International Journal of Innovative Education Research 10(4):122-127, Oct.-Dec., 2022

© SEAHI PUBLICATIONS, 2022 www.seahipaj.org ISSN: 2354-2942

Effect of Video Advance Organizer Strategy On Pre-Service Teachers' Retention And Gender In Colleges of Education Yobe State

[1]Muhammad Bukar & [2]Isa Kafaju

[1,2]Department of Curriculum and Instructions
Umar Suleiman College of Education Gashua, Yobe State, Nigeria
[1]mbukar3560@gmail.com/07032135596, 08124536702
[2]08064983172, 08088207788

ABSTRACT
This research work investigate the Effect of Video Advance Organizer Strategy on Pre-Service Teachers' Retention and Gender in Colleges of Education Yobe State. The research work will adopt quasi-experimental with pre, post-test and post-post-test. The population of the study will comprise of state colleges of education in Yobe state. The null hypothesis were to at 0.05 level of significance. The showed the effect of video advance organizer on NCE student's learning retention. As regard to the gender the video advance organizer does not have any effect on gender. Therefore the recommended that, the use of video advance organizer is an effective strategy that improves students' performance and retention.
Keywords: Video advance organizer, Pre-service teacher, Retention and strategy

INTRODUCTION

The contemporary youth, often described as digital natives, were raised with continuous access to personal computers, tablets and smartphones that can be connected to the internet, which allows interaction, in real time, with other people, news, opinions, statistics, etc. In other words, students have, nowadays, free access to an uncountable amount of information posted online every single day (Prensky, 2001). When digital natives interact in educational environments they tend to behave as active questioners and researchers, not as mere data receivers, in terms of education content such as historic facts, formulas, states and their capitals. This hierarchy rupture represented by the access to information and, consequently, the ways in which formal education is understood impacts directly the teacher's activities and requires urgent changes (Rafael, Diego and Clarissa 2021). Teachers are working to learn how to use technology to improve student learning and increase academic achievement. While the increase in the integration of technology in classrooms has been researched, there is a need for more with a focus on the middle and high school mathematics classroom (Minshew and Anderson, 2015). Technology provides unique challenges and benefits to the teaching and learning of mathematics. To greater understand how to support math teachers in their implementation of technology, their knowledge of technology, pedagogy, and math content must be understood, as well as their methods of and perceived barriers to technology integration.

The 21st century teaching and learning technologies are so flexible and inclusive that teachers need to wake up from their slumber and embrace these technologies if they want to be relevant in this era of Information and Communication Technology. Despite the facilities provided, school teachers are unable to integrate ICT in their educational practices and pedagogy (Adeyemi and Olaye 2010; Yusuf, 2005). Teachers ought to avail themselves with the appropriate technological disposition for the utilization of technologically driven ideas that will transform the teaching from the popularly acclaimed traditional method of teaching that is largely oratory to activity based instruction. What is

of utmost importance to any education system is what learners are able to learn and not just what teachers are required to teach (NCCE Minimum Standard, 2020). Learners need to be engaged actively in the learning process and their learning must be supported and monitored explicitly. Learning only becomes meaningful if it is centred on the learner and on the development of the learner's ever growing and challenging understanding and application of professional content knowledge, skills and attitudes. The new teacher education programmes aimed at producing professional teachers, from this perspective, it is essential that student teachers are also provided with opportunities to acquire the skills and the use of conventional teaching strategies and word's unfolding ICT in the generation and imparting of knowledge, attitudes, values and skills.

Statement of the problem

Research findings like Olayinka, (2008) have continued to reveal that our classrooms are heavily dominated by the use of traditional teaching methods (Barde, Ezugwu, Muhammad & Mustapha 2003).These methods emphasize procedure of instruction in which majority of learners are merely passive listeners, while teacher plays the role of dispenser of knowledge. Recent researches like Nuruddeen, (2013) have debunked the use of this mode of instruction because of inadequacies to solve and address learner's immediate problems. Therefore learners are to be actively involved in constructing knowledge and video advance organizers have such potentials (Ausubel, 2000). Reports and studies reveal that there is a difference in retention in the use of information technology gadgets between sexes, in African culture of northern Nigeria there is a lot of differences in gender social attitudes, the use of educational technology teaching methods may have an influence between the different sexes. The learner previous experience is important in the choice of teaching methods Bello, (2014) The use of video advance organizer as an ICT technological materials in teaching in recent time, attached the attention of education academic communities; the parent socio-economic status, community advancement among others, can affect student access, electronic devices programmes etc. Northern Nigeria communities are among, the poor and less advance societies of the world. Therefore, the main thrust of the study is to examine the effect of video advance organizer strategy on per-service teachers' retention and gender in College of Education Gashu'a Yobe State.

Objectives of the study

- To find out the effect of Video Advance Organizer on NCE II Geography students` retention levels in learning geomorphology concepts after treatment.
- To compare the difference between the academic performance of male and female students` when exposed to video advance organizer strategy in learning geomorphology concept after treatment.

Hypothesis

- **H_{o1}:** There is no significant difference in the retention levels of students taught using Video Advance Organizer strategy before after Treatment.
- **H_{o2}:** There is no significant difference between the performance of male and female Students taught using Video Advance Organizer strategy after treatment.

LITERATURE REVIEW

Advance organizers are of considerable value where the learner may not be able to recognize his or her prior knowledge as relevant and where the teacher wishes to focus students' attention on relationships among linked parts of an idea and on connections between parts and the whole. But it has elegantly argued that the use of advance organizers can enhance the relationship between cognitive structure and new material, thus facilitating students' performance (Shihusa and Keraro, 2009). And that video advance organizers and concept mapping if they are effectively utilized students would never be passive subjects in the learning process there by improving performance. A key requirement for the future is the need to prepare students to participate in the information society, where knowledge is the most crucial factor in the social and the economic development of a country (Spathis, 2004). The adoption of new Information Technologies and Communication has led to significant changes in both the structure and the functionality of education Belias Dimitrios, Sdrolias Labros, Kakkos Nikolaos, Koutiva Maria, Koustelios (2013).

Advance organizers are links that have capacity to introduce and also organize the new learning material and learners' experience. Meyer (2003) reported an advance organizer is information presented by an instructor that helps the student organize new incoming information. This is achieved

by directing attention to what is important in the learning material, highlighting relationships, and providing a reminder about relevant prior knowledge. Woolfolk, Winne, Perry and Shapka, (2010:43) has this to say;" video advance organizers make it easier to learn new material of a complex or otherwise difficult nature, provided that students understand the information presented in the organizer and the organizer must indicate the relations among the basic concepts and terms that will be used".

It is an ICT oriented strategy, with its potentialities of making learning to become real, immediate and permanent. In other words, it implies the use of introductory materials with a higher level of generality that introduces new material and facilitates learning by providing an "anchoring idea**"** to which the new idea will be attached. Cognitive theorist believed that it is essential to relate new knowledge to existing information learned. Teachers can facilitate learning by organizing information presented; so that new concepts are easily relatable to concepts already learned. Examples of devices that may be used include: pictures, short video segments, titles of stories, reviews of previous learned concepts. Since this organizers are introduce in advance of learning itself, the substantive content of a giving organizer or series of organizers is selected on the basis of its suitability for explaining, integrating, and interrelating the material they precede, this strategy simultaneously satisfies the substantive as well as the programming criteria for enhancing the organizational strength of cognitive structure.

Development of models of teaching is the recent innovations in teaching. They have been developed to help a teacher to improve capacity to reach more children and create a richer and more diverse environment for them. Model of teaching consists of guidelines for designing educational activities and environments. Important purpose of discussing models of teaching is to assist the teacher to have a wide approach for creating a proper interactive environment for learning. Intelligent use of these approaches enables the teacher to adopt him to the learning needs of the students. In teaching learning process, the learning of the student depends on various factors out of which method of teaching is the most important one. Presently teaching in most of the institutions is dominated by the conventional method which is easy to use but is not so effective. Students' non-performance in different subjects is due to poor understanding of concepts. Even poor understanding of concepts by teachers themselves and status quo of being untrained in the right method of teaching concepts can also be the probable reasons of non-performance of students. Different researchers tried to explore different areas to find effective methods of teaching Agnihotri and Sharma, (2013).

The pedagogic uses of computers necessitate the development, among teachers' and learners' skills and attitudes relating to effective use of ICTs. Beside, literacy, ICTs also facilitates leaning to programmed, learning to learn in subject areas and learning at home on ones' own, and these necessitate the use of new methods like modeling, simulation use of data bases, and guided discovery for the teaching of Geography Solomon, Catherine, and Okunamiri, (2011). Educators have shown increasing interest in the use of computers for classroom teaching during the last few years Olufunmi, (2008). Chen, (2007) argues that a teaching strategy that a teacher adopts is a strong factor that may affect learner's motivation to learn and hence has a direct impact on the resultant cognitive gain. A study by Nyabwa, (2005) has demonstrated the effectiveness of using advance organizers in the teaching of mathematics in secondary schools. Ejedafeta, (2007) believed that, there seems to be a general agreement among educators concerning the role played by teaching method and instructional strategy adopted by the teacher as a classroom variable in affecting student's performance, retention and attitude.

The computer-based education is an instructional strategy that has been acclaimed all over the world. For example a number of educationist and researchers has attested to the effectiveness of computer based strategy Olufunmi, (2008). Augustine, (2009) asserts that the dominance of teacher-talk in class instruction involves only the learners' sense of learning which practice could be boring after a while. Therefore the more the number of sense involves in the instructional process the more enduring the learning become. Indeed, the use of new technologies of Information and Communication transforms traditional teaching and assists the adaptation of new curricula and new courses in existing applications (Petridou and Spathis, 2001; Mohamed and Lashire, 2003) in Belias *et el*. (2013). Kompa (2012) posits that teacher-centered learning fosters a culture whereby the learner does not outgrow his dependency on the supervising instructors and In a nutshell, computer availability alone will not have an impact, policymakers and project leaders should think in terms of combinations of input factors

that can work together to influence learning. Coordinating the introduction of computers with national policies and programmes related to changes in curriculum, pedagogy, assessment and teacher training is more likely to result in widespread use and impact Kozma, in Cabrol and Severin (2013).

METHODOLOGY

This study employed quasi-experimental research design with post-test and post-post-test. The study will involve the use of experimental and control groups of NCE II Geography students, and digit of randomization were used to select the two groups. The experimental group (**EG**) were exposed to Video Advance Organizer (**X1**). And control group (**CG**) were taught using lecture method without treatment (**X0**). Post-test ($\mathbf{O2_A^I}$) were administered after the treatment to determine the effectiveness of two instructional methods on students' performance. As for the student's retention ability, Post-post-test ($\mathbf{O3_R}$) were administered to students after rearranging the serialization of the questions and options. The gender was determine after the post-test to
establish the differences in the students' ability of both male and female. The entire null hypothesis were verified at ≤ 0.05 level of significance with the aid of SPSS software, H_{o1} and H_{o2} were analyzed using comparative t- test.

RESULT

Hypothesis One

H_{o1} There is no significant difference between the retention level of students taught video advance organizer Strategy before and after treatment.

To test this hypothesis, the students' performance after posttest treatment that is (post-post-test) was computed using t-test statistical analysis as shown in Table 1.1

Actually, the expectation of this research showcase the influences and dominance of ICT based strategies in our classroom today. Researches have proven that ICT's tend to make students to be active participants and contribute more in the development of the lessons, they tend to dominate the activity of the entire classroom instead of being passive listeners.

Table 1.1: t-test Analysis of Students Learning Retention on Geomorphological Concepts for Experimental and control Groups (Post-Post-Test)

Within-Subjects	N	X	SD	SE	df	t_value	p_value	Remarks
Treated Group	30	16.27	4.56	0.84				
					29	2.86	0.008	Significant
Non-Treated Group	30	12.77	4.22	0.77				

Significant at the P ≤ 0.05 levels

From the statistics in Table 1.1 it can be deduced that, the level of students learning retention differ significantly before and after treatment on geomorphological concepts with t(29) = 2.86; while P = 0.008. This statistically testifies that, the ability of the two groups to retain geomorphological concepts differ significantly. Since P ≤ value (0.008) is less than 0.05 level of significance. Therefore hypothesis one is there by rejected and that the treated within-subject group retain the learning of geomorphological concepts better.

Hypothesis Two

H_{o2} There is no significant different between the performance of male and female students taught using video Advance organizer strategy after treatment.

The posttest scores of male and female students in the experimental group exposed to video advance organizer strategy was computed using independent t-test statistical analysis to find out the difference in their performance after the posttest treatment. The distribution of their test scores is shown in Table 2.

Table 4.4b: t-test analysis of males and females performance in the Experimental group exposed to video advance organizer strategy

Within Group	N	X	SD	SE	df	t_value	p_value	Remarks
Males	15	15.00	4.29	1.11				
					28	0.594	0.790	Not Significant
Females	15	14.00	4.91	1.27				

Significant at the P ≤ 0.05 levels

Results from Table 2 shows an insignificant difference between males and females performance in the experimental group exposed to video advance organizer strategy with t (28) = 0.594; P = 0.790 in the posttest treatment. Statistically since the P value 0.594 is greater than 0.05 then males and females performance is insignificantly different. Therefore the null hypothesis four is accepted and that video advance organizer strategy does not have any effect over gender after treatment.

DISCUSSION

Hypothesis One The findings of this study showed that there was a significant difference among students taught Video Advance Organizer strategy. And that Video Advance Organizer strategy improves students' ability to retain Geomorphological concept longer. This might be due to the fact that Video Advance Organizer strategy have the potentiality to make students remember more conceptual ideas and able to relate the previous concepts with present concepts. This is consistent with the findings of Sharma and Agnihotri, (2013); Adedeji, Folorunso and Adedeji, (2013); Mayer, (2002); Lee, (2009); Lin and Tsuiping, (2006); Yeh and Lehman, (2001); Mayer, (2000); that Video Advance Organizer strategy facilitate meaningful learning and retention. Video organizers like cartoon increases the students' understanding by providing a skeletal map that increases students ability to link new concepts with prior knowledge; therefore, increasing retention and recall (Dye, 2000; Hassard, 2005; Mosco, 2005). Advance organizers are therefore frameworks that enable students learn new ideas or information and meaningfully link these ideas to the existing cognitive structure and improve retention. Chinyere, (2011) says an effective and efficient use of Video Advance Organizer in instruction can favourably leads to effective as well as efficient learning and retention of landforms concepts.

Hypothesis Two revealed that there is no significant difference in the mean score of males and females students exposed to Video Advance Organizer strategy in the within-subjects group. The non-significant difference in the performance of male and female students agreed with findings of Adedeji, Folorunso and Adedeji (2013); Oloyede, (2011) who found insignificant difference in their research and that, the performance of males and females in the experimental group is almost equal. Similarly when males and females were giving opportunity to participate and compete among themselves, females have the capacity to perform very wonderful as their male counterpart. This is against the notion that females are weak and are subjected to many interpretations. Therefore this study proved that if given equal opportunity female can perform academically better as the male do.

RECOMMENDATIONS

1. It has been proven in this research that; learning is measured in terms of retention; this is due its power in equipping, motivating and enhancing students to recall future events. Therefore Yobe state Government as matter of agency should adopt this new strategy due its effectiveness in order improve retention, so that future events will be recall with more ease and by implication it improve performance. To achieve Yobe State Ministry of Education should equip our tertiary institutions with ICT gadgets and train teachers for the task ahead. Because Yobe state is one of the educationally backward state in Nigeria, so there is need for this new strategies to be implemented in order to improve and sanitize the entire educational sector.
2. The notion that males performs better than females counterparts does not come to way in this study, here gender is not a determining factor for students general performance. Therefore, it has been proved that females can compete with males if equal opportunity and conducive environment was giving more important video advance organizer strategy. Since Vide Advance Organizer strategy has proving to be gender friendly then Yobe state Government should pave way for the adoption and utilization of these ICT gadgets for the improvement of students cognitive ability to concepts faster with much of fairness since it is gender friendly.

REFERENCES

Agnihotri, K and Sharma, R. (2013). Effect of instructional material based on advance organizer model for teaching educational technology to B.Ed. students in terms of achievement and reaction, *Research Direction*. 1 (6) 1-6.

Ausubel, D. P. (2000). *The acquisition and retention of knowledge: A cognitive view*. Boston: Kluwer Academic Publishers.

Barde, A. I, Ezugwu, K. U, Muhammad, R. J & Mustapha Eva (2003). *Introduction to educational technolog*y, multimedia approaches, media and graphic No.257 Darma Quarters, Kano.

Belias, D. Sdrolias, L. Kakkos, N, Koutiva, M. Koustelios, A. (2013). Traditional teaching methods vs. teaching through the application of information and communication technologies in the accounting field: Quo Vadis? *European Scientific Journal*, 9 (28), 1857 – 7881.

Bello, A. M. (2014). *Analysis of students' performance using two dimensional media and conventional methods in teaching agricultural science in selected secondary schools in Zaria metropolis. Unpublished Thesis*. Educational foundation and curriculum faculty of education, Ahmadu Bello University Zaria.

Chen, B. (2007). Effects of advance organizer on learning and retention from a fully web-based class, *Unpublished Ph.D. dissertation*. University of Central Florida Orlando, Florida.

Kompa, J. S. (2012). *Disadvantages of Teacher-Centred Learning.* Retrieved 19/09/2013, 4:06pm fromjoanakompa@gmail.com.

Mayer, R. (2003). *Learning and Instruction.* New Jersey: Pearson Education, Inc.

Minshew, L and Aderson (2015) Teacher Efficacy in 1:1 iPad Integration in Middle School Science and Math Classroom. https://citejournal.org/volume-15/issue-3- 15/science/teacher-self-efficacy-in-11-ipad-integration-in-middle-school-science-and- math-classrooms/

NCCE Minimum Standard 2020.

Nuruddeen, A. I. (2013). Use of photoshop video tutorial instructional modes (PVTIM) for effective teaching of graphic arts in SS II. *NAEMT Proceedings of the 34th International Conference*. 1 (47-55).

Nyabwa, R. A. (2005). *Effects of advance organizers on form three students' mathematics self-concept and performance in commercial arithmetic in selected secondary schools in Nakuru District Unpublished Master's Thesis*, Egerton University, Njoro.

Olayinka, O. J. (2008). *Impact of computer-assisted and textual programmed instruction on pre-service teachers' learning outcomes in some environmental education concepts in biology. Unpublished Ph.D. Dissertation* University of Ibadan.

Olufunmi, A. (2007). *Effect of computer assisted instructional package on per-service teachers' knowledge, classroom practices and secondary schools learning outcomes in Christian religious studies. Unpublished Ph.D. Dissertation*. University of Ibadan.

Shihusa, H. & Keraro F.N. (2009). Using advance organizers to enhance students' motivation in learning biology. *Eurasia Journal of Mathematics, Science and Technology Education*. 5 (4), 413-420.

Solomon. I., Catherine. U. & Okunamiri. U. (2011). Integration of information and communication in to teacher education programme. *Journal of Educational Media and Technology*, l5 (2), 17-23.

Spathis, C. H. (2004). Use of information technologies and communication by business studies students. Proceedings of the 4th Conference in UTIC, Athens' University. Athens. Greece. *Instructional Science,* 8 (2), 133-167.

Woolfolk, A.E., Winne, P.H., Perry, N.E., & Shapka, J. (2010). *Educational Psychology* (4th ed). Toronto: Pearson Canada.

Yusuf, M. O. (2005). Information and Communication Technology and Education: Analysing the Nigerian National Policy for Information Technology. *International Education Journal, 2005,* Vol., 6(3), pp. 316-321