Online learning effects on students with learning disabilities: Parents' perspectives

Ayed H. Ziadat [a1], Department of Special Education, Princess Rahman College, Al-Balqa Applied University Al Salt, Jordan. https://orcid.org/0000-0002-7920-2419

Abstract

The study aimed to investigate the parent's perspectives toward the effect of online learning on their child's learning, particularly, the ones with learning disabilities. This descriptive study randomly selected one hundred and ninety-three parents with students with learning difficulties. All participants received an online designed form of survey to achieve study objectives. The results carryout that: the parents has medium perspectives toward the effects of online learning, while they have high perspectives toward factors related to their children . Furthermore, there is a statistically significant impact of online learning on the learning of students with learning difficulties and the effects of online learning on students learning disabilities differ based on their disability and are higher in case of multiple learning difficulties.

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Keywords: Online learning; Parents perspectives; Students; learning disabilities; Dyslexia; Dyscalculia; Dyspraxia.

* ADDRESS FOR CORRESPONDENCE: Ayed H. Ziadat, Department of Special Education, Princess Rahman College, Al-Balqa Applied University, Al Salt, Jordan
 E-mail address: ayedziadat@bau.edu.jo

1. Introduction

The recent global health condition interrupted the education of around 1.5 billion students internationally (UNESCO, 2020). Therefore, countries work on adapting a distance learning environment through online means to ensure the continuation of the learning process. Similar to many students, this online learning poses challenges to students with learning disabilities (Jalalia et al, 2020). However, the lack of concern about students with learning disabilities by the Infectious Pandemic Management is not alarming, but it is with regard to the learning management authorities. There are around 500,000 students with disabilities under 18 years old, representing 11% of the population, who have the right to learn. Approximately 0.64 of these students suffer from concentration and remembering difficulties ranging from sever to absolute, while 2.7% of them from simple to absolute, this disability is considered the most one correlating to age (Department of Statistics, 2015). These percentages represent a significant prevalence of learning disability in education systems, which should not be neglected.

Neurological processing deficits affect the primary learning skills and cause Learning disabilities, for example reading and writing and higher skills such as time planning, memory, attention, etc. regardless of the main causative factors of these deficits as they induce challenges in society, school, and family (Badr & Asmar, 2020). Previous studies (for example, (Olugu, 2020; Atanga et al., 2019; Devi & Sarkar, 2019) suggested that assistive technologies are blooming solutions that provide support for students with learning disabilities who face challenges, precisely, in the educational domain. A survey study illustrated that such technologies advance online learning, but some participants in the study, namely, students with dyslexia claimed that accessibility to online learning is scarce, and thus needed to look for improving their access (Kumar et al., 2011). According to a systematic study conducted on online e-learning for students with learning disabilities, it was found that the inclusion of accessibility standards is weak for these students in most online learning platforms, there is a lack of studies addressing online learning for this population, and there is a scarce of studies on online learning assessment for students with learning disabilities (Cinquin, et al., 2019).

1.1. Background

Students with specific learning disabilities are defined as those learners who suffer from developmental, emotional, or behavioral deficits that influence their learning competencies or cognitive abilities, which as a result interfere with adaption at school or in some cases in society. Accordingly, these learners are categorized in the special educational needs (SEN) category, which is comprised of learners that need specific learning strategies, environments, and needs that differ from their normal peers (Kormos & Nijakowska, 2017). Globally, learning disabilities are defined as a heterogeneous set of academic skills deficits in all primary diagnostic nomenclatures according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5th ed) (APA, 2013). In the current study, learning disabilities are defined as a set of academic skills disorders that are diagnosed in the following categories; Dyslexia, Dyscalculia, Dysgraphia, Dyspraxia, Aphasia/Dysphasia, Auditory and visual processing problem, and more than one of these learning difficulties could be present. Over the past 50 years, a dearth of research and studies were conducted on the identification, intervention, and treatment of these understudied population. Since the emergence of the definition of Students with learning disabilities in 1986, various education legislations, approximately 1975, were constituted based on this definition, which stipulated the rights of this population in free appropriate education and related services, which nowadays are known as Individuals with Disabilities Education Act -IDEA (IDEA, 2015).

Recently, numerous studies and investigations depicted the significance of advanced technology (assistive technology) in increasing the effectiveness of learning for students with learning disabilities (for example; (Atanga et al., 2019; Kiru et al., 2018; Perelmutter et al., 2017). One of the popular technologies

in learning is online learning platforms. Online learning includes numerous settings, e-learning, blended learning, fully online, and online-supplementary sources (Rice & Dykman, 2018). In the current study, online learning is defined as any application or web-based or TV stream that is used for continuing the learning process as a response to shifting learning to online means due to schools' closure, whether public or private. It is worth mentioning that according to previous review studies (such as (Rice & Dykman, 2018; Greer et al., 2014; Vasquez & Straub, 2012), the majority of studies conducted on students with learning disabilities involved in online learning are few and lack empirical evidence.

However, A recent study by Kintu, et al. (2017) who conducted blended learning found that the students' satisfaction of their academic performance through blended learning was mainly affected by students' characteristics, backgrounds (attitudes, self-regulation), with the same priority of the design features (the technology's quality, online tools, and direct support (face to face)). Consequently, some researchers revealed barriers and deficiency in the availability of online learning for students with learning disabilities, as this population required specific designs and platforms to advance their benefits from online learning as their normal peers (Review; (Badr & Asmar, 2020). A report focusing on online learning and students with disabilities stated (Tindle et al., 2016):

"Students with disabilities may need special educational support to access and process content in order to maximize their learning and allow them to reach their potential in online learning platforms." (p.2)

Likewise, Wang et al. (2019) argued that online learning has to respond to different learning needs or mental conditions, and mentioned that online learning combined with personalization mechanism is a demand to adopt online learning platforms in the real-world settings and to have suitable learning services and experience, this is in light of the lack of user modeling and personalized interventions that increase motivation for learners. For example, Srivastava and UddinHaider (2020) developed a personalized assessment for learners with dyslexia as an adapted form on online learning platforms, which was built based on a previously studied cognitive potentials of dyslexic students.

Furthermore, online learning settings have to adhere to specific requirements related to caregivers or parents of students with learning disabilities to facilitate and support the learning process through online learning platforms. General considerations for online learning and virtual learning designation for parents responsible for students with learning disabilities are as follows (Tindle et al., 2016): A) offering up-to-date information about the students learning progression. B) Sustain a consistent and regular communication channel between teachers and parents. C) Provide an online conference meeting for teachers and parents that enable screen sharing. D) Provide a consistent and 24h/7days technical support channel or dashboard for parents to support their training and usage of online learning platforms.

In sum, despite the significance of online learning in educational development, until now, we know little about online learning needs for students with learning disabilities and their caregivers or parents' concerns. We do not have knowledge-based evidence of online learning benefits for students with learning disabilities and do not have comparable results of online learning and direct learning for this population.

However, the current study determinedreveal that there is a gap in relevant research the lack of research and the scarce body of literature investigated regarding online learning for students with learning disabilities. Previous studies have investigated the effectiveness of online courses or blended learning that are not the same as the complete shift to online learning in which all educational services are offered online as in the current study. However, most of the existing studies on online learning were suggesting and proposing applications and platforms without any empirical evidence to support the effectiveness of these designs. As they presented recommendation reports and methodology for online learning designs appropriate to students with learning disabilities, without any federal trial or experimental results. This can be explained through the notion that learning disabilities encompass wide categories each category

has its unique learning needs (for example, what work and is appropriate for students with dyslexia may not be consistent nor work for Dyscalculia).

In Jordan,In September 2020, the Ministry of Education has decided to switch to distance learning (online-learning) in September 2020 due to the increased number of registered infected cases in Jordanwith coronavirus, in tandem with the Ministry of Health's recommendations; to protect students from the infection risk by the emerged pathogenic virus. This shift was not the first online-learning experience that Jordanian students had. Due to the same causes, Students had experienced the switch to online learning in the second semester of 2018/2019 due to the outbreak of the pathogenic virus. The Ministry of Education has launched Darsak platform both on TV streaming and website for all students enrolled in grade one to twelve (EdTech, 2020). However, this unplanned shift faces various challenges such as inadequate readiness of infrastructure, staff, students and so forth (EDT & UNICEF, 2020). In fact, the role of parents as facilitators of learning were changed and shifted as well (Batshon & Shahzadeh, 2020).

At the beginning of the first shift experience, the parents and students had an ambiguous perception toward the online learning environment, their demands (such as readiness, facilities, time, efforts), and the way of implementation in reality. Hence, large debates were conducted among educational stakeholders on the shift's success. Recently, parents in Jordan have created a clear picture of the online learning environments, predicted academic outcomes, and overcome challenges and burdens to adapt to this shift (Centre for Strategic Studies, 2020). According to a survey conducted by the Research Center in the University of Jordan, only 55% of students used the Darsak platform for learning (EDT & UNICEF, 2020). Therefore, parents launched a wide protest using social media platforms, such as Facebook and Twitter, and used the Hashtag (#) tool to protect their children's right to learning, such as #no_for_online_learning, #noforstudentsbeingleftbehind, #no-lockdown-for-schools, and so forth. In this protest, face-to-face education is a demand for both students with learning disabilities and their normal peers. Furthermore, the Health and Disability Commissioner (HDC) asked the government to exclude students with learning disabilities from online learning and to continue their learning in classes in schools or centers (Kayed, 2020). HDC claimed that online learning has negative consequences on the learning of students with learning disabilities (for example, low academic achievement, poor content accessing, increase in the learning difficulty particularly students with Dyslexia, losing progress, etc.) (Batshon & Shahzadeh, 2020; Kayed, 2020). Moreover, increasing the learning burden on their parents, as well as other negative consequences such as the increased exposure to violence at home (Kayed, 2020). UNICEF was concerned with helping these students and support their parents through distributing workbooks up to the 6th grade for the basic academic subjects, posting support videos to ensure continuity of speech and occupational therapy (EDT & UNICEF, 2020). Therefore, the current study intends to assess parents' perception of the impact of online learning on their children's learning.

Based on the expected results, the study contributes to support a long-term shift toward online learning in Jordan including students with learning disabilities. Because the study addresses a huge current debate about the unplanned learning shift toward online learning in Jordan, and its impact on students with learning disabilities, who have occupational dysfunctions, which makes them less qualified compared to their normal peers. Furthermore, the study will focus on such students; since in this unplanned paradigm shift, they are underestimated. Based on the expected results, the study contributes to support a long-term shift toward online learning in Jordan including students with learning disabilities. This study provides data to improve the readiness to continue the learning process for students with learning disabilities in the case of the current and future infectious diseases. Moreover, the study could be an appropriate research base for future studies and contribute to enrich the online learning assessment literature in the context of students with learning disability with regard to usage and accessibility; since to the best of the

researcher's knowledge, this is one of the earlier studies that depicts the effect of online learning on the learning of students with learning disabilities (Cinquin, et al., 2019).

2. Methodology

The study adopted a descriptive-analytic approach to investigate how do parents of students with learning disabilities perceive the influence of online learning on their children's learning. Thus, the researcher developed a self-administrated online survey based on the limited literature on the online learning paradigm for students with a learning disability and the last reports of parents' role in their children's learning in the online learning environments in Jordan.

2.1. Aim

The study aims to answer the following questions:

Q1: How do parents of students with learning disabilities perceive the effects of online learning on their children's learning?

Q2: Is there a statistically significant effect of online learning on the learning of students with learning disabilities?

Q3: Do the Parents' perspectives toward the effects of online learning on their children's learning differ based on the learning disability's category?

2.2. Sampling

The researcher's purposes were to cover a wide variety of participants. Therefore, authorized parents' information was obtained from both private and public schools, by looking for who might be interested to take part in this study. Both mails and telephone numbers of parent were taken, and the online form of invitation to anticipate was send to them through mail and whatsup application. The invitation included a consensus form and description letter of study's aims and measurements, and the total number of participants was 193 out of 220 sent invitations, which represents a response rate of 87.3%. Accordingly, table no.(1) shows demographic characteristics of participants.

Most parents have one child with learning disabilities (64%), the majority of children were at primary educational level (63%), the majority of parents have not acquired education higher than diploma (58%), and 88% of parents have more than three children continuing their learning using online learning platforms.

Furthermore, the higher prevalence of learning disabilities was in favor of Dyscalculia, Dyslexia, Dysgraphia, combined disabilities with the percentages of (27%, 25%, 16%, 14%), respectively. The majority of students access their learning platforms through smartphones (60%), with a maximum of two devices available for learning per family (67%) corresponding to more than three children learning through online learning per family (88%), and most of them are learning through Microsoft Teams platform (53%) corresponding to (31%) for Darsak platforms.

Table 1: *Demographic Characteristics of participants*

	Frequency	Percentage
Number of your children with learning disability		
One child	124	64.2
Two Children	52	26.9

Three Children	12	6.2
Four children	5	2.6
Total	**193**	**100.0**
Educational level of your children		
Kindergarten	28	14.5
Elementary level	123	63.7
Primary Level	28	14.5
Secondary level	14	7.3
Total	**193**	**100.0**
Learning disability categories		
Dyslexia	49	25.4
Dyscalculia	81	42.0
Dysgraphia	31	16.1
Dyspraxia	11	5.7
Aphasia/Dysphasia	10	5.2
Auditory and visual processing problem	11	5.7
More than one learning difficulty	28	14.5
Online learning Application type		
Darsak platform	60	31.1
Microsoft Teams platform	103	53.4
Special application version from school	24	12.4
Social media platform (WhatsApp, Facebook, …etc	6	3.1
Total	**193**	**100.0**
Device used to access online learning application		
Smart phone	115	59.6
Computer	61	31.6
Ipad	17	8.8
Total	**193**	**100.0**
Level of education of the parent who is responsible for the child's learning		
Secondary	24	12.4
Diploma	89	46.1
B.Sc.	63	32.6
Master	15	7.8
Ph.D.	2	1.0
Total	**193**	**100.0**

Number of your children who are learning through online learning		
1	12	6.2
2	12	6.2
3	82	42.5
4	57	29.5
5	24	12.4
6	6	3.1
Total	193	100.0
Number of available devices for accessing online learning		
1	39	20.2
2	130	67.4
3	18	9.3
4	6	3.1
Total	193	100.0

2.3. Instrument

The study tool consisted of two sections: Section one, the demographic data as (The number of your children with learning disability, the educational level of your children, learning disability categories, online learning application type, device used to access online learning application, level of education of the parent who is responsible for child learning, number of your children who learning through online learning and number of available devices for accessing online learning), while section two included the online learning effects on the learning of students with learning disability represented by three dimensions: Parents' perspective related to student with learning disability (10 statements), Parents' perspective related to online learning platform (7 statements), and Parents' perspective related to difficulties facing them (7 statements).

2.3.1. Validity and reliability

The scale was presented to a group of referees specialized in the field of learning difficulties in Al Balqa' University, to take their opinions and observations, to verify the validity of its statements, paraphrase some of the statements, make the required modifications, and carefully create consistency between the contents of the statements.

To calculate the reliability of the study instrument, the researcher used the equation of internal consistency using Cronbach's alpha test. The values of Cronbach alpha for all variables of the study reached (60%) which is acceptable in this research, which gives the questionnaire as a whole a reliability coefficient ranging between (.73-.90%), as shown in Table (2).

Table 2: *Cronbach's alpha for the Instrument's Facets*

Variables	*Statements*	*Cronbach Alpha*

Parents' perspective related to the student with learning disability	10	.827
Parents' perspective related to online learning platforms	7	.727
Parents' perspective related to difficulties facing them	7	.900
All Questions	24	.891

The research scale included five Likert scale as follows:

Very High	**High**	**Moderate**	**Low**	**Very Low**
1	2	3	4	5

Relative agreements, assigned due to:

- The responses agreement degree is low if the mean score is $1.00 \leq M \leq 2.33$

- The responses agreement degree is moderate if the mean score is $2.34 \leq M \leq 3.67$

- The responses agreement degree is high if the mean score is from: $3.68 \leq M \leq 5.00$

2.4. Data analysis techniques

A Statistical Package for Social Sciences (SPSS) was used to analyze the collected data and test the research questions. The following statistical techniques and tests were used in data analysis:

a) Frequencies and percentages were used to describe demographical variables.

b) Cronbach's Alpha reliability (α) was used to measure the strength of the correlation and coherence between questionnaire items, to highlight the stability of consistency with which the instrument is measuring the concept and to help assess the quality of an instrument.

c) Descriptive Statistical Techniques: these included means and standard deviations. They were used to illustrate the respondents in the study fields.

d) One Sample T-tests was used to show the effect of online learning on the learning of students with learning difficulties: Parents perspectives

e) One Way ANOVA test was used to show the differences and Variance in the parent perspectives on the effect of online learning on the learning of students with learning disabilities.

2.5. Limitation of Study

The study had the following constraints:

- Subjective constraints: the study's focal point is to investigate the parents' perspectives toward the effect of online learning on the learning of students with learning disabilities due to schools' closure. Thus, their perspectives were investigated only toward the learning of their children in three main aspects: online learning platforms, students with learning disabilities, and their role in their children learning.

However, the study does not suggest solutions or investigates their perspectives toward teachers or school administrations' role in online learning or supportive strategies, if present.

- Humanitarian constraints: the study targeted the parents of students with learning disabilities, who have at least one child with the following learning disabilities (Dyslexia, Dyscalculia, Dysgraphia, Dyspraxia, Aphasia/Dysphasia, Auditory and visual processing problem, or more than one learning difficulty). However, further categories, such as Attention Deficit and Hyperactivity Deficit (ADHD), processing deficit, and Autism spectrum disorder (ASD), were excluded from the study, as only the academic learning disabilities were included.

-Time constraints: the study was conducted during the middle of first semesters of the academic year 2020-2021, which represents the second semester of online learning experience due to school closure.

- Instrument design constraints: the instrument of the study was developed only based on the learning of students with learning disabilities, parents' role in students' learning, and the relevant features of online learning platform that supported students' disabilities (difficulties). The instrument was designed based on the available body of literature.

-Spatial constraints; the study instrument was distributed on three main governorates, namely, Balqa'a governorate, Irbid governorate, and Ma'an governorate, representing north, south, and middle governorates over the kingdom.

3. Results

Q1: How do parents of students with learning disabilities perceive the effects of online learning on their children's learning?

The study was based on the descriptive analysis to show parents' perspectives toward the effects of online learning on the learning of students with learning difficulties, as follows:

Table 3: *Parents' perspectives toward the effects of online learning on the learning of students with learning difficulties*

Variables	Mean	Std. Deviation	Agreement level
Parents' perspective related to the student with learning disability	3.33	0.42	Medium
Parents' perspective related to online learning platform	3.11	0.50	Medium
Parents' perspective related to difficulties facing them	3.12	0.73	Medium

According to Table no. (3), parent's perspectives toward the effects of online learning on the learning of students with learning difficulties were at a medium level. The highest level of agreement referred to their perspectives related to students with learning disabilities with a (*M*=3.33, *SD*=0.42) followed by, perspectives related to difficulties facing them with a (*M*=3.11, *SD* = 0.50). Finally, their perspectives toward online learning platforms with a (*M*=3.12, *SD*= 0.73). However, these results are not surprising rather expected since the students and their parents handle the higher burden of learning responsibility

compared to the educational institutions within online learning platforms. The following descriptive analysis, therefore, explores further information and insight into parents' perspectives.

I.   Parents' perspective related to students with learning disabilities

Table 4: *The level of parents' perspective toward online learning effects on students with learning disability*

No	Statements	Mean	SD	Rank	Agreement Level
9	Online learning obstructs my attempts to isolate my child from smart devices	3.73	0.45	1	High
3	Online learning increased the social isolation of my child and reduced their engagement with his/her peers.	3.64	0.56	2	Medium
4	My child's achievement reduced through online learning compared to direct learning	3.50	0.50	3	Medium
10	My child does not accept online learning.	3.47	0.81	4	Medium
7	My child does not have self-regulated learning strategies required for online learning	3.44	0.50	5	Medium
1	My child faces difficulty accessing online learning platforms and using available learning resources	3.42	0.50	6	Medium
6	online learning increases my child's attention deficit and distraction and makes him/her lose focus on learning content	3.37	0.48	7	Medium
5	My child cannot learn through online learning	3.23	0.55	8	Medium
8	My child does not have the knowledge for using online learning platform	2.78	1.00	9	Medium
2	online learning platform increased the learning difficulties facing my child.	2.73	0.99	10	Medium
Total		3.33	0.42		Medium

Parent's perspective was at a medium level of agreement about the effects of online learning on the students with learning disability (see table no. 4), whereas the statement "Online learning obstructs my attempts to isolate my child from smart devices" was at a high level with a (*M*=3.73, *SD* = 0.45), after that the parent's perspective tended highly to take a certain direction toward "Online learning increased the social isolation of my child and reduced their engagement with his/her peers" with a (*M*=3.64, *SD* = 0.56).

On the other hand. the parents' perspective "online learning platform increased the difficulties facing my child" was at a medium level with a (*M*=2.73, *SD*= 0.99).

II. Parents' perspective related to online learning platforms

Table 5: *The level of parents' perspective toward online learning effects on students with learning disabilities platform*

No.	Statements	Mean	Std. Deviation	Rank	Agreement Level
3	online learning platforms do not offer the supportive learning services, which my child had through direct learning (such as resource classroom)	3.33	0.76	1	Medium
2	Assessment (exam) designs do not consider my child condition neither in time nor questions' standards.	3.26	0.70	2	Medium
1	Online learning platform do not consider My child learning difficulties	3.22	0.81	3	Medium
7	online learning does not offer online programs for reading or writing.	3.21	0.72	4	Medium
5	the online learning content is not rich in diverse educational resources such as pictures, videos, and stories.	3.16	0.70	5	Medium
6	online learning does not support online learning groups that my child may benefit from.	3.15	0.87	6	Medium
4	the duration of exploring and explaining the learning content in online learning does not consider the difficulties of my child (fast delivery)	2.46	1.11	7	Medium
Total		3.11	0.50		**Medium**

The participants confirmed that the effects of online learning on students with learning disabilities determined by online learning platform was at a medium level (see table no. 5), as they rated "online learning platforms do not offer the supportive learning services, which my child had through direct learning (such as resource classroom)" at a medium level with a (*M*=3.33, *SD* = 0.76). Next, the participants rated "Assessment (exam) designs do not consider my child condition neither in time nor questions' standards" at a medium level also with a (*M*=3.26, *SD* = 0.70). Finally, the participants agreed that "the duration of exploring and explaining learning content in online learning does not consider the difficulties of my child (fast delivery)"at a medium level with a (*M*=2.46, *SD* = 1.11).

III. Parents' perspective related to difficulties facing them

Table 6: *The level of parents' perspective about online learning difficulties when teaching their children with learning disability*

No.	Statements	Mean	SD	Rank	Agreement Level
6	online learning requires supportive devices to benefit my child, which I cannot equip.	3.25	0.88	1	Medium
1	online learning increases my role in my child's learning, which increases my burdens	3.21	0.80	2	Medium
7	I often feel confused with regard to the content that my child has to learn such as having to use online platforms and not mentioning the educational content.	3.21	0.82	2	Medium
5	there is a clash between the online classes of my other children and my child with the learning disability	3.15	0.84	4	Medium
2	I do not have teaching strategies as those special education teachers to enhance my child's learning.	3.06	0.96	5	Medium
3	My anger is increased when providing my child with his educational learning.	2.99	1.08	6	Medium
4	it is difficult to me to follow-up my child's learning due to the lack of time.	2.96	1.05	7	Medium
Total		3.12	0.73		**Medium**

According to table no. 6 above, the parents' face some difficulties when applying online learning for their children with learning disabilities, represented with a high mean value (3.25), and a standard deviation of *(*0.88) for the statement "online learning requires supportive devices to benefit my child from online learning, which I cannot equip", then "online learning increases my role in my child's learning, which increases my burdens" that ranked second with a mean of (3.21), and a standard deviation of (0.80) and both of them are at a medium level. The last difficulty statement "it is difficult to me to follow-up my child's learning due to the lack of time." had a mean value of (2.96) , and a standard deviation of (1.05).

Q2: Is there a statistically significant effect of online learning on the learning of students with learning disabilities?

One sample T-test was used to show the statistically significant impact of online learning on the learning of the students with learning difficulties from the parents' perspectives as shown in table (7).

Table 7: *One Sample T-test to validate the impact of online learning on the learning of student*

Online learning effects on	Mean	S.D	Calculated (T)	Tabulated (T)	DF	Sig
Student with a learning disability	3.33	0.42	11.032		192	.000*
Learning platforms	3.11	0.50	3.097	1.96	192	.002*
Parents difficulties	3.12	0.73	2.268		192	.024*
Total	3.19	0.45	5.834		192	.000*

Note * *Significant at the level (0.05), the value of T = 3.00, the df = the sample - 1, indicates the level of work confidence.*

Table (7) shows the mean of the online learning effects on the learning of the students with learning difficulties on three dimensions (students with learning a disability, learning platforms and parents difficulties) (t) calculated values were (11.032, 3.097, 2.268, 5.834) correspondingly, which all of them were exceeding the tabulated value (1.96). The statistical outcomes emphasize the statistically significant differences between the means of the scale and the default mean (3.00) at the significant level of (0.05).

Q3: Do the Parents' perspectives toward the effects of online learning on their children's learning differ based on the learning disability's category?

One Way ANOVA test was used to show the statistically significance differences in the level of parents' perspectives about the effects of online learning on the learning of students with learning difficulties based on the disability's category as shown in table (8).

Table (8) One *Way ANOVA test*

		Sum of Squares	Df	Mean Square	F	Sig.
Students with learning disability	Between Groups	2.000	6	.333	1.990	.069
	Within Groups	31.166	186	.168		
	Total	33.166	192			
Learning platform	Between Groups	3.027	6	.505	2.045	.062
	Within Groups	45.877	186	.247		
	Total	48.904	192			
Parents difficulties	Between Groups	8.724	6	1.454	2.889	.010*
	Within Groups	93.616	186	.503		
	Total	102.341	192			
Total	Between Groups	3.199	6	.533	2.836	.012*

Within Groups	34.971	186	.188
Total	38.170	192	

Note*: significant at level of (005)	**Note*:** significant at level of (005)	**Note*:** significant at level of (005)	**Note*:** significant at level of (005)	**Note*:** significant at level of (005)

The results in table (8) showed that there are statistically significant differences in the level of parents' perspectives about the effects of online learning on the learning of students with learning difficulties based on the disability's category and also with regard to "Parents difficulties". The total degree of their (*F*) values are (2.889, 2.836) respectively which is significant at level of (0.05).

To show the source of the differences, the Scheffe test was used for multiple comparisons. Results found that the variance was in favour of more than one disability. While it showed that there were no statistically significance differences at level of (0.05) in "Student with learning disability and Learning platform" as according to the learning disability categories (F) values were (1.990, 2.045) which is not significant at level of (0.05).

3. Discussion

The parents of students with learning disabilities moderately perceived the effects of online learning on their children's learning. Their responses revealed a moderate perspective toward the effect of online learning related to students with learning disabilities, related to difficulties facing them, and toward online learning platforms, respectively. However, these results are not surprising rather expected since the students and their parents handle the higher burden of learning responsibility compared to the educational institutions within online learning platforms. A further information and insight into parents' perspectives revealed that According to the results, the main effect of online learning on the learning of students with learning disabilities that related to students were: 1) The increase of students' dependency on smart devices, 2) The increase of social isolations and reduction of peers-engagement, 3) lessen students' academic achievements. That can explain what a local survey found regarding online learning which reported that only 55% of students used the Darsak platform for learning (EDT & UNICEF, 2020). However, that can be explained by the lack of students' readiness, as reported by their parents, children do not acquire the required learning strategies, learning knowledge, and psychological basis to efficiently benefit from online learning platforms as a solution for their learning challenges(for example, (Olugu, 2020; Atanga, et al., 2019; Devi & Sarkar, 2019)

Regard the effect of online learning on the students with learning difficulties Accordingly, the parents' agreed at a medium level on the effects of online learning on students with learning disabilities that are determined by online learning platforms determined the effect pf online learning on students, illustrating that the. The main effects of online learning on the learning of students with learning disabilities related to online learning platforms were: 1) The lack of supportive learning services that students with learning disabilities need. 2) The lack of appropriate designs, management, and delivery. 3) The lack of diversity in the educational content. This is consistent with the arguable findings by Kumar, et al. (2011) which state that accessibility in online learning is scarce, and they needed to look for improving their access. Likewise, the findings of Cinquin, et al. (2019) show that the inclusion of accessibility standards is weak for these students in most online learning designs. These influential factors can explain what a local survey found

regarding online learning, as it reported that only 55% of students used the Darsak platform for learning (EDT & UNICEF, 2020).

The summary of the main effects of online learning on the learning of students with learning disabilities with regard to difficulties facing parents were: 1) Parents cannot afford supportive devices needed in the online learning environments. 2) The increase of the burden on parents. 3) The lack of knowledge and experiences regarding appropriate teaching strategies for students with learning disabilities, 4) The increase of the parents' anger toward their children. These effects can be explained based on the demographic characteristics of participants. Most of the children were at primary level (63%) that need substantial support from parents, the majority of parents do not have higher than diploma, 88% of parents have more than three children continuing their learning using online learning platforms, and most of them do not have more than two devices for online learning (87%). These factors support the notion that the role of parents as facilitators of learning were changed and shifted within online learning environments (Batshon & Shahzadeh, 2020).

Moreover, The results validated the statistically significant impact of online learning on the learning of the students with learning difficulties, which consented with the HDC expectations when the government was asked to exclude students with learning disabilities from online learning and acquire their learning in classes in schools or centers (Kayed, 2020). HDC claimed that online learning has negative consequences on the learning of students with learning disabilities (Batshon & Shahzadeh, 2020; Kayed, 2020).

Further investigations showed that there are statistically significant differences in the level of parents' perspectives about the effects of online learning on the learning of students with learning difficulties based on the disability's category and also with regard to "parents' difficulties". According to a survey study conducted by Kumar, et al. (2011), even these technologies advance online learning, but some participants, namely, students with dyslexia, claimed that accessibility to online learning is scarce, and they needed to look for improving their access. This coincides with the current study's results in the differences prevalence regarding the effects of online learning, but the current study targeted a wide range of difficulties categories, as 27% and 25% of participants have children with dyscalculia and dyslexia, respectively. Moreover, 28 participants have children with more than one learning disability. Thus, it is reasonable to conclude that these children are expected to be the most affected by online learning since the online learning platforms do not support such learning disabilities as their parents reported.

4. Conclusion

The study aimed to explore the parents' perspectives toward online learning effects on the learning of their learning-disabled children. The study was motivated by the observed local protests on social media platforms requesting going back to direct learning rather than online learning , as well as the HDC demands to go back to direct learning for students with learning disabilities. An online survey was used for the purpose of collecting data from parents who have children with learning disabilities. The study summarized, First, the main effects of online learning on the learning of students with learning disabilities that are related to students: 1) The increase of students' dependency on smart devices, 2) The increase of social isolations and reduction of peers-engagement, 3) The lessening of students' academic achievements. Second, the main effects of online learning on the learning of students with learning disabilities that are related to online learning platforms: 1) The lack of supportive learning services that students with learning disability need, 2) The lack of appropriate designs, management, and delivery , 3) The lack of diversity in the educational content. Third, the main effects of online learning on the learning of students with learning disabilities that are related to difficulties facing parents: 1) Parents cannot afford supportive devices needed in the online learning environments. 2) The Increased burden on parents. 3)

The lack of knowledge and experiences of appropriate teaching strategies for students with learning disabilities, 4) The Increase parent's anger toward their children.

Moreover, the results revealed that there is a statistically significant impact of online learning on the learning of students with learning difficulties, which is in line with the HDC expectations and claims about the negative consequences of online learning on the learning of students with learning disabilities (Batshon & Shahzadeh, 2020; Kayed, 2020). Consequently, it asked the government to exclude students with learning disabilities from online learning and to continue their learning in classes in schools or centers.

Furthermore, it was found that there are differences in online learning effects on students with learning disabilities based on their disability's category. According to the parents' perspectives, students with multiple learning difficulties face a higher level of difficulty in learning through online learning platforms.

5. Recommendation

The study recommends designing a special online learning supportive platform for the learning of students with learning disabilities accords to their difficulty's genre. Furthermore, the adoption of online learning settings cannot be in one stage, these are set of prerequisites stage to shift to online learning, the study thus recommends investigating the needs and requirements of both students and their parents in online learning settings before real shift toward online. the study suggests conducting further studies to introduce solutions and to investigate parents' perspectives toward teachers or school administrations' role in online learning or supportive strategies if present.

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