



**CONCERNS FOR ONLINE EDUCATION AND WELL-BEING AMONG STUDENTS
WITH VISUAL IMPAIRMENT AND THEIR PARENTS DURING COVID-19
PANDEMIC**

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Abstract

Objectives: The present paper intends to study the concerns for online education and well-being among the parents/care takers of student with visual impairment during COVID-19 pandemic and to enable visually impaired students to stay safe and learn with the use of technology which is the present and the future of the world. The paper also highlights the variation of concerns among the group of the visually impaired students in different locations and the factors related to online learning for their well-being.

Methods: The study employs a descriptive survey study method and through 'random sampling' technique, 51 students and their parent, of a private visually impaired school in Bobbili town of Vizianagaram district of Andhra Pradesh, India, were randomly selected for the present study. All teachers of the school were also interviewed. A structured interview schedule was developed and the data was collected by making the phone calls to the sample students.

Results: There were many concerns which are identified which included lack of preparedness to meet COVID-19 pandemic. The concerns in adopting online education for the visually impaired students varied from group to group of students like total blind to partially blind, students from towns to villages, economic background of lower classes to higher classes. There was variation among students with educated parents to uneducated parents, there was variation in children who had devices to those who did not have devices. But, between girls and boys there was only a minor variation was observed.

Conclusions: Achieving the well-being while imparting the online learning for the visually impaired students requires the availability of digital devices and its adoption by the visually impaired students, without which it becomes their major concerns, since it is being faced by the majority of the visually impaired students. Also, problems such as insufficient network coverage and teachers training for teaching online to the visually impaired becomes minor concerns along with others which should be taken care. Use of various Apps by which better learning for the visually impaired is also a concern. The study suggests the ways to overcome the barriers for the online learning of the visually impaired students.

Keywords: Online education, visually impaired, COVID-19, parents, teachers.



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Introduction

The concerns of children learning and staying safe is the greatest need of world during the present times of COVID-19 pandemic. Traditional education had been hindered when all the schools, colleges and universities were under lockdown. Online education had opened a way for the learning. ‘Online education’ is learning using internet by the teachers and the learners for interaction and to share learning material and allow students to study anywhere and anytime. With the use of technology learning online has become more convenient to create better learning environment.

According to Ackland, et al. (2017), out of 248 million visually impaired people in the world more than 39 million are totally blind and more than 245 million have low vision; and approx. 90% belong to the developing countries (Ackland, et al. 2017; Dutta & Wadhwa, 2013), and India is such developing nation. Among these the visually impaired students are those who have vision loss or some defect in vision. These are special group who experience life with much difference than others and who walk through darkness to live better each day as they move to see greater light in their life to stand independent. Any Learner would like to enlighten himself or herself for their well-being According to Kharade & Peese (2012), more and more Indian students are enrolling for online courses for their self-development and empowerment in spite of many challenges they are facing. So, online learning can be as much as encouraging for visually impaired students to learn online as according to Augestad (2017) to build learners’ motivation and resilience for improved engagement, there is a need to invest time and effort in building their self-concept and self-esteem, and for learners with visual impairment; this can be linked directly to independence in mobility, supportive parenting, social support mechanisms and friendships Augestad (2017). As trends are changing according to changing times, we must allow visually impaired students to online learning to boost up self-esteem while taking care of their well-being. As, research has shown that students with language deficits react to math problems on the page as signals to do something, rather than as meaningful sentences that need to be read for understanding (Garnett,1998). So, the students with visual impairment can also show great sense towards technology adoptability. Thus, the present paper intends to study the concerns for online education and well-being among the parents/care takers of student with visual impairment during COVID-19 pandemic and to enable visually impaired students to stay safe and learn with the use of technology which is the present and the future of the world.

Review of Related Research

The COVID-19 pandemic imposed dramatic changes to everyone’s daily routines, but especially to children with developmental disabilities. According to Mitruț, et al. (2015), the majority of blind people have limited or restricted access to education. For them, learning is a difficult task, as the acquisition of information is constrained by various factors, including the lack of accessibility to adaptable, user-centred educational tools Mitruț, et al. (2015). According to Mauch & Mauch (2012) the distance learning courses use many visual resources to assist the student in the learning process. But such visual resources raised some barriers to the visually impaired. So, to overcome some of the barriers a personalized online learning environment is created with right hardware and software with a range of required technologies such as



personal computing tools, web-based resources, audio tapes, etc. (Mitchell, and Scigliano, 2000). In developing countries these facilities may not be available with most of the visually impaired students. There were studies done to make visually impaired students learn with tactile designs (McDonald, et. al. 2014); when given proper visual aids, a visually impaired student can learn and explore ideas in the topics of graphical and digital design (McDonald, et. al. 2014). At places for online learning screen reader was supported with the help of mouse like these advance technology inventions has come and for better online learning visually impaired students should be advised to use mobile technology and access educational apps like Sugamya, bookshare, Coursea etc. google apps and other apps specially designed for the visually impaired. According to Sayal, et al. (2020), the people with vision impairment require assistance to access these mobile apps through handheld devices like mobile and tablets. Google, Android applications has been developing various mobile apps for visually impaired people (Sayal, et al., 2020). There were many difficulties for visually impaired persons such as they cannot perceive but all the mobile phones and devices are commonly designed only for people who can see (Deepa, et. al. 2017). Visually impaired persons have to use the phone liable on what they hear, which is too challenging, which requires some other assistive devices even for the movement of the people in the cities specially designed for the visually impaired like maps (Deepa, et. al. 2017); and similarly for education also, which is the major concern for the visually impaired students.

Objective

The objectives for the present study are:

- i. To find the variation in the use of devices by the visually impaired students for online classes
- ii. To study the concerns of conducting effective online classes for the visually impaired students
- iii. To find the ways to overcome the barriers of the visually impaired students for joining online classes

Methodology

The study employs a descriptive survey study method and through 'random sampling' technique, 51 students of a private visually impaired school in Bobbili town of Vizianagaram district of Andhra Pradesh, India, were randomly selected for the present study along with their parent. A structured interview schedule was developed, pilot tested on 4 students with visual impairment and their parents and 3 school teachers. Further, 4 Experts were shown the structured interview schedule. The interview schedule was improved based upon the suggestions received. The data was collected by making the phone calls to the sample students.

Here random sample was taken from a visually impaired school to find the possibility of conducting online classes and to study the issues involving the visually impaired students during the COVID-19 pandemic taking all the factors into consideration. Parents and teachers of the students were also interviewed to study the issues and concerns related to online teaching during COVID-19 pandemic.

Findings and Results

The objective-wise major findings for the study were:

In the group of 51 visually impaired students 16 Girls and 35 boys, 41 students stay in the range of



communication signals and 10 students out of signal reach area that is even if somebody sponsors device for online learning, they do not have signal and 23 students have possibility to use device if they are provided with a device as they are in the range of communication signal range.

18 students have phones, out of which 13 students have their own phones with educated parents and are more confident of using device by themselves with little help from others at required places. Five students use phone with the support of others like care takers/guardians/ parents as they have other impairments along with visually impairment only who are less confident to use devices.

Objective 1: Variation in the uses of devices by the visually impaired students for online classes

Now at this stage 65 percent of the students cannot take part in the online classes and the remaining 45 percent of student can take part in online classes and the possibility of increasing the students joining online classes by providing devices to the students who does not have devices at all and those who are in the range of communication signal by doing so the online classes can be there for almost all of the students. We can make the online classes meaningful with the technology assistance by the parents or guardians and the teachers with better assistance and assistive online tools adoption.

From Table 1 and Figure 1, we can further say that approximately, 20 percent of students will be missing the classes as the geographic location is far from the range of communication signals. From this we can conclude that all of students lack devices or usage of devices since they are not trained or prepared or for the online classes during the sudden lockdown due to COVID-19 pandemic.

Table 1: Availability of devices as well as connectivity

N=51

	<i>Out of signal range</i>	<i>In signal range</i>	<i>No device</i>	<i>With device</i>	<i>Can use device</i>	<i>Cannot use Device</i>
At present	10	41	23	18	13	5
On supply of device	10	41	0	41	32	9
On support of help	10	41	0	41	41	0

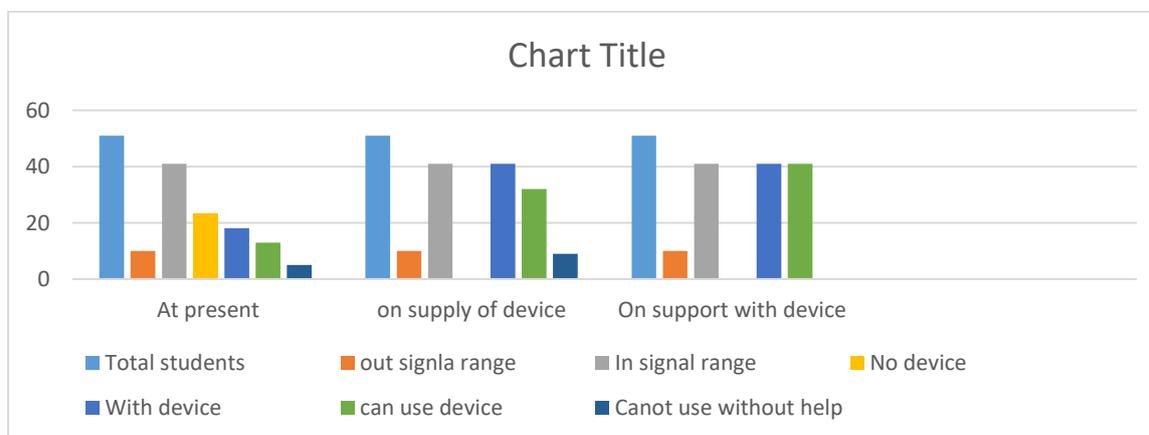


Fig.1: Availability of devices as well as connectivity



There were many concerns which are identified which included lack of preparedness to meet COVID-19 pandemic. The concerns in adopting online education for the visually impaired students varies from group to group of students like total blind to partially blind, students from towns to villages, economic background of lower classes to higher classes. There was variation among students with educated parents to uneducated parents, there was variation in children who have devices to those who does not have devices. But between girls and boys there was only a minor variation was observed.

Objective 2: Concerns of conducting effective online classes for the visually impaired students

The concerns of online education for the visually impaired is addressed based on the concerns expressed by the students, parents and teachers are presented as-

Concerns of parents/guardians/care takers: During this COVID-19 pandemic the parent/guardian/care taker required to look into special needs of the students taking all safety precautionary measures like social distancing and regular hand wash. Special needs are never to be forgotten or neglected while learning online in creating the learning environment as the student is away from the traditional learning environment. All learning supported devices to be provided by the care takers or parents specially during the COVID-19 and online classes. Some other concerns of partially blind students' parents or care takers about their children while looking at the screen with strain on the eye and for longer period of time can cause further decrease in the vision of the student.

Concerns of teachers: The biggest concerns of the teachers are that the students should take the help of parents or care takers to prepare for the class with some of assistive devices for example ball to understand shape of earth or sun as teacher cannot make them feel it by touching, help students in adoption to the use of technology till they get used. As COVID-19 pandemic situations had went in an unpredicted manner and as there was no proper preparation or training for the teachers also, to teach online for the visually impaired. There should be online training for the teachers to enhance their teaching skills for effective teaching. Students should listen to the recorded content sent on the social networking groups like WhatsApp to avoid lengthy online classes.

Concerns of students: Concerns varies from total blind students to partially blind students where totally blind students need full picture with more explanation of particular context, from girls to boys, here in terms of device use allowed by parents where girl parents or care takers does not allow them other than the class timings. Concerns differ from one student family to another family, from economically week families to well-to-do families.

Objective 3: The ways to overcome the barriers of the visually impaired students for joining online classes

Achieving the well-being while imparting the online learning for the visually impaired students requires the availability of digital devices and its adoption by the visually impaired students, without which it becomes their major concerns, since it is being faced by the majority of the visually impaired students. Also, problems such as insufficient network coverage and teachers training for teaching online to the visually impaired becomes minor concerns along with others which should be taken care. Use of various



Apps by which better learning for the visually impaired is also a concern. The study suggests the ways to overcome the barriers for the online learning of the visually impaired students.

In online education as the teachers provides visual information on the digital screen explaining the content with the video here the student with visual Impairment only can hear the explanation given by the teacher but in reality, or in traditional classroom environment the education for the visually impaired makes it quite interesting as most of the learning happens in three ways

- i. Audio: Learns while listening to the teacher in the classroom and note down.
- ii. Tactile: Learns using the tactile models or diagrams or some special assistive devices
- iii. Reading the braille books related to the content taught in the class

According to Petchinathan, Padmanarayanan, and Bharathi (2017), the beauty of the world lies in its astonishing sceneries. Man understands and enjoys his surroundings mostly using his eyes. But some people are visually impaired and they face many difficulties every day to move around places especially inside any organisation like hospitals, schools and colleges.

Visually Impaired student miss out the two important ways while learning online i.e., (i) Tactile diagrams/models/specially designed assistive devices, and (ii) reading the braille books as they are not mostly available at home. Therefore, the most of the learning happens for the visually impaired through the audio lectures happening online.

As in virtual classes, the students feel the reality with the slide shows, short videos, visual effects with moving objects, moving cursor, with colour variation text, highlighted text etc., in front of them on the digital screen which makes them feel the virtual world of learning but all these cannot be seen by the visually impaired students.

So, the designers of online materials should avoid using background images to convey meaningful information (Crow, 2008). Screen readers are currently unable to read background images in the case of visually impaired students. However, a digital screen is there in front of normal student but in front of a teacher for the visually impaired student there should be light in the darkness. In an online class for the visually impaired students the teacher or content developer should keep in mind the above said things which are commonly known to us and look forward to reach that is mentioned below:

- i. They cannot see the moving objects but they have to feel the movement of the object.
- ii. They cannot see the colours of the world and people but they have to feel the difference in variation.
- iii. They cannot see the moving cursor but they should be moved in imagination.
- iv. The way of narrating a scene should be more than a video.
- v. They cannot see the highlighted text but they should feel the stress at particular situations needed.
- vi. They should be carried with thoughts like slide show one after the other with clear picture.

The 'visual effects' cannot create much effect but 'sound effects' can create great effects for visually impaired students.

Here, utmost care can be taken or more explanation can be given for taking the students to virtual world of learning. A learning environment with enhanced 'sound effects' according to the situational need of the



visually impaired students can work. Suppose, if there is a big collision or the situation where it is raining or people talking while the train is moving and so on like this, according the situation ‘sound effects can induce the learning.

Conclusions

The study concluded that the students with visual impairment can also show great sense towards technology adoptability, if the concerns for online education can be tackled by taking care of the well-being of student with visual impairment and to enable visually impaired students to stay safe and learn with the use of technology which is the present and the future of the world. Online learning can make impact on visually impaired and more meaningful if more sound effects according to the background description will be used. Use of devices for online learning differs from persons to persons in varies ways like partially blind to total blind, high economic to low economic back grounds, educated parents to uneducated parents and girls to boys. Online learning for the visually impaired depends on the teacher, parent and student’s ability to adopt to technology. Overcoming the barrier can be achieved by two ways; one by providing device to students who does not have and second is for students with other impairments along with vision impairments student taking support of the care takers/parents/guardians. From this we can understand that majority of students lack devices or usage of devices are not trained or prepared for the sudden lock down or for the COVID-19 pandemic and for the online classes during the pandemic.

Suggestions

Further analysis can be made by taking feedback after the online classes for future upgradation. Providing counselling to parent’s devices access can be increased for better learning among the visually impaired students. Providing devices for children who cannot afford to buy. Providing some support to students at home by care takers/guardians/parents in a safe manner. Adopt advance technological methods for better online learning environment/ virtual learning environment by teaching the same to both parents and students.

Limitations

Due to limited data in the present study, generalization of the results needs to be cautiously done.

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