

Original Research Article

An insight into attitude about usage of ICT by teachers in school for hearing impaired

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Received: 24 August 2023

Revised: 05 October 2023

Accepted: 06 October 2023

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ABSTRACT

Background: Information and Communication Technology (ICT) in education is the mode of education that depends on digital medium of information transfer for delivery of course content and related learning experiences. Its focus is on utilization of different technologies in order to support, enhance, and optimise the delivery of information. ICT can be used in many ways to help both the students and the teachers gain knowledge on a particular topic/subject. The present study was inclined to look into the attitude of teacher for the hearing impaired towards usage of ICT in classrooms.

Methods: Questionnaire which consists of attitude of teachers towards ICT. The questionnaire used for this study was adopted and modified from the original questionnaire designed by Gulbahar and Guven (2008), Ghavifekr and Athirah (2015) that is considered suitable for this research. Descriptive statistics was carried out for analyzing the data in SPSS version 20.0.

Results: For all the questions framed to elicit positive opinions, the median values were either 4 i.e. agree is the common response of all the judges. For questions framed to elicit the common response is either disagree or strongly disagree. The responses of the judges suggest that they consider ICT to be helpful for teaching-learning of hearing impaired children.

Conclusions: The study was able to demonstrate that ICT tools have gained popularity among the teachers of hearing impaired included in the study.

Keywords: Information and communication technology, Hearing impaired children, Teachers

INTRODUCTION

Technology nowadays has become an integral part of every individual, and has changed the lifestyle and transformed the society.¹⁻³ Technology is also major contributor to the field of education and the use of efficient technology in an institution improves the quality of education. This helps not only students but also teachers, through making available rich content, interactive learning experience and remote learning

possibility. Online interactions facilitate learning without time constraints and easier mode of conducting assessments and generating reports.

Information and Communication Technology (ICT) in education is the mode of education that use information and communications technology to support, enhance, and optimise the delivery of information. As a part of educational curriculum, Information Communication and Technology (ICT) have become vital and are needed in the part of the curriculum.⁴ Interesting ways are there to

learn through videos, animations, guided discovery, mind mapping, brainstorming, music, World Wide Web (www) that will make the process of learning more holistic and meaningful.⁵

Worldwide research has shown that Information and Communication Technology (ICT) can lead to an improved student learning and better teaching methods. The concept of e-learning is a rising trend where the education has outgrown the physical constraints of the classrooms and acquired mobility. Student's access information whenever and wherever they want, and institutions that provides such advanced technological terrains is rising in number day by day. Information and Communication Technology (ICT) helps in enhancing learning experiences and providing new sets of skills, reaching more and more students online, minimising costs and saving time. Measuring importance of ICT in education is vital for policy makers as well in order to make informed decisions on national priorities and developing educational policy (UNESCO).

ICT in the classroom situation is the use of computers in the classroom where teachers play a key role in teaching and ICT provides a pro-active and dynamic teaching and learning environment.⁶ Almost all the subjects from science, social, mathematics, languages, art can be learned more effectively through technology-based tools.⁷ ICT can be used in many ways where it helps both the students and the teachers to gain more knowledge at a particular topic/subject. Interesting ways are there to learn through videos, animations, guided discovery, mind mapping, brainstorming, music, World Wide Web (www) that will make the process of learning more holistic and meaningful.⁵

ICT is definitely the path to take for institutions, especially in countries like ours, as our growth is directly aligned with technology and the field of education is no exception. And assuring higher quality education for its students will define whether the institution should move forward or perish. Key Benefits of ICT-based Education is that it promotes learning by doing approach, enables self-paced learning, provides access to wide range of up-to-date learning materials. ICT is important in primary education because it enables kids to search for the information they need and to organize what they have found. As children progress through the school system, they become increasingly responsible for their own learning. The National curriculum framework 2005 (NCF 2005) has highlighted the importance of ICT in school education.

Aim of this study was to investigate the attitude of teachers and students for ICT teaching methods.

METHODS

The study was conducted in Research Center of Bangalore Speech and Hearing Trust (BSHT) as part of intramural project of faculty of the research center and Dr

SR Chandrasekhar Institute of Speech and Hearing, a Unit of BSHT. The study period was from June 2020 to February 2021.

All the teachers of Sunaad school for the hearing impaired' and contacted for the study. Sampling method used was convenient sampling. Research design is self rating questionnaire based survey.

Study population

Teachers who are working in 'Sunaad School for the Hearing Impaired', Bengaluru were chosen for the study based on following criteria.

Inclusion criteria

The teachers were all with mandatory qualification as recommended by Government of Karnataka and having at least 5 years of teaching experience in the school for the hearing impaired. The curriculum covered was regular state prescribed syllabus used by regular schools for typically developing children in state curriculum were included.

Exclusion criteria

Teachers with no government recommended qualification but with experience with ICT, teachers who have withdrawn from teaching in last 2 years, teachers teaching only for typically developing children were excluded.

Material used

Questionnaire which consists of attitude of teachers towards ICT. The questionnaire used for this study was adopted and modified from the original questionnaire designed by Gulbahar and Guven (2008), Ghavifekr and Athirah (2015) that is considered suitable for this research.^{2,3}

Stage 1

Adaptation and development of questionnaire to assess the attitude of teachers for ICT based teaching. Checking the validity and reliability of the questionnaire.

Stage 2

Obtaining consent from teachers for the study. Demographic data is collected from teachers. Administration of the questionnaire to consenting participants. Analysis of the data of the questionnaire.

Procedure

The background check on a one-to-one interview of all teachers gave information on their use of ICT. Commonly ICT was used during teaching new concepts (abstract and concrete) and blackboards are used in other times

according to the education plan of the teacher. Projects and activities, evaluation of student's performance were done through ICT. The frequency and duration of use of ICT for content delivery varied among the teachers.

Stage 1: The questionnaire, 'attitude towards ICT based teaching' was subjected to adaptation and content validation check. The questionnaire was subjected to validity and reliability test with the help of three judges who evaluated question items of the questionnaire for their appropriateness for the objective of the study on a Likert's scale. The final form of questionnaire administered contained all modifications suggested by judges.

Stage 2: Of the 15 teachers available in the school, 10 fulfilled the inclusion and exclusion criteria. They consented to participate in the study and ten returned the filled questionnaire within the time frame specified. The final approved questionnaire was administered on the

participants. The questionnaire consisted of four options, namely, strongly disagree, disagree, neither agree/disagree, agree. Teachers were asked to choose one of the options for each question which best reflects their perspective.

RESULTS

Out of 16 questions, 14 questions were framed to elicit positive opinion towards ICT and two questions, q.10 and q.11 were framed to elicit negative opinions.

For all the questions framed to elicit positive opinions, the median values were '4' i.e. agree is the common response of all the participants (Table 1). For questions framed to elicit the common response is either disagree or strongly disagree, the median values of responses were '2'. The responses of the judges suggest that they consider ICT to be helpful for teaching-learning of Hearing Impaired children.

Table 1: Responses of participants.

Participants responses										
Question No/item No.	P1	P2	P3	P 4	P5	P6	P 7	P8	P 9	P10
1	3	4	4	3	4	4	4	4	4	2
2	3	4	4	3	4	3	4	4	4	3
3	4	3	4	4	3	4	4	3	4	3
4	4	4	4	4	4	3	4	4	3	4
5	3	4	4	3	4	4	4	4	4	4
6	4	4	4	4	4	4	4	3	4	3
7	4	4	4	4	4	4	4	3	4	2
8	3	4	4	3	4	4	4	3	4	3
9	3	4	2	3	4	3	1	4	3	3
10	1	1	3	1	1	1	1	1	4	1
11	1	2	4	1	2	1	4	1	3	1
12	3	3	3	4	3	3	4	3	4	3
13	4	4	4	4	4	4	4	4	2	3
14	4	4	4	3	4	3	4	4	4	3
15	3	4	3	3	4	3	4	3	3	2
16	3	3	4	3	3	3	3	3	3	3

The following section explores the aspects of ICT which contributed to positive opinion, among teachers, towards ICT in education.

ICT is a helpful tool for teaching-learning

Aim of any teaching method is to enhance student learning and ease teaching practices.

On question "Students learning becomes better with the use of ICT" as can be seen on Figure 1, the responses are distributed between '3' and '4' both of which indicate positive valency towards the item. The chi square test

shows that occurrence of response option '4'- agree, is above the chance level.

On question no 14. "ICT makes teaching learning better to the teachers and students: the common response again is option no '4'-agree, again indicating positive valence among responses of participants.

The teachers agree that the ICT has enabled them with improved reach. It helps them improve their teaching, save time and have better participation from students.

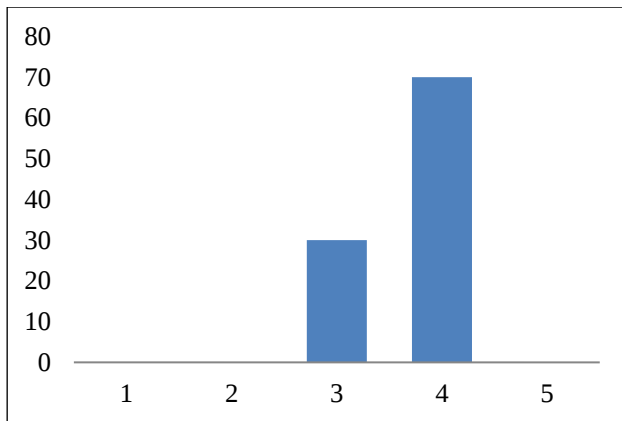


Figure 1: Students learning becomes better with the use of ICT.

ICT is helpful in fostering student performance on academic assessment.

Q.15 explored teacher opinion on students performance on class assessments. "ICT classroom trained students with hearing impairments perform better than not" And the analysis of responses shows that the common (median) responses are 3-neutral. And chi square tests shows that the selection of option 3-agree is above chance level, therefore statistically significant. Majority of teachers in the survey do not consider ICT to be making a strong change in student performance on class tests or assessments. They neither disagree to the question, therefore more exploratory surveys need to be considered to understand how they view relevancy of ICT on student's performance and to understand how this aspect can be improved.

The experience of teachers and students on e-learning/ ICT learning platforms is not always positive. For example, Batanero et al (2019).¹⁰ Reported that when Moodle learning platform was used, performance of deaf students improved by 46.25%. But many still had reservations on their ease of use and training needed to integrate into regular curriculum. Teachers opinion in our study may reflect such hesitations and practical difficulties in integrating ICT into classroom.

ICT is helpful in making teaching task easier

Q. 6 and q.12 checks the teachers' attitude towards use of ICT in classroom, whether it makes teaching easy or they like using ICT in classroom.

Again the median choice of answers for these questions are '4'-agree for both of them. This suggests that ICT is viewed with positive attitude by the teachers. As lesson plans can be planned better and can be reused with modifications and updating information is easier, ICT is seen positively by teachers. It also helps them to search for relevant information faster and also add visual details to complex concepts (Hawkrigde et al 2018).¹¹

Teacher student interaction

Q 4 and 8 both explores opinion on teachers towards how much change in student's involvement in classroom is observed after introducing ICT in classroom.

As seen in Figure 1, the q.4 elicited strongest positive opinion- 80% of judges selecting 4-agree option and 8 shows that 60% of judges selected 4-agree option. And none selected disagree or strongly disagree options. Therefore overall there is a consensus among teachers that ICT is helpful in improving student participation in classroom learning atmosphere Batanero et al (2019).¹⁰

Strength of ICT

The questions 1 and 7 suggests that ICT is helpful in teaching difficult concepts. As ICT fosters visualization, abstract concepts on literature-poetry, geography concepts and history all can be taught in an effective manner. The answers of teachers therefore is in consensus with the main benefits of ICT. This suggests teachers have understood the inherent strength of the ICT method and are able to use it effectively and selectively in the classrooms.

DISCUSSION

The study was able to demonstrate that ICT tools have gained popularity among the teachers of hearing impaired included in the study. They have understood the inherent strengths of ICT and able to use it effectively. Therefore their response to majority of the questions on the questionnaire has been largely positive. They have understood that ICT is effective in teaching difficult concepts, increase classroom discussion, engage students in learning, reduce their distractibility. They also feel that using ICT is easy and fun. The study did not discover any barriers or biases that can reduce their chances of using ICT in their classrooms. They are not particularly averse towards technology.

CONCLUSION

The study highlights the following points of use of ICT in classrooms: 1) There is a healthy attitudes towards ICT tools among teachers of hearing impaired, 2) The responses are largely an agreement to the statements given in the questionnaire. None of the positive statements received 'disagree, 3) Some of the key points of ICT receiving seen with positive attitude are, increase classroom discussion, engage students in learning, and reduce their distractibility, 4) Study shows that teachers are not averse to the use of technology and view it as easy and interesting activity.

This is a summary of the ongoing intramural project at BNGRC, a unit of Bangalore speech and Hearing trust. The project includes activities that foster knowledge among the teachers of hearing impairment, about ICT and

the education tools available for different courses in the curriculum. As part of such activity, a continuous monitoring of teacher opinion on various aspects of ICT related educational issues are recorded using questionnaire and interview methods. The present article present results of such a monitoring activity using a questionnaire developed for the purpose. This results represents teacher's opinion at the end of first year of introduction of ICT in their classroom and facilitating the classes with smart TVs.

The study will continue, recording the opinion of teachers on issues related to education and use of ICT in education. Study will expand to include other schools as well in future.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Prabhu V, Srividya A, Suresh T, Babu P. An insight into attitude about usage of ICT by teachers in school for hearing impaired. Int J Community Med Public Health 2023;10:4313-7.