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EFFECT OF LEARNER-CENTERED TEACHING METHODS ON THE ACADEMICACHIEVEMENTS OF SLOW LEARNERS IN ANKPA EDUCATION ZONE, NIGERIA.

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Abstract

This study examined the effect of learner-centered activity-based teaching method on the academic achievement of slow learners in physics. For the purpose of the study, one hypothesis was formulated and tested at 0.05 level of significance. The population of the study is twenty (20) senior secondary, 2 students both boys and girls identified as slow learners. The design of the study is quasi experimental. It adopted a pre-test, post-test, design. The instrument of data collection was a 60-item teacher made Physics Achievement Test which was validated and reliability index of 0.75 established by equivalent forms method. The hypothesis was tested with t-test and it was found that the achievement of slow learners in Physics could be enhanced by teaching them is small groups using the learner-centered activity-based teaching method. It is recommended amongst others that teachers should employ adequate techniques to identify slow learners so as to address their inadequacies early. Teachers should also use adequate teaching techniques in teaching their lessons bearing in mind that slow learners are part of the class.

Background to the Study

Sciences generally known to be a body of knowledge which involves the study of nature and natural phenomenon through experiments, observations, testing etc. There are two areas in the world of science namely Physical science and Biological Science. Subjects Grouped under Physical Science includes Physics, Chemistry, Engineering etc while Biological Science includes Biology, Zoology, Botany, Microbiology etc. The environment for students in these vocations in tertiary institutions and their performance are usually affected by misconceptions that such vocations or courses are meant for those with high cerebral dispositions and no slow learners, late bloomers nor underachievers (Dakat, 2020).

Education reforms seeking to make schools and classrooms more effective have proposed that curriculum and instruction should be restricted so as to engage students in meaningful problem solving activities (Ajeka, 2023). There is a constant reminder that learning should be captivating to maintain students` interest and participation. Students learn in various ways including seeing and hearing, reflecting and acting, reasoning logically and intuitively, memorising and visualizing, drawing analogies and building mathematical models (Felder & Silverman, 2024). Teaching methods also vary, some teachers lecture, other demonstrate or discuss while other focus of principles, projects, assignments, debates etc. How much a given student learn in class is not only determined by that students` native ability and prior preparation but also the compatibility of his or her learning style and the teacher`s teaching technique. In other to meet multiple learning goals, teachers need to practice alternative techniques in the delivery of instructions since students are diverse in their learning needs and learning styles. This study is interested in the learning needs of some students grouped as slow learners. A slow learner is the student who has great trouble with academic discipline resulting from inability to learn quickly as his peers (Dakat, 2020).

Ah (2017) believes that inefficiency and slowness are traits of slow learners. The learner`s process which starts at the learner`s expectation based on previous knowledge or experience and ends with receiving feedback (Ajeka, 2019), is inefficiently managed and therefore slowed down. Shaw (2019) and Westwood

(2012) list the characteristics of slow learners as low test scores, low self esteem and constant failure. Their ability to retain and recall information for short periods is highly impaired. Slow learners often find it difficult to relate events to each other and this makes them rely heavily on external help since they lack confidence in their problem solving skills. Slow learners are a population that tends to fail academically. Therefore the first step is helping them break the circle of failure using varied techniques that foster their learning of concepts. One of such concepts in the Activity Based Learner Centered teaching method. The learner centered teaching method is a classroom technique in which consideration for the child is at the center of all plans for teaching and learning activities (Ajeka, 2023). There is cooperative planning activities by teachers and pupils. The teacher acts a guide and a facilitator while the pupil plays active parts in the learning process. This method involves group work, paired work, whole class tasks and individualized instruction as must be necessary at specific stages in lesson delivery. This the lesson not to be boring since varied activities are involved.

The learner teaching method has little rooms for disciplinary problems as all pupils are busy and active in the class with relevant resources at the same time (Ajeka, 2023). The basic needs of the learners are highly emphasized and the child assumes greater responsibility for his or her learning. This makes learning fun and as such, learners are more interested in the school work.

Ajeka (2023) notes that the learner centered approach is not only desirable but indeed imperative for our school to offer the students the expected high quality teaching and learning. He outlined the conditions needed to achieve this to include professional training of teachers to implement the method availability of material/resources required for teaching and learning, incentives such as praise, encouragement and recognition of students, flexible time table etc.

This study is partly in the mastery learning theory propounded by Carroll (2024) in which he theorized that students` aptitudes are reflective of an individual`s learning rate. Traditionally, differences in the rate of learning were viewed as ability or intelligence. Further, intelligence was seen a relatively fixed and innate. From this perspective, the explanation for students` poor performance in mathematics for instance, would be seen largely as lack of

ability in solving mathematical problems. (Agudelo Valderrama, 2024, Encyclopedia Americana, 2022, Gbamanja, 2004 Threfal, 2024).

Carroll`s (2024) thoughts produced a fundamental change in the thinking about the characteristics of instructions of instruction. In this theory, learning outcomes vary for reasons that were both external and internal to the learner. The two external factors are (a) the opportunity to learn (That is, time allowed for learning) and (b) The quality of instruction. The internal factors are (a) The amount of time needed to learn a task given optimal instructional conditions (aptitude). (b)The ability to benefit from instruction and (c) the amount of time a learner is willing to engage in active learning (perseverance).

Impressed by Carroll`s ideas, Bloom (2024: 12) developed the concept now known as Mastery Learning. He concluded that the aptitude could:

1. Predict a learner`s learning rate, then set the degree of learning expected of a student, to some level of mastery performance.
2. See to the instructional variable under an instructors control such as the opportunity to learn and the quality of the instruction.
3. The instruction should ensure that each learner attains the specific objective.

Bloom concluded that given sufficient time and quality instruction, nearly all learners could. The theory of mastery learning resulted in a radical shift in responsibility for teachers. The blame for a student`s failure rests within instruction not a lack of ability on the learner. In this type of learning environment, the challenge becomes providing enough time and employing instructional strategies so that all learners can achieve the same level of learning (Bloom, 1981, Levine, 2017, Young & Rees 2017).

In the context of this study, which is on slow learners in Physics, the concern is the ability of the learner to benefit from instruction. The learner should not be left with his or her fate without any attempt made to help him or her overcome the peculiar handicap. It is contended in this study that learner-centered teaching method could foster learning and achievement of slow learners in Physics. This is in effect what this study is designed to explore.

Several scholars have defined techniques of instruction as being either student or teacher centered. Omachi (2024) sees technique as a detailed learning

activity usually of a short duration, used during an instruction process for a specific purpose. The specific purpose here is to help learning take place. Agwu (2001) states that a technique is a plan, trick or strategy employed to achieve an immediate objectives. In which case this plan employed must be an already stated objective. Ejifugha (2023: 73) asserts that it is a creative effort made by teacher to design means of achieving instructional objectives. In each of the definitions stated, it is very clear that an activity instructional objectives. In each of the definitions stated, it is very clear that an activity is introduced into the normal process of teaching to help teacher achieve the institutional objectives set for the lesson. The major aim of instruction is to foster learning but in the process certain difficulties realized need to be address to maximize learning.

Rose (2024) identify effective teaching practices of successful teachers as teaching in small groups with activity base and a continuous guiding of students systematically thus providing all with opportunities for success. They found out that these techniques worked well with slow learners. Sturomski (2024) supports the above by adding them in order to make slow learners assume responsibility for their learning, small groups should be used for instruction. He asserts that immediately they are able to retain and recall through these techniques, their confidence and self concept increase making them value themselves and learning becomes interesting to them. According to Tola and Olu (2017a), Ajifa (2017), and Wood & Jones (2024), struggling learners` also known as slow learners require the use of small groups of four as this will help to maximize attention given to individuals. Since their attention span is limited, interaction within the group as well as teacher`s ability to effectively watch in groups is effective in building their self esteem.

Most slow learners are bored and restless in the class, sometimes hanging their head down and wondering when the teacher would shut up and leave. When small groups are however employed with the active instructions, the teacher is able to observe every learner and also give attention where and when necessary (Tola & Olu, 2017, Ajifa, 2017).

Since slow learners are a population that tends to fail academically, this suggests that the constant low performance of the slow learner makes him of her begin to lose interest in most school subjects especially the sciences, of which Physics is one and Mathematics. Ali (2019) opines that it is more disturbing when the student has faced approximately diagnose and then left to his or her

fate with almost no predisposed attempt made to help overcome this peculiar handicap.

The problem of this study is therefore, posed as a question is: what is the effect of the learner-centered, activity-based teaching method on the academic achievement of slow learner in Physics One Null hypothesis was formulated and testdat 0.05 level of significance.

There is no significant difference between the achievement of slow learner taught Physics in a general class by conventional teaching method and achievement when taught in small groups using the learner-centered method.

Method

The research adopted, pretest treatment, post test simple variable experimental design. The population of the study consists of twenty (20) senior secondary school students` slow learners who are offering Physics. The slow learners were identified by one of the researchers who teach Physics, who taught them Physics in senior secondary I and also senior secondary II. The slow learners were exposed to general teaching by conventional teaching with members of the class and a pre-test of 60 item tests of Physics validated by experts in Physics content validity using table specifications. The same slow learners were taught just using small group learner-centered method and a post-test of validated 60 item test were given. Equivalent or parallel forms method of determining reliability used. The co-efficient of equivalence was determined and found to be 0.75. students` t-test was used for data and analysis to test the hypothesis.

Results

Pre-Test	Post-Test	
Sample (n)	20	20
Mean (X)	20	25.75
Standard Deviation (S)	3.406	5.7695
T-Cal		3.839
T-tab		2.006

Since t-calculated (3.839) is greater than t-tabulated (2.006) at 0.05 level of significance, the null hypothesis would be rejected and the alternative hypothesis which state that there is a significant difference in the achievement of slow learners in Physics using the learner-centered teaching method is accepted.

Discussions of Findings

The null hypothesis was rejected and accepted that there is a significant difference in the achievement of slow learners in Physics using the learner centered teaching method. The result of this study shows that the experimental group of slow learners obtained a greater mean on the achievement test when they were taught in small groups using learner centered teaching than when they are taught in the general class. The t-calvalue yielded 3.839 and the t-tab was 2.006 at 0.05 level of significance. This shows a significance difference due to treatment. It follows therefore that the small group and learner centered teaching method is a potent technique for improving slow learner`s achievements especially in Physics.

The findings of this study are consistent with the findings of earlier works (Wood & Jones, 1998, Lee Swanson 2005, Sturomski 2006). They agree that students were able to learn, retain, and recall concept, ideas and principles when they take active part in the learning process especially in small groups. The findings also established that the use of small groups and class practice or participation is effective in teaching and learning among slow learners.

Conclusion

This syudy explored the effect of the learner-centered teaching method on slow learner`s achievement in Physics. They were taught in the general classs first, and then in three in three small groups using the learner-centered teaching method. Results of the study revealed that the learner-centered teaching method proved to be effective in enhancing slow learners achievement in Physics.

Recommendations

The following recommendations are made:

1. Secondary School Management Board should periodically train and retrain teachers in teaching methods and techniques.
2. Teachers should employ adequate techniques to identify slow learners so that their inadequacies should be addressed early.
3. Teachers should continuously encourage slow learners in their class in order to motivate them for hardwork and better achievement once identified.
4. Teachers should use appropriate teaching techniques in teaching their lessons bearing in mind that slow learners are also part of the class.
5. Government, investors and stakeholders in Education should ensure the availability of material/resources required for teaching and learning with regards to specific learner groups, incentives such as encouragement and recognition of students as well as flexible school time table to accommodate slow learners.

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