they were worried about the future of their children' communication skills and the negative impact of isolation on their children' psychological health. Meanwhile, it appeared that the parents were tolerant of other variables since they felt able to enhance their quality. However, SI was out of their control during the pandemic.

6. Conclusion

The era of the COVID-19 pandemic was a challenge for teachers, students and families worldwide. OL was the only suitable and available educational solution during the lockdown. Thus, students were behind a screen receiving a learning experience that most had never encountered before and teachers were obliged to function in a way that they were not prepared for, outside their usual classroom environment and without the benefits of body language and face-to-face communication. Similarly, some parents were trying to juggle their jobs and their new role of supervising and teaching their children at home. It is therefore necessary to explore their satisfaction with OL especially in the case of parents with very young children, since these parents had the responsibility for ensuring that their children attended classes for dealing with technical issues and for helping their children with homework and studying. This study highlights PS with OL and the factors that affected it during the COVID-19 pandemic. The main findings revealed that technical support, instructional support, the quality of the online curriculum program and social interaction predicted approximately 69% of the variance in overall parents' satisfaction. However, social interaction was the only significant predictor of parents' satisfaction. Furthermore, the parents' satisfaction with online learning during the COVID-19 pandemic was found to be moderate.

7. Limitations and Future Direction

There are certain limitations to this study that need to be addressed. First, the small sample size represents a limitation that could be due to difficulties with accessibility faced by the participants during the pandemic. Therefore, the findings of this article should be validated in future studies using a larger sample size. Secondly, this study focused specifically on the satisfaction of parents with kindergarten and primary school age children whereas the satisfaction of parents with intermediate and secondary school students could be addressed in future work. Thirdly, the participants were drawn exclusively from a single province in Saudi Arabia. Thus, it is recommended to run the survey in other provinces. Finally, the quantitative data were collected using a self-reported survey but this limitation was mitigated by triangulating the data with semi-structured interviews. Therefore, further studies with different triangulation methods are suggested.

8. Implications

This study offers insights into online learning experiences during the pandemic, parents' level of satisfaction with the OL provided for kindergarten and primary school students and the factors affecting PS despite the above-mentioned limitations. Therefore, there are potential implications for policymakers, teachers and curriculum designers. Several recommendations have also been derived from the main findings as follows:

1. The pandemic has receded; decision-makers in the education sector should take the satisfaction of parents of early-stage schoolchildren into consideration since parents are an essential element of the success of their children's online learning experience. During the pandemic, the parents received beneficial information about their children' interaction with digital and educational resources. Therefore, this knowledge should be given some attention.
2. Teachers should be trained to teach kindergarten and primary school students to deploy strategies that maximize their levels of interaction during online classes such as the use of online games that allow students to turn on microphones and cameras and communicate with their colleagues in virtual groups.
3. Pre-service teachers should be introduced to an extensive educational technology course to equip them with the necessary skills for dealing with online platforms and designing electronic interactive educational materials that help to improve their students' online learning experience in the future.

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Appendix

Appendix 1. Survey instrument.

Demographic information
Parents' age (Years)
20-30
31-40
41-50
Over 50
Parents' educational level
Elementary/Secondary/High school
Undergraduate education
Postgraduate education
Child's educational level
Kindergarten and preschool
Primary school grade (1st / 2nd / 3rd grade)
Primary school grade (4th / 5th / 6th grade)
Parents' job status
Unemployed
Employed
Parents' technology skills level
beginner
Intermediate
Advance
Technical support
1. Technology support at my child's school is prompt.
2. Technology support at my child's school is courteous.
3. Technology support at my child's school is effective.
4. Technology support at my child's school is available when we need it.
Instructional support
5. My child's teacher is available for assistance when needed.
6. My child's teacher gives prompt feedback.
7. My child's teacher adequately measures and reports academic progress.
8. My child's teacher gives appropriate, helpful feedback.
9. My child's teacher shows respect to students' individual differences.
10. My child's teacher knows his/her strengths and weaknesses.
11. The teacher provides my child with assignments and educational activities that help him to develop his learning correctly.
The Quality of online curriculum programs
12. The online curricular programs at my child's school are visually pleasing.
13. The educational content of the online curricular programs are of high quality,
14. Logging on to the online curricular programs at my child's school is efficient.
15. The online curricular programs at my child's school are easy to navigate.
16. The online curricular program allows my child to work independently.
Social interactions
17. The social opportunities available through my child's school are adequate in quantity.
18. The social opportunities available through my child's school are adequate in quality.
19. My child feels like part of a school community at his/her school.
20. My child has made friends through his/her school.
21. My child does not miss going to school every day.
22. My child is interested in interacting with his teacher and friends during the online classes
Parents overall satisfaction
23. My child is able to learn at his or her own pace at this school.
24. My child is able to work at his/her appropriate level at this school.
25. I feel comfortable providing assistance to my child when a teacher is not available.
26. My child is learning as much or more than if he/she was in a traditional school setting.
27. Administrative support at my child's school is adequate.
28. Overall, I am satisfied with my child's experience in online education in this school.
29. I would suggest an online school to other parents for their children.