EFFECTIVENESS OF AUDIO-VIDEO MATERIAL IN TEACHING-LEARNING PROCESS AT SECONDARY STAGE

Pramila Tanwar

Associate Professor
DESM, NCERT, New Delhi

This work is based on the use of audio-video resources in few schools of Delhi NCR with specific reference to five secondary schools opted for this study. The study had following purposes information about the types of audio-video teaching materials available in the schools, the frequency of their use, the steps school has taken in promoting the use of audio-video resources and the effectiveness of these resources in the teaching-learning process. Four questionnaires were administered in each school; two sets to science lecturers, one set to students and one set to administrative staff in order to explicate the above information. Data were collected, coded and analysed using statistical techniques like percentages for the easy analysis of data. Finally, it was unearthed that the schools collection of audio-video materials was inadequate. Audio-video materials were hardly used by the teachers for teaching. The only medium of instruction used was chalkboard method. Non-availability of e-resources, lack of supporting ICT infrastructures and lack of awareness about the utility of these e-resources in these schools was recorded. There are numerous benefits that students derive from the use of audio-video materials. The awareness of available audio-video resources created by these schools was not imposing.

Keywords: Audio-video material, teaching-learning, process, ICT

Introduction

According to NCF-2005, at the secondary stage, an important part of curriculum is to verify the theoretical principles by performing systematic experimentation. In today's digital age, technology enables us to transact learning resources in an effective way to a large number of learners. In view of this, audio-video materials will facilitate and promote use of technology in explanation of scientific concepts. E–pathshala, NROER and other such platforms also promote students to be constantly involved in the educational process through experiential learning.

According to Shamsideen, S.A. (2016), we all are living in an era where a child learns to operate gadgets much before they can even crawl. We are so overpowered by technology in every field and this influence can be very well observed in the education sector too. It has been observed that when a teacher used audio-visual aids instead of books to teach a concept to the students, it becomes clearer and also lasts in the mind of students.

Deeley, 2018 has stated that by taking small progressive steps and by using different types of interactive technologies, the students are benefited by gaining effective learning.

According to González-González, et al. (2015), audio-visual aids, namely, short films, storytelling, etc., help the students to understand the practical implication of the theory which has been explained in classroom teaching.

Oketunji, 2000 corroborates that when audio-video materials are used effectively, they

have certain advantages. The weakness of verbalism is lessened and the subject matter is more humanised, the topics are dealt with a new and interesting approach, it helps us save time and most importantly explicit content is supplied.

Anzaku, F. (2011) underlines that the term 'audio-video' material is used to refer those instructional aids which translate knowledge without the dependence on books and verbal symbols. Therefore, any reference material or textbook does not fall under this category.

ICT not only plays a vital role in teaching-learning of science for normal students but also for special students. There are some screen reader softwares used by visually impaired students like Job Access with Speech (JAWS) which is a computer screen reader programme for Microsoft Windows that allows the visually impaired students to read the screen either with a text-to-speech output or a refreshable Braille display, NVDA (Non Visual Desktop Access), etc.

Methodology

The study is a survey research type. This paper deals with the methods used by the investigator to find out:

- the use of audio-video materials and other assistive strategies (ICT) by the teachers to help the normal and special students in learning science.
- the frequency of the use of these audio-video learning materials.
- the awareness in schools regarding the effectiveness of audio-video materials and other assistive strategies in learning science.

So, in order to study the above, the investigator opted for the survey method. The audio-video materials based on laboratory safety and use of chemical balance were disseminated in schools of Delhi NCR, namely:

1. Salwan Public School, Rajender Nagar, New Delhi
2. Tagore International School, Vasant Vihar, New Delhi
3. NP Bengali Senior Secondary School, Gole Market, New Delhi
4. Kendriya Vidyalaya, JNU Campus, New Delhi
5. Government Girls Senior Secondary School, Vasant Kunj, New Delhi

Audio-video material dissemination in Government Girls Senior Secondary School, Vasant Kunj, New Delhi

Analysis and Interpretation of Data

The four questionnaires were disseminated in five selected schools of Delhi NCR— Salwan Public School, Rajender Nagar, New Delhi; Tagore International School, Vasant Vihar, New Delhi; N P Bengali Senior Secondary School, Gole Market, New Delhi; Kendriya Vidyalaya JNU Campus, New Delhi

and Government Girls Senior Secondary School, Vasant Kunj, New Delhi.

Students Feedback about the Use of Audio-video Materials

Many videos of secondary stage were shown to the students and teachers. Their views on some of the videos are as follows:

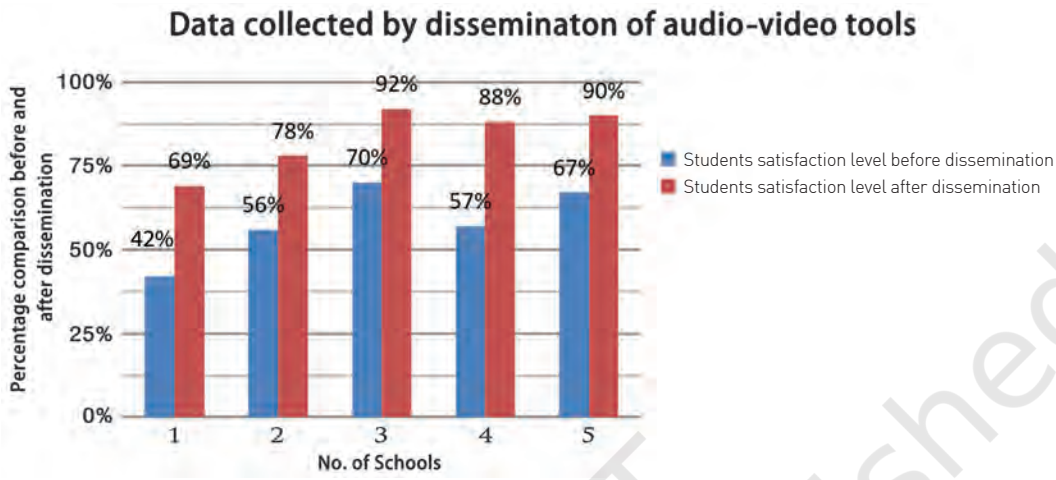
The students found the 'Science laboratory safety' video very helpful as most of them were not taught about the precautions one needs to take while working in a science laboratory and handling of corrosive chemicals. Also most of schools lacked chemical balance in their laboratory and in case it was present, the students were not introduced to it physically. Moreover, they emphasised on the importance of having an audio-video material for every theory topic they study as it will help them to learn and retain the topics better and for longer duration. They underlined that traditional verbal instructions become boring for them sometimes. However, the use of audio-video materials provided an intrinsic motivation by peaking up their curiosity in the topic.

Teachers Feedback about the Use of Audio-Video Materials

The teachers substantiated the need of audio-video materials in their classroom and also underlined the benefits of it by mentioning that they could incorporate numerous items in one audio-video lesson plan such as music, images, websites, etc. It allows the teachers to make customised content according to the need of students. According to most of the teachers, audio-video learning would help more students to participate in classroom discussions as it will save time from note-taking.

Table 1
Data collected by the dissemination of audio-video research tools

Schools	Students satisfaction level before dissemination	Students satisfaction level before dissemination
Salwan Public School, Rajender Nagar, New Delhi	42.0%	69.0%
Tagore International School, Vasant Vihar, New Delhi	56.0%	78.0%
N P Bengali Senior Secondary School, Gole market, New Delhi	70.0%	92.0%
Kendriya Vidyalaya JNU Campus, New Delhi	57.0%	88.0%
Government Girls Senior Secondary School, Vasant Kunj, New Delhi	67.0%	90.0%



It is evident from the above graph that in all the schools under study, teachers found a considerable difference in the opinion of students when they were asked about the clarity of conceptual understanding through practical implementation.

Conclusion and Discussion

Technology has a huge impact on the world of education these days. If it is used in a constructive way, then it can really help in building the conceptual understanding of students through a good practical implementation. ICT-integrated teaching in classrooms are observed by using audio-video tools and other assistive strategies in secondary classes. These tools were disseminated in five schools of Delhi-NCR and they were asked to fill a questionnaire after the implementation. As a result, students found these videos very interactive as well as sustaining in their minds. According to them, it built a substantial interest in the classroom by adding innovative practices.

Salwan Public School showed a 27 per cent progressive growth in the interest for learning chemistry practical at secondary level, Tagore International School and N P Bengali Senior Secondary School both showed a 22 per cent increase in the same. On the other hand, 31 per cent increase in students understanding of practical was observed in the Kendriya Vidyalaya JNU Campus and lastly 23 per cent students agreed on the benefit of audio-video materials in teaching-learning process in Government Girls Senior Secondary School, Vasant Kunj. The teachers lacked knowledge and expertise in using audio-video materials and other assistive strategies in schools. Regular science teachers were also not trained enough to deal with CWSN (Children with Special Needs). Moreover, the infrastructural facilities in most of the schools were not encouraging enough to opt for ICT-based learning.

Broadly translated, our findings indicate that a proper audio-video configuration in a classroom can not only help to deliver better content but also produce

more tech-savvy scholars. Audio-video materials such as Power Point Presentations (PPTs), Interactive White Boards (IWB) combined with educational software, Bring Your Own Devices (BYODs) like laptop, tablets , video conferencing, etc., are changing the effectiveness in a classroom and also assist the teachers in preparing and delivering the lectures more effectively.

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