The Impact of Passive and Active Teaching Methods on Students’ Learning Among Secondary School Students in Yenagoa, Bayelsa State.

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Abstract
The purpose of this study is to find out the impact of passive and active teaching methods on students’ learning in Yenagoa, Bayelsa State. Pre-test post-test experimental design was adopted for this study. Two hundred secondary school students were randomly selected for this study (X = 14.42; SD = 0.91). The sample was made of 72 males and 124 females. Data was collected via administration of achievement test in Biology with specific focus on Osmosis and Diffusion. ANOVA was used to analyse the data. The findings showed that the overall, active teaching methods have a significant impact on students’ learning than the passive teaching method at p<.05 level for the four conditions (F (3,192) = 162.03, p = .000). Based on these finding, it was recommended that the Ministry of Education should embark on enlightenment campaign on the need for teachers to employ effective teaching methods in classroom.

Keywords: Passive teaching method; Active teaching method; Learning

1. Introduction
It can be argued that one prominent underlying cause for students’ failure is poor teaching. Teaching and two sides of the same coin. Consequently, the quality and teaching method ultimately determine the quality and type of learning. Students’ learning has a lot to do with teaching method. Learning is not automatically what students learn but basically the state under which a student is most likely to learn effectively and retain information of what they have been taught. In other words can be described as the preferred way in which a student assimilate, processes, understands and retains information[1]. Concluded after his research on teaching methods and its importance in education that students and the school will suffer a great deal if preferred learning style of students is not properly assessed [2]. Learning style in other words can be described as the preferred way in which a student assimilate, processes, understands and retains information. Approaches for teaching can be passive or active.

Educators have over the years used the traditional lecture method in imparting knowledge to learners [3]. The traditional lecture teaching method is termed passive as information is verbally passed to students and they are in no way actively involved on the other hand active teaching involves students participating in a discussion, giving a talk on the proposed topic to be learned, doing a presentation and doing the real thing (practical).

Students are termed passive learners as during classes they sit behind desk, listening, jotting down notes, and where necessary give brief answers to questions asked by the teacher, or completing assignments, tests and examination. makes them passive learners [4]. Passive learning is defined as a process where a teachers pass information to students in form of lecture in class, the students memorise it, and no feedback is gotten from the teacher/instructor [5]. The teacher reads the definitions to the class and students are expected to write down/record and absorb knowledge. Although passive learning is cost effective, teacher centered, presents a great deal of information
within a short time and is the easiest method for teachers. Passive teaching makes the students passive learners. Lecturing, one of the methods employed in passive teaching remains and still is one of the most commonly used methods for transferring information and ideas by teachers and facilitators [6]. Students see traditional lecture method as educative and at same time boring based on the compelling nature of the lesson, the teaching style and clarification of the subject matter. Passive learning as a method where students are mere recipients of knowledge, are expected to record or take in the knowledge delivered by an expert. That is, students are viewed as empty vessels waiting to be filled [7].

Active learning method is the direct opposite of the passive learner who only receives information, internalises and processes it [8]. The active learner works with detailed information on the steps on how something should be done which makes the learner concentrate more on relate with the content of the study through actively involving in creating designs, ideas and contributes meaningfully. She further explained that active learning is characterised by constant change which supports students’ ability to be creative and applying acquired knowledge to enhance productivity in other areas. Active involvement promotes maximum retention Active learning is the process of making students participate in the learning process through various active methods. For an active leaning method to be initiated, the teacher needs to design interactive activities to get the learners to participate actively. The introduction of active teaching method introduces new ideas and encourages individual involvement [10].

Lawton and Gordon [9] posited that students’ learning refers to the present attainment or acquiring of a specific skill or knowledge displayed by information of some kind in assessment and performance test. According to Kpolovie, Joe and Okoto [11], learning is measured based on the ability of such student to study, encode facts and being able to pass the knowledge gained verbally or in the form of a test in an examination setting. They also defined academic performance as the result of education which examines and explains the degree to which the individual, teacher, curriculum and the school have met the pre-determined academic goals. Joe, Kpolovie, Osonwa and Iderima [11] defined learning as the noticed and uniform aspect of a student’s comprehensive knowledge of a skill and subject which are measured with valid and reliable tests.

2. Methodology
A total of 196 senior secondary school students in four public schools participated in this study. Their age ranged between 13-18 years. (Mean age 14.42, SD = 0.91) there were 72 male and 124 female. All participants are students in senior secondary school 1.

2.1 Sampling method and instrument
This study adopted simple random sampling techniques and this study, test was used as instrument. In the test were questions in biology on the topic osmosis and diffusion. The test consist of three sections; the first section was on the respondents’ demographic data which included gender, age and name of school. The first part of the questions have 15 multiple choice questions and the second part consist of 10 theoretical questions all on the topic osmosis and diffusion. Teachers were asked the commonly used teaching method they apply in classrooms so as to get information on the most commonly used teaching method in public secondary schools. A qualitative technique of observation was also used. Content validity was established by subject expert and a
psychometrician to ensure the content of the test measures what it is supposed to measure and in line with the curriculum.

3. Result and discussion

Hypothesis: There is no significant difference in the impact of active and passive teaching methods.

Table 1: One way ANOVA result on the impact of teaching methods on students’ learning.

| Sum of squares | df | Mean square | F    | Sig. |
|----------------|----|-------------|------|------|
| Between groups | 18829.612 | 3 | 6276.537 | 162.026 | .000 |
| Within groups  | 7437.669 | 192 | 38.738 |        |      |
| Total          | 26267.281 | 195 |        |        |      |

\( P < .05 \)

The result in table 4 shows that there is a significant difference in the relative impact of active teaching methods (discussion and practical) and passive teaching (traditional lecture and video watching). \([F (3,192) = 162.03, p = .000] \). The post-hoc analysis that followed shows the most impactful teaching methods.

Table 2: Mean difference in the four teaching methods.

| TEACHING METHOD | N  | Mean  |
|-----------------|----|-------|
| DOING THE REAL THING (PRACTICAL) | 50 | 84.700 |
| DISCUSSION METHOD | 50 | 85.280 |
| HEARING WORDS (TRADITIONAL LECTURE) | 50 | 70.520 |
| VIDEO WATCHING | 46 | 61.826 |

Source: SPSS output, 2019

Table 3: The result of post hoc analysis on the impact of teaching methods on students’ learning.

| (I) NAME OF SCHOOL | (J) NAME OF SCHOOL | Mean Difference (I-J) | Std. Error | Sig. |
|--------------------|--------------------|-----------------------|------------|------|
| DOING THE REAL THING (PRACTICAL) | PARTICIPATING IN DISCUSSION | -14.18000* | 1.24479 | .000 |
| HEARING WORDS (TRADITIONAL LECTURE) | WATCHING A MOVIE (VIDEO WATCHING) | 22.87391* | 1.27157 | .000 |
| PARTICIPATING IN DISCUSSION | DOING THE REAL THING (PRACTICAL) | 14.18000* | 1.24479 | .000 |
| HEARING WORDS (TRADITIONAL LECTURE) | WATCHING A MOVIE (VIDEO WATCHING) | 23.45391* | 1.27157 | .000 |
| HEARING WORDS (TRADITIONAL LECTURE) | DOING THE REAL THING (PRACTICAL) | -14.76000* | 1.24479 | .000 |
| PARTICIPATING IN DISCUSSION | -14.76000* | 1.24479 | .000 |
| Teaching Method            | Mean Difference | p     |
|---------------------------|-----------------|-------|
| Watching a movie          | 8.69391         | .000  |
| Watching a movie (video)  | -22.87391       | .000  |
| Doing the real thing      | -23.45391       | .000  |
| Participating in discussion| -8.69391       | .000  |
| Hearing words             | -8.69391        | .000  |

Source: SPSS output, 2019

Table two (2) and three (3) shows that the active teaching methods (practical and discussion) have the highest means (84.7000 and 85.2800) while the passive teaching methods (traditional lecture and video watching) had the lowest means (61.8 and 70.5 respectively). The post hoc analysis further shows that the active teaching methods were significantly more impactful than the passive teaching methods [practical teaching method and the traditional lecture method (mean difference = 14.18; p = .000); practical teaching and video watching method (mean difference = 22.9; p = .000); discussion method and video watching (mean difference = 23.5; p = .000) and discussion method and traditional lecture method (mean difference = 14.8; p = .000)].

The four teaching methods (hearing words, video watching, participating in discussion and doing the real thing) significantly impacted on students' learning. However, the active teaching method (participating in discussion and doing the real thing) impacted more on students' learning than the passive teaching method. This agrees with the report given by Salman [8], which says active learning method focuses on the learner interacting with the subject matter content of a course through active participation and generating of ideas, rather than being a passive listener and a mere receiver of knowledge. Salman further explained that active learning involves a dynamic process that encourages pupils' participation or involvement in creating new knowledge, and application of such knowledge to other professions and academics. It also enhances pupils' activeness, challenges, practical exposure and maximum retention. The passive teaching methods used also imparted on students' learning. From the findings of the study, hearing words (traditional lecture) was significantly effective than watching a video on students' learning. This findings disagree with the study of Abdulhamid [6], according to him traditional lecture method usually is one-way communication which allows for little or no audience participation and as a result students lose information and have poor retention of what is being taught. The findings of this study is not in accordance with the popular report in Edgar's cone of learning. According to the cone of learning, students retain and perform better in watching a video than just hearing words (traditional lecture). But the study found that hearing words (traditional lecture) impacted more on students' learning than watching a movie (video watching).

Conclusion

The findings of this study emphasize the need for secondary school teachers and educators who aim to reduce poor performance of students in both internal and external examinations to incorporate effective and most preferably active teaching methods in class as this method impacts more on students and increases their retention level.

Recommendation

From the findings of the study, the following recommendations are made;
• The Ministry of Education in the state should embark on enlightenment campaign on the need for teachers to employ teaching methods in classes that will best bring about learning.
• School time table be arranged such that subjects that require active teaching will be allotted more time.

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