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Comparison of Traditional and Advanced Teaching Aids; Their Impacts on Students Learning

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Abstract

This research deals with the STEM, STEAM and the STREAM teaching methods used in our schools. First of all, teaching aids are defined. The research discussed the most useful advance teaching aids available in the field of education now-a-days. The objective of this research is to determine the STEM (traditional) teaching aids as well as advance teaching aids including (STREAM) methodology used at secondary level school in Tehsil Shakargarh, District Narowal. The population of the study comprises on all 2610 male students of Govt. Boys High Schools of Teshil Shakargrah. Sample size of 142 students is determined by using available software i.e. www.surveysystem.com. The findings reveal that a good number (35.9%) of the respondents were belong to age group of 16-17 years while almost 95% respondents lived in rural areas. A huge majority (74.6%) of them obtained 60 or above marks in their exams. Traditional teaching aids, classical teaching aids or back-to-basics teaching aids are still commonly employed in their schools. This study recommends that in modern teaching methods A.V aids are very useful in teaching and should be used in a classroom at all levels of school to facilitate maximum learning.

Key Words: Teaching aids, Project-learning, STREAM, Classroom.

Introduction

Education is the main foundation in the formation of individual character and intellectual abilities, and plays an important role in nation building. Since ancient times, education has been one of the main focuses of various civilizations as a tool for transferring knowledge, skills and cultural values from one generation to the next. Education does not only aim to develop individual potential academically, but also to form individuals who have character, morals and contribute positively to society. Along with the times, the concept of education has undergone a significant transformation. In the current era of



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globalization and advances in information technology, the challenges faced by the world of education are increasingly complex. Education is no longer just a process of transferring knowledge, but also includes aspects of developing soft skills, critical thinking, problem-solving, and the ability to adapt to rapid change (Dahlia *et al.*, 2024). Admittance of A.V resources might produce stimulating changes in favor of superior learning. It will also be more responsive by taking care individual needs of the students and admittance to A.V resources invigorate changes establishing improved erudition setting (Raza *et al.*, 2020).

Audio-visual materials are very constructive teaching, instructional and promotional aids and they provide physical experience to the learners. It has been also revealed in a study by Hanson *et al.* (2011) that in Pakistan the usage of A.V technology is less at elementary level in schools. At the moment the humanity is passing through quick advancements and education cannot oppose such changes. Fresh technologies have unlocked a lot of novel possibilities in teaching. Quality of teaching can be enhanced by use of A.V aids by facilitating the students. So, present study aims to discover the student's discernments about the viability of audio-video aids at elementary level. Halabi *et al.* (2002) and Halabi (2005) found that students attending the accounting direction courses prefer the traditional way of teaching (i.e., face to face teaching) as opposed to distance learning and interactive television use. The traditional way of teaching with notes, slides and books started to be replaced by tools drawn from the Virtual Learning Environment. The Virtual Learning Environment (Web-based Learning Environment-WBLE) is defined as the technology that uses the internet as a tool to support and promote learning. Today, it is used as the only tool in distance teaching or as supplementary means to the traditional teaching. Magazine and newspaper articles, advertisements and even some comic books may be used as an instructional aid to help students' understanding levels (Lindquist and Olsen, 2007). It is observed by teachers that reinforcing a skill or notion, teaching techniques prove to be an amazing and valuable tool for teachers. Many teachers not only allot students extra time for practice, but they also showed the knowledge in a way that permits students to be busy with the topic in new ways. Of course, it is very necessary in order to extract the diverse learning style of class (Wells *et al.*, 2008).

As mentioned above, it is crucial for a teacher to reach out to all students in classroom. As a result, use of any teaching aid is beneficial for teacher to achieve the goal by supporting students in different ways. Use of AV-aids such as Pictures, charts, cards, and movies can provide visual stimulation. It allows learners to acquire information from a fresh perspective. It also allows each learner to interact with all kinds of knowledge in a way which can make it easier for students to understand (Clinton and Kohlmeyer, 2005).

Spaced learning is a modern strategy in which students are forced to change sharply. The goal of advance learning is to improve grades, and its effectiveness. Sometimes it is observed that this is more effective than teaching students for four hours using standard methods, as it allows brain cells to form the connections needed to remind information. It also aids in relaxation (Zane, and Muilenbrug, 2000). Students of the modern era are so much connected to the technological trends and it would be difficult for them to indeed imagine not utilizing it in their standard of living. It is most likely that they would do development in finding new ways of utilizing the available innovation, in this way



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they consider of smartphone utilize among students must. be of specific importance (Emanuel, 2013).

Learning is the foremost portion lasting adjustment of a person's information or behavior due to affiliation. This definition has three components: 1) the term of the change is long-term instead of short-term; 2) the locus of the alter is the substance and structure of data in memory or the behavior of the learner; 3) the cause of the change is the learner's encounter inside the environment instead of an inadequacy, inspiration, drugs, physical condition or physiologic intervention (Richard, 2020). At the starting of 2020, many nations around the world have closed most sectors including the education sector due to new circumstances caused by the outbreak of COVID-19 widespread. E-Learning could be a term that combines the areas of learning through the Web, preparing through the internet, and instructing utilizing innovation. It incorporates two essential sorts: raising e-learning and non-concurrent e-learning, in which they share a spatial division between the educator and the learner on a viewpoint, and the learners from each other on the other aspect (Cortez, 2020). Furthermore, it is stated that integration responds to the need to offer new generations a well-rounded education, along with the social and economic uncertainty in the near future, where not only scientists and experts in science and technology will be needed, but also professionals in the arts, humanities and social sciences, to capture and understand the nuances and interpretations of human behavior (Hartley, 2017).

The world is constantly evolving, and so does its educational system, in order to meet the needs of students and the demands of society. The educational system in the twenty-first century has progressed from STEM to STEAM, and then to STREAM (Sucheta, 2022). STEM, STEAM and STREAM education empower learners to be inventive pupils with critical thinking, which is crucial for future generations, from preschool to elementary school, middle school, and finally high school. STEM is an acronym for Science, Technology, Engineering, and Mathematics. STEAM is a combination of STEM with the letter A, which stands for Art. STREAM is a blend of STEAM and R, which comprises reading and writing, with the goal of pupils having effective communication skills in order to tackle crucial challenges. STREAM is created by combining STEAM reading and writing with the assurance that students have mastered the skill of effective communication, which is an important aspect of social interactions. STREAM provides a well-rounded learning experience by incorporating these skills into the current STEAM education system by making Reading and Writing a core element of gaining new knowledge. Language is basic and important to Science. "Science literacy enables learners to build their knowledge of Science and to do and communicate science" (Yore *et al.*, 2006). STEAM is the merger of five disciplines (Science, Technology, Engineering, Arts, and Mathematics), in which Science is the acquisition of knowledge via observation and experimentation (Martinez, 2017). As a researcher I want to quote here some magnificent importance on STREAM which is following;

The foundation of STREAM, particularly the R (Reading/Religion) component, aligns with the first revelation in Islam:

"Read in the name of your Lord who created." (Surah Al-'Alaq 96:1)

Modern learning aids encourage students to collaborate and therefore are more fruitful. It is saying that both traditional and advance teaching aids are helpful



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and useful in today's teaching and learning process. It is needed to understand when a traditional aid works best and when it's right to try an advance and innovative strategy. Considerable studies have demonstrated that the application of visual aids improves information retention to a great extent as well as understanding of student (Thornburry, 2002).

Objectives

- To identify the Socio-economics characteristics of respondents.
- To identify traditional teaching aids used at secondary level school.
- To find out advance teaching aids used at secondary level school.
- To analyze the impact of traditional VS advance teaching aids on students learning at higher school level (This objective is expressed in comparison of effectiveness of both teaching aids)
- To suggest some recommendations on the basis of the research findings.

Materials and methods:

The study design was quantitative type of research. The data were collected by survey method. It was descriptive research in nature. The target population of this study was students of all Government High School of tehsil Shakargarh which are total in number 126 secondary schools in this tehsil. All school are selected randomly as a population of this study. The population of the study comprises on all 2610 male students of Govt. Boys High School. Randomly Sample size of 142 students which is determined by using available software i.e. www.surveysystem.com with confidence level of 95% and confidence interval 5%. A questionnaire is a method of gathering information from respondents. For data collection, simple random sampling technique was used. The data was analyzed through statistical package for social science (SPSS). T-test statistical analysis is also used for comparison of both teaching aids.

Results and discussion:

Socio-economic characteristics are made up of a variety of components, each of which has its own set of indices; each community develops socio-economic characteristics based on its own set of norms and values.

Age group (in years)	F	%
14-15	45	31.7
16-17	51	35.9
18 and above	46	32.4
Residence	F	%
Rural area	135	95.1
Urban area	7	4.9
Family type	F	%
Nuclear	83	58.5
Joint	59	41.5

Age remains a very important variable in social research. Table 1 contains the frequency distribution about the age of the respondents. A good number (31.7%) of the respondents were belong to age group of 14-15 years followed by 35.9% of



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them belonged to age group of 16-17 years old. there are no variations in some health metrics between rural and urban settings, other unfavorable health measures are more prevalent in urban areas. A vast majority (95.1 %) of the respondents were belong to rural while 4.9% of them were belong to Urban residence. A significant majority (58.5%) of the respondents had nuclear family system while 41.5% of them had joint family system. Our findings are in relation with (Park and Shea, 2020) stated that more than one-fourth (26.0) students (14-15 years) and a good number (32.4) students were above age of 18 years. Ahsen (2021) reported that a huge majority (78.5%) of the respondents gave preference to rural residence instead of urban area.

Traditional teaching aids, classical teaching aids or back-to-basics teaching aids are still commonly employed in our schools which are discussed in following **table No.2**. The old and traditional aid of teaching was through recitation and memorization, whereas the advance aids employ interactive methods.

Table 2: Ranking of participants' awareness about traditional teaching aids fulfill students learning demand which are used at secondary level

Traditional teaching aids	WS	Mean	S.D	Rank
Inquiry-Based Learning	608	4.28	1.113	1
Personalized Education	572	4.03	.982	2
Project-Based Learning	548	3.86	1.089	3
Cooperative Learning	541	3.81	1.098	4
Teacher-Centered Instruction	514	3.62	.980	5
Small Group Instruction	466	3.28	1.279	6
Student-Centered Constructivist Approach /	466	3.28	1.126	7
Flipped Classroom	424	2.99	1.266	8

Data presented in this Table regarding the participants awareness about traditional teaching aids fulfill students learning demand which are used at secondary level in which respondents nominated that traditional teaching aids was ranked 1st in this table. Data reveal that it took mean values of 4.28 which highly tended towards agree category and weighted score were 608 followed by them inquiry based learning with the mean values of 4.03 highly tended towards agree category. Among these traditional aids, they reported project-learning was rated as the 3rd with mean value of 3.86 and its weighted score was 548. They also reported constructive approach was rated as 7th with mean value of 3.28 and its weighted score was 466 which fall between neutral and agree categories but tended towards agree category. Flipped classroom teaching aids was placed at the bottom of this table with the mean value of 2.99 which highly tended towards neutral category. It is concluded that students have uncovered constructive observations in the direction of the implementation of innovative techniques in their study. Mansoor (2016) concluded that teachers keep in mind level of their pupil. It includes grounding the tutorial strategies to get required aims. classroom activities the role of teachers and students need adjustment when technology becomes an essential fraction in the classroom. Because prearranged textbooks are considered to be critical during learning, an overview of the formal



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procedures reveals the constraints, achievement and failures in teaching of students. Findings of this research also conclude that students feel A.V aids constructive and relevant when they have direct relation with the course content.

Table 3: Ranking of participants' opinion about the visual teaching aids used at secondary level school

Visual Teaching Aids	WS	Mean	S.D	Rank
Picture Map	539	3.80	1.350	1
Figures	528	3.72	1.307	2
Models	524	3.69	1.267	3
Graphs	510	3.59	1.311	4
Charts	509	3.58	1.333	5
Posters	492	3.46	1.432	6
Cartoons	441	3.11	1.610	7
Bulletin Board	423	2.98	1.560	8

Focusing the process of learning, only the words are not sufficient for young students. Therefore, there should be different activities like pictures and objects which must be added in the lecture for better gain of knowledge. Therefore, visual observations are more important than words. Data presented in this Table regarding the participants opinion about usage of visual teaching aids at secondary level in which respondents nominated picture map among advance teaching methods was ranked 1st in this table. Data reveal that it took mean values of 3.80 which highly tended towards agree category and weighted score were 539 followed by figures which are with the mean values of 3.72 highly tended towards agree category. Among these visual teaching aids, they ranked models at 3rd in the table which are used by teachers in explaining the thoughts with mean value of 3.69 and its weighted score was 524 which highly tended towards agree category. They also reported graphs, cartoons, charts were ranked 4th, 5th and 6th with the mean values of 3.59, 3.58, 3.46 and 3.11. The addition of visual guides in educating empowers correspondence among learners and scholarly articles. It permits to have full focus on the writings which prompt their logic and stream of the writings. It is found that concluded that when video is used in teaching, it enhances learners' constructive interest towards the lesson. Also it affects their performances positively. It was recommended with studies that every teaching and learning activity should always be strengthened with media such as video. Arora (2013) concluded that if A.V aids shown to students are related with the curriculum, at that point they get more pulled in towards these innovative methods. It forces the trainees to go to the classes, because they are interested to know that what the instructor will clarify. Furthermore they stated that by observing enlivened impacts they can concentrate more in study.

Table 4: Ranking of participants' opinion about the Audio-Visual Aids used at secondary level school

Audio-Visual Aids	WS	Mean	S.D	Rank
Computer	549	3.87	1.415	1
Television	510	3.59	1.435	2
Films	495	3.49	1.491	3



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Data presented in Table 4 regarding the participants opinion about usage of audio-visual teaching aids at secondary level in which respondents revealed that computer was the at the top in this table with the mean values of 3.87 which fall between neutral and agree categories but highly tended towards agree category and weighted score were 549 followed by television with the mean values of 3.59 highly tended towards agree category. Jain (2004) expressed that A.V aids are effectual tool that spend the past through an air of reality. A.V aids make available the students with pragmatic experience, which hold their attention and facilitate in the understanding of the lesson. A.V aids plea mind from beginning to end of lecture with the help of auditory senses. So it can be concluded that applying A.V aids construct teaching process successful. A.V materials present information all the way through auditory of visual encouragement to facilitate the lecture. They hypostatize the knowledge to be delivered and aid in creation of vital and real learning experience. In addition to that they also supplement the job of the teacher and promote the study of books with more interest.

Table 5: Comparison of the effectiveness of both teaching methods

Methods	N	Mean	Std. Deviation	T-value	P-value
Traditional teaching method	142	4.18	.51	9.00	.000**
Advance teaching method	142	3.39	.91		

In the light study findings, the t-value (9.00) shows a significant ($p = .000$) difference between the traditional ($4.18 \pm .51$) and advanced ($3.39 \pm .91$) teaching methods in favor of the traditional teaching method. So, it can be concluded that the traditional teaching method is more effective as compared to the advanced teaching method. Davidson (2009) determines that videos can aid students in rising listening performance and retention of knowledge by providing multi-modal input to illustrate authentic communication environment. In short in order to obtain different communicative goals, it can be possible to use video as a teaching aid.

Conclusion and Recommendations

There are many A.V aids which are used by the teachers in the classroom, out of which most used A.V aids are white board, black board and chalk. After that diagram, graphs, charts and pointer are used in the classroom in a smaller amount. Keeping in view, overall results, it can be concluded that use of A.V aids improve listening and speaking skills, superior reinforcement and retention of learning, consequences rapid communication between students and teachers, increase learning skills, save time of students and teachers and motivate students.

The study recommends that in modern teaching methods A.V aids are very useful in teaching and should be adopted by teachers and must be practiced in a classroom at elementary level to facilitate maximum learning. Furthermore,



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government should take solid steps to resolve the problems which are faced in deploying A.V aids. Teacher should use different A.V AIDS more frequently in the class to make teaching learning process more effective.

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