EXPLORING THE EFFICACY OF ONLINE EDUCATION FOR CHILDREN WITH SPECIAL NEEDS DURING THE COVID-19 PANDEMIC

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Abstract

This study seeks to delve into the realm of online education effectiveness for children with special needs within the unprecedented context of the COVID-19 pandemic. Employing an exploratory research approach, we meticulously scrutinize the experiences of 21 adept special educators, meticulously selected from diverse special schools. Leveraging a purposive and snowball sampling technique, we engage in a comprehensive analysis of their perspectives through a structured questionnaire distributed via Google Forms. Our methodological journey unfolds over a meticulously orchestrated timeline, ensuring both the depth and rigor of our inquiry. The results, presented in a tabular format, provide insights into the intricate tapestry of challenges encountered by special educators and illuminate the nuanced facets of transitioning from conventional offline teaching to the virtual landscape. This study not only contributes to the discourse surrounding special education during the pandemic but also lays the foundation for further research and innovation, propelling the trajectory of online learning for children with special needs.

Keywords: *Children with Special Needs, Effectiveness of online learning, Pandemic, Special Education, Special Educators, COVID-19*

INTRODUCTION

Children with special needs constitute a diverse cohort, necessitating tailored educational support to fulfill their distinctive developmental and academic requisites. The realm of special education embodies a specialized pedagogical approach, striving to orchestrate an inclusive and accommodating learning environment. Amidst the tumultuous landscape imposed by the COVID-19 pandemic, this study emerges as a beacon of inquiry, focusing on the efficacy of online education for these exceptional learners. With unwavering dedication, 21 resolute special educators were enlisted as participants, each bearing witness to the intricate interplay of challenges and adaptations within the virtual realm.

Special education or inclusive education is typically harnessed as the mode of teaching for individuals with special needs. It is a specialized field of education that aims to provide individualized support and accommodations to students with diverse learning needs and disabilities. Special education programs employ a range of strategies, such as tailored lesson plans, assistive technologies, and differentiated teaching methods. It facilitates the agenda of creating an inclusive and supportive learning environment that fosters the academic, social, and emotional growth of the students. Inclusive education is a transformative approach that seeks to deliver quality education for all students, regardless of their background, abilities, or differences. It emphasizes the participation and meaningful engagement of diverse learners in an encouraging and nurturing learning environment and aims to eliminate barriers and promote equal opportunities for every student by enriching the educational experience for all. Teachers with the required special skills set and competence to cater to the needs of students with special needs are referred to as special educators.

The marginalized population of children with special needs faces a high rate of illiteracy in India. Burdened with a myriad of challenges, it also grapples with alarmingly high school dropout rates, as they face an array of obstacles alongside their families.

Inadequate accessibility, like an insidious specter, haunts their pursuit of education. Alas, the advent of the COVID-19 pandemic catapulted the educational landscape into turmoil, as schools shuttered their doors and the realm of offline, in-person lessons disintegrated into distant memory. In this tempestuous storm, children with special needs found themselves confronted with an even more arduous task of adaptation.

For the valiant special educators who champion their cause, the transition was nothing short of seismic upheaval. Navigating the uncharted waters of technology posed an immense hurdle, and for those entrusted with teaching children with special needs, the mastery of assistive technologies and virtual tools specifically

designed for their unique requirements demanded extraordinary exertions. Each child's individualized education plan (IEP), a beacon of hope, depended on the dexterity and resourcefulness of these educators. After all, the mosaic of disabilities these children embody demands a bespoke approach, tailored to cater to their diverse needs.

The absence of face-to-face interactions and hands-on support may impact not only the academic progress of the children but also the vital realms of social and emotional development. The efficacy of online education for children with special needs requires careful examination to identify the optimal strategies and interventions for supporting their learning outcomes during the pandemic.

Although, some research suggests that online education can provide valuable opportunities for children with special needs, offering flexibility, access to a wide range of resources, adaptive technologies, and assistive tools to cater to different disabilities and learning styles. Additionally, the use of multimedia content, interactive simulations, and virtual reality can enhance engagement and promote experiential learning for these students.

Despite the new opportunities, parents, teachers, and all stakeholders involved find themselves perpetually on tenterhooks, acutely aware of the necessity to foster holistic development within these precious souls. The current juncture, therefore, presents a crucial opportunity to scrutinize the profound impact of the transition from offline to online education for these students. Alas, the dearth of research in the Indian context pertaining to children with special needs renders this pursuit even more imperative.

Hence, this study aspires to bridge that formidable gap, endeavoring to compare the influences of online teaching during the pandemic with its offline counterpart, unraveling the intricacies of this transformative journey for these exceptional students. In the kaleidoscope of challenges faced by children with special needs, this study emerges as a ray of hope, casting its illuminating gaze upon the path ahead. It stands poised to unearth invaluable insights, empowering educators, parents, and policymakers to navigate the uncharted terrain of inclusive education with unwavering resolve and unwavering dedication.

REVIEW OF LITERATURE

There have been a few studies conducted around the world on the effectiveness of online classes on Special Needs children during the COVID-19 pandemic.

A paper in 2021, examined the challenges faced by special needs students in inclusive primary schools during the COVID-19 pandemic concerning early reading learning (Asri et al.). The study explored the impact of the pandemic on the educational process for students with special needs, and the challenges faced by them, particularly in the domain of early reading acquisition. Qualitative research methods were used to include interviews and observations, the researchers gathered data to understand the difficulties experienced by special needs students in remote learning settings. Some challenges faced by the students during the pandemic included limited access to technology and resources, difficulties in individualized and specialized support, and the loss of face-to-face interaction with teachers and peers. The study also highlighted the need for teachers to adapt their teaching approaches and strategies to cater to the diverse needs of special needs students in the virtual learning environment. There is a need for more comprehensive support and resources for inclusive primary schools to address the challenges faced by special needs students during the pandemic and to ensure equitable access to quality education for all students.

A national survey was conducted in Italy in 2021 to assess the impact of distance learning on primary and middle school children during the COVID-19 pandemic (Scarpellini et al.). The study aimed to understand the challenges faced by students, parents, and educators during the transition to remote education and to identify potential effects on educational outcomes and social well-being. The results revealed that distance learning led to increased educational deprivation and social inequalities, especially among younger children. Additionally, children with disabilities faced additional challenges, as they often lacked the necessary support and accommodations required for effective remote learning. The paper also highlighted the need to invest in digital infrastructure, provide training for teachers and parents, and implement targeted support to ensure equitable access to education and support the learning needs of all students, particularly those with disabilities.

Another study conducted in 2021, investigated the experiences of students with special needs in online classrooms during the COVID-19 pandemic in Turkey (Yazcayir and Gurgur). The study utilized qualitative research methods, including interviews and surveys, to understand the challenges faced by the students and the strategies employed to support their education during the COVID period. The findings reveal diverse challenges, such as limited access to digital devices and internet connectivity, difficulties in engaging with online materials, and the need for individualized support and accommodations. The research highlights the crucial role of parental involvement and support in facilitating online learning for students with special needs, as families played an essential role in helping their children navigate the digital platforms and ensuring their unique educational needs were addressed. The paper also emphasized the importance of professional development and training for special education teachers to effectively adapt to the online learning environment and provide appropriate support to students. The study also highlighted the importance for developing effective strategies and support systems to ensure an inclusive and equitable educational experience for students with special needs during remote learning periods, such as the COVID-19 pandemic.

In another Italian paper in 2021, the implementation and challenges of online special education in during the COVID-19 pandemic was explored (Parmigiani et al.). The study focused on e-inclusion, which refers to ensuring the participation and access of students with special needs in the digital learning environment. Using qualitative research methods, including interviews and surveys, the study examined the experiences of students, teachers, and families involved in online special education. The research highlighted the role of educators in adapting teaching strategies to suit the online environment. The paper also discussed the digital divide and the disparities in access to technology and internet connectivity among students with special needs. The study also showcased the challenges and opportunities of online special education during the pandemic and offered recommendations for improving e-inclusion strategies to support the unique learning needs of students with disabilities in digital classrooms.

A study from 2020, investigated the mental health status and changes in perceived strain among caregivers of children with special needs during the COVID-19 pandemic (Dhiman et al.). A total of 264 caregivers participated in an online survey. The findings indicated a notable prevalence of depression among caregivers, along with an increase in perceived strain during the pandemic compared to pre-outbreak levels. Caregivers who did not utilize telerehabilitation and perceived it as an ineffective medium were at a higher risk of experiencing poor mental health. Similarly, caregivers with negative perceptions of homecare therapy were more likely to exhibit psychological symptoms and strain. Due to the recency of the pandemic, establishing a causal link between COVID-19 and the observed psychological outcomes proved challenging. Additionally, controlling the contributing factors to caregivers' poor mental health or assessing the severity of their children's illnesses was not feasible. It is important to note that the study's results cannot be generalized to all caregivers tending to children with special needs, as the sample consisted solely of English-speaking participants from major cities in India.

A study from 2020, study aimed to examine the techniques employed in distance learning for students' special education during the COVID-19 pandemic and assess the benefits for students and their families (Ayda et al.). A group of 10 special educators from Turkey participated in the study, undergoing interviews with semi-structured questions. The findings revealed that distance education did not effectively benefit students, with inadequate consideration given to family education in the Ministry of National Education's plans. The special educators had both positive and negative opinions about distance education practices. They also highlighted the lack of Individual Education Program (IEP) applications tailored to students' diverse developmental characteristics and insufficient materials suitable for their education. However, due to the small and accessible sample, the study's generalizability is limited.

METHODOLOGY

Aim:
To study the effectiveness of online education for children with special needs during the COVID-19 pandemic as compared to offline learning.

Hypothesis:
Online mode of teaching during COVID-19 was effective in comparison to offline mode of teaching for children with special needs.

Research Method:
Embarking on an expedition of exploration, our study navigates a precisely choreographed trajectory. Employing a deliberate synthesis of purposive and snowball sampling, we meticulously curate and engage with the seasoned perspectives of specialized educators. The process of data collection, meticulously orchestrated through a structured Google Forms questionnaire, reflects a duality of affirmative and opposing statements, echoing the intricate dynamics of online education. This strategic approach culminates in an intricately tabulated representation of the amassed insights, serving as the foundation for a meticulous and thorough analysis. Employing the methodology of exploratory research, this study undertook the task of comprehensively evaluating the effectiveness of online learning in juxtaposition with traditional offline learning. The data collection spanned a week, culminating in the meticulous recording of 21 distinct responses. Subsequently, a rigorous scoring process unfolded over a span of four days, followed by a two-day period dedicated to the meticulous interpretation of the collected data. This comprehensive methodology was executed by a team of three dedicated researchers, each contributing to various facets of the research endeavor.

Sample & Sampling Technique:
The **sample size was 21(16 females & 5 males)** participants, and all the respondents were special educators dealing with children with special needs. After setting the basic criterion, we followed the **purposive and snowball sampling** method. We reached out to respondents via call and mail and the research was administered on the basis of voluntary participation. Following research ethics, the respondents could reveal

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their name in their survey or choose to maintain anonymity.

Data Collection:

In response to the exigencies posed by the COVID-19 pandemic, a meticulously designed questionnaire comprising 25 inquiries was meticulously crafted and subsequently distributed to the participants through the platform of Goog le Forms. The questionnaire adeptly encompassed a balanced amalgamation of positively and negatively phrased statements, and its evaluation was facilitated through the implementation of a 5-point Likert scale. Upon the completion of the respondents' submissions, a meticulous process of evaluating and scoring the received responses was undertaken, aligning precisely with the overarching objectives of the study. In a concerted endeavor to fortify the reliability of the amassed data, a supplementary measure was enacted, wherein the participants were individually contacted via telephone. Through this personalized interaction, participants were conscientiously engaged in clarifying and authenticating their provided responses, thus fortifying the credibility and dependability of the study's findings.

Link for the Google Form used as the questionnaire for this study:

https://docs.google.com/forms/d/e/1FAIpQLSfCISegNqNw4pYV6m7VpzrRdcekhNaR6WI--VSyD9yyY9X2Fg/viewform?usp=sf_link

Picture 1 shows an overview of the form used for the study
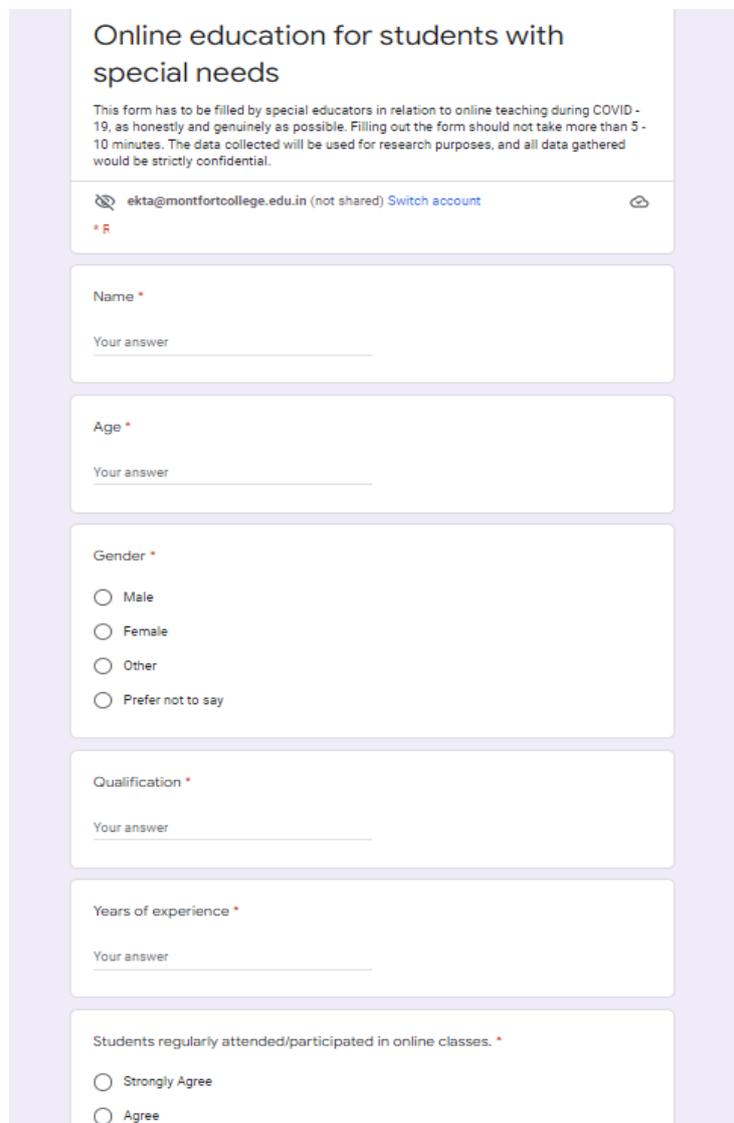
For positive worded statements, the scoring was as follows –
*   Strongly agree - (5 points)

- Agree - (4 points)
- Neutral - (3 points)
- Disagree - (2 points)
- Strongly disagree - (1 point)

On the other hand, for negative worded statements, the scoring pattern was the opposite –

- Strongly Agree - (1 point)
- Agree - (2 points)
- Neutral - (3 points)
- Disagree - (4 points)
- Strongly disagree - (5 points)

Results and Discussion
Statistical Analysis:
Following statistical techniques were used in the present study:

- Mean
- Median
- Mode

Table 1 shows the scores of 21 Special Educators and their views on Online & Offline Education for Children with Special Needs

Sl. No.	Name	Score
1	AS	61
2	PM	83
3	KS	84
4	SB	55
5	SJ	47
6	S	45
7	RS	57
8	LM	50
9	SS	62
10	SSH	92
11	BD	69
12	SJY	52
13	U	65
14	SA	42
15	SY	69
16	SL	67
17	VMK	63
18	HSB	69
19	SU	64
20	R	71
21	SN	63
	Total Score	1330

Table 2 shows the mean, median, mode scores of the 21 participants

Mean	Median	Mode
63.33333333	63	69

The aim of the research was to study effectiveness of online education for students with special needs. It was hypothesized that online education during the pandemic was effective for students with special needs as compared to offline teaching.

According to Table 2, the mean score of the group is 63.33 and median score is 63. Since these are low scores, it indicates that teachers did not prefer online teaching over offline teaching. The highest score of 92 in the group was of subject SSH while the lowest score of 42 was of subject SA, indicating a range of 50.

Table 3 shows the mean and SD scores for the female and male participants in the group

	Total	Mean Score	SD

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Females	16	58.8	8.258329
Males	5	64.75	13.85881

There were also differences seen gender-wise. According to Table 3, male educators have a mean score of 58.8 which is lower than the group mean, while the female educators have a mean score of 64.75, which is slightly more than the group mean. According to this study, female special educators found online education slightly more effective than male educators, although, the difference is negligible.

In one of the negative statements—"Achievement of goals is more visible in offline mode", 57.1% of the respondents answered with "Agree" while 33.3 percent of the respondents said, "Strongly agree." This shows that almost 90% of the respondents considered offline education to be more effective in terms of goal achievements if the students. Moreover, when directly asked if "In - person teaching has a better impact on students than online learning", 54. 5% of respondents said "Agree" and 36. 4% answered with "Strongly agree.". In another statement "Lack of in - person interaction made it difficult to give personal attention to students", 45.5% of respondents said "Agree" while 27.3% of respondents answered with "Strongly Agree." This showed that 72. 8 percent of the respondents realized that online teaching wasn't as effective.

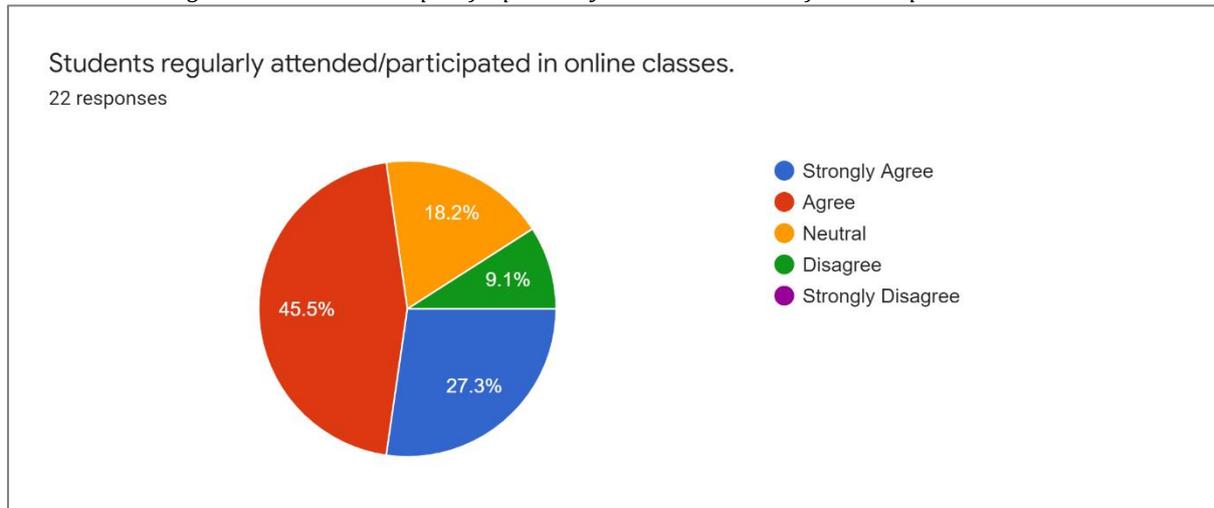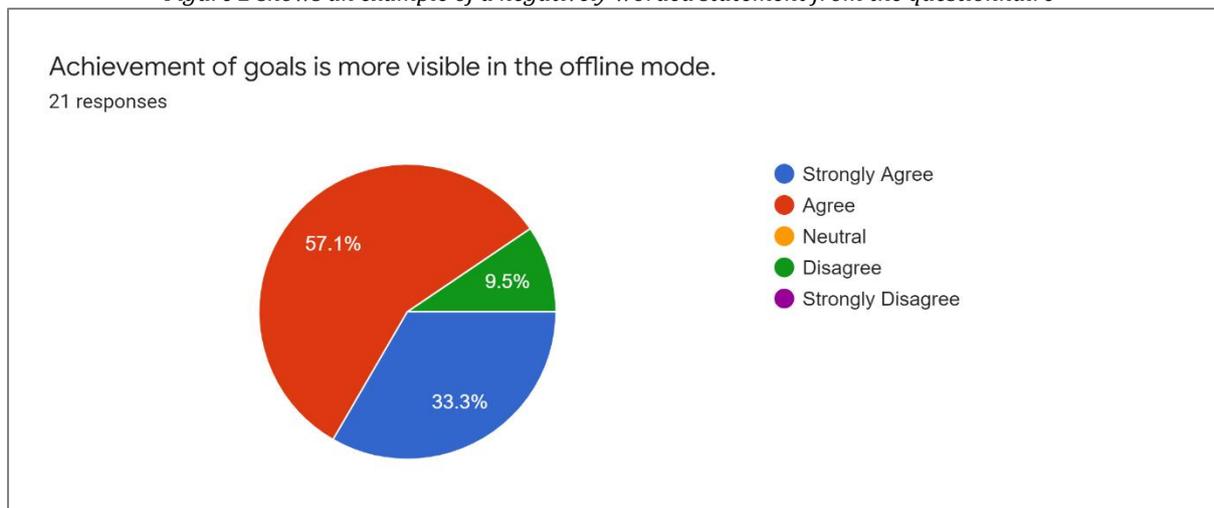*Figure 1 shows an example of a positively worded statement from the questionnaire*

Figure 2 shows an example of a negatively worded statement from the questionnaire

There were certain questions that elicited one-sided responses from the sample. In one negative worded statement, "It was very difficult to make children sit in one place and engage them for long periods of time", 42.9 percent of the participants responded with "Strongly Agree" and another 42.9 percent responded with "Agree."

In another negative worded statement, "Your students faced social and emotional problems during lockdown, which affected their progress in online learning", 33.3 percent participants responded with "Strongly Agree" while 52.4 percent said "Agree."

In a negative worded statement, "Due to lack of sensory integration activities, degree of learning was less effective" 19 percent said Strongly agree while 52.4 percent said "Agree."

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There were also questions that elicited a balanced response at either end of the spectrum from the participants. In one positive worded statement which said "There is no innovation required in the field of online education for children with special needs", 4.8 percent said "Strongly agree", 38.1 percent said agree, 28.6 percent said "Disagree" and 19 percent said "Strongly disagree."

Even though the balance was in favor of innovation, this almost equal proportion of responses on either side indicates the disparity in provision of new technology among several special educators, causing some to say that innovation isn't required at all while some responded that it is needed.

Figure 3 shows the scores of special educators on the effectiveness of online & offline education for Children with Special Needs
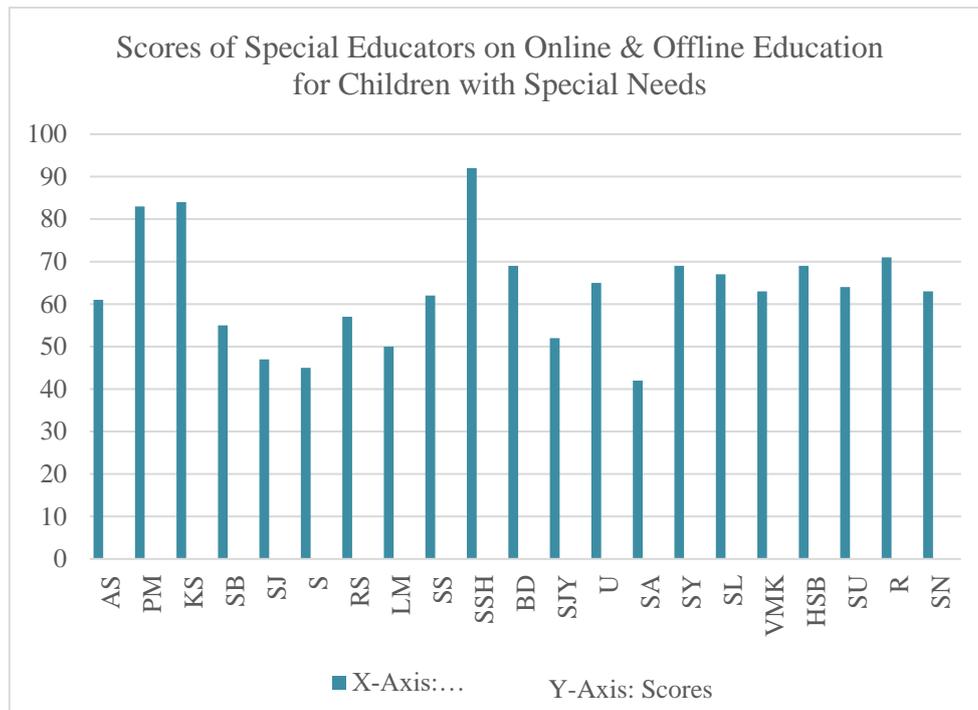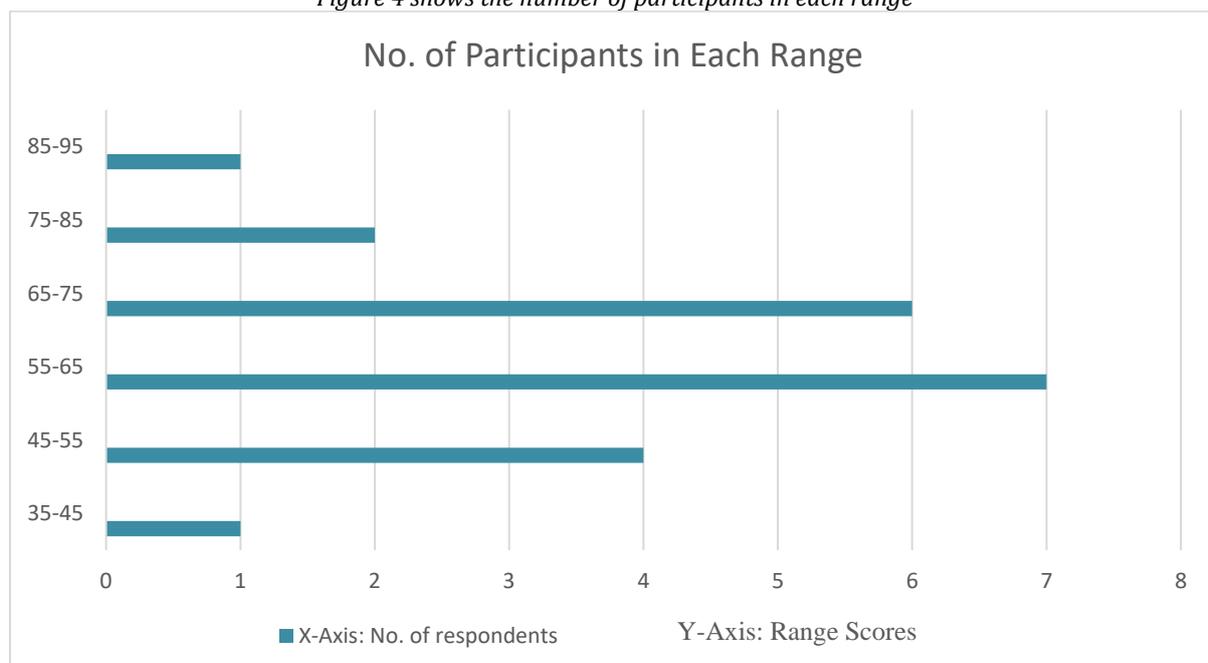

Figure 4 shows the number of participants in each range

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CONCLUSION

The advent of the Covid-19 pandemic mandated a paradigm shift from traditional offline education to the realm of online learning, presenting formidable obstacles for specialized educators. This necessitated their adept navigation of novel technologies and the delivery of tailored instruction to address diverse disabilities. The ramifications of this profound transition, notably encompassing academic advancement and socio-emotional growth, assume paramount significance.

The findings from our present study unveil that, on average, special educators did not express a preference for online instruction as opposed to traditional offline teaching, evidenced by a mean score of 63.33. The spectrum of perspectives, spanning from the highest score of 92 to the lowest score of 42, underscored the diversity of viewpoints among participants. Specifically, a notable majority concurred or strongly concurred that offline education wielded a more pronounced impact in attaining educational objectives and offering individualized attention to students.

In summation, the shift to online education amid the Covid-19 pandemic presented formidable challenges for children with special needs. This necessitates the rejection of the hypothesis that posited the efficacy of online instruction surpassing that of offline mode for these special-needs learners. This scholarly endeavor strives to cast illumination upon this pivotal domain, arming stakeholders with the tools and insights to traverse the uncharted course of inclusive education with unwavering dedication and determination.

LIMITATIONS

1. Given the limited scale of the sample, the outcomes may exhibit a degree of unreliability. A larger sample size could potentially have yielded more precise and dependable findings.
2. The utilization of mail for questionnaire distribution introduces the possibility of extraneous variables influencing the responses. The suitability of conditions for respondents might have contributed to variances in their answers.
3. As a consequence of the uneven gender distribution within the sample, the capacity for a comprehensive comparative analysis based on gender-specific responses was constrained.

SUGGESTIONS

1. Subsequent in-depth research can delve into the nuances uncovered by this study, illuminating the specific challenges entailed in the realm of online learning.
2. The findings of this study can serve as a catalyst for innovative advancements within the pedagogical landscape, particularly tailored to the unique requirements of special needs children.
3. This study lays the groundwork for establishing a mandatory framework of basic technological training for educators, ensuring the seamless execution of online classes and the delivery of high-quality education to children with special needs.
4. Utilizing the insights garnered from this study, the formulation of interactive and captivating online learning curricula can be pursued for special needs children. Moreover, strategic scheduling can be implemented to mitigate burnout and maintain student engagement.
5. The implications of this study extend to nurturing the social and emotional well-being of special needs children within the virtual classroom, concurrently with their academic guidance.
6. By directing focus towards the integration of sensory-engaging activities into online educational modules, this study has the potential to enhance student engagement and subsequently facilitate more effective learning experiences
7. This study has the capacity to spearhead efforts aimed at equitable distribution of technology and resources across schools catering to special needs children, thereby narrowing the existing disparities and fostering enhanced learning outcomes for all.

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