

**Comparative Effectiveness of Two Types of Film-Viewing Approaches  
in the Performance of Students in Biological Science**

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**Abstract** –The study determined the effect of two film-viewing approaches on the performance of Bachelor of Secondary Education (BSE) students in Biological Science. The first type, the staggered film-viewing approach, is where the teacher pauses at some part of the video material for discussions and queries. The second type, the uninterrupted film-viewing approach, is where the whole video is viewed before discussion is done and questions are entertained.

This study utilized the experimental method using the post-test only design. The subjects were two groups of BSE students taking Biological Science from the Pangasinan State University – College of Teacher Education (PSU-CTE) during the first semester of academic year 2014-2015. Ten videos were viewed for five weeks covering the nine body systems. A validated 350-item summative test was administered after exposure to their respective film-viewing approaches. The staggered and uninterrupted film-viewing discussion groups obtained a mean of 305.15 and 272.77, respectively. The mean difference was analyzed using t-test which revealed that the performance of the staggered film-viewing discussion group is significantly better than the uninterrupted film-viewing discussion group. This indicates that students exposed to the staggered film-viewing approach have better performance than those in the uninterrupted film-viewing approach. This implies that discussion at some part of the video material led to better student learning. Questions and doubts needing answers and clarifications can be thrashed out leading to a better understanding of the succeeding parts of the video material.

**Keywords** – academic performance, audio-visual aids, body systems, biology

## INTRODUCTION

The foundation of every state is the education of the youth. The failure of education represents the failure of the society, its inability to prepare its young for their inevitable ascendancy into leadership roles in the future and to properly perpetuate itself through the succeeding generations [1].

One particular concern of the Philippine educational system is science education. Science is important because of its links to technology and industry which are areas with high priority for development. Science is included as a core element of basic education despite conceptual complexity and high cost of implementation [2]. Its inclusion in the curricula is mandated in the 1987 Philippine Constitution that all citizens need to achieve a degree of scientific literacy to enable them to participate effectively as citizens in modern societies.

Studies, however, indicated that many Filipino students are not attaining functional literacy without which it would be too difficult to meet the challenges posed by our rapidly changing world. The main factors cited to account for their low performance in science include the lack of science culture and deficiencies regarding the school curriculum, the teaching learning process, instructional materials and teacher training [2].

Many studies conducted regarding classroom teaching found that the use of multi-media for classroom instruction significantly improves the level of academic performance of students. Audiovisual aids in particular are stimulating materials and devices which aid sound and sight

on teaching to facilitate learning of the students by activating more than one sensory channel [3]. Audiovisual aids strengthen an instructor's verbal presentation while helping the students capture a specific message. They keep students' attention throughout a presentation and help them remember particular information [4].

Audiovisual materials are used for the following reasons: (a) to supplement and enrich teacher's own teaching, (b) to make teaching-learning more concrete, (c) to maintain a high level of interest in the lesson, (d) to make teaching an effective process, and (e) to promote greater student participation [5]. Some examples of these audio-visual materials are videos and films.

The use of audio-visual materials is premised on the holistic learning theory which believes that the individual personality consists of many elements which are the intellect, emotions, the body impulse or desire, intuition and imagination that all require activation if learning is to be more effective. Therefore, the more senses are involved in learning, better learning takes place. The following are the senses and their contributions to learning: sight – 75%, hearing – 13%, touch – 6%, taste – 3%, and smell – 3%. This implies that a combination of visual and audio aids is far more effective [6]. This is supported by a study conducted that the eyes contain nearly 70% of the body's receptors and send millions of signals along the optic nerves to the visual processing centers of the brain [6].

Surely, the use of film-viewing as a means to enhance teaching could improve students' performance. In Biological Science, film viewing is used especially in the study of the different body systems. But when is it advisable

for a teacher to give discussions or supplements about the film or video material? Will the teacher need to wait until the film-viewing is over before he can supplement, discuss or entertain questions? Or can he do the same at some selected parts of the video or film?

### **OBJECTIVES OF THE STUDY**

This study investigated the effect of two types of film-viewing approaches on the performance of the Bachelor of Secondary Education (BSE) students in Biological Science during the first semester of academic year 2014-2015. The first approach, called the staggered film-viewing approach, is one where the teacher pauses at some selected parts of the video so that he can discuss and entertain queries from the students. The second approach, called the uninterrupted film-viewing approach, is one where the teacher waits until the entire video material is viewed before he discusses or entertains questions from the students.

It also determined if there is a significant difference between the performances of BSE students in Biological Science when exposed to the two types of film-viewing approaches at 0.05 level of significance.

### **MATERIALS AND METHODS**

The study utilized the experimental method which made use of the post-test only design [7].

The subjects were 103 Biological Science students who were enrolled during the first semester of school year 2014-2015. Of these students, 50 belonged to the BSE I-1 while 53 belonged to the BSE I-2. The type of film-viewing approach assigned for each group was determined by tossing a coin. Hence, BSE I-2 was exposed to the staggered film-viewing approach while BSE I-1 was exposed to the uninterrupted film-viewing approach. Ten CDs were viewed covering the nine body systems for a period of five weeks equivalent to 10 meetings of one and a half hour each. These systems were the nervous system, digestive system, circulatory system, endocrine system, excretory system, reproductive system (male and female), respiratory system, muscular system and skeletal system. The researcher prepared a 350-item multiple choice summative test evaluated by three biology teachers and two experts on test construction in order to establish content and construct validity, respectively.

The summative test was administered for two and a half hours to the two groups of students after exposure to their respective film-viewing approaches. The means of each group were computed to determine their level of performance when exposed to the two types of film-viewing approaches. The t-test for independent sample means was used to determine whether their mean difference is significant at 0.05 level of significance [8].

### **RESULTS AND DISCUSSION**

Table 1 shows the mean of each group as well as the observed and critical t-values.

Table 1. Test of Difference Between the Mean Performance of the Two Groups

Film-Viewing Approach/Treatment	Mean Score	Mean Difference	df	critical t-value	observed t-value
Staggered	305.15	32.38	101	1.9863	16.3897*
Uninterrupted	272.77				

\* significant at 0.05 level

The table reveals that the group of students exposed to the staggered film-viewing approach obtained a higher mean score of 305.15 compared to the group of students in the uninterrupted film-viewing approach which obtained a mean score of 272.77. They have a mean difference of 32.38. This suggests that the students from the staggered film-viewing approach performed better than their counterpart in the uninterrupted film-viewing approach.

Further analysis revealed that the observed t-value of 16.3897 is greater than the critical t-value of 1.9863. This implies that the null hypothesis stating that there is no significant difference between the mean performances of the students when exposed to different types of film-viewing approaches is rejected. Therefore, the difference between the mean scores of the two groups is significant in favor of those who were exposed to the staggered film-viewing approach.

### **CONCLUSION AND RECOMMENDATION**

Students who are exposed to the staggered film-viewing approach performed better than those students who were exposed to the uninterrupted film-viewing approach. This shows that having some discussions at some selected part of the video material when the teacher deemed it necessary for some discussions will lead to better understanding on the part of the students than those who will only receive discussions after the entire film has been viewed. The advantage is due to the fact that at some parts, questions and doubts that need immediate answers, explanations or clarifications can already be threshed out leading to a better understanding of the succeeding parts of the video material [9][10][11].

It is recommended that the use of film or video materials as a teaching approach or strategy should be planned carefully in such a way that discussions at some parts can be made for more effective learning. Other researchers can replicate the study in other subject areas covering a longer period of time. They can also look into the effectiveness of the two film-viewing approaches when used to different types of learners.

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