

Impact of Audio-Visual Aids on the Performance of Grade 1 Students in Science

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Abstract

This study examined that how audio-visual (AV) aids can improve first-grade science students' performance. The objective of this research was to find out how well AV aids may enhance students' performance and learning. For this study, a quasi-experimental research design was employed. The participants for this research were 20 students of grade 1. A test composed of multiple-choice questions was used as a research instrument. The research found that the group used AV aids during teaching performed better than the group that received traditional lectures during teaching. Based on the findings, it is suggested that AV aids may be a useful tool for helping young children to understand the subject of science.

Keywords: Audio-Visual Aids, Performance, Grade 1 Student, effectiveness, Science.

1. Introduction

Audio-visual aids have a profound impact on learning by enhancing engagement, retention and understanding of the learning material. Audio-visual aids significantly enrich the learning experiences by making it more engaging, memorable and accessible, ultimately leading to improve the learning outcomes. Audio visual aids have a substantial effect on first-graders' learning outcomes. At this age, students

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are curious and eager to learn, but their attention spans can be quite short. Audio visual aids such as videos, interactive games and colorful images capture their attention and make learning fun and engaging (Katozai, 2016).

Audio visual aids in the classroom have been shown to increase students' participation. The interest of students is increased when audio visual aids are used in the process of teaching. Comenius (1999) was an early supporter of using sound and video in the classroom. Subsequent research has demonstrated that these tools may greatly improve the way of teaching, as well as maintaining the course materials (Zhu et al., 2021).

It has been found that engaging the senses is the most efficient method to learn. The most senses are stimulated when audio-visual content is used. For this reason, effective educators frequently make use of gadgets or audio-visual resources. However, the experienced teacher is aware that word choice by itself cannot create the stimulating learning situation. Professional teachers use wide range of teaching materials, including recordings, movies, photographs, and they are always on the lookout for methods and technologies that will make learning relevant (Mondal, 2024).

In teaching, audiovisual aids are essential. The significance of audio-visual technology in the classroom cannot be overstated. Many technologically advanced nations believe in the enlightening and powerful potential of audio visual technology, which is why they want to implement it in schools to help students become highly competent (Shah 2015).

According to Tareen, Khan, and Nazmine (2021), students in school benefit more from teaching that uses audio visual (A/V) aids. According to Jain, Vinod, and Sharma (2023), to improve the learning environment in the classroom and encourage cognitive engagement the use of audio-visuals as a teaching tool is essential.

This study was carried out to determine the "Impact of Audio-Visual Aids on Learning Performance of Students" since, in AJK, the use of AV aids in the teaching and learning process at the early grades is still lacking.

1.1. Research Question

What is the impact of using AV aids on the learning performance of grade 1 students in science?

1.2. Hypothesis of the Study

There is a positive effect of using AV aids on students learning at grade 1.

2. Literature Review

2.1 What is Audio Visual Aids

Tools or resources that combine sound and graphics to support learning are known as audio-visual aids in education. You can view pictures or videos in addition to hearing someone speak. Consider it similar to instructional movies, presentations or models that add interest and clarity to learning. By utilizing both eyes and ears, these tools enhance the learning process and make it more memorable. They are like the cool sidekick in the classroom. They are frequently used by teachers to liven up lessons and improve students' understanding of ideas (Arrahma, 2024).

2.2 The Impact of Audio-Visual Aids on Classroom Learning

Multimedia tools and technology have revolutionized the traditional classroom in today's modern educational system. The incorporation of audio-visual (AV) aids is one of the most successful technological innovations. Audio-visual aids have a major impact on how students learn and interact with content by integrating music and graphics into classes. These resources promote a more participatory and inclusive learning environment while improving comprehension and retention. The audio-visual aids enhance a more productive learning environment to enhancing the understanding of complex concepts and increasing student's engagement and motivation. The use of audio-visual aids has a significant impact on students' ability to retain and recall information. Not all students learn the same way, and one of the greatest strengths of audio-visual aids is their ability to cater to different learning styles. AV aids also promote active learning by encouraging students to engage directly with the content rather than passively consuming information (Muthmainnah, M, 2021).

By adopting best practices and ensuring equitable access, educators can harness the power of audio-visual aids to produce a more vibrant, inclusive, as well as effective learning surroundings (Omoku, 2024). When it comes to curriculum development, audio-visual aids are considered essential for improving students' understanding of educational ideas with

attentiveness. The integration procedure needs to be carried out in a way that ensures the aids are used as effectively and efficiently as possible. Institutions of higher learning must make sure that the necessary materials are available in order to support the incorporation of audio-visual aids into instruction. Providing audio-visual apparatus, including multimedia devices such as projectors, screens etc. In order to share successful pedagogical practices for using audio-visual aids and learn from each other's experiences, educators must collaborate (Atieku, Segbefia, & Jyampoh, 2023)

2.3 Need and importance of AV Aids

Visual sense is used by Visual aids. Examples of this assistance include descriptions of instruments, strategies, and visual or symbolic depictions of ideas. Use of A.V.aids always benefited teaching and learning process. It is also used as an excellent teaching tool. Although the term "audio-visual aids" is widely used in literature, it is rarely utilized when teaching courses at the school level (Singh, 2021).

Make use of earshot aids, such as radios, tape recorders, and gramophones, is known as audio aid. Info graphics, photos, imaginative presentations, drawings, instructive graphs, study information, actual items, mock-up, diagrams flash cards, flannel boards, chalkboards, overhead projectors, and lesson plans are examples of visual aids that are applied by seeing. This study focuses on secondary school English instruction using visual aids. Since the dawn of time, the value of visual aids has been acknowledged and has only grown. Visual aids are what pique people's curiosity about learning more (Kausar, 2013).

A.V. aids are those tools, machines, dealing devices, or equipment that promotes the efficiency, dignity, and memo capacity of the learning process. Audio visual technologies also referred to as student aids, are the gadgets that are utilized in classrooms to support and enhance learning activities and make them more understandable and interesting. (Shah 2015).

Presenters can deliver their content in a more polished and cohesive way by using audio visual assistance. There are many opportunities for improving students' academic lives in the teaching profession. While some learning objectives and concepts may be easy for pupils to grasp, others may need creative problem-solving to achieve important learning goals. Using audio visual devices in the classroom is

one way to enhance lesson plans and provide students more chances to absorb information (Kunari, 2006).

Instructors benefit from the use of charts, maps, projectors, and TVs because they make it easier for them to comprehend, recall, consider, and resolve issues pertaining to their pupils as they are being taught. Oladigo, MA, ET, (2011) claimed that the students' concepts, focus, perception, and cognitive abilities were all improved by the utilization of educational resources in the classroom. This suggests that using audio-visual assistance to judge and make judgments is simple. Additionally, it was discovered that students' behaviors, ideas, and perceptions increase when audiovisual aids are employed appropriately.

According to Aggrawal (2009), "audio visual aids help in completing the triangular process of learning that is motivation, classification, and stimulation". Good's Dictionary of Education states that the senses of hearing and sight can be used to promote or continue the learning process. All of these definitions could support the claim that audiovisual aids are actually essential to the teaching and learning process since they not only make lectures easier but also provide students with interesting and efficient education.

An integral part of the teaching and learning process are audio visual tools. These are the gadgets teachers use in the classroom to improve instruction and arouse students' interest. These materials are the best means of disseminating information and raising training standards (Shabiralyani et al., 2015).

By enabling teachers to more effectively explain difficult subjects and evaluate students' comprehension in real time, the use of audiovisual aids can increase teacher effectiveness (Mintz, 2015).

2.4 Types of audio-visual aids

Audio-visual aids come in four different varieties. They include movies, TV shows, videos, and CDs. Ahmad (2013)

2.4.1 Films

A good teaching tool is a video that captures students' interest and holds their attention. Any subject matter or facet of behavior and knowledge can be the subject of educational films.

2.4.2 Television

A variety of educational programs can be broadcast on television, making it a flexible medium. It's an interesting way to communicate. Regular television broadcasts of beneficial educational programs are available to the student body. On appropriate occasions, a teacher should use the TV shows as the starting point for a discussion.

2.4.3 Videos

Video is a useful tool for teaching and learning. Video-assisted instruction is the term used to describe teaching that uses video. A questionnaire is typically used to assess students' knowledge in video-assisted instruction, and videos are undoubtedly a more engaging and enjoyable teaching tool than more conventional printed materials.

2.4.4 CDs

These days, educational video cassettes are widely accessible. Any topic related to the curriculum and subject matter can be covered in educational CDs.

2.5 Benefits of Audio-visual Aids

Jawad (2021) asserts that there are numerous benefits to utilizing audio visual aids, some of them are following.

1. **Top motivators:** They set the standard for motivation. Pupils work harder and more enthusiastically. They are more focused.
2. **Essential to verbal instruction:** They address verbalism, a major shortcoming of the educational system. They express the same idea as words do. They aid to improve learning accuracy by providing explicit concepts.
3. **Clear images:** Seeing, hearing, touching, tasting, and smelling all produce distinct images because our experiences are direct, palpable, and fundamentally permanent. Using the senses is the simplest and most natural method of learning.
4. **Vicarious Experience:** Everyone agrees that the finest kind of educational experience is first-hand experience, but in some cases, students cannot always have this kind of experience, hence alternatives must be offered. We discover many inaccessible things and phenomena as a result. For instance, the Taj Mahal cannot be exhibited to all Indian

students. Audio-visual aids are the greatest alternatives in all of these situations.

5. Variety Teachers can use a number of tools and resources with audio-visual assistance.

6. Freedom: Students have numerous opportunities to move around, talk, laugh, and discuss when audio-visual aids are used. Instead than doing so because their teachers want them to, students work in such an environment because they want to.

3. Research Methodology

Research methodology is a structured approach to conducting studies and resolving issues in social contexts in the social sciences. It offers a broad perspective on how to investigate a topic or carry out research. The process of demonstrating, elucidating, and forecasting a particular occurrence is known as research methodology. It is a kind of researcher work plan. The research design for this study was experimental research design Data was gathered by conducted a pre and post test. Data analysis was done using quantitative techniques.

3.1. Sample

The participants for this study were 20 students of grade 1 divide into two groups each group have 10 participants from Sabir Hussain Mughal School Upper Chatter Muzaffarabad”

3.2. Research Instrument

The research instrument used in this study was a test designed to assess the students' understanding of the key concepts covered in the lesson. The test items were developed by the researchers in consultation with subject matter experts to ensure content validity. The test was administered as a pre-test before the intervention and a post-test after the intervention.

3.3. Data Collection

Pre and post Test were distributed among respondents for collection of data

3.4. Data Analysis

With the use of Microsoft Excel sheets, all of the gathered data was organized into tables according to frequencies. The data was examined using response percentages.

4. Results

Table 1.

Traditional Lecture Method

S.No	Test	Pretest Total Marks	Pretest Obtained Marks	Pretest Percentage	Test Type	Posttest Total Marks	Posttest Obtained Marks	Posttest Percentage
1.	Pretest	10	4	40%	Posttest	10	6	60%
2.	Pretest	10	3	30%	Posttest	10	4.5	45%
3.	Pretest	10	2.5	25%	Posttest	10	4	40%
4.	Pretest	10	3	30%	Posttest	10	5	50%
5.	Pretest	10	4	40%	Posttest	10	6	60%
6.	Pretest	10	3.5	35%	Posttest	10	5.5	55%
7.	Pretest	10	4	40%	Posttest	10	5	50%
8.	Pretest	10	3	30%	Posttest	10	6.5	65%
9.	Pretest	10	2	20%	Posttest	10	6	60%
10.	Pretest	10	3	30%	Posttest	10	4.5	45%

The results show that the students who were taught through traditional method have gained maximum 40% marks in pretest and maximum 60% marks in their posttest. Some students gained 20% in their pretest and some students gained 25% while some students gained 30% marks in their pretest.

Table 2.

Av Aids Model Demonstration Method

S. No	Test Type	Pretest Total Marks	Pretest Obtained Marks	Pretest Percentage	Test Type	Posttest Total Marks	Posttest Obtained Marks	Posttest Percentage
1.	Pretest	10	2.5	25%	Posttest	10	8	80%
2.	Pretest	10	3.5	35%	Posttest	10	7.5	75%
3.	Pretest	10	3	30%	Posttest	10	6	60%
4.	Pretest	10	4	40%	Posttest	10	7	70%
5.	Pretest	10	3.5	35%	Posttest	10	8	80%
6.	Pretest	10	2.5	25%	Posttest	10	8.5	8.5%
7.	Pretest	10	3	30%	Posttest	10	6.5	65%
8.	Pretest	10	4	40%	Posttest	10	7	70%
9.	Pretest	10	2.5	25%	Posttest	10	8	80%

10.	Pretest	10	3	30%	Posttest	10	8.5	85%
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Hence the results show that both groups have maximum 40% in pretest and the group of students who were taught the topic using AV aids (model demonstrations method) performed significantly better in the post-test (maximum 85%) than the group of students who were taught the topic using the simple lecture method (maximum 65%). This suggests that AV aids can be an effective tool for teaching science to Class 1 students.

5. Discussion

This randomized controlled trial examined the impact of using audio-visual (AV) aids on enhancing learning in ECE students. The results clearly demonstrate the benefits of incorporating AV aids into ECE classrooms. The key finding was that students taught with AV aids performed significantly better on the post-test compared to students taught using traditional lecture methods. The AV aids group scored a maximum of 85% on the post-test while the lecture group only scored a maximum of 65%. This aligns with existing research showing AV aids can improve comprehension, retention, and outcomes (Mayer & Moreno, 2003; Rasul et al., 2011).

The findings of this study suggest that the use of AV aids can significantly improve the learning performance of grade 1 students in science. The interactive and engaging nature of AV aids likely helped students better understand the concepts, leading to improved retention and application of the knowledge (Mayer & Moreno, 2003; Rasul et al., 2011).

These results align with existing research on the benefits of using multimedia tools in the classroom. AV aids can cater to diverse learning styles, enhance student motivation and participation, and bring abstract concepts to life through dynamic representations (Mintz, 2015; Clark & Mayer, 2016).

The study's implications point to the importance of integrating AV aids into early childhood science education. Given young students' limited attention spans and sensory learning needs, leveraging engaging AV materials can be a powerful tool for delivering high-quality instruction and promoting conceptual understanding (Anderson & Dron, 2011; Pashler et al., 2008).

6. Conclusion

It is concluded from the results of the study that AV aids can be an effective tool for teaching science at ECE level. Students who were taught

using AV aids performed significantly better on the post-test than students who were taught using the simple lecture method. AV aids helped students to better understand the concepts of the lesson, made the lesson more engaging and interesting for students, helped students to retain information more effectively, and made students more likely to participate in class discussions and ask questions about the lesson.

7. Recommendations

- It is found out that students learn better when teaching with AV aids in the classroom. Therefore, it is suggested that there may be proper arrangement of training related to use of AV. aids for ECE teachers in schools.
- It is found that some schools have lack of teaching resources therefore it is recommended that schools may provide teaching equipments to teachers at ECE level to bring creativity in teaching process.
- More research should be conducted on the effectiveness of AV aids in teaching science to different grade levels.

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