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Helping People with Hearing Impairment Interact Socially using Computer Programs

Dr. Asma Kanwal
Lecturer, Division of Education, University of Education, Township Campus, Lahore,

Dr. Zahid Majeed
Director, Academic Planning & Course Production, Allama Iqbal Open University, Islamabad,

Dr. Abdul Basit
Senior Special Educationist, Department of Special Education, Govt. of the Punjab, Lahore,

Akram Maqbool
Ph.D. Scholar, Institute of Special Education, University of the Punjab, Lahore.

Abstract

The research set out to answer the question, "How do you think computer apps can help people with hearing impairment with their social skills?" by surveying educators who work with kids who have hearing impairment. The research followed a quantitative approach and was descriptive in nature. Participants in the study were educators who work with students who have hearing impairments. Through a suitable sample procedure, 83 (M=64, F=37) special education teachers of kids with hearing impairments were recruited for the study. These teachers hail from various institutions. Data was collected using a self-designed questionnaire using a survey approach with a reliability coefficient of $\alpha = 0.95$. The data was analyzed using statistical measures. The study's findings demonstrated that students are utilizing computer applications for online education and research. Students can utilize these applications to their advantage by storing and organizing their research materials, finding relevant information about their education, projects, and assignments, and even stealing useful information from other researchers. Computer programs have many benefits, one of which is that they can assist deaf students in developing their social skills. For example, through online chats and email, students/persons with hearing impairment can practice interacting with others on a variety of subjects and improve their overall communication abilities.

Keywords: Teaching, Learning, Educational Activities Through Computer Applications, Persons With Hearing Impairment.

Introduction

It is logical to assume that physical limitations, such as hearing impairment, are no longer obstacles to obtaining a bachelor's degree, given the fast development of computer applications. Nevertheless, students who are deaf or hard of hearing may encounter numerous challenges in the classroom because of their impairments, including social exclusion, poor self-esteem, and academic struggles. (Gillard, S. Bailey, D. & Nolan E, 2008).

Over 352 million individuals throughout the globe are hard of hearing, with many having been born deaf or developing a hearing impairment prior to acquiring spoken language skills, as reported by the World Federation of the Deaf (Ashfaq & Rana, 2015). When it comes to deaf students' education, this is a major obstacle. Due to a lack of accessible educational resources, almost 80% of the deaf population is either uneducated or has a low level of education. All governments should consider all students with impairments, according to the Salamanca conference, which is about the status of special needs education. Educational legislation should take into consideration the fact that students learn in different ways, according to the UNESCO-sponsored conference.

With the tremendous advancements in educational technology, it is no longer acceptable to consider hearing problems as obstacles to academic accomplishment. While there has been an uptick in the number of deaf students enrolled in college and university programs recently, research shows that many of these students drop out due to various obstacles (Ashfaq. Et.al.,2022).

Thankfully, not every application of technology is negative. It has the potential to unite people, and that is especially true for younger generations. They can maintain relationships with friends they know in real life, according to those who use messaging, social networking, and other applications. Making friends with people all over the globe who have similar interests and aspirations is another benefit (Rohaan, et.al., 2012).

To practice social interaction skills and build confidence in social communication, children with social anxiety disorders may discover that online communities and social media platforms provide a more comfortable environment than in-person contact. Online social support

groups also provide a safe space for kids to talk about their struggles and get advice and encouragement from others who might not be in their immediate vicinity (Glass, et.al.,2015).

This kind of social contact is crucial, but it can be tricky to navigate. There are a lot of ways for a person to transmit and receive information while they are face-to-face with another person. When we have a discussion, it's not only the words that matter; our body language, facial emotions, context, and even physical touch all contribute to the message. Although there is no substitute for in-person communication, technological advancements have made it possible for people to stay in touch even when they aren't in the same room (Ade-Ojo, G.2022). Social media platforms and mobile applications have made instantaneous global communication possible. Adding elements that simulate face-to-face interaction ironically makes technology-based social connection more popular. For instance, we can now signify physical contact and show facial expressions thanks to the emergence of emojis in texting and on Facebook. Although social media helps us keep in touch with faraway loved ones, it is gradually taking the role of in-person meetings (Maurin & McNally, 2008).

On the other hand, research shows that people's ability to be social and make face-to-face contact is negatively impacted by mobile communication. The use of mobile devices has the potential to lessen face-to-face interaction and conversation. You're constantly interacting with other people, which means you have less time to spend alone. It may also divert your attention away from your academics. You also lose some of your privacy because it's possible for anyone, at any moment, to locate you. To sum up, these factors influence modern human behaviour. The complexity of our way of life would be much reduced in the absence of technical breakthroughs. The way people behave now is shaped by technological factors. Both social isolation and progress can be brought about by technology. According to Sriwijayanti, R. P., & Rulyansah, A. (2022), children's social and relationship abilities may be severely affected by increased technology use, which can isolate both younger and older children.

Some of these challenges include a total or partial inability to hear, while others include a lack of specialized resources that could help them overcome the emotional and social obstacles, they face because of their hearing impairment or impairment, or at the very least, help them catch up to their classmates in terms of academic performance (Larson. R., et.al.,. 2002).

Statement of the Problem

In their quest to discover the best ways to get their students to use computers, teachers of children with hearing impairment have had to rely on trial and error.

Due to a lack of familiarity and knowledge about the effectiveness of these devices, teachers of children with hearing impairments are perplexed when it comes to computer application devices. Raising consciousness on the significance of computer applications is the driving force behind this research. Also, you should know what kinds of readily available and efficient computing gadgets there are.

Objectives of the Study

The purpose of the study was to explore the role of computer applications in the socialization skills of a person with hearing Impairment.

The specific objectives of the study were to:

1. To explore the role of computer applications in socialization skills of persons with hearing impairment.
2. To differentiate the responses of the respondents based on their gender.

Questions of the Study

Basing on the objectives of the study, following research questions were developed to guide the study:

1. What is the role of computer applications in social skill of persons with hearing impairments?
2. What kind of computer applications is available of persons with hearing impairments?
3. What computer applications are effective for the socialization of persons with hearing impairments?

Delimitation of the Study

Due to the time, financial restrictions. The study was delimited to Lahore city only.

Methodology

The purpose of this research is to learn more about how teachers' perspectives on the use of technology in the classroom have influenced the social skills of students who are hard of hearing. One hundred thirty-three hearing-impaired kids' teachers made up the study's sample. Researchers in quantitative studies might delve into the phenomenon by way of an individual's first-hand accounts in different contexts. To dig further into parents' actual encounters with computers, this study employed a descriptive quantitative methodology to solicit pertinent responses. The data was also evaluated and analyzed using SPSS. Microsoft Word was used to tabulate and describe the data based on the respondents' responses. Considering the results, the suggestions are made.

Significance of the Study

Students with hearing impairments provided the data used in this study. The best way for teachers and educators to tackle this difficulty is to work together, be adaptable, and creative. As soon as feasible, teachers should ask to meet with the parents of their students. After that, they should meet frequently to check in on their students' development and make any necessary adjustments to their lesson plans. At team meetings, parents should keep an open mind about all goals and services, brainstorming different ways to meet each one and provide any necessary accommodations.

Students with hearing impairment can make more friends with computer programs that facilitate social interaction. In its network-like fashion, it is bringing together an increasing number of individuals from all corners of the globe. To construct social communications platforms such as blogs, email, IM, SNS, wikis, social bookmarking, Instagram, WhatsApp, YouTube, Facebook, and Twitter, these are the computer applications to utilize.

Microsoft Word was used to tabulate and describe the data based on the respondents' responses. Considering the results, the suggestions are made.

Research Methodology

Research methodology, population of interest, sample selection, and sampling strategy are all detailed in the report. Research tool, data collection, and data analysis technique development is also a primary emphasis. The goals of this research study dictate the techniques that will be used.

Research Design

The study was carried out using a descriptive research design within the quantitative research paradigm. Methods were followed in a sequential fashion to conduct the study and arrange the findings in the quantitative research technique.

Population of the Study

All pupils at Lahore's public and private special education institutes who are hard of hearing were the intended subjects of the research.

Sample for the Study

The sample of the study consisted of 83 participants persons with hearing impairment from both public and private sectors.

Sampling Technique

Researchers used a purposive sampling strategy to choose study participants. Researchers use their personal judgement to pick individuals from the public to take part in surveys in a non-probability sampling method called purposeful sampling, judgmental sampling, subjective sampling, or selective sampling.

Instrumentation of the Study

The problem's characteristics should be considered before choosing an instrument. The researchers constructed the study's instrument after reviewing the relevant literature. To better understand the challenges faced by students with hearing impairment when using the oral-aural learning approach, a self-administered, closed-ended questionnaire was devised.

Two sections made up the questionnaire:

Respondents' names, genders, ages, email addresses, school names, and semesters were all collected in Section 1 of the survey.

There were 17 statements in Section 2, which were arranged into 5 groups.

With 5 being the most strongly agreed upon position and 1 the least, respondents to each survey item used a Likert-type scale to indicate their level of agreement.

- Strongly agree (SA) = 5
- Agree (A) = 4
- Neutral (N) = 3
- Disagree (D) = 2
- Strongly Disagree (SD) = 1

Validations of the Instrument

To ascertain the questionnaire's content validity, a panel of experts was interviewed. Prior to finalization, experts in the relevant fields were consulted for each item of the questionnaire, and the applicability of each item was discussed, amended, and updated with their opinions.

Pilot Testing & Reliability of the Instrument

Resolving the research instrument's ambiguities, misconceptions, and shortcomings was of utmost importance. This goal was achieved by the execution of pilot tests. Following the validation of the questionnaire, it was piloted with a sample of 30 hearing-impaired students from public and private special education institutions. The pilot was followed by discussions with field specialists. A reliability of $\alpha = 0.95$ was produced following the pilot testing. Thus, the questionnaire underwent revisions following pilot testing, and a final version was created taking into consideration expert recommendations.

Data Collection

Researchers used a survey approach, which included in-person visits and the use of social media, to gather data. While gathering data and analyzing the findings, the researchers made sure to adhere to ethical standards and obtained informed consent from students with hearing impairments, as well as from headmasters, headmistresses, and principals of special education intuitions. Roughly 150 surveys were sent out; 120 were returned; and 100 were chosen following careful evaluation by the researcher.

Geographical Universe

The study region is referred to as the geographical universe. The study was carried out in Lahore city, with a geographical universe consisting of students from Lahore schools.

Statistical Analysis of Data

The statistical package for the social sciences (SPSS) was used for analysis after data collection. The demographic data, including gender, age, education level, hearing impairment, industry, disability type, and assistive listening device type, was analyzed using frequency distribution. We used an independent sample t-test to break down the replies by industry and gender. Respondents' answers were compared according to their degree of hearing impairment using one-way analysis of variance. The tables displayed the study's results as percentages. Recommendations, findings, and conclusions were compiled at the completion of the analysis.

Data Analysis

Tables and figures displaying the results of the statistical analysis of data obtained from a variety of research instruments are followed by the results of the interpretations of those results. The information was presented in the following order of importance. The views of public and private school educators on the topic of pupils with hearing impairment: The gender breakdown of the participants is displayed in the following table.

Table 1: Frequency and percentage of gender of respondents.

Gender	Frequency	Percent	Cumulative Percent
Female	29	35.0	35.0
Male	54	65.0	100.0
Total	83	100.0	

Tables 1 demonstrate that 35.0٪ respondents responded that female while 65.0٪ respondents Male responded.

Table 2: Frequency and percentage of age of respondents.

Age	Frequency	Percent	Cumulative Percent
20-30 years	72	86.75	86.75
31-40 years	8	9.64	9.64
41-50 years	3	3.61	3.61
Total	83	100	

Table 2 demonstrates that 86.75٪ respondents responded that 20-30 years age. 9.64٪ respondents 31-40 years responded and 3.61٪ respondents 41-50years responded.

Table 3: Frequency and percentage of job experiences of respondents.

Age (in years)	Frequency	Percent	Cumulative ٪
0-10 years	75	74.3	74.3
11-20 years	17	16.8	91.1
21-30 years	4	4.0	95.0
Above30	5	5.0	100.0
Total	101	100.0	

Table 3 demonstrates that 74.3٪ of respondents responded that 0-10 years job experience.16.8٪ respondents 11-20 years responded.4.0٪ respondents 21-30 years responded. 5.0 respondents above 30 years responded.

Analysis of Questionnaire for Teachers of student with hearing impairment

Topic: Helping People with Hearing Impairment Interact Socially using Computer Programs

Strongly Disagree (SD)	Disagree (D)	Neutral(N)	Agree(A)	Strongly Agree (SA)
1	2	3	4	5

1	Computer applications help students with hearing impairment to build social skills.	2.5	1.25	5	63.75	27.5
2	Students with hearing impairment can practice to communicate with each other through computer applications.	5	3.75	15	62.5	13.75
3	Computer applications help students with hearing impairment to understand and share feelings (empathetic behavior) of others.	8.75	5	12.5	51.25	22.75
4	Through computer applications, students with hearing impairment make discussions with each other on different topics.	6.25	13.75	12.5	51.25	22.5
5	Students with hearing impairment can grow and develop their social circle online through computer applications.	5	6.25	17.5	52.5	18.75
6	Computer applications have made it much easier to get and stay in touch others for students with hearing impairment.	2.5	3.75	13.75	51.25	28.75
7	Computer applications have made the way of meetings much easier for students with hearing impairment by using social media apps.	7.5	3.75	13.75	48.75	26.25
8	Through computer applications students with hearing impairment stay connected with friends and family who is away from them.	11.25	3.75	11.25	45	28.75
9	Computer applications are good for students with their hearing impairment for their well-being and overall happiness.	10	3.75	13.75	52.5	20
10	Through computer applications students with hearing impairment have more opportunities to participate in activities of society.	6.25	7.5	12.5	53.75	20
11	Students with hearing impairment sell/ shop online through computer applications.	6.25	5	23.75	46.25	18.75
12	Through computer applications students with hearing impairment get more opportunities to celebrate events with deaf and hearing communities	2.5	10	23.75	47.5	16.25
13	Students with hearing impairment can share their feelings and ideas by using computer applications.	8.75	7.5	16.25	55	12.5
14	Students with hearing impairment waste their time on computer applications.	5	5	15	47.5	16.25

15	Students with hearing impairment stick to computer applications most of the time and ignore face to face interaction with family, and friends.	8.75	6.25	12.5	48.5	23.5
16	Students with hearing impairment face difficulty to understand others nonverbal cues (facial expressions, gestures and body language) of others while using computer applications.	10	2.5	15	55	17.5
17	Computer apps can decrease communication and relations between students and their peers and make them less socialized.	6.25	5	16.25	50	22.5
18	Students with hearing impairment face harassment/bullying while using computer applications.	6.25	5	16.25	45	27.5
19	Computer apps help students with hearing impairment in hospitals to maintain a database of patients' history, diagnosis, X-rays, live monitoring of patients, etc.	2.5	11.25	17.5	51.25	17.5
20	Students with hearing impairment can entertainment to their selves to watch movies online, playing games and photo editors through the use of computer apps.	8.75	0	13.75	56.25	21.25

Findings

- The majority (63.75%) of respondents respond that agree computer applications help students with hearing impairment to build social skills.
- The majority (62.5%) of respondents responded that agree students with hearing impairment can practice communicating with each other through computer applications.
- The majority (51.25%) of respondents respond that agree Computer applications help students with hearing impairment to understand and share feelings (empathetic behavior) of others.
- The majority (50%) of respondents respond that agree through computer applications students with hearing impairment make discussions with each other on different topics.
- Majority (51.5%) respondents respond that agree Students with hearing impairment can grow and develop their social circle online through computer applications.
- Majority (51.25%) respondents respond that agree the computer applications have made it much easier to get and stay in touch others for students with hearing impairment.
- Majority (58.75%) respondents respond that agree computer applications have made the way of meetings much easier for students with hearing impairment by using social media apps.
- Majority (45%) respondents respond that agree students with hearing impairment sell/shop online through computer applications.
- Majority (52.2%) respondents respond that agree through computer applications students with hearing impairment stay connected with friends and family who is away from them.
- Majority (53.75%) respondents respond that agree computer applications are good for students with their hearing impairment for their well-being and overall happiness.
- Majority (56.25%) respondents respond that agree through computer applications students with hearing impairment have more opportunities to participate in activities of society.
- Majority (47.5%) respondents respond that agree through computer applications students with hearing impairment get more opportunities to celebrate events with deaf and hearing communities.
- Majority (55%) respondents respond that agree students with hearing impairment can share their feelings and ideas by using computer applications.
- Majority (47.5%) respondents respond that agree Students with hearing impairment waste their time on computer applications.
- Majority (48.75%) respondents respond that agree students with hearing impairment stick to computer applications most of the time and ignore face to face interaction with family, and friends.
- Majority (58%) respondents respond that agree students with hearing impairment face difficulty to understand others nonverbal cues (facial expressions, gestures and body language) of others while using computer applications.
- Majority (40%) respondents respond that agree students with hearing impairment face harassment/bullying while using computer applications.
- Majority (45%) respondents respond that agree computer apps can decrease communication and relations between students and their peers and make them less socialize.
- Majority (51.25%) respondents respond that agree computer apps help students with hearing impairment in hospitals to maintain a database of patients' history, diagnosis, X-rays, live monitoring of patients, etc.
- Majority (56.25%) respondents respond that agree Students with hearing impairment can entertainment to their selves to watch movies online, playing games and photo editors using computer apps.

Conclusion

During the use of computer applications technologies are building a bridge of continuity among teachers, students, and families. Despite some difficulties, our experience shows that remote teaching with deaf students is possible if the school accepts the challenge and the community of practice affirms itself finding technical, methodological, and organizational solutions to achieve inclusion through learning. The aim of this research the use of computer applications for socialization communication and learning of students with hearing disability, including the measurement level of agreement on their use of computer applications for communication and learning in school students.

Recommendation

i. Teachers should design the syllabus for student with hearing impairment in print form.
ii. School should organize a communication interaction networks between teachers and students through computer application.
iii. School should provide proper training to parents at home to manage their child's activities for student with hearing impairment.
iv. Teachers should provide sign language tutorial by using computer application related educational activities.
v. School should arrange training session for parents, teachers and students to cope up educational challenges for students with hearing impairment.
vi. Policy makers should manage computer application in educational challenges students with hearing impairment.

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