



RESEARCH PAPER

Utilization of Audio-Visual Aids by Teachers: Impacts on Academic Achievements of Students

¹Asia Rubab* ²Syed Zaheer Hussain Shah

1. Ph. D Scholar, Institute of Education and Research, Muslim Youth University, Islamabad, Pakistan,
2. LLM (Corporate Law), Department of Law, Bahria University, Islamabad, Pakistan

***Corresponding Author** asiarubab87@gmail.com

ABSTRACT

AV aids provide effective support in teaching-learning process. Objectives of the study were to analyze the impact of utilizing audio-visual aids on students' academic achievement and to examine the difference in academic achievement between the control and experimental groups. Pre-experimental research design was used. Experimental group received treatment and post test form both experimental and control groups was taken. Two sections of class 7th from elementary level were selected through convenience sampling technique, consisting 30 students each. Section A was experimental group and section B was control group. Findings of first objective showed that using LCD and audio-visual aids to display relevant documentaries to students improved their understanding of the history curriculum and in second objective; experimental group score was greater than control group. It was recommended that utilization of AV aids has a considerable impact on students' academic achievement. Government to provide these AV resources to schools for improving the learning outcomes.

Keywords: Academic Achievement, Audio-Visual Aids, Elementary Schools

Introduction

Over time, teachers have been accused of using incorrect teaching strategies as a reason why pupils have performed poorly on public exams. Other aspects, such instructional aids, instructor qualifications, school environment variables, student characteristics and so forth, have a significant impact on teaching and learning activities. The purpose of this study is to examine the impact of instructional tools on students' academic achievement. It is impossible to overstate the value of teaching aids in any teaching or learning process. This is due to these tools improving, making teaching and learning easier and more tangible. Teaching aids are the devices developed or acquired to assist or facilitate teachers in transmitting organized knowledge, skills and attitudes to the learners within an instructional situation (Nwachukwu, 2006).

Teaching aids are specifically instructional tools intended to illustrate lesson content, making learning more concrete and less abstract. The order in which students encounter the materials directly affects how well they complete the activity. Teaching aids improve learning and memory by bringing the classroom experience closer to reality. Teaching tools not only give students the essential hands-on practice, but also assist them in integrating existing knowledge.

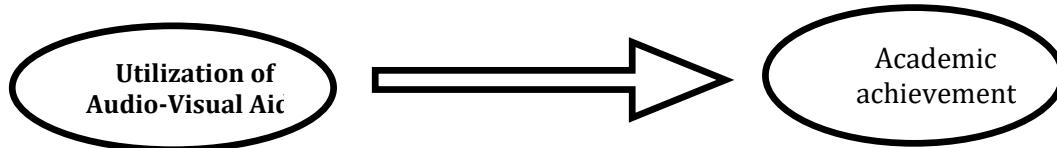
It is impossible to minimize the role that teaching aids play in the successful implementation of any educational programme. Teaching aids serve a number of purposes, including expanding the experiences that students can access, completing and complementing the teacher's verbal explanations to enrich the learning experience and piquing the interest of the teacher in a wide range of educational activities. Teaching aids are used to complement, explain, animate, accentuate and improve learning while transferring knowledge, ideas, skills and attitudes. This necessitates the inventiveness and

resourcefulness of the economics teachers. Lessons are more successful and pupils perform better when teachers use "local" materials rather than "standard" ready-made ones. If one wants to properly teach a lesson to pupils and ensure that the lesson's goal is being met, using teaching aids is crucial. This is due to the fact that understanding of anything learned in school depends on the way the instructor presents the material and the accuracy of the subject matter.

Many countries throughout the world have dedicated a large portion of their money to the establishment and administration of educational institutions at various levels because they believe that education is an effective tool for growth. Students, educational institutions and society at large have all been significantly impacted by the dynamic and fast changes that the Pakistani educational system has undergone. The adoption of audio-visual teaching aids at all levels of the educational system is one of many changes in policy development and directives that have occurred since independence.

The Utilization of Audio-Visual Aids by Teachers and its Impact on Student Academic Achievement addresses the need to investigate the current level of utilization of AV aids by teachers in the classroom and its potential impact on student academic achievement. The study seeks to understand whether the use of audio-visual aids has a significant influence on students' academic achievement, examining whether students taught with these aids demonstrate higher levels of comprehension, engagement and academic achievement compared to those who do not have access to such aids. By exploring these aspects, the research aims to provide insights into the potential benefits of integrating AV aids in education and its implications for improving student learning outcomes.

Conceptual Framework



The framework posits that the effective utilization of audio-visual aids by teachers in the classroom positively influences students' academic achievement. The use of audio-visual aids, such as, documentaries and visual materials, enhances students' understanding, engagement and retention of academic content. Eventually, this conceptual framework provides a foundation for investigating the potential benefits and challenges associated with the integration of audio-visual aids in the teaching and learning process and its subsequent impact on students' academic achievement.

Literature Review

Visual aids capture students' attention and make it easier for teachers to convey concepts. Visual aids are those teaching tools that support the teaching and learning process in the classroom. According to Singh's (2005) definition "any device that enhances practise beyond what is learned via reading labelled audio-visual materials". Visual aids are instructional tools used in schools to encourage learning, make it easier to understand and make it more interesting. Models, charts, strips of paper, projectors, radios, televisions and other items are examples of what are referred to as teaching aids (Rather, 2004). A powerful method that "invests the past with an aura of actuality" is the use of visual aids. Visual aids provide the students with accurate information, retaining their interest and assisting in the comprehension of the wonders of antiquity. Through the visual and aural senses, they make demands on the mind. One of the factors that roots student participation in the class is the use of visual aids as a teaching tool because when students look at a visual model or aid, it is regarded as a form of contribution.

Additionally, using visual assistance encourages movement and could improve control (Jain, 2004). One picture is worth a hundred words, according to a well-known Chinese saying and it is true that we acquire knowledge through our intellects. Another saying goes, "If we hear we forget, if we see we remember and if we do something we know it," which suggests that the use of visual aids improves the effectiveness of teaching and learning. "Visual aids enhanced thinking and cognizing," as (Kishore, 2003) put it. There are several benefits to using visual aids in the teaching and learning process (Mohanty, 2001).

Speakers can deliver more polished, consistent achievements thanks to visual aids. While certain concepts and educational objectives will be straightforward for students to grasp, others will call for you to exercise critical thought to ensure that crucial learning objectives are met. There are various chances to enhance students' academic lives in the teaching profession. Using visual aids in the classroom is one way to improve lesson planning and give students more chances to absorb subject matter (Kunari, 2006).

In order to facilitate learning, visual aids are tools that deliver a unit of knowledge using both aural and visual cues. They help make learning practise apples real, active and essential by making the knowledge more concretely accessible. They aid in the research for the textbooks and support the teacher's job. The renowned educator Comenius once observed, "Clear representation to the senses is the basis of all learning." And sensible items so they can be easily appreciated (Singh, 2005). Real items, audio aids, visual aids and a variety of other things are all examples of learning materials (Agun et al., 1977).

Visual aids are materials that may be developed locally or commercially. They take the shape of photos that serve as examples, wall charts, symbolic materials and other flat objects. Additionally, there are audio-visual aids. These are instructional tools with sound capabilities, similar to television, radio and other projector types. Other beneficial educational resources include radio and television shows. Similar to books, movies serve as broad teaching and learning tools. Teaching and learning resources have benefits beyond simply aiding pupils in remembering vital information. When properly applied, they promote learning and keep students' attention. Visual aids can be highly helpful in supporting a concept and combining visual and auditory stimuli is especially beneficial because it involves the two most critical senses (Burrow, 1986). Teachers must remember that they are selling philosophies, just like salesmen and that many of the most effective strategies for grabbing customers' attention are well worth taking into account. Undoubtedly, one of the fundamental aims of all instruction is to help the students retain as much information as they can, especially the key ideas. Numerous research have looked into the effectiveness of learning resources in achieving this goal.

Audio-Visual Aids (AVA)

Videotaped educational materials are an example of an audio-visual aid, according to Fademiro (2000) these tools need the use of both the eyes and ears (sight and hearing). According to Webster's Dictionary (2001), audio-visual aids (AVA) are training or educational tools that target both the hearing and visual senses, including the use of movies, recordings, photos and other visual aids in the classroom for teaching purposes.

Categories of AV Aids

According to Rashid (1993, p. 21) educational technologists have divided AV aids into the three categories. (1) Non-Projected AV Aids i.e. Books, journals, instruction manuals, handouts, programmed texts, chalkboards and other whiteboard materials, charts, cutouts and models are some examples. (2) Projected AV Aids i.e. Slides, film strips, films, overhead projectors, etc. (3) Electronic AV Aids i.e. Videos, Closed Circuit Television (CCTV), Computers, Internet, Audio, Radio and Television Both teacher training institutions and schools employ all these audiovisual aids nowadays.

Theories of Visual Aids in Learning

Dual Coding Theory

According to Paivio, (1990), images and words have different cognitive presentations; therefore, the brain employs many memory systems to store various kinds of data. According to him, visual memory encompasses flavours and images whereas verbal memory is related to the language system. According to Paivio, linguistic information is acquired by visual processors from sensory memory. What level of improvement have the instructors made in terms of creating new visual teaching tools to deliver high-quality education is the question at hand. This investigation will provide light on the subject. Paivio's dual coding theory, which proposed that memory is organised as a network with many verbal representations that lead to the same information, was pertinent when discussing the recovery of information from memory systems. Paivio concluded that, the more mechanisms students utilise to remember knowledge, the more ways they can recollect it later.

Multimedia Theory

Multimedia learning was a specialty of Richard Mayer's. His multimedia theory was influenced by Bruner's constructivism, Sweller's Cognitive Load theory and Patio's Dual code theory from 1990. Mayer and his collaborator Moreno (2000) carried out research on the use of cognitive theory's instructional design principles in multimedia learning. Their key claim is that selection, organization and integration are the three cognitive processes that active learning involves. Additionally, this investigation will aid in validating this issue.

Instructional Theory

A hypothesis that describes how students may quickly acquire and comprehend a material is known as an instructional theory. In theories of behaviourism, Skinner is the main proponent of this notion. This method reveals that theory has the greatest impact on education because it stresses the use of visual learning resources, which support quality education. The organisation, coordination and introduction of visual learning resources to students, as well as rules governing their use of such tools, are all part of the instructional theory of the learning process.

Research Hypotheses

- H₁ There is a significant impact of the utilization of audio-visual aids on the academic achievement of students.
- H₂ There is a significant difference between the control and experiment groups about the academic achievement of students.

Material and Methods

Research Design

Study is quantitative in nature. The pre-experimental research design was used for this study. The study employs a static group comparison design and consists of two groups: an experimental group and a control group. There is no pre-test for either group only the experimental group receives treatment in this study's static group comparison design and both the experimental and control groups then take a posttest. Only the experimental group receives treatment in this study's static group comparison design and both the experimental and control groups then take a posttest. Because it allows for comparison of the academic achievement of students in both the experimental group and the control group, it was

determined that it was appropriate for the study. This study was conducted on the students of elementary level students in 7th class.

Population

The population of this study consists of all secondary schools in Tehsil Lawa. The total population size is estimated to be 2749 students, with 975 students in the 6th grade, 978 students in the 7th grade and 796 students in the 8th grade.

Sampling

Specifically, the sample for the study was taken from students at the elementary level in the academic session of 2022. Two sections of 7th class from the elementary level were selected through convenience sampling technique. Section A and B; both consists of 30 students each and total sample was 60 students of 7th class. Section A was used for the experimental group and section B for control group.

Research Instrument

The researcher employed teacher-made achievement tests of the history students. In both the experimental and control groups, achievement tests were administered as a post-test to gather the data needed to determine the study's emphasis. The achievement exam includes some demographic information, including name, sessions, gender, age, total time, total marks and five multiple-choice questions (MCQs), five short questions, five fill-in-the-blank questions and a matching column. The achievement test was conducted in both treatment and control groups in tow sessions of 7th class of secondary school Govt. high school number 2, Dhurnal of Tehsil Lawa, District, Talagang, Punjab.

Reliability & Validity of Quantitative Data

To ensure the validity of the research instrument, qualified professionals with expertise and specialization in the field of education were consulted. Their valuable recommendations were incorporated to improve the format and item categorization of the instrument.

Results and Discussion

Table 1
Frequencies Statistics of Control and experimental group

Sr. No.	Cr & Ex group	Age	ID	Mcqs	SQ.s	Blanks	Colum	Total Marks
N	60	60	60	60	60	60	60	60
Mean	1.50	2.28	15.07	3.97	3.20	3.87	3.88	3.53
Mode	1	3	4	5	4	4	5	4
Min	1	1	1	0	0	1	0	2
Max	2	3	30	5	6	5	5	5

Table 1 compares a control group and an experimental group of students. This tble includes information about the frequencies of certain variables, age, ID, their scores on multiple-choice questions (MCQs), short-answer questions (SQs), blank-fill questions, Colum and the total marks. The "Valid" row indicates that there were 60 valid observations for each of the variables listed in the first column. The "Mean" row shows the average score for each variable. The "Mode" row shows the most frequently occurring score for each variable. The "Minimum" row shows the lowest score observed for each variable. The "Maximum" row shows the highest score observed for each variable. Scores range from 0 to 5 and 1 to 30.

Table 2
Total Marks of students in both of Control and experimental group

	Frequency	Percent	Cumulative %
10	8	13.3	13.3
15	17	28.3	41.7
20	30	50.0	91.7
25	5	8.3	100.0
Total	60	100.0	

This 2 presents a frequency distribution of the total marks that students obtained in test. This table shows the total marks, frequency, percentage and the cumulative percentage of students who obtained marks. The first column lists the total marks: "10", "15", "20" and "25". The "Frequency" column shows the number of students who obtained that many marks. The "Percent" column shows the percentage of students who obtained that many marks out of the total number of students. The "Cumulative Percent" column shows the percentage of students who obtained that many marks and all previous marks.

Table 3
t-Test Group Statistics of Control & Experimental group

	Cr & Ex group	N	Mean	Std. Dev	Std. Er M
age of Students	Ex group A	30	2.17	.791	.145
	Cr group B	30	2.40	.770	.141
MCQs	Ex group A	30	4.93	.254	.046
	Cr group B	30	3.00	1.287	.235
SQs	Ex group A	30	4.17	.592	.108
	Cr group B	30	2.23	1.251	.228
Blanks	Ex group A	30	4.53	.629	.115
	Cr group B	30	3.20	.887	.162
Colum	Ex group A	30	4.87	.507	.093
	Cr group B	30	2.90	1.647	.301
Total Marks	Ex group A	30	4.17	.379	.069
	Cr group B	30	2.90	.662	.121

Table 3 presents group statistics for a study that compares a control group and an experimental group of students. The study looked at the utilization of audio-visual aids by teachers and its impact on student academic achievement on the age of students, the number of correct answers on multiple-choice questions (MCQs), short-answer questions (SQs), blank-fill questions, Colum and the total marks obtained by the students. Section A of 7th class was selected to be the treatment group, where the experiment took place, while Section B of 7th class was considered as the control group where the teacher used chalk-talk teaching process.

This table shows the mean, standard deviation and standard error mean for each variable for the experimental and control groups. Experimental group (Ex group A) had a mean age of 2.17, with a standard deviation of .791 and a standard error mean of .145. The control group (Cr group B) had a mean age of 2.40, with a standard deviation of .770 and a standard error mean of .141.

To investigate the significance difference between Control and Experimental group. It was found that there was a significance difference whereas, experimental group score was greater than ($M= 4.17$, $SD= .379$) control group ($M= 2.90$, $SD= .662$), rewardingly.

Table 4
Independent Samples t-Test of Control and experimental group

	F	Sig.	t	df	M
MCQs	34.375	.000	8.075	58	1.933
			8.075	31.252	1.933

SQs	8.484	.005	7.652	58	1.933
			7.652	41.376	1.933
Blanks	3.727	.058	6.718	58	1.333
			6.718	52.281	1.333
Column	51.913	.000	6.249	58	1.967
			6.249	34.454	1.967
Total Marks	4.657	.035	9.097	58	1.267
			9.097	46.180	1.267

Table 4 shows the results of the Levene's test and the independent samples t-test are shown for multiple measures (MCQs, SQs, Blanks, Column, Total Marks). The independent samples t-test is used to compare the means of two groups, in this case the control group and the experimental group. The Levene's test is used to check the assumption of equal variances between the two groups. For the Levene's test, the "Sig." column shows the p-value, which indicates the probability that the variances are equal. If the p-value is greater than .05, it is generally concluded that the variances are equal. If the p-value is less than .05, it is generally concluded that the variances are not equal. According to the data provided, the results of the Levene's test for equality of variances are significant at the .05 level for the variables MCQs, SQs, Blanks and Total Marks (p-value < .05), which suggests that the variances of the two groups are not equal for these variables. The t-test for equality of means is then run for each variable.

The results for the t-test are considered significant if the p-value is less than .05. According to the data provided, the t-test results are significant for all variables (p-value < .05) except for the variable age of students, which suggests that there is a significant difference in means between the control and experimental group for all variables. To investigate the significance difference between Control and Experimental group. It found that there was a significance difference whereas, experimental group score was greater than ($M= 4.17$, $SD= .379$) control group ($M= 2.90$, $SD= .662$), $t= 9.097$ rewardingly.

The study's findings show that the use of audio-visual aids has a significant and notable impact on students' academic progress. The analysis of the study emphasize, how using audio-visual resources improves students' overall academic achievement.

The assessments used in the study provided strong proof that students who were taught history using audio-visual aids demonstrated a higher level of comprehension than those who were taught using the traditional chalk and talk teaching approach. The audio-visual aids and auditory cues seemed to help pupils understand the material more thoroughly. The analysis of the study highlights how using audio-visual aids greatly improve students' all-around academic performance and achievement.

These findings highlight the importance of investing in educational technology and ensuring that teachers have the necessary knowledge and skills to use audio-visual aids effectively.

Conclusion

It was concluded that most history teachers in schools have never used any audio-visual aids in their classes due to a lack of materials or a lack of knowledge about how to use them during teaching-learning processes. Using audio-visual aids in teaching history is an innovative and radical approach because most history teachers in schools have never used any audio-visual aids in their classes due to a lack of materials or, in cases where materials are available, lack of knowledge about how to use them during teaching-learning processes. In most schools, lack of sufficient power sources makes it difficult to employ these teaching aids effectively.

Recommendations

The study has recommended following.

1. Government should provide audio-visual resources to schools for improving the learning outcomes and that teachers receive training and support.
2. It is essential that government authorities allot resources and financing for the provision of audio-visual resources to schools, which will give enormous impact on students' academic progress. With this assistance, schools will be able to successfully incorporate these tools into their pedagogical plans and improve student learning results.
3. Due to instructors' limited use of audio-visual aids and ignorance, educational institutions should create extensive teacher training programs. The emphasis of these programs should be on teaching the abilities and methods required for successfully integrating audio-visual aids into classroom education.
4. Establishing dependable power sources inside of schools should be a top priority if they want to guarantee uninterrupted use of audiovisual equipment. The constant integration of these tools will be made possible by an adequate electrical infrastructure, which will improve the experiences of teaching and learning.
5. When employing audio-visual resources, educators should adapt their style to the variety of subject matter. It is important to tailor teaching methods for courses like history, economics and geography to ensure that students fully understand and are interested in the material.

References

- Aamna, S. K. (2013). Technology's role on students behavior. Department of Education, Preston University, Pakistan, Proc. *10th International Conference on Statistical Sciences, Lahore, Pakistan*
- Afolabi, S. S. (2009). Teaching Method and Textual Material Variables as Correlate of Students' Learning Outcomes in Senior Secondary School Mathematics. Ph.D. *Post-Field Seminar*, Department of Teacher Education, University of Ibadan.
- Ahmed, T, M. (2003). Education and national development in Nigeria. *Journal of Studies in Education*, 10, 35-46.
- Akuezuilo, E, O. & Chinweoke, F, U. (2009). Effective of Prior Knowledge of Behavioural Objectives and Study Question of Female Students' Mathematics Achievement. *Unizik Journal of STM Education*: 1(1) 1-7.
- Alio, B, C, Ude, D. & Okoye, K, R, E. (2009). Effects of the Use of Geoboard Teaching on Primary School Pupils Academic Achievement in Mathematics in Enugu South Local Government Area of Enugu State. *Unizik Journal of STM Education* 1(1), 31-38.
- Awolaju B. A. (2016). Instructional Materials as Correlates of Students' Academic Achievement in Biology in Senior Secondary Schools in Osun State. *International Journal of Information and Education Technology*, Vol. 6, No. 9. Page???
- Baylor, A, L. & Ritche, D. (2002). What factors facilitate teacher skill, teacher morale and perceived student learning in technology-using classrooms? *Computers and Education*, Vol 39, Issue 4, 394-414
- Baylor, A, L. & Ritche, D. (2002). What factors facilitate teacher skill, teacher morale and perceived student learning in technology-using classrooms? *Computers and Education*, Vol 39, Issue 4, 394-414
- Bradshaw, M, J. & Lowenstein, A, J. (2007). *Innovative Teaching Strategies in Nursing and Related Health Profession*. Boston and Toronto: Jones and Bartlett Publisher.
- Bud, S. (2005). The Importance of Interaction in Web-based Education. A program level case study of on line MBA courses. *Journal of Interactive of Online Learning*, 4 (1) Page???
- Coombs, P, H. (1970). *The World Educational Crisis: Asystem Analysis*. NewYork. Oxford University Press.
- David, B. (2012). Innovations in Practice Learning from Online Video Lectures. California State University, Sacramento, California, USA, *Journal of Information Technology Education*, 11, .227-250.
- David, B. (2012). Innovations in Practice Learning from Online Video Lectures. California State University, Sacramento, California, USA, *Journal of Information Technology Education*, 11, .227-250.
- Dunn, K., John, A, S. & Leslie, A. (2007). *The Contemporary Applications of a Systems Approach to Education, Models for Effective Reform*. New York: University Press of America.

- Dunn, K., John, A, S. & Leslie, A. (2007). *The Contemporary Applications of a Systems Approach to Education, Models for Effective Reform*. New York: University Press of America.
- Elijah, O. (2014). Impact Of Audio-Visual (AVs) Resources On Teaching And Learning In Some Selected Private Secondary Schools In Makurdi. *International Journal of Research in Humanities, Arts and Literature*. 2(5), 195-202.
- Ertmer, P, A., Ottenbreit-Leftwich, A, T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, 59(2), 423-435. doi: 10.1016/j.compedu.2012.02.001
- Ertmer, P, A., Ottenbreit-Leftwich, A, T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, 59(2), 423-435. doi: 10.1016/j.compedu.2012.02.001
- Fademiro, J. (2000). Use of Instructional Media in Teaching and Learning of Environmental Sciences in the Universities of Technology. *Nigerian Association for Educational Media and Technology*. 21st Century Convention Proceedings.156 – 159.
- Gbodi, E, B. & Laleye, A, M. (2006). Effect of Videotaped Instruction on Learning of Integrated Science. *Journal of Research in Curriculum and Teaching*. 1(1), 10-19
- Koc, M. (2005). Implications of learning theories for effective technology integration and pre-service teacher training. A critical literature review. *Journal of Science Education*, 2, (1), 1-16.
- Lee, H. & Owens, D, T. (2004). Video-based versus traditional instruction: A comparison of two methods for teaching the skill of performing a 12-lead ECG. *Journal of Nursing Education*, 43(5), 201-207.
- Mbah, M, I. (2013). Use of Instructional Materials and Educational Achievement of Students in Integrated Science. *IOSR Journal of Research & Method in Education*, 7-11.
- Mimrot, B. (2016). A Study of Academic Achievement Relation to Home Environment of Secondary School Students, *International Journal of Indian Psychology*, Volume 4, Issue 1, No. 79,
- Moeller, B & Reitzes, T. (2011). *Integrating technology with student-centered learning*. MA: Nellie Mae Education Foundation.
- Moronkola, O, A. (2012). School Health Programme. Ibadan: Royal people Nigeria Ltd Approach to Multimedia Explanations. Retrieved from Privering nstructional Design Principles from cognitive theory: <http://imej.wfu.edu.articles/2000/2/05/index.asp>
- Ngozi, B, O., Samuel A, O., Ameh, O, I. (2012). Motivating Use of Audio-Visual in a Nigeria Technological University Library. *Journal of Education and Social Research*, 2(1).
- Obara, J, K. & Okoh, C. (2005). Instructional Media Production the Need for Provisional and Innovation. *African Journal of Education and Development Studies*, 2 (182), 129-36.
- Oladajo, M, A., Olosunde, G, R., Ojebisi, A, O. & Isola, O, M. (2011). Instructional materials and students' academic achievement in physics: Some policy implications. *European Journal of Humanities and Social Sciences*, 2(1), 113-126.

- Omosewo, E. O. (1999). Relative Effects of Planned Post Laboratory Discussion on Students Achievement in Physics. *Journal of Education Foundations*, 4(2), 116-121.
- Onasanya, S. A. & Omosewo, E. O. (2011). Effect of Improvised and Standard instructional Materials on Secondary School Students' Academic Achievement in Physics in Ilorin, Nigeria. *Singapore Journal of Scientific Research*, 1(1), 68-76.
- Quarcoo-Nelson.R., Buabeng, I. & Osafo, D. K. (2012). Impact of Audio-Visual Aids on Senior High School Students' Achievement in Physics Eurasian Journal of Physics and Education. 4(1), 46-54.
- Ranasinghe, A. I. (2009). The benefit of integrating technology into the classroom. *international Mathematical Forum*, 4, (40), 1955-1961.
- Shabir, G., Hasan, K. S., Naqvi, H. & Iqbal, N. (2015). Impact of Visual Aids in Enhancing the Learning Process Case Research: District Dera Ghazi Khan. *Journal of Education and Practice*, 6(19), 226-33.
- Suleman, Q., Aslam, H. D., Javed, T. & Hussain, I. (2011). Barriers to the Successful Integration of Educational Technology in Teaching Learning Process at Secondary School Level in Khyber Pakhtunkhwa, Pakistan. *International Journal of Research in IT & Management*, 1 (8), 97-119
- Ward, A. (2012). *Achievement and Ability Tests-Definition of the Domain*. *Educational Measurement*, University Press of America