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EFFECT OF CONTEXT-BASED LEARNING ON ACADEMIC PERFORMANCE, INTEREST AND RETENTION IN PHYSICS AMONG SECONDARY SCHOOLS STUDENTS IN KATSINA ZONAL EDUCATION QUALITY ASSURANCE, KATSINA STATE – NIGERIA

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ABSTRACT

The study examined the effect of context-based learning on academic performance, interest and retention in Physics among secondary school students in Katsina State, Nigeria. The study developed six objectives, answered six research questions and tested six research hypotheses. The study adopted Quasi-experimental research design. The population of the study comprised of 12,853 students from twenty co-educational public secondary schools in Katsina Zonal Education Quality Assurance. Two schools were selected based on cluster and intact classes were used in each school with a sample size of 149 students. A validated instruments namely Physics Performance Test (PPT) and Physics Interest Questionnaire were used for data collection.

Introduction

The formulation of policies to govern the running of education programme in Nigeria has witnessed active participation by non-governmental agencies, communities and individuals as well as government at various levels. Education plays a vital role in an attempt to maintain productive life. It improves the value and excellence of one's life as well. Education influences self-assurance and provides us with the things we need to partake in today's world. It

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The reliability coefficient of the PPT and PIQ was obtained using Pearson Product Moment Correlation Coefficient and Crobach Alpha which was 0.89 and 0.87 respectively. The Research questions were answered using mean and standard deviation, while null hypotheses were tested at $p<0.05$ level of 'significance using t-test independent sample. The major findings revealed there was a significant difference in the mean academic performance, interest and retention level between experimental and control group in favor of experimental group, it was concluded that the students taught Physics using context based learning perform significantly better than those taught using lecture method. The study recommended among others that Physics concepts should be taught using context based learning approach which allows active participation of the students.

KEYWORDS : PERFORMANCE, INTEREST, , RETENTION, CONTEXT-BASED PHYSICS

makes human beings more independent and aware of what is going on in the world today, along with the awareness of opportunities and rights. It offers a greater understanding of one's capability and potential as well (Campbell, 2021). Science and technological advancement flourished well especially in the 19th, 20th and 21st centuries due to science education popularized in schools.

Science education has become a useful tool for National Development. Science education refer to the cultivation and disciplining of an individual to utilize science for improving his/her life, cope with and increasingly technological world or pursue science academically and professionally and for dealing responsibly wit science related social issues (Akpan, 2021). Science education entails the teaching and learning of science process and principles. The role of science education in the lives of individuals and in the advancement of science and technology for the development of mankind and the society in general is very crucial. Scientific literacy, which is the gateway to achieve scientific and technological advancement and economic survival, is achievable through science education. The impact of science on a nation and its citizens could be seen from the production of basic human needs to social, political, educational, technological and economic advancement. The steps scientists take during scientific investigation (Science processes) and scientific products draw the

attention of the society to the fact that science makes life comfortable. According to Aina (2014), Science education is fundamental to technology of any nation of the world.

The goals of science education in Nigeria are geared towards the cultivation of inquiring and rational minds for the conduct of a good life and democracy; production of scientists for national development; service studies in technology and the cause of technological development; Provision of knowledge and understanding of the complexity of the physical world, the form and the conduct of life (Aina, 2014). Physics is one of the most fundamental science disciplines. It is natural science that studies matter, its motion and behavior through space and time, and that it studies relate entities of energy and force. Physics is one of the oldest academic disciplines and by virtue of its inclusion of astronomy; it is perhaps the oldest (Krupp, 2020). In senior secondary school physics, the basic branches include: mechanics and properties of matter, sound, optics, nuclear physics among others.

Physics deals with study of matter and energy. The application of physics is directly or indirectly unavoidable in electrical engineering, electronics, telecommunications, construction, architecture, traffic, mechanical engineering, technology, veterinary medicine, pharmaceutics, physics, biology, agriculture, military skills, mining, forestry, meteorology, astronomy, economy, philosophy, sociology, psychology among others. Almost every life field has some relation with Physics like organisms or inanimate, from Engineering to Mathematics, Biology, and Physics (Ukoh, 2021). Without Physics science knowledge, man will face difficulties in exploring the universe (Ghozali, 2021). Furthermore, understanding of Physics helps to understand the content of universe. For students, it helps to develop the observation skill, accuracy, analysis ability and creative thinking (Mekonnen, 2020). Acquisition of Physics science knowledge, which is now very required, cannot be avoided by students (Ukoh, 2020).

Science education comprises of Biology, Physics and Chemistry. According to Aina (2014) these three subjects are the tripod on which the world's technology rests upon. According to Akpan (2021) Aina (2014) lament that, students' performance in these physics in both internal and external examination is not good enough for the future development of science and technology in Nigeria. Students' mode of response to questions related to Mechanical Energy is poor. According to West Africa Examination Council (WAEC) chief examiner's report regarding the May/June 2021 WASSCE, majority of the candidates could not

correctly define Machines nor were they able to differentiate the types of machines.

The underlying evidence to this pitiful situation of poor academic performance could be traced to the teacher's classroom practices. Omebe and Akani (2021) opined that, science is resource' intensive as such effective teaching of science requires teaching learnings. Onasanya and Omosewa (2020) argued that, no matter how well trained or qualified a teacher is, if the teacher lacks a good teaching method, he/she will fail to put his ideas into practice.

However, it has been observed that the use of traditional modes of teaching physics is still prevalent in our secondary schools. Such an approach hinders students' acquisition of concepts, and eventually affects the development of conceptual understanding of physics. According to (Wulan, 2020) the present system is nevertheless examination-driven. According to (Nikolaos, 2019) teaching has been done, mostly, by conventional sophisticated or teacher-centered learning rather than modern student-oriented applications and techniques, instead of understanding of the concepts and laws, thereby applying them in everyday life. Rote learning has become the unavoidable means to get through the various stages of examinations. Traditional method being utilized by many physics teachers has negative effect on students' abilities and hinders the development of conceptual understanding in all subjects including physics (Keinonen, 2020).

Methods of teaching such as context based learning are suggested for the effective teaching of some topics in physics such as motion, force, and conservation of mechanical energy, machines and types of machines. context based learning are concerned with the tactics teachers use to meet teaching objectives, including instructional organization and techniques, subject matter, and the use of teaching tools and materials. Edwards (2020) asserted that, the use of helps students to learn abstract concepts in physics. Obviously, most concepts in physics seems to be abstract. Machines and types of machines are mostly described by teachers which often create confusion in the minds of the students. Sometimes, curious students are forced to raise questions as to the reality of the existence of physics concepts taught in class.

Academic performance has to do with how well students meet up with educational standards; aims, goals and objectives of education set up for them at a particular time. According to Nkiru (2021) academic performance can be defined as the notable action or achievement. It is a word that describes starting

of events, extra-ordinary for any person to perform excellently in academics, the person must be naturally endowed, be determined and also make concerted effort to improving his/her effort. Academic performance refers to students‟ progress, understood as the level of learning and comprehension. To improve students' academic performance the use of innovative teaching strategies can be used for effective teaching and learning physics concepts and therefore leading to student's academic interest and retention.

Interest can be said to be a feeling that accompanies or causes special attention to an object or class of objects. It is the feeling that gingers somebody to act towards or against something in the environment. Interest is an important variable in learning because when one becomes interested in an activity, one is likely to be more deeply involved in that activity and is therefore likely to achieve higher. Salisu (2021) defined interest as a feeling of curiosity or concern of subject, topic (in this case digestive concept) that make attention toward it. Interest can be expressed through simple statements, made by individuals, of their likes and dislikes. It can also be through overt actions or activities being performed by the individuals/ students. People have a tendency to devote more effort, time, resource and energy to the activities they like. It therefore implies that when children are interested in an activity, they tend to persevere, spend time and even undertake extra work to do it well. Simply put, interest can influence how well student learn. Mamman and Bakori (2019) put interest as a critical cognitive and effective motivational variable that guide attention, facilitate learning in different content areas, for all students of all ages, and develop retention.

Retention on the other hand is the ability to store what has been learnt and recall what has been stored in the memory. According to Gab (2021) retention is the ability to retain and later remember information or knowledge gained after learning into memory. The nature of the materials to be coded contributes to the level of retention in terms of meaningful, concreteness and image evolving characteristics (Gab, 2021). The term retention and perception are frequently employed interchangeably. Attempts to differentiate the terms have not been successful. For example, it has been suggested that retention is an institutional-level measure of success, and that persistence is an individual or gender-level measure of success (Hag, 2019).

Gender is a specially constructed phenomenon that is brought about as society ascribes different roles, duties, behaviours, and mannerisms to the two sexes,

(Mangvwat, 2020). It is a social connotation that has sound psychological background, and it is used to refer to specific cultural patterns of behaviour that are attributed to human sexes. Gender relates to cultural attributes of both males and females (Akpochafo, 2020). Gender according to Mangvwat (2020) is a psychological experience of being a male or female. It has to do with personality and central components of self-concept. Unlike sex, which is concerned with, only the distinction between male and female based on biological characteristics, gender encompasses other personality attributes as roles, orientation and identity based on individual's conceptualization of self. For instance, Kizlik (2021) opines that gender refers to a socio-cultural construct that connotes the differentiated roles and responsibilities of men and women in a particular society. This definition implies that gender determines the role, which one plays in relation to general political, cultural, social and economic system of the society. Against this background, it is deemed necessary to empirically determine the Utilization of Context Based Learning in improving Interest, Performance and Retention in Secondary Schools on physics students' performance in machines while using gender as moderating variable.

Statement of the Problem

Teachers, parents and other stakeholders in Science Education have been worried about the poor performance of students in both internal and external examinations. In spite of the important position of physics among other science related disciplines, literature revealed that, students' performance in physics at Senior Secondary Schools Certificate Examination (SSCE) has been consistently poor (Njoku, 2019). It has been observed that students purposively develop phobia anytime physics is mentioned because they see physics as a difficult subject to learn and therefore loses interest in the subject, this in turn results in students' poor performance in physics (Abdullah, 2020). Students' academic performance has been the immediate indicator for the effectiveness of the school system. The planning of the school programme and its objectives are translated in to classroom practices. The effect of the school programme can only be observed in the performance of the students. Unfortunately, the students' performance is not something to talk about as the situation is too worrisome.

The struggle to improve students' under performance in physics is imperative because Science and Technology is a gateway to National Development. Physics is an important science subject relevant for advanced studies in medical science,

textile technology, agricultural science, synthetic industry, printing technology, pharmacy, chemical engineering among others. Students must demonstrate mastery of physics and score at least a credit pass in WASSCE or NECO SSCE before he/she can be admitted into university to study any of the above mentioned courses. If students' poor performance in physics persists, it will not only affect the future of the students but the nation as a whole. The plan to advance science and technology in the country as planned by the Federal Republic of Nigeria will remain a mere dream.

Students' poor performance is a function of teachers' lack of usage of appropriate teaching methods like context based learning to illustrate concepts perceived as difficult (Basiriyu, 2019; Abdullah, 2020). The use of context based learning in teaching and learning situation especially in a physics class may play a vital role in increasing physics students' academic performance in Senior Secondary School, hence the study seeks to find out the utilization of context based learning in improving interest, performance and retention of Secondary School Students' performance in physics in Katsina Zonal education quality assurance.

Objectives of the Study

The study is set to examine the utilization of context based learning in improving academic performance, interest and retention of physics students in secondary schools of Katsina state Nigeria. Specifically the study intends to achieve the following objectives:

1. Determine the effect of context based learning on students' performance in physics among secondary schools of Katsina zonal education quality assurance.
2. Examine the effect of context based learning on students 'interest in physics among secondary schools of Katsina zonal education quality assurance.
3. Determine the effect of context based learning on students' retention in physics among secondary schools of Katsina zonal education quality assurance.
4. Find out the difference in the mean performance of male and female students when exposed to Context based learning.
5. Find out the difference in the mean rank of male and female students interest when exposed to Context based learning

6. Find out the difference in the mean retention of male and female students when exposed to Context based learning.

Research Hypotheses

The following null hypotheses will be tested at 0.05 level of significance

H_{01}: There is no significant difference in the mean academic performance scores of students taught physics using context based learning and those taught using Lecture Method in senior secondary school of Katsina Zonal Education Quality Assurance.

H_{02}: There is no significant in the mean interest scores of students taught physics using context based learning and those taught using Lecture Method learning in senior secondary school of Katsina Zonal Education Quality Assurance.

H_{03}: There is no significant difference in the mean retention scores of students taught physics using context based learning and those taught using Lecture Method in senior secondary school of Katsina Zonal Education Quality Assurance.

H_{04}: There is no significant difference in the mean academic performance scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance.

H_{05}: There is no significant difference in the mean interest scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance.

H_{06}: There is no significant difference in the mean retention scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance.

METHODOLOGY

The study adopted pre-test post-test quasi experimental and control group design. The study has two groups; experimental group one (EG) will be exposed to experimental treatment (X_1), involving the use of Context Based Learning while the control group (CG) were not be given special treatment. The two groups were taught Mechanical Energy concept for a period of six weeks using the different instructional strategy (Context based learning and Lecture method). Pre-test (O_1) was administered before treatment to both experimental and control groups. Post-test (O_2) was administered after the six weeks of treatment

and then followed by post posttest after a period of 2 weeks from posttest administration.

The population of this study comprised of all the senior secondary school two students (SSII) offering Physics in Katsina Zonal Education Quality Assurance of Katsina State. The Zone consists of three Local Government Area; Katsina, Kaita and Jibiya Local Government Area. At the time of conducting this study, there are a total of twelve thousand eight hundred and fifty-three (12,853) students spread across the 24 secondary schools in the zone, out of which 6,774 (52.7%) are males and 6,079 (47.3%) are females. This cohort was chosen because they have get acquainted with the school environment unlike the year one (SS I) students who are still novice and year three (SS III) students who are preparing for exit exams.

The schools in the population were grouped into three clusters and one school was selected from each cluster. The researcher wrote the names of all twenty five public schools on pieces of papers according to their Local Government Area and then picked at random to select one experimental, one control groups and the other one for reliability measure. The study has a total of 149 students as sample (86 male and 63 female) drawn from two schools in the study area. In each school, intact classes were selected. The intact classes comprise of both male and female students.

Instrumentation

The instruments used for data collection were Physics Performance Test (PPT) and Physics Interest Questionnaire (PIQ). PPT consist of 40 items multiple choice question lettered A-D. The items were obtained from a collection of West African Examination Council (WAEC) and National Examinations Council (NECO) past assessment items on Physics. The items covers the entire unit to be taught by the researcher on the area of Mechanical Energy and are in line with the National Physics Syllabus for SSII. The instruments reliability coefficients were determined through the use of Cronbach Alpha and it ensured the measurement of internal consistency of the instrument to be use. The reliability coefficient for the PPT and PIQ were 0.708 and 0.707 respectively. This reliability coefficient shows that the instruments are reliable.

RESULT

H_{01}: There is no significant difference in the mean academic performance scores of students taught physics using context based learning and those taught

using Lecture Method in senior secondary school of Katsina Zonal Education Quality Assurance.

Table 1: t-test Analysis of Academic Performance Score between Experimental and Control Group

Groups	N	Mean	Std. Dev.	Df	t value	P value	Remark
Experimental	77	34.83	3.21	147	26.651	0.00	Significant
Control	72	21.29	2.98				

Significant at $P \leq 0.05$

Table 1 Shows that ($t = 26.65$, P-value $= 0.00$, $df = 147$). Since the p-value of 0.00 $<$ alpha value $= 0.05$), there is significant difference between the mean academic performance scores of students taught physics using context based learning and their counterparts taught using lecture method. The difference is in favor of experimental group. Therefore, the null hypothesis which states that there is no significant difference between the mean academic performance scores of students taught physics using context based learning and those taught using Lecture Method in senior secondary school of Katsina Zonal Education Quality Assurance rejected.

H_{02}: There is no significant in the mean interest scores of students taught physics using context based learning and those taught using Lecture Method learning in senior secondary school of Katsina Zonal Education Quality Assurance.

Table 2: t-test Analysis of Students Interest between Experimental and Control Group

Groups	N	Mean	Std. Dev.	Df	t value	P value	Remark
Experimental	77	63.69	6.79	147	21.81	0.00	Significant
Control	72	42.00	5.18				

Significant at $P \leq 0.05$

Table 2 Shows that ($t = 21.81$, P-value $= 0.00$, $df = 147$). Since the p-value of 0.00 $<$ alpha value $= 0.05$), there is significant difference between the mean interest scores of students taught physics using context based learning and their counterparts taught using lecture method. The difference is in favor of experimental group. Therefore, the null hypothesis which states that there is no

significant difference between the mean interest scores of students taught physics using context based learning and those taught using Lecture Method in senior secondary school of Katsina Zonal Education Quality Assurance is rejected.

H_{03}: There is no significant difference in the mean retention scores of students taught physics using context based learning and those taught using Lecture Method in senior secondary school of Katsina Zonal Education Quality Assurance.

Table 3: t-test Analysis of Students Retention between Experimental and Control Group

Groups	N	Mean	Std. Dev.	Df	t value	P value	Remark
Experimental	77	34.49	5.26	147	18.15	0.00	Significant
Control	72	21.53	3.05				

Significant at $P \leq 0.05$

Table 3 Shows that ($t = 18.15$, P-value $= 0.00$, $df = 147$). Since the p-value of $0.00 <$ alpha value $= 0.05$), there is significant difference between the mean retention scores of students taught physics using context based learning and their counterparts taught using lecture method. The difference is in favor of experimental group. Therefore, the null hypothesis which states that there is no significant difference between the mean retention scores of students taught physics using context based learning and those taught using Lecture Method in senior secondary school of Katsina Zonal Education Quality Assurance is rejected.

H_{04}: There is no significant difference between the mean academic performance scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance.

Table 4: t-test Analysis of academic performance between male and female students in Experimental Group.

Groups	N	Mean	Std. Dev.	Df	t value	P value	Remark
Female	33	35.36	3.23	75	-1.267	0.209	Not significant
Male	44	34.43	3.17				

Significant at $P \leq 0.05$

Table 4 shows that (t -1.267, P-value = 0.209, df = 75). Since the p-value of 0.00 > alpha value = 0.05), there is no significant difference between the mean academic performance scores of male and female students taught physics using context based learning. Therefore, the null hypothesis which states that there is no significant difference between the mean academic performance scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance is retained.

H_{05}: There is no significant difference in the mean interest scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance.

Table 5: t-test Analysis of Interest between male and female students in Experimental Group.

Groups	N	Mean	Std. Dev.	Df	t value	P value	Remark
Female	33	62.00	7.40	75	1.923	0.058	Not significant
Male	44	64.95	6.08				

Significant at P ≤ 0.05

Table 5 shows that (t 1.923, P-value = 0.058, df = 75). Since the p-value of 0.00 > alpha value = 0.05), there is no significant difference between the mean Interest scores of male and female students taught physics using context based learning. Therefore, the null hypothesis which states that there is no significant difference between the mean interest scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance is retained.

H_{06}: There is no significant difference in the mean retention scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance.

Table 6: t-test Analysis of Retention between male and female students in Experimental Group.

Groups	N	Mean	Std. Dev.	Df	t value	P value	Remark
Female	33	32.91	2.83	75	2.340	0.022	Significant
Male	44	35.68	6.34				

Significant at P ≤ 0.05

Table 6 shows that (t 2.340, P-value = 0.022, df = 75). Since the p-value of 0.00 < alpha value = 0.05), there is significant difference between the mean retention scores of male and female students taught physics using context based learning. Therefore, the null hypothesis which states that there is no significant difference between the mean retention scores of male and female students taught physics using context based learning in senior secondary school of Katsina Zonal Education Quality Assurance is rejected.

Discussions of Findings

The results of data analysis reveal that there was a significant difference in the mean academic performance, interest and retention between those taught physics using Context based learning and those taught using lecture method, among senior secondary schools in Katsina state Nigeria, in favor of students in the experimental group. This finding is line with that of other researchers that reported context based learning approach to have significantly enhances students' academic performance, interest or retention.

Finding number one indicated that Students taught physics concept using context based learning approach performed academically better than their counterparts exposed to lecture method. This is so because, context based learning engages, informs and allows for practice within each lesson. This finding is line with that of Olatoye (2011) reported that context based teaching methods significantly improved students' achievement in organic chemistry, but practical method is significantly better than context based teaching methods when compared. This finding is also in agreement with the findings of Pepple (2014), Githae (2015), Ishaq (2015), Musa (2015) and Waziri (2015) who in their separate studies all reported that Context Based method enhanced students' academic achievement. However, Ugama (2016) and Nwanekezi and Cheta (2018) reported on contrary to this finding that practical learning fosters students' achievement in basic science than context based learning approach.

In addition, finding number two revealed that Students taught physics concept using context based learning approach developed higher positive interest better than their counterparts exposed to lecture method. This finding agrees with that of Githae (2015) who reported that there was a statistically significant difference in motivation to learn between the experimental and control groups in favor of experimental groups. Similarly, the finding agrees with that of Korkmaz (2016) who reported that cooperative and context based learning enhanced interest of

the knowledge among students. Oyarole (2016) also supports this finding by reporting that context based instructional strategy is significant in the enhancement of the academic performance and interest of ecology concepts among formal and concrete ability students.

Finding number three indicated that context based learning approach appears to be activity-oriented method that simulate students to action and significantly improve their retentions as reported, this finding is in line with that of Dada (2021) which revealed that Context Based learning affects students' achievement and retention and there was no gender influence on students' achievement. Similarly, the finding is in agreement with that of Bika, and Joseph (2021) as well as Bika and Sule (2019) in which in both studies it was revealed that there is significant retention of what have been learnt by the students when taught using context based instructional strategy as compare to the lecture teaching method. This means that when context based learning approach is used teach, it enhances the students retention ability, this finding could be attributed to manner in which lesson was delivered to the students. In this model, learners' active participation was ensured as asserted by Astin's theory of 1984 that aids in quick remembering as suggested by the theory.

Similarly, finding number four revealed that there was no significant gender difference in terms of academic performance when physics students are taught using context based learning approach. This implies that both male and female students taught using context based learning performed at almost the same pace. This finding agrees with that of Olatoye (2011), Pepple (2014), Githae (2015), Waziri (2015), Ugama (2016) and Williams and Akpan (2017) all reported that Male and female students do not significantly differ in their performance when exposed to context based learning approach by implication, context based learning approach is gender friendly in terms of performance. However, Atoo (2018) reported female students to have a slightly higher performance scores compared to the male students when exposed to context based learning.

Finding number five revealed that male and female students exposed to context based learning approach do not differ significantly in their Interest. This finding is in line with that of Olatoye (2011) who reported that effect of treatment (context based learning) on moderating variables (gender and self-concept) is not significant. Similarly, Oyarole (2016) reported that the interest of both male and female students in the experimental group improved equally. On the

contrary, the finding disagrees with that of Williams and Akpan (2017) whom reported that gender has effect on most instructional strategies.

Finding number six revealed that male students taught physics concept using context based learning approach are significantly better than their female counterparts in their retention ability. In contradiction with this finding Oyarole (2016) reported that both male and female students in the experimental group retained what they learnt equally. However, Atoo (2018) reported that students taught using Context Based strategy improved significantly in their mean retention score against those taught using conventional method and that the female students gained slightly higher retention scores compared to the male students. This finding is similar to that of Bika and Sule (2019) whose finding revealed significant gender difference in retention in favour of the male students when taught using Context Based learning, however, gender interaction effect is not significant. Both findings are in agreement with this finding.

Conclusion

Based on the findings of this study, the following conclusion was drawn:

i. Context based learning approach improves students' academic performance in physics in respective of their gender.
ii. Context based learning approach helps in improving interest of both male and female students in physics as indicated by insignificant gender difference in the interest mean score of male and female students.
iii. Students taught concepts through context based learning retained the concepts better than their counterpart taught using Lecture method.
iv. However, the male students exposed to context based learning retained better than their female counterparts in the same group.

Recommendations

Based on the findings of this study, the following recommendations were made

i. Physics concepts should be taught using Approaches, methods and techniques like Context based learning that allows active participation of the students
ii. Since Lecture method was found to be less effective in this study with respect to students' academic performance and retention, therefore teachers should be discouraged from using it in teaching.

iii. Physics teachers should be encouraged to use Context based in teaching physics in order to improve students' academic performance, interest and retention.

iv. Teachers should also be encouraged to use Context based learning in teaching in order to improve students' performance and interest irrespective of gender because Context based learning is a gender friendly teaching technique with regards to academic performance and interest.

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