AUDIO-VISUAL AIDED INSTRUCTION IN SCIENCE AMONG HIGH SCHOOL STUDENTS IN THE PHILIPPINES

Aris A. Lapada
Eastern Samar State University

Andy A. Lapada
Eastern Samar State University
lapada213@gmail.com

ABSTRACT

The study aimed to determine the effects of Audio-visual aided instruction on Grade 8 students and correlate their profile and attitudes to their academic performance in Science. The data were drawn using a self-structured achievement test for students' academic performance in Science and a survey questionnaire which included profile, attitude towards technology, media, study habits and motivational practices of the family. The gathered data were correlated to the Science academic performance of the respondent. It was found out that the students taught by audio-visual aided instruction performed better compared to the students taught by the conventional method. The profile and over-all attitudes of the students taught by audio-visual aided instruction did not affect their academic performance. The profile and attitudes towards technology, media and study habits of the students taught by conventional method did not affect their performance as well; however, the students' attitude towards motivational practices of their family had negative causal relationship to their academic performance. Based on the findings of the study, the researcher recommends the following: (a) Parents should support and encourage their children to study well. The advancement of technology is inevitable; hence, parents should have active roles in explaining and choosing things found in the mass media since it can positively or adversely affect their children's academic performance; (b) Audio-visual aided instruction could be used to increase the retention of knowledge and skills of the students in Science; (c) This study can be replicated using audio-visual aided instruction in various subjects. Future researchers who will conduct the same study may include the profile and attitudes of the respondents since the results of this study may not be similar with the future studies because of the factors affecting learning. To ascertain the effectiveness of audio-visual aided instruction, thorough study on a wider scope is suggested.

Keywords: Audio-Visual Instruction, Science, Education, Technology, Philippines

INTRODUCTION

At the core, it can be said that science comprises of three disciplines: Biology, Chemistry, and Physics. Oguneleye (2002), as cited in Oladajo, Olosunde, Ojebisi, & Isola (2011) stated that science is a dynamic human activity concerned with understanding the workings of the world.The Third International Mathematics and Science Study-Repeat (TIMSS-R) revealed that Filipino High School Students were very weak in Science in their conducted survey. A report of the Department of Science and Technology (DOST) said that the 6,601 Filipino students who took the TIMSS ranked 36th in science test out of a field of 38 countries (Crisostomo, 2013).

DepEd order No. 72 dated September 2011 showed that of roughly 5,600 secondary schools, some 67.10 percent of schools scored within the "lower average" range (26 and 50 percent correct) in National Achievement Test for second year high school students. While the National Achievement Test 2014 results for Science gave Maypangdan National High School an alarming MPS of 47.09 percent compared to their

previous MPS. The researcher found out that in the past four years the National Achievement Test results of the said school is continuously declining.

This decline in Science MPS pushed the researcher plan out teaching aids which would enhance the performance of the students and the teachers in the said subject such as the use of the audio-visual aided instruction in teaching Science in Maypandan National High School. Mishra (2001) revealed that the use of these teaching aids can show practical and real life activities that can also be used to capture hazardous and costly experiments for presentation and for repeated use. Tooth (2000) observed that though video resources are expensive to produce, they are very useful where practical demonstrations of skills are required. For Jung (2005), however, cost-savings can be carried out through the reuse of video resources.

Fatunmbi (2005) stated that there is an improvement in teaching – learning process through the use of audio-visual aids. He claimed that audio-visual materials can be used to provide real experiences in almost all field of learning. It can be made to repeat information and demonstration as many times as possible, thereby, learning is made easier, more realistic and more concrete for learners. This study therefore examined the effectiveness of audio-visual aided instruction on the academic performance in science of some grade 8 students of Maypangdan National High School.

Objectives of the Study

The study seeks to find out the effectiveness of audio-visual material aids in teaching Science in terms of the academic performance of the grade 8 students. The use of this strategy as an experimental treatment is compared against the use of conventional instruction.

Specifically, this study is guided with the following objectives:

1. To determine the profile characteristics of Grade 8 students taught by audio-visual aided instruction and by conventional method in terms of the following:
   a. age;
   b. sex, and
   c. family monthly income.
2. To find out the attitudes of the students taught by audio-visual aided instruction and by conventional method in terms of:
   a. technology,
   b. media,
   c. study habit, and
   d. motivational practices in the family.
3. To compare the academic performance of Grade 8 students in Science in terms of learning gain scores;
4. To determine if there is significant relationship between the two groups of Grade 8 students' profile characteristics and their academic performance in Science;
5. To determine if there is significant relationship between the two groups of Grade 8 students' attitudes and their academic performance in Science; and
6. To determine whether audio-visual aided instruction significantly affects Grade 8 students' academic performance in Science.

Conceptual Framework

Figure 1 illustrates the Coombs System Approach (Coombs, 1998) with three elements namely input, process, and output. The study has distinguished the inputs such as the pretest scores in Module 1: The Particle Nature of Matter, Module 2: Atoms, inside and out and Module 3: Periodic Table of Elements. The second frame shows the methods used in this study for the experimental and control groups using audio-visual aided instruction and conventional method respectively.

Then the Post-test was given. The Learning Gain Score or the difference between the pretest and posttest scores was the science academic achievement of grade 8 students

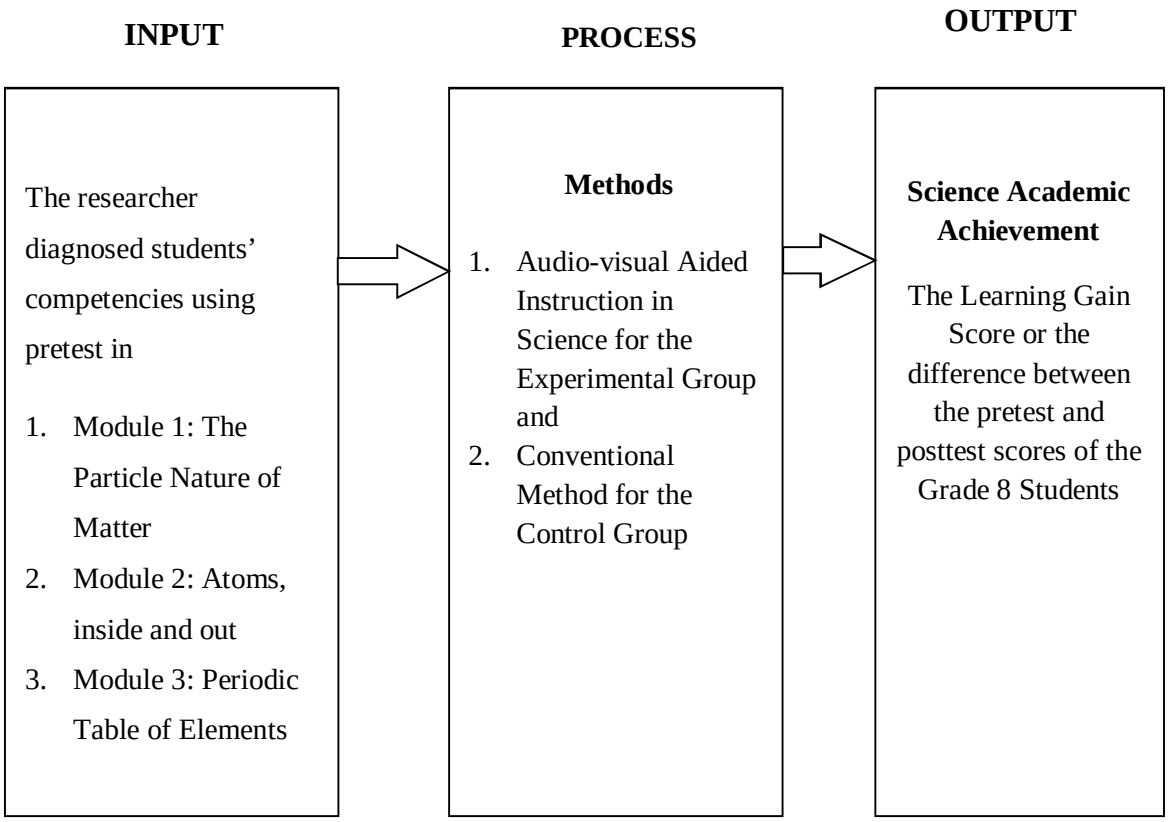

Figure 1. Paradigm illustrating the relationship between variables considered in this study.

Hypothesis of the Study

1. There is no significant difference in the academic performance of Grade 8 students' achievement in science in terms of audio-visual aided instruction and conventional instruction.
2. There is no significant relationship between the students' profile characteristics and their academic performance.
3. There is no significant relationship between the students' attitudes and their academic performance.
4. Audio-visual aided instruction does not significantly affect the grade 8 students' achievement in Science.

METHODOLOGY AND DESIGN

This chapter presents the research design, locale of the study, respondents, sampling design, research instrument, validation of the instrument, data gathering procedure and analysis of data.

Research Design

Experimental research design was adopted for the study. Specifically, the study used randomized pretest-posttest control group experimental design. This design was used because the study used randomly composed samples (Campbell & Stanley, 1963). In this study, both the experimental and control groups were given a pretest before the experimentation commenced to assess the prior knowledge of the students about the topics to be discussed. After the experimental process, the control and experimental groups were

given a Post-test to assess their learning gains after exposing to audio-visual aided and conventional instructions.

Locale of the Study

This study was conducted at Maypangdan National High School, Borongan City during the school year 2014-2015. The school is located approximately 7 kilometers from the Borongan City proper. Currently, the school has 751 students and 27 permanent teachers for this school year. The school is supervised by Mr. Jessie A. Abunda as head teacher in-charged. Hereunder is the map of Baragay Maypangdan, Borongan City, where Maypangdan National High School is situated.

Plate 1. Map of Maypangdan National High School (googleearth.com)

The yellow line in the map above is the Maypangdan National High Way while the white lines are the Streets in Barangay Maypangdan, Borongan City, Eastern Samar. The big black arrow shows the road going to Eastern Samar State University. The intersection between the yellow and white lines marked "B" is the Maypangdan's waiting shed, while "A" is Maypangdan National High School which is approximately one hundred (100) meters from the said waiting shed.

Respondents of the Study

The researcher used the randomized pairing method and grouped the respondents according to the grades bracket system of the K+12 program. (Enclosure no. 7 to DepEd Order 73, series 2012)

Advanced (A)	-	90% and Above
Proficient (P)	-	85%- 89%
Approaching Proficiency (AP)	-	80%- 84%
Developing (D)	-	75%- 79%
Beginner (B)		74%- below

Sampling Procedure

The respondents' Science GPAs were taken from their Grade 7 Form 18A or (Report on promotion). From these students, the proponent assigned no one as Advanced (A) since no one got an Advanced Science GPA in the two sections. Two students were Proficient (P), 42 students were given Approaching proficiency

and six students as Developing (D). Arbitrarily, one member of each pair will be assigned to experimental group and the other pair to the control group.

Table 2. Respondents per category for Experimental and Control Group.

Level of Proficiency	Audio-visual Aided Instruction	Conventional Method
Advanced (90% and Above)	0	0
Proficient (85% - 89%)	1	1
Approaching Proficiency (80%-84%)	21	21
Developing (75%- 79%)	3	3
Beginning (74%- below)	0	0
Total	25	25

All students in the class were involved to avoid the Hawthorn effect (Adair, 1984) or hurting other students by feeling uninvolved in the class. Only 25 respondents from each class were used for data gathering.

Research Instrument

Self-designed Science Achievement Test. The test consisted of 50 objective multiple choice items with four options on the units used in the study. Students were asked to choose the correct answer from the options and were given one minute to answer every question. McKeachie, (1999) claimed that students should be given one minute to answer for every item in an objective-type of test. The achievement test was used to measure the pretest and the posttest of the experimental and control groups.

Survey Questionnaire for Students' Profile and Attitudes. This questionnaire is owned by Victorino (2011), the proponent adopted this questionnaire to find out the profile characteristics and attitudes of the respondents. This questionnaire composes of two (2) sets of survey, the personal profile and the attitudes affecting learning. The proponent did some modification on the survey questionnaire. In the first part or the profile of the respondents the proponent took off the religion and family structure while in the second part, the proponent added five more questions in the attitudes towards study habit from the suggestion of PBBC (2008).

Validation of the Instrument

The self-designed Science Achievement Test was face-and content-validated by experts in the subject and Measurement and Evaluation (Assessment of Learning) by adhering to the table of specifications. A dry run of the instrument was administered at Maypangdan National High School to grade 8, Section Love under Basic Education Curriculum (BEC). An item analysis was made by the researcher using Kuder Richardson formula 21 (Dreesil, 1940) to test the reliability of the test before it was given to the respondents.

Experimental Treatment

The teaching of the experimental and control groups were almost the same since the proponent followed the learners' material of the K to 12 Program. The only difference, experimental group was taught using audio-visual materials in discussing their lesson while the control group was taught by conventional method.

Data Gathering Procedure

In this study, audio-visual aided instruction refers to a type of teaching where teaching or learning aids that appear to the two most used senses – hearing and visual such as videos, are used to complement the conventional method. The randomized Pre-test-Post-test design was used to collect data for the study. The

main treatment for the study were the use of conventional and audio-visual aided methods in teaching. The experimental group and the control groups were both taught the same units.

Before the study commenced, the researcher requested for the first year science GPA of the respondents. Teacher A, a Science teacher in Maypangdan National High school was selected to teach the two groups. In the control group, Teacher A delivered a pre-planned lesson to the students whereas in the experimental group, Teacher A was trained by the researcher on how to use the audio-visual aids. The teaching of the topics lasted for 28 sessions for each group for the normal period teaching time.

The self-designed Science Achievement Test together with the survey questionnaire by Victorino (2011) was administered as a Pre-test before the treatment commenced. After teaching both groups, the Post-test was administered with the same achievement test (except the survey questionnaire). Intervening variables extraneous to the study such as group interaction and teacher effect was controlled through the presence of the researcher during instructional periods and days tests conducted.

Analysis of Data

To analyse the data that was obtained from data gathering, the following statistical tools were performed:

Frequency. According to Triola (1997), this tool facilitates the tallying and counting of frequencies falling under each category. In this study, frequency will be used to measure the respondents answer to a specific set of questions.

Percentage. It is the ratio of the responses to the total, to find the trends in opinion (Triola, 1997). This will be used to determine the trends of the subject of the study's profile as well as the significant difference on the respondents' assessment. Specifically, this will be used to compare the frequency of responses according to the number of sections.

Weighted Mean. Triola (1997), asserted that a mean is computed with the different scores assigned different test. This formula was used for the scale type of questions, to measure the extent on how the respondents affected by their personal and teacher's demographic profiles.

Variance. Measures how far a set of numbers is spread out.

Standard Deviation. Measures the amount of variation or dispersion from the average.

Likert Scale. It is a type of psychometric scale frequently used in psychology questionnaires. It was developed by and named after organizational psychologist Rensis Likert. In the study's questionnaire, the Likert item took the following format:

SCALE	Range	Verbal Interpretation
5	4.51 to 5.00	Strongly Favorable
4	3.51 to 4.50	Favorable
3	2.51 to 3.50	Undecided
2	1.51 to 2.50	Unfavorable
1	1.00 to 1.50	Strongly Unfavorable

Pearson r. this was used to correlate profile and attitudes of the students to their academic performance.

Learning Gain Scores (LGS). This was used to compute how much students gained out of the total possible that they could have gained from Pre-test to Post-test.

Effectiveness of Audio-visual aided instruction over Conventional Instruction. LGS was utilized in computing a one tailed *t*-test for independent samples. The test of null hypothesis was set at 0.05 level of

significance. The *t*-test for dependent samples will be also computed in order to determine the level of significance of the results.

RESULTS AND DISCUSSIONS

This chapter shows the academic performance and the attitudes towards factors affecting learning in Science of the students of Maypangdan National High School in the school year 2014-2015. To test which method (conventional or audio-visual aided instruction) has significantly affected the performance of the students, one-tailed t test for independent samples was used for learning gain score from the Pre-test and Post-test of the experimental and control groups. In the factors affecting learning, each dimension was correlated to the learning gain score of the respondents.

The profile of the both experimental and control groups are summarized in the following tables provided with corresponding frequencies and percentages.

Table 4. Sex of the respondents

Sex	Groups	Frequency	Percentage
Male	Experimental	16	64
	Control	13	52
Female	Experimental	9	36
	Control	12	48
	Experimental	25	100
Total	Control	25	100

Table 5. Age of the respondents

Age	Groups	Frequency	Percentage
Above 14 yrs. Old	Experimental	6	24
(old)	Control	12	48
13 – 14 yrs. Old	Experimental	19	76
(normal)	Control	12	48
Below 13 yrs. Old	Experimental	0	0
(young)	Control	1	4
	Experimental	25	100
Total	Control	25	100

Table 6. Combined monthly income of the family

Income	Groups	Frequency	Percentage
Above Php 20,000	Experimental	2	8
(High)	Control	4	16
Php 10,000 -20,000	Experimental	7	28
(middle)	Control	5	20
Below Php 10,000	Experimental	16	64
(low)	Control	16	64
	Experimental	25	100
Total	Control	25	100

Respondents were chosen based on a pairing method and both groups were well distributed in terms of their level of proficiency in Science as reflected in their GPA the previous year. From a sample of 50, 25 were from experimental group and 25 from the control group. As shown in table 4, male students outnumbered female respondents from each group. The table shows an almost unequal distribution of male and female Grade 8 students of Maypangdan National High School. Sixty - four percent of the sample (16 out of 25) were male while 52 percent of males (13 out of 25) came from experimental group and control group respectively. Thirty - six percent (9 out of 25) of the experimental group were female as compared to 48 percent (12 out of 25) from the control group.

Table 5 shows that most of the respondents from each group falls under normal age. There is a considerable number of 13- 14 years-old in the survey, which comprised 76 and 48 percent of the sample from experimental and control group, respectively.

Table 5 does not exhibit a normal distribution inasmuch as the middle category of the distribution got the highest frequency. It can be gleaned that the students of Maypangdan National High School consistently attended a certain year level according to the normal and recommended age.

Majority of the students came from the marginalized strata of the economic class. Table 6 revealed that a greater percentage of the respondents, 64 percent from each group, belong to a family with an average monthly income of below P 10,000.00. This income is considered lower than the poverty threshold suggested by the National Statistical Coordination Board for a family which has six members. Only 28 and 20 percent from the experimental and control groups have a monthly income of 10,000-20,000 respectively and only 8 and 16 percent earns above 20,000.

Most of the students were economically challenged because of the kind of livelihood that most residents have since most of the students came from the said barangay. Some families rely on farming and fishing where it is justifiable to earn a minimal monthly income.

The result of the survey conducted for the attitudes towards the factors affecting the academic performance of both experimental and control groups are summarized in the following table.

Table 7. General weighted means of the attitudes of the experimental and control groups.

Dimension	Groups	General Weighted Mean	Verbal Interpretation
1. Attitude towards Technology	Experimental	3.53	Favorable
	Control	2.68	Undecided
2. Attitude towards Media	Experimental	2.72	Undecided
	Control	2.4	Unfavorable

3. Attitude towards study habits	Experimental	2.52	Undecided
	Control	2.32	Unfavorable
4. Attitude towards motivational practices of the family	Experimental	3.55	Favorable
	Control	2.6	Undecided

Attitude towards technology

From the mean score of the groups, it can be gleaned that the experimental group has higher attitude mean (3.53) than those of the control group (2.68). This results indicates that students who underwent the audio-visual aided instruction agree, have a greater appreciation for and think of high importance of technology as a source of valuable information such as internet and electronic devices that facilitates learning. However the control group was undecided and considered technology as may or may not affect their learning.

Attitude towards Media

Students from the experimental group were uncertain whether media influences their academic performance or not. Media from different sources such as television shows, radio forecasts, magazines, newspapers and others. may or may not increase their performance at school. Control group was disagreed that media influences their academic performance. This may be because of their lifestyle. Some of them have no TV at home and cannot even afford to buy a newspaper to read.

Attitude towards Study habits

Bagongon & Edpalina, (2009) as cited by Victorino (2011), "Many studies say that learning are better acquired and mastered as soon as the learner attends to it In application to learning process, immediate and regular study periods and doing school requirements tend to result in a better performance than delayed and erratic study periods do. Good study habits are expected to help students achieve higher at school. Even the attitude of the students towards the importance of healthy eating and nutrition in achieving academic excellence is relegated to a second-class status. This can overpower their achievement level in school, despite satisfactory study habits in terms of preparation for exams and doing one's home work" (p. 89).

Based on the survey, the experimental group with GWM of 2.52 was undecided whether good study habits help them learn better while the control group disagreed with GWM of 2.32. However both groups think of whether a student practices good study habits or not, he or she may perform better at school and good study habits does not guarantee a better academic performance since there are a lot of factors that hinder their academic performance like environmental factors.

Attitude towards motivational practices of the family

Students from a family who values education, is unfasten and lead each member of the family think of motivational practices as positive reinforcements for them to achieve better at school. The experimental group showed a greater general weighted mean (3.55) than the control group did (2.6) and agrees that motivation promotes better learning while the control group is undecided.

For their families, doing well in school is a means to climb the social ladder. This concept is apparent in the parents' telling of stories of people who were able to attain better economic status because of their academic achievement and hard work. Having said that, it is rightful to say that there is a concept of "education is the best equalizer" among families, particularly in the public school setting in a society which have a lot of poor people (Victorino,2011). Nonetheless; it is rather unexpected that while parents encourage students to study well, the level of family's involvement in the process of the students' academic performance remains minimal. There is a smaller participation of parents as regard the actual delivery of scholastic outputs.

Table 8. Result of the Pretest and Posttest and the Learning gain score of the respondents

Student no.	Experimental group			Control group		
	Pre-test	Post-test	LGS	Pre-test	Post-test	LGS
1	23	34	11	12	19	7
2	16	15	-1	14	17	3
3	15	19	4	12	10	-2
4	16	28	12	23	26	3
5	14	19	5	14	20	6
6	15	19	4	18	24	6
7	18	29	11	13	24	11
8	22	31	9	9	16	7
9	14	21	7	18	22	4
10	10	27	17	22	28	6
11	21	21	0	13	13	0
12	13	22	9	18	13	-5
13	25	28	3	17	22	5
14	17	30	13	14	18	4
15	15	15	0	12	14	2
16	13	23	10	15	12	-3
17	15	24	9	9	12	3
18	22	33	11	14	11	-3
19	16	23	7	8	11	3
20	17	27	10	17	23	6
21	19	29	10	18	21	3
22	11	28	17	18	18	0
23	16	19	3	12	14	2
24	14	22	8	14	16	2
25	19	17	-2	12	15	3
Average	16.64	24.12	7.48	14.64	17.56	2.92

The Learning Gain Scores (LGS) was used to compute how much students gained out of the total possible that they could have gained from pretest to posttest. In this study, the LGS was computed by subtracting pretest scores from posttest. This represents the academic performance of the students from the two groups in terms of the learning gain score to compare from pretest and posttest. As shown in the table 8, the experimental group got higher mean in terms of pretest 16.64, posttest 24. 12 and learning gain score 7.48 compared to the control group with pretest 14.64, posttest 17.56 and learning gain score of 2.92.

This result indicates that higher positive LGS means an increase in academic performance from the conducted tests. This situation indicated that the general performance of the experimental group who underwent audio-visual aided instruction was higher than the control group. These results agrees on the results of the study of Brecht and Ogilby (2008), they found out that students who worked with the aid of audio-visual performed better compared to the students who worked with the traditional lectures.

Table 9. Independent t-test of the Learning gain scores between Pretest and posttest mean scores of experimental & control groups.

Groups	LGS mean	SD	t-test	Critical value	Decision
Experimental N=25	7.48	5.06	3.62	1.689	Reject H_O
Control N=25	2.92	3.58			

*Significant at df= 48, a = (0.05)

The LGS of the two groups taken from the pre-test and post-test were compared using one-tailed t-test for independent samples using 0.05 level of significance. As shown in table 9 above, the learning gained in the experimental group were higher compared to the learning gained by the control group. This means that the two groups generally performed better from the said tests for they've got a higher score from the expected scores to be attained. The standard deviation of the experimental group was 5.06, this supported the LGS of the individual scores were more spread in relation to the mean than those of the control group 3.58. In terms of performance within each group, in experimental group, more students performed well while in the control group more students performed less compared to the rest of the group respectively. This result further indicates that more students from the experimental group gained a considerable difference in content knowledge from the other group. The students from the experimental group generally got higher scores than that of the control group. The t-test revealed a computed value of 3.62 which is greater than tabulated value t (0.05) of 1.689 and this has been validated by his statistician.

Therefore, the hypothesis of no significant difference in academic performance in terms of learning gain scores of the two groups of students taught by Audio-visual aided instruction and by conventional method was rejected. Since the null hypothesis is rejected, there is a significant difference between the variables compared. This result indicates that students taught under audio-visual aided instruction learned better than those of conventional method. There is a significant effect of the audio-visual aided instruction on the academic performance of the students. This further justified that audio-visual aided instruction is significantly more effective than traditional instructions to promote long-term retention of knowledge and skills acquired during the learning experience. This result agrees with the idea of Isiaka (2007) who researched on the effectiveness of video as a medium of learning found that video group performed better than the group without instructional media. The video group did significantly better than the chart group. He concluded that video was an effective medium for teaching / learning in schools. Also, Fatunmbi (2005) stated that there is an improvement in teaching – learning process through the use of audio-visual aids. He claimed that audio-visual materials can be used to provide real experiences in almost all field of learning. It can be made to repeat information and demonstration as many times as possible, thereby, learning is made easier, realistic and concrete for learners.

To further support the idea on the academic performance of the two groups, their profile and attitude towards factors affecting learning were correlated in the following tables. This correlation is to determine which of these factors might be the reason why the experimental group performed better than those of the control group.

Table 10. Result of Correlation between Academic performance and the profile of the experimental and control groups

Dimension	Group	Pearson Correlation	Critical value	Decision	Interpretation
1. Age	Experimental	-0.072		Accept H_O	Not significant
	Control	-0.09	0.337	Accept H_O	Not significant
2. Sex	Experimental	0.291		Accept H_O	Not significant
	Control	0.223	0.337	Accept H_O	Not significant
3. Student's family Monthly Income	Experimental	-0.048		Accept H_O	Not significant
	Control	0.015	0.337	Accept H_O	Not significant

The study showed that students from the experimental group performed better than those from the control group. This may be attributed to different factors affecting their learning. The profile of the students presented in the table above was correlated to test if there is significant relationship between each dimension to their academic performance using the learning gain scores. The table shows that the three dimensions: age, gender and family income were not significantly related to the academic performance of the students. Pearson product-moment correlation coefficient (r) is used to determine the strength of association or whether a relationship exists between two variables based on interval data or not. The researcher used numbers to translate the nominal into interval data as required in computing the correlation. The following data were used: Sex (male= 1, female = 2), Age (below 13 = 1, 13-14 yrs old = 2 and above 14 yrs old = 3), Monthly income(below 10,000 = 1, 10,000 – 20,000= 2 and above 20,000 = 3) .The study used this test and revealed the computed value r (0.05) of the three dimensions from experimental and control group were less than the critical value 0.337, thus, the null hypothesis was accepted. This means that there is no significant correlation between the age, sex and family income to the academic performance of the students. One cannot determine whether a student who is male or female, young or old, belong to an average income-earning family or not, will perform better in school

Table 11. Result of Correlation between Academic performance and the profile of the experimental and control groups

Dimension	Group	Pearson Correlation	Critical value	Decision	Interpretation
1. Attitude towards Technology	Experimental	0.142	0.337	Accept H_O	Not significant
	Control	-0.226		Accept H_O	Not significant
2. Attitude towards media	Experimental	0.283	0.337	Accept H_O	Not significant
	Control	-0.160		Accept H_O	Not significant
3. Attitude towards study habits	Experimental	0.103	0.337	Accept H_O	Not significant
	Control	-0.003		Accept H_O	Not significant
4. Attitude towards motivational practices of the family	Experimental	0.295	0.337	Accept H_O	Not significant
	Control	-0.368		Reject H_O	**Significant**

The researcher tried to correlate each dimension of the attitude through the scores obtained towards the academic performance through their learning gain score from the conducted tests. The findings in table 11 above went to show that there was only one factor that is significant in as regard with its correlation with the learning gain score from the control group, and that was the attitude of the students towards motivational practices of the family. The attitude of the students to these practices has a computed Pearson correlation value of -0.368. Since the computed value is greater than the critical value, the null hypothesis was rejected. This result denotes a negative causal relationship. Students under the study do not perform well even if they are encouraged or motivated by the family. These means that parents and siblings are not equipped with the tools to help the students deal with the requisites of their student life.

Nevertheless, the students need ample support from them, in form of properly allocating money for their school allowance and giving them some advice on how to improve study habits (Victorino, 2011). This however contradicts the idea that motivation from family members has been recognized as having positive effect on a student's achievement in science. According to George and Kaplan (1998) as cited by Victorino (2011), "one of the important effects seen in the present study is the influence of parental involvement on science attitudes"(p. 102).

The more the parents showed a positive attitude to science the better the pupils achieve in science. The parental effect works through discussion of school experiences and through arranging or supporting activities in inside and outside the school's premises. Science is a systematic study of the world, including everything that can be seen or detected in nature, man, and society, together with the knowledge that grows out of such study. Most high school students have a difficult time in studying this subject. Nevertheless, homework gets done faster, and students retain concepts longer when study styles are married to learning styles in science. When parents and teachers match study skills techniques to individual learning styles, kids learn faster, retain material longer, earn better grades, and have increased self-reliance in their study skills (Victorino, 2011).

Generally, the correlation students' attitude towards the factors that affect learning was computed to no statistical significance as regard with the performance of the experimental and control group in the test conducted. The factors that was deemed not significant from the experimental group were technology (r (0.05)= 0.142), media (r(0.05) = 0.283) and study habits (r(0.05) = 0.103) while from control group were technology (r (0.05)= -0.226), media (r(0.05) = -0.160) and study habits (r(0.05) = -0.003). This result somehow agrees with the idea of Tuckman (1975) who defined performance as the apparent demonstration of understanding, concepts, skills, ideas and knowledge of a person and proposed that grades clearly depict the performance of a student. He emphasized that the use of technology such as internet is one of the most important factors that can influence educational performance of students positively or adversely.

CONCLUSIONS

Based on the summary of findings presented above, the following conclusions were drawn:

1. The profile of the grade 8 students of Maypangdan National High School did not affect their academic performance.
2. The attitudes of the grade 8 students taught by audio visual aided instruction did not affect their academic performance while the attitude towards motivational practices of the family in the students taught in conventional method affect their academic performance and the rest of attitudinal dimensions did not affect their academic performance.
3. The academic performance of the grade 8 students taught by audio-visual aided instruction was better than of the students taught by conventional method.

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