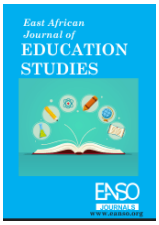
Article DOI: https://doi.org/10.37284/eajes.7.2.1953



East African Journal of Education Studies
eajes.eanso.org
Volume 7, Issue 2, 2024
Print ISSN: 2707-3939 | Online ISSN: 2707-3947
Title DOI: https://doi.org/10.37284/2707-3947

EAST AFRICAN NATURE & SCIENCE ORGANIZATION

Original Article

Relationship Between Teaching Strategies and Students' Academic Performance at Ordinary Level Secondary Schools in Gulu District

Gloria Lamaro[1*] *& Doris Jane Anena*[2]

[1] Gulu University, P. O. Box 166 Gulu, Uganda.
[2] Dr. Obote College Boroboro, Lira P. O. Box 91, Uganda
[*] Author for Correspondence ORCID ID: https://orcid.org/0009-0009-3984-9523; Email: g.lamaro@gu.ac.ug

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Date Published: *27 May 2024*

Keywords:
Teaching Strategies and Students' Academic Performance.

ABSTRACT

This study investigated the relationship between teaching strategies and students' academic performance at ordinary level secondary schools in Gulu District. The study used cross-sectional design. Three hundred and seventy-five (375) participants were randomly and purposively sampled. Questionnaire and interview were used for data collection. Data analysis for quantitative data was done using SPSS version 16. Content analysis was used to analyse interview data. The results showed that most students prefer presentation, seminars and class assessment. Further, students prefer discussion, brainstorming, demonstration and group work. Majority of teachers however prefer lectures, role-play, project and drill as better teaching and learning strategies. The results also show significant positive correlation between project method and level of academic performance ($r(259) = .391$, $p < .0001$), strong positive significant correlation between group discussion and level of academic performance ($r(259) = .336$, $p < .0001$), positive association between role play and level of academic performance ($r(259) = .315$, $p < .0001$) and significant positive association between storytelling and level of academic performance ($r(259) = .310$, $p < .0001$). This indicates that project method, group discussion, role play, storytelling, presentation and drill when practiced can improve academic performance of students in ordinary level secondary schools. Educators should consider implementing more of project, group discussion, role play, storytelling, presentation and drill in their teaching activities.

APA CITATION
Lamaro, G. & Anena, D. J. (2024). Relationship Between Teaching Strategies and Students' Academic Performance at Ordinary Level Secondary Schools in Gulu District *East African Journal of Education Studies*, *7*(2), 330-347. https://doi.org/10.37284/eajes.7.2.1953

CHICAGO CITATION
Lamaro, Gloria and Doris Jane Anena. 2024. "Relationship Between Teaching Strategies and Students' Academic Performance at Ordinary Level Secondary Schools in Gulu District". *East African Journal of Education Studies* 7 (2), 330-347. https://doi.org/10.37284/eajes.7.2.1953

HARVARD CITATION
Lamaro, G. & Anena, D. J. (2024) "Relationship Between Teaching Strategies and Students' Academic Performance at Ordinary Level Secondary Schools in Gulu District", *East African Journal of Education Studies*, 7(2), pp. 330-347. doi: 10.37284/eajes.7.2.1953.

IEEE CITATION
G., Lamaro & D. J., Anena "Relationship Between Teaching Strategies and Students' Academic Performance at Ordinary Level Secondary Schools in Gulu District" *EAJES*, vol. 7, no. 2, pp. 330-347, May. 2024.

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

MLA CITATION

Lamaro, Gloria & Doris Jane Anena. "Relationship Between Teaching Strategies and Students' Academic Performance at Ordinary Level Secondary Schools in Gulu District". *East African Journal of Education Studies*, Vol. 7, no. 2, May. 2024, pp. 330-347, doi:10.37284/eajes.7.2.1953

INTRODUCTION

Scholars such as Winter (2009) defines teaching strategies as an organized, orderly systematic and well-planned procedure aim at facilitating and enhancing students learning. It considers the abilities, needs and interests of the learners and is employed to achieve certain aims of instruction (ATL, 2015). It is a means or strategies employed by the teachers in attempt to impact knowledge to learners. According to Kimweri (2004), teaching strategies refers to the variety of ways in which a learning task is managed to facilitate the learning process. It helps to blend the teaching and learning situation.

For the purpose of this study, teaching strategies is defined as techniques specially designed for a particular special education to facilitate changes in the learners' behaviour through imparting of knowledge, skills and values. It involves explaining, persuading, illustrating, demonstrating, guiding and instructing through learner- centred strategies and teacher- centred strategies (Nasibi, 2002). Academic performance is the accomplishment of a given task measured against present known standards of accuracy and completeness in education (Ackerman, Chamorro-Premuzic & Furnham, 2011). Typical intellectual engagement is direct, correlated predictors of academic performance. To them, "a hungry mind" is a core determinant of individual differences in academic achievement.

Knowles (2008), defines academic performance as the extent to which a student, teacher or institution has achieved their short- or long-term educational goals. It is commonly measured through examinations or continuous assessment. For the purpose of this study Academic performance is defined as the achievement of learners in a particular task given by an instructor both inside and outside the classroom after teaching and learning has been facilitated using both teacher- centred and learner- centred strategies.

Teaching strategies influence students' academic performance. While the learners are expected to work hard and attain success in education, the delivery of relevant knowledge, skills and attitude that can contribute to the development of society depend on the teaching strategies employed (Naminde, 2015). Students' academic performance is essential because it is linked to the positive outcome that society values (Nickerson, 2007). Good performance brings out individuals who are better organized, better prepared and have organizational plan in their society and career. This can only be achieved through the use of different teaching strategies. Teachers, therefore, are advised to be innovative during their lessons and use instructional methods that can successfully challenge every student to participate in the learning process to achieve better academic performance (Henson, 2004).

Since the introduction of formal education in Uganda, foundation bodies like the Roman Catholic Church, Church of Uganda, Islamic faith and local communities had a big control over secondary education and schools, despite government involvement. This involvement began following the report by the Phelps-Stokes fund in the 1922 (Government of Uganda, 1992). In 1952, a commission known as de Bunsen committee was appointed and came up with recommendations for the expansion of secondary education to provide teachers for primary and secondary schools. The idea behind these recommendations was to provide cadres for the local colonial civil service especially at lower levels (Dejaghere, William & Kyeyune, 2009). This paved direct involvement of government in secondary schools and in education in general.

Worldwide, the need for quality education for all was embedded in the UNESCO (1960) convention against education discrimination and

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

the child's cultural, social and economic rights. In 1989 the convention on child rights was endorsed by 191 member states of the United Nations, Uganda inclusive in which primary education was considered as basic and free. While in Uganda it took off in 1997 as government of Universal Primary Education (UPE), followed by the introduction of Universal Secondary Education (USE) in 2007.

Late president Milton Obote in 1969 admitted that "Uganda had not moved far from the results of the education investments which the British wanted when formal education was first introduced in Uganda. On the advent of the National Resistance Government, one of the ten point- program was restoration and improvement of social services and rehabilitation of war-ravaged areas. Point six which presupposes the provision of adequate education facilities in war torn areas like Gulu District but on ground little has been done to the secondary school sector which impacts negatively on the good performance especially in UCE (Nsubuga, 2008).

ADuring the 1990s and owing to the government policy of privatization, secondary schools were expanded nationwide. Although this partially satisfied the social demand for secondary schools, it compromised the quality of education in lieu of the performance that would have enhanced social ties and development in Uganda (Muwonge, 2015). Academic performance In Gulu District has not been satisfactory for the past few years. According to reports from Uganda National Examination Board (UNEB), Gulu District registered 3472 candidates in 2016 and got 184 (5.3%) in division one, 3537 candidates in 2017 and got 163 (4.7%) in division one and 3456 candidates in 2018 and got 167 (5.1%) in division one in the Uganda Certificate of Educate (UCE) National examinations. This shows that is poor compared to some districts like Wakiso and Mbarara, which have higher percentages.

In congruence with performance, one needs to take cognizance of the fact that education is a powerful tool as well as an engine for national transformation and development. It greatly contributes to the human resource development of a country because it fosters a broad perspective of human rights, peace, justice, social cohesion, patriotism, moral and spiritual value. All these are geared towards improved performance in the education sector.

However, the commonly used teaching strategies especially in developing countries are teacher-centred (Gulaba, Wokodola & Bategeka, 2010), which are viewed to be somewhat ineffective in the impartation of knowledge. These methods are no longer used in other countries. Problem- based learning as a teaching method is becoming increasingly popular in education institutions as a tool to address the inadequacies of traditional teaching strategies, since its approaches does not encourage students to participate in learning process leading to poor academic achievement (Kim, 2005). The determinants of academic performance of the students include class participation. Class assignments, home-work assignments, tests, examinations and participation in competitions or other school events. All these come after teaching has been done; therefore, different teaching strategies should be applied for better performance (Nyagosia, 2011).

Many reforms in Uganda are geared towards enabling teachers to move away from standard learning by rote methods, and to develop research and reflect on alternatives that encourage students to make inquiry and develop critical thinking skills for better achievement in academics (Active Teaching and Learning (ATL guide, 2015). Despite these arguments about teaching strategies being advocated in literature, no universally accepted methods exist (Farkas, 20003). The question remains that which of these teaching strategies contribute to students' failure or success, especially in developing countries like Uganda where the causes of poor academic performance in secondary schools is not well understood.

The world over, effective teaching strategies impact on students' academic performance and learning outcome. A teacher plays a vital role within a few hours in the classroom by delivering

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

the daily specific planned content which later transforms to a learners' academic performance (Stunn, Bendikt & Premuzie, 2011). According to Hass (2002), the world is changing and advancing daily, so teachers need to use different teaching strategies for learners to perform well in academics and cope with technological advancement. In Africa, many countries had embraced the colonial education system, where practical learning was not emphasized, but with the changing technology many African countries have started encouraging the use of learner-centred and teacher-centred strategies in schools in order to enhance academic performance.

In Uganda a report by Talemwa (2010) revealed that teaching in secondary schools is dominated by preparation for national examinations. Fact retention dominates teaching strategies, learners are not being taught to think and analyse, they are being taught to memorize. The same organization reported that students do not put teachers to task by asking questions nor do they answer questions asked by the teachers in class. This certainly has resulted in poor teacher-student relationships, leading to poor academic performance, which this study would like to improve. In Gulu District, a report from the District Education Office 2014 indicated academic performance was not any better. The outcome of teaching was not yielding much fruit either. This was because many teachers still continued to use traditional approach of instruction. This had been observed in the way students grasp concepts of what was taught in class according to the report. A number of factors could have contributed to that poor level of students' performance. This study was. Therefore, conducted to establish the relationship between teaching strategies and students' academic performance at ordinary level secondary schools in Gulu District in 2020 and reported on in the year 2021.

Statement of the Problem

Teachers play a crucial role in helping learners develop knowledge, skills, and attitudes through various teaching strategies. However, in Uganda, particularly in Gulu district secondary schools, students often fail or show poor academic performance in examinations due to teachers' failure to follow established teaching strategies. This study aimed to establish the relationship between teaching strategies and students' academic performance at ordinary level secondary schools in Gulu District in 2020 and reported on in 2021, focusing on factors contributing to poor performance.

Purpose of the Study

The purpose of this study was to establish the relationship between teaching strategies and students` academic performance at ordinary level secondary schools in Gulu District.

Objectives of the Study

This study was guided by the following objectives:-

- To establish the relationship between teaching strategies and students' academic performance at ordinary level in Gulu District.

LITERATURE REVIEW

Theoretical Review

Walberg's (1981) theory of educational productivity specifies that classroom learning is a multiplication, diminishing returns of four essential factors. That is student's ability, motivation, quality and quantity of instruction and possibly four supplementary or supportive factors, the social psychological environment of the classroom, educational stimulating conditions in the home, peer group, and exposer to mass media MIE (2004). Walberg have identified key variables that affect students' performance, that is students' ability/ prior achievement, motivation, age/ development level, quality of instruction, quantity of instruction, classroom climate, home environment, peer group and exposer to mass media Walberg, Fraserad, Welch (1986). In this study the Walberg's theory captures classroom environment, motivation of learners' quality of instruction and quantity of instruction which is paramount in teaching pedagogy.

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

John Dewey's (1938) theory of central concept, which refers to interpreting experiences. In his view, the teacher should observe the interests of the learners, observe the direction they naturally take, and then serve as someone who helps develop problem-solving skills. Dewey's approach was truly child-centred which in education places the emphasis of teaching on the need and interest of the child (Prothoroe, 2002). In his view, learners should be allowed to explore their environment. Reality must be experienced; this means that students should interact with their environment in order to adapt to learning and that teacher and students must learn together (Dewey, 1938).

David McClelland's (1958) theory of Achievement and Motivation states that managing a group of people with different personalities is never easy. But if you are managing a team, it's essential to know what motivates them, how they respond to feedback and praise and what task fit them well. McClelland's theory gives the teacher a way of identifying learners motivating drivers. This can then help teachers give praise and feedback effectively, assign learners suitable tasks, and keep them motivated.

These theories therefore looks at the effectiveness of teaching and learning as being determined by the type of teaching strategies applied in the classroom for any learner to achieve good academic performance.

Empirical Literature Review

The delivery and quality of secondary education will depend to a larger extent on the teaching strategies demonstrated by teachers. Secondary education in Uganda and elsewhere requires improve teachers that will inspire collective responsibility, hard work and commitment in improving students' academic performance. The relationship between teaching strategies and academic performance can either be positive or negative (Griffin, 2007).

In the traditional era, many teaching practitioners would apply teacher-centred methods to impart knowledge to learners comparative to student-centred strategies that have been emphasized in the modern days. The question has been asked is about the effectiveness of the teaching strategies used in class and their impact on students' academic performance (Hightower et al., 2011). Moreover, research on teaching endeavour to examine the extent to which different teaching strategies enhance growth in student learning. Quite remarkably regular poor academic performance by majority students is fundamentally linked to application of ineffective teaching strategies by teachers to impart knowledge to learners (Adunola, 2011).

According to a study conducted by Griffin (2007), on teaching strategies in Melbourne, there is a positive relationship with students' academic performance. A teacher who uses specific style of evidence-based learning and operate within a developmental learning paradigm has an increase effect on students' learning outcome. Thus, teaching and learning strategies play an important role in producing good or bad students' performance. However, the study by Griffin considered students' performance in only one state of Melbourne which may not represent the entire view of how teaching strategies affect academic performance in secondary schools in Gulu district. Besides, the study only used questionnaires as a principle tool for data collection. This study used mixed methods therefore the study needed to be carried out in Gulu district.

Thompson (2004) carried out a study on challenges of educating students who were deaf and hard of hearing in Jordan. He surveyed 30 teachers and four principals drawn from four schools. In his study, he found that many teachers lacked the necessary expertise to plan individualized education programmes. Nyeri (2010) established almost the same findings. He noted that, students who were deaf benefited more from individualized education program as their needs and interests were catered for in class based on their learning pace. He further noted that, failure of deaf students to master academic subjects was as a result of failure by teachers of

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

deaf people to cater for their differences. Nyeris' (2010) study highlighted urgent need to introduce individualized educational programme to address the prevailing poor performance. This study was to find out if teachers in Gulu District secondary schools were incorporating different teaching strategies in their teaching during learning and how this was facilitating achievement in academic.

Nickerson (2008), in his study in study reveal that government is committed in providing basic education for all, but blamed teachers for the low students' academic performance and unjust, field professional misconduct. This was the case because the grades may determine teachers' effectiveness the students obtain in their examinations. It is unheard to dissociate teachers from their students' performance because they are responsible for interpreting and implementing policies. The study therefore agrees that teachers effective in lesson delivery points that there is a relationship between teaching strategies and students' academic performance.

Towards the end of the 20th century governments around the globe perceived added advantages accruing from the walk of science and technology (Nampa, 2007). Consequently, the government of Uganda embraced a policy promoting sciences and technology in schools with the hope of transforming the nation's fabrics. Mathematics, physics, biology and chemistry among others were made compulsory to all students at ordinary level. This necessitated government to put in place supportive strategies to ensure successful implementation. In the aftermath of announcing the policy, the government of Uganda through the Ministry of Education and Japan International Corporation Agency (JICA), established the Secondary Science and Mathematics Teachers' (SESEMAT) program. SESEMAT program was developed to enhance the quality of teaching and learning science and mathematics through in-service education (INSET), primarily targeting secondary science and mathematics teachers in order to improve their teaching skills for better academic performance.

With the advent of the concept of discovery learning, many scholars widely adopt suppler student- centred methods to enhance active learning (Lenz, 2006). Most teachers today apply student-centred approaches to promote interest, analytical research, critical thinking and enjoyment among students (Maina 2012). The researcher found out that this teaching method is more effective since it does not centralize the flow of knowledge from the lecturer to the students. The approach also motivates goal- oriented behaviour among students hence the method in very effective in improving students' academic performance.

A study conducted by Asikia (2010) on teaching strategies in Nigeria, indicates that teaching methods like discussion and brainstorming impact greatly on students' performance. This study also revealed that teacher learner-centered pedagogies have a positive impact on students' academic performance and the medium of instruction also positively impact students' performance. However, the study conducted by Asikia only considered learner-centred strategies positively impacting academic performance. This study considered both teacher-centred and learner-centred strategies, hence the need to conduct the study.

However, the Parliament of Uganda (2012) report on teaching strategies in Northern Madagascar claims that other factors than teaching strategies affect academic performance. These factors include insufficient text books, ability of the learner and curriculum coverage. This implies that teaching strategies have no relationship with students' academic performance. The gap with the study however, was that it did not link teaching strategies directly to academic performance. Instead it looked at other factors rather than teaching strategies. In addition, it was carried out in Madagascar which has completely different context from the one of Gulu District.

It is further reported by Guluba (2010), in his study on teaching strategies that teaching is linked to academic performance. This linkage is portrayed throughout the teaching process

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

teachers use while teaching students in class or in field work. This finding shows that properly using teaching strategies contributes to better academic performance.

Ingosi (2011) in his study strategy combined a third level learner who had been engaged with a fellow pupil. The learner who was retained took up the position of a tutor for the stressed peer. By the end of the study, they both realized substantial improvement in their exam marks. Knowles (2008) established that the self-confidence of the retained learner was improved, and improvement was shown with a lot of exercise in math. He also made observation on dissimilar kinds of learners. Even though he considered learners who were not the same, he concluded that when learners are paired in the form of peer instructors, they increase their performance.

Project-centered instruction has been a popular method for acquiring science knowledge, resulting in positive academic results (Donna, 2009). The curricular being used supports project-based learning as a method that motivates learners and allows them to retain greatly the learnt knowledge. This method motivates learners and allows them to construct their own knowledge, creating active environments in classrooms (Kim (2005). Constructivist learning encourages learners to build facts independently and communicate with others (Obanya, 2010). Teachers and students can work together to advance low-achieving students, enhancing motivation and self-image (Patton (2012).

Maina (2012) studied factors influencing performance in class in four provinces in Kenya. His study revealed that, there was positive correlation between method of delivery and performance. United Nation Educational Scientific and Cultural Organization (UNESCO) (2009), echoes the same sentiment when it indicated that there is consistent positive correlation between in structural method and students' achievement in exams, homework and assignment which even appears more evidenced in developing countries. None of these studies focused on secondary schools, which is the gap this study aimed to fill.

Many teachers perceive Problem Based Learning (PBL) as beneficial to their students for better academic performance, thus motivating them to adopt the instructional approach in their classrooms. A national survey of public-school teachers revealed that they were most likely to use PBL in their classrooms because they believe it teaches abilities beyond academic content including such 21th century skills as collaboration and presentation techniques (Ravitz, 2008). Project strategy allows learners to increase the worth of their effort as they work through inspecting the activities carried out by other learners.

The literature reviewed (Donna 2009, Obanya, 2010, Patton 2012, Kim 2005), showed that project as instructional methods had positive outcomes in relation to performance in the classroom. These studies, however, did not give any reason why a teacher would prefer to choose a specific teaching strategy and ways of obtaining feedback from learners. This study therefore sought to find out if the use of the different teaching strategies can lead to good academic performance in secondary schools in Gulu District.

Teaching effectively demands that the teacher possess some basic ability to organize, co-ordinate, utilize personal qualities, objectives and competency in lesson preparation, presentation and evaluation. Teachers are also expected to implement a variety of instructional strategies in order to meet the objectives of the program as well as to address individual students' interest and needs for better academic performance.

Most teachers think they can improve their teaching practices by developing sound knowledge of content that needs to be taught and delivered (Ndirangu, 2007). This is a major drawback in many schools. The teachers lose focus on their teaching strategies and they assume that the learners face difficulties because the content is complicated or not of their interest,

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

instead of realizing the fact that the teaching strategy should be more effective and as per their requirement and needs to generate their interest and better learning opportunities for the students. Furthermore, both what needs to be taught and delivered, and how to teach and deliver are linked together for better achievement.

Persistent poor performance by the majority students linked to application of ineffective teaching methods by teachers to impact knowledge to learners (Adunola 2011). Substantial research on the effectiveness of teaching methods indicate that the quality of teaching is often reflected by the achievement of learners, which often reflects the quality of teaching. Teaching is a process that involves bringing about desirable changes in learners to achieve specific outcomes. In order for the method used for teaching be effective, Adunola (2011), maintains that teachers need to be conversant with numerous teaching strategies that take recognition of the magnitude of complexity of the concepts to be covered.

All educationists are well familiar with the fact that all the learners have different learning styles, whereas the problem lies in catering to all of them with an effective teaching strategy so that they can achieve. Students learn in different ways based on their capabilities. Some by seeing, hearing, reflecting, modelling, reasoning and drawing (Martin, 2005) similarly there are different teaching styles as well. Some give lectures, some discuss the topic, some make their students work in groups, some use technology, some use textbooks and many more. But the main purpose behind these efforts is to help students grasp content knowledge and achieve academically.

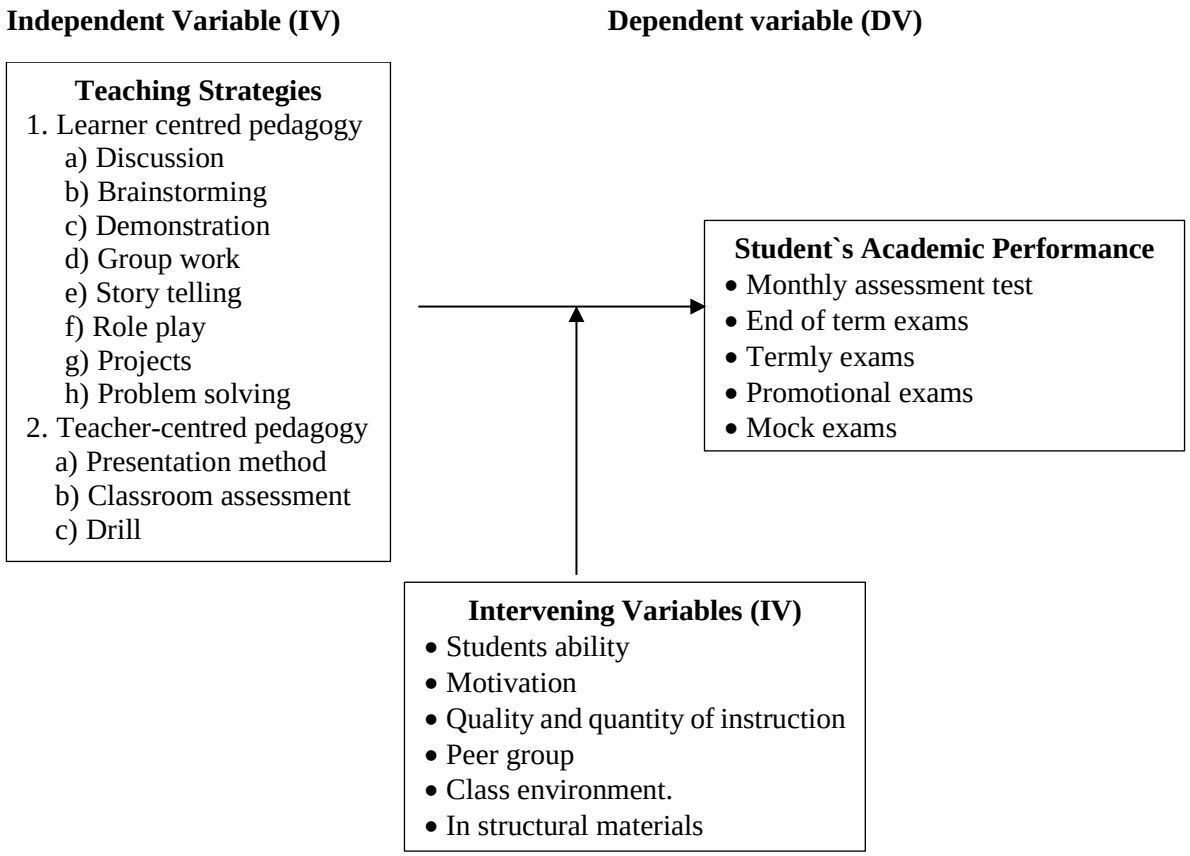
Zeeb (2004) conducted research on teaching styles within a secondary school in England, finding that aligning learning styles with teaching strategies could enhance academic performance positively. His study explored how junior high students learned and how teachers taught, revealing a gap between students' learning styles and teachers' instructional methods. By assessing teaching strategies and recommending adjustments based on learning preferences, Zeeb observed improved student performance across exams, assignments, and tests. This underscores the significance of tailored teaching and learning approaches in fostering academic success at the secondary level. However, it's worth noting that Zeeb's study was limited to a single school in England and employed a quantitative methodology, potentially limiting its generalizability to secondary schools in Gulu District. To address this gap, this study adopted a mixed-methods approach and extended its investigation to ordinary secondary schools in Gulu District, offering a more comprehensive understanding of how teaching strategies influence academic performance. It can be seen that teaching strategies is one of the key factors that play significant roles in enhancing or retarding academic performance and there is no single best teaching strategy for teaching and learning. There is need to use a variety of teaching strategies depending on the learning situation and learning environment.

CONCEPTUAL FRAMEWORK

This illustrates the interconnection between the independent and dependent variables in the research.

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Figure 1: Conceptual framework showing relationship between teaching strategies and academic performance at ordinary level secondary school in Gulu district



Source: Adapted from Walberg Theory of Educational Productivity (1981)

The model in *Figure 1* above shows that teaching strategies would lead to students' academic performance. This can be achieved through looking at the class assignments, monthly assessment and termly examinations. It also assumed that teaching strategies and students' academic performance is intervened by student's ability, motivation, quality and quantity of instruction, peer group, class environment and in structural materials. These intervening factors may affect the relationship between teaching strategies and students' academic performance positively or negatively.

METHODOLOGY

Research Design and Orientation

The study used cross-sectional survey research design. It involved a large number of respondents of different categories and collected data within a limited time period (Kumar, 2005). The study used mixed method approach employing both qualitative and quantitative paradigms. In the qualitative paradigm, the study used key informant interview which helped in acquiring in-depth information about the study (Creswell, 2002). The quantitative paradigm used questionnaire survey to gather data from the students.

Target Population

The study targeted students at ordinary level, head teachers, deputy head teachers, director of studies, district education officers and district inspector of schools. The study population was 15,051 and targeted, 15,000 students, 24 Head teachers/ Deputy Head teachers, 24 Directors of studies, 1 District Education Officer and 2 District Inspector of Schools in Gulu District.

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Sample Size Selection

Krejcie and Morgan (1970) table of sample size determination for determining sample size was used for the study. A sample size of 375 was selected from a population of 15051. (*Table 1*).

Table 1: Proportionate allocation of sample

Participants	Target population	Sample size	Sample techniques
Head teacher/Deputy	24	07	Purposive sampling
Director of studies	24	07	Purposive sampling
Students	15,000	358	Simple random sampling
DEO	1	1	Purposive sampling
Inspectors of school	2	2	Purposive sampling
Total	15,051	375	

Source: Krejcie and Morgan (1970)

Sampling Procedures

The study employed simple random sampling to sample participants (students) in ordinary level secondary schools in the 24 selected schools in Gulu District. From each of the 24 schools included, the researcher randomly selected approximately 4 participants from each of the classes from senior one to senior four. The researcher used class list as sampling frame to select participants for the study. This was done to ensure that each member of population had an equal chance of being selected. Simple random sampling also limited the probability of choosing a biased sample (Tuckman, 1994).

In addition, the researcher used purposive sampling method for selecting head teachers, deputy head teachers, directors of studies, district education officers and district inspector of schools. Purposive sampling was used because the respondents were considered knowledgeable on secondary schools' teaching strategies and academic performance.

Data Collection Techniques

The study used questionnaire survey to gather quantitative data on teaching strategies and academic performance from students and teachers. Questionnaire survey was used because the study involved a large number of respondents. On the other hand, interview was used to gather information from head teachers, Director of Studies, Inspector of schools and the District Education Officer. This was used to clarify issues and provide in-depth information about teaching strategies and academic performance (Kumar, 2005).

Data Collection Instruments

The study used questionnaire and interview guide for gathering data from participants. For the questionnaire, 5-point Likert scale of strongly agree to strongly disagree was used to measure teaching strategies and academic performance. In addition, interview guide was used to gather information from key informants. The guide sought information about teaching strategies and academic performance levels in secondary schools in Gulu District. Interview guide helped in guiding the researcher not divert from the real issues it also provided opportunity for clarifying questions and to explore issues for additional information (Odiya, 2009).

Administration Procedures

A letter of introduction was obtained from the dean of the faculty after approval of the research proposal. The researcher then got permission from the district officials. The researcher trained research assistants who helped in data collection. The researcher visited the locations where the research was conducted, to make appointment with respondents on data collection. After that, the researcher proceeded to collect data, analysed and wrote a report.

Quality Control

Quality control of research instrument was largely meant to ensure validity and reliability of the study instrument. This was determined as follows.

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Content Validity Index (CVI) of Questionnaire

Content validity index (CVI) was computed based on the opinion of three experts who were teachers and knowledgeable about the subject. According to Brink and Wood (1998), a total of three experts or judges are recommended to obtain statistically justifiable results. Each of the judges was asked to give their independent opinion rating on the relevance of each questionnaire item and interview items. A two- point rating scale of relevant/ not relevant was used. The validity was obtained by the formula, therefore, CVI was computed as below, CVI 34/46= 0.7391. In this study, the value of the overall CVI obtained was 0.9375, indicating that the instrument was valid. content validity index (CVI) equals number of items rated relevant by experts over total number of items in the questionnaires. Item with validity lower than 0.7391 were rephrased before the tools were administered and used for individual interview (See App. F)

As reported by De Vaus (2002), content validity index of 0.70 and above is considered as reliable set of items. The Content validity test for questionnaire for this study passed the test and was consider acceptable for the research. (See App. F)

Reliability of Questionnaire

The reliability of questionnaire was computed after doing pretest with 20 secondary school students selected from within Gulu District before the actual data collection. Baumgartner, Strong and Hensly (2002) recommended that the reliability of the questionnaire must be determined before it is used in the study. An alpha value of 0.767 was arrived at. (See App. G).

Reliability of Interview

To ensure the reliability of the qualitative data, the researcher ensured trustworthiness and ensured that participant' views and perspectives were presented as clearly as possible during the interview. In addition, the researcher was consistent in putting across questions and recoding participants' responses, ensuring that accurate information is gathered. The researcher also ensured that the study participants represent the study problem (Baumgartner et al., 2002). Head teachers, Deputy Head teachers, Directors of studies, DEO and Inspectors of schools were selected for this study.

Ethical Considerations

The researcher sought clearance from Faculty of Education and Humanities Gulu University before the study commence. Permissions to gain access to individuals and study sites (secondary schools) were expressly sought; all study aspects were explained to participants. Participants were made aware of their rights, the risks and benefits of the study and their limits before they voluntarily made informed decisions to participate. Privacy, confidentiality and anonymity at all stages of the study was safeguarded and observed. The researcher ensured that data were collected and analysed appropriately and plagiarisms avoided by making sure that sources are credited for their individual work. The names of individual schools were left out to make the data anonymous.

Data Analysis

The data analysis plan for the study was organized based on the three study objective as follow: For research objective three, on relationship between teaching strategies and academic performance, Spearman's Correlation was used to analyse the associations between study independent and dependent variables. Multiple regression was also carried out to analyse relationship between the two variables. For the interview data, the researcher used interview transcript divided in to four columns. The columns contained code, questions, response, category and themes. Qualitative data was analysed using descriptive statistical analysis for the items operationalizing teaching strategies and frequency and percentage.

RESULTS

As shown in *Table 2* above, 261 ordinary level students participated in the study. From the sample, 148 (56.7%) were female and 113 (43.3%) were male. Majority students were in the age group 16-19 years 168 (64.37%) more than those in the age group 12-16 years 77 (29.5%).

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Those 20 years and above were few at only 16 (6.13%). The numbers of students sampled per class were almost equal. Senior one were 77 (29.62%), Senior Three 73 (28.08%), Senior Four 71 (27.31%) and Senior Two 39 (15%) respectively. This implies that majority of the students surveyed were female and young students within the secondary school going age. It can also indicate that more females' students are enrolled than male in ordinary secondary schools in Gulu District.

Table 2 also show that, majority of students are from day mix schools 115 (44.06%), followed by boarding single sex 71 (27.2%). The number of individuals in boarding mixed group, comprising 40 (15.33%) participants, and those in both day and boarding mix, totaling 35 (13.41%) individuals, were comparatively lower.

There were more participants from government aided schools 164 (62.84%) than private aided at 97 (37.16%). Most participants have stayed in their respective school for less than 1 years 105 (40.23%), followed by 3 years 71 (27.2%), 2 years 46 (17.62%) and lastly 4 years at 39 (14.94%).

Table 2: Demographic characteristics of respondents

Demographics		Frequency	Percent
Gender	Male	113	43.30
	Female	148	56.70
Age group	12-15	77	29.50
	16-19	168	64.37
	20 and above	16	6.13
	Total	261	
Class	S 1	77	29.62
	S 2	39	15.00
	S 3	73	28.08
	S 4	71	27.31
	Total	261	
Type of school	Boarding mix	40	15.33
	Boarding single sex	71	27.20
	Day mix	115	44.06
	Both day and boarding mix	35	13.41
	Total	261	
School Ownership	Government aided	164	62.84
	Private aided	97	37.16
	Total	261	
How long have you been in this school	Less than 1 year	105	40.23
	2 years	46	17.62
	3 years	71	27.20
	4 years	39	14.94
	Total	261	

Source: Primary Data (2019)

Results of the Spearman correlation *Table 3* indicated that there was a significant positive association between project method and level of academic performance ($r_s(259) = .391$, $p < .0001$), significant positive association between group discussion and level academic performance ($r_s(259) = .336$, $p < .0001$), significant positive association between role play and level academic performance ($r_s(259) = .315$, $p < .0001$) and that there was a significant positive association between storytelling and level of academic performance ($r_s(259) = .310$, $p < .0001$).

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Table 3: Spearman' level of academic performance coefficient

Teaching and learning strategies	Population (N)	Correlation Coefficient	Sig. level
Lecture methods	259	.218	.077
Presentation	259	.302(**)	.000
Seminar	259	.154(*)	.013
Class assessment	259	.203(**)	.001
Drill assessment	258	.248(**)	.000
Brainstorming	259	.176(**)	.005
Presentation	259	.292(**)	.000
Group discussion	259	.336(**)	.000
Story telling	259	.310(**)	.000
Role play	259	.315(**)	.000
Project	259	.391(**)	.000
Problem solving	259	.112	.073

*** Correlation is significant at the 0.01 level (2-tailed).*
** Correlation is significant at the 0.05 level (2-tailed).*

Furthermore, results of the Spearman correlation indicate that there was a significant positive association between presentation and level of academic performance (r (259) = .303, p < .0001) and a significant positive correlation between drill assessment and level of academic performance (r (259) = .248, p < .0001). In addition, results indicated that there is insignificant positive correlation between brainstorming and level of academic performance (r(259) = .176, p > .0001), insignificant positive correlation between lecture method and level of academic performance (r(259) = .218, p > .0001) and insignificant positive correlation between problem solving and level of academic performance (r(259) = .112, p > .0001).

Using the statistical results from Spearman's Correlation, it can be concluded that teaching strategies of: project method, group discussion, role play, storytelling, presentation and drill assessment have positive influence on the level of academic performance. These findings imply that, when project method, group discussion, role play, storytelling, presentation and drill method are practiced, there will be improvements in the level of academic performance of students in ordinary secondary level.

During the interviews, participants opinions were that relationship exist between teaching strategies and academic performance. Their opinions were that the various teaching strategies teachers used help students understand and apply what they learn to improve their academic performances. The following quotations below show participants opinions on the relationship between teaching strategies and academic performance:

> *'For me, I think teaching strategies influence the manner in which a student is going to learn and help the student to grasp concepts and use them to answer questions in exams, leading to either good or bad performance. '* (DOS 1)

> *'For me, I feel that there is a relationship teaching strategies and academic performance, because transfer of knowledge depends on the teaching strategies used by the teacher the students will then transfer the knowledge to answering questions in examinations, for better or worse performance'*. (HT 1)

> *'I know there is a relationship because when teachers use different teaching strategies in delivering knowledge, learners will perform well in academics'* (DHT 4)

The results from Spearman showed that there was significant positive correlation between project method and level of academic performance (r (259) = .391, p< .0001), significant positive correlation between group discussion and level of academic performance (r (259) = .336, p< .0001), significant positive correlation between role play

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

and level of academic performance (r (259) = .315, p< .0001) and significant positive correlation between storytelling and level of academic performance (r (259) = .310, p< .0001). This positive relationship is good since it will make teachers fully engage in using the different teaching strategies to improve academic performance in secondary schools.

multiple regression analysis was also performed.

Table 4: The Regression Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Sig. F Change	Change Statistics			
	R^2 Change	F Change	df1	df2		R^2 Change	F Change	df1	df2
1	.572(a)	.327	.291	8.00080	.327	9.128	13	244	.000

a Predictors: (Constant), problem-solving, Discussion methods, Presentation methods, Role play, Lecture methods, Drill methods, Class assessment, Storytelling methods, Demonstration methods, Seminar methods, Group discussion, Brainstorming methods and Project method.

Table 4 show the model summary of the regression which indicates that predicting the level of academic performance in ordinary level secondary schools by 14 predictor variables of (problem-solving, discussion method, presentation method, role play, lecture method, drill method, class assessment, storytelling, demonstration method, seminar method, group work, brainstorming method and project method) gives coefficient of multiple (R) of 0.572 and multiple correlation square (Adjusted R2) of 0.291 showing low correlation and weak relationship between teaching strategies and academic performance. These values are statistically significant at 0.01 level of significance; indicating that 29.1% of the variation of students' level of academic performance in ordinary-level secondary schools is explained by the combination of the 14 predictor variables.

Table 5: Multiple regression analysis of teaching strategies on level of academic performance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Err	Beta		Tolerance		VIF
1	(Constant)	18.335	2.214		8.281	.000		
	Lecture methods	.016	.208	.004	.075	.940	.906	1.104
	Presentation	1.048	.291	.205	3.603	.000	.849	1.177
	Seminar	-.131	.253	-.030	-.518	.605	.806	1.241
	Class Assessment	-.066	.279	-.013	-.236	.814	.877	1.140
	Drill methods	.460	.223	.119	2.058	.041	.830	1.205
	Discussion	.608	.321	.114	1.893	.060	.759	1.317
	Brainstorming	-.357	.287	-.075	-1.245	.214	.753	1.329
	Demonstration	.375	.299	.073	1.257	.210	.826	1.211
	Group Discussion	.849	.282	.178	3.007	.003	.790	1.265
	Storytelling Methods	.360	.248	.088	1.450	.148	.741	1.350
	Role play	.341	.255	.081	1.336	.183	.742	1.349
	Project	.899	.254	.229	3.540	.000	.659	1.518
	Problem- Solving.	-.026	.378	-.004	-.068	.946	.865	1.156

a Dependent Variable: Performance

As shown in *Table 5*, statistically, presentation methods (*t = 3.603, Sig = .000*) and project method (*t = 3.540, Sig = .000*) were the 1st and 2nd largest predictors of level of academic performance by students in ordinary secondary schools. The 3rd largest predictor is group discussion method (*t = 3.007, Sig = .003*). The implication of these statistics is that when teachers practice presentation, project and group discussion methods as teaching/learning strategies

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

in their class room, then the level of academic performance of students will improve. Despite project and discussion methods being the largest predictors of performance, in overall, there is low correlation and weak relationship between teaching strategies and academic performance.

DISCUSSION

Various aspects of teaching strategies were correlated to find out whether there was a relationship between teaching strategies and students' academic performance.

The finding shows that there was a significant positive association between project method, group discussion, role play, storytelling, presentation, drill method and the level of academic performance. The finding also show that there was insignificant positive association between lecture method, brainstorming, problem solving method and level of academic performance. The finding is similar to Maina (2012) who reveals that, there was positive correlation between method of delivery and academic performance. United Nations Educational Scientific and Cultural Organization (UNESCO, 2009), echoed the same sentiment when it indicated that there is consistent positive correlation between instructural method and students' achievement in exams.

Drill as a teaching strategy was found to enable knowledge retention and support active participation of learners by question and answer. This finding was however inconsistent with the previous study conducted by Harrington (2012) who found out that drill method fosters participation, sometimes learners fail to grasp the content and subject matter.

The study recommends the use of the project method to supplement other methods such as problem-solving, group discussion and lecture method in teaching. Teachers need to be sensitized on the benefits that accrue as a result of the usage of project method through in-service courses. The strength of project method was highlighted by Iwamoto, Hargis and Vuong (2016) who found out that the experimental group that engaged in project and took responsibility for the learning of their peers scored significantly higher on the multiple-choice exams when compared to the control group.

Role play was found to be significantly positively associated with the level of academic performance because it creates a realistic environment using real life situations for the learners. This finding is supported by Nickerson (2007-08), who revealed that role play can aid teaching and learning by bringing out ideas and situations as they appear in real life. However, teachers usually shy away from more effective activity-oriented teaching methods in preference for easy and mostly inappropriate methods such as lecture which is purely teacher-centred, leaving students as passive recipients of knowledge.

CONCLUSION

The study aimed to explore the relationship between teaching strategies and students' academic performance in ordinary level secondary schools in Gulu District. Through correlation analysis, it was found that several teaching strategies, including project-based learning, group discussion, role-play, storytelling, presentation and drill method, were significantly positively associated with academic performance. These findings align with previous research highlighting the positive correlation between instructional methods and students' achievement in exams. In conclusion, the study highlights the importance of selecting appropriate teaching strategies that actively engage students and promote deeper learning. While certain methods like role-play show promise in enhancing academic performance, there is a need for educators to embrace a variety of effective teaching approaches to cater to diverse learning styles and needs.

Recommendations

Based on the study findings, the following is recommended; The Ministry of Education and Sports should formulate policies to help teachers improve on teaching strategies in order to better academic performance in ordinary level

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

secondary schools. Additionally, Policy implementers should encourage teachers to use the different teaching strategies so that learners can participate actively in the learning for better academic performance. The District Education Offices should carry out regular inspection in schools to ascertain teachers' use of different teaching strategies.

REFERENCES

Ackerman, P. L., Chamorro-Premuzic, T., & Furnham, A. (2011). Trait complexes and academic achievement: old and new ways of examining personality in educational contexts. *British Journal of Educational Psychology, 81(1), 27– 40*. https://doi.org/10.1348/000709910X522564

Adunola, O. (2011). Impact of Teachers' Teaching Methods on the Academic Performance of Primary Schools Pupils in Ijebu- Ode Local Cut Area of Ogun State, Nigeria.

Amin, M.E. (2005). Social science research: conceptions, methodology and analysis. Kampala: Makerere University.

Asikhia, O.A. (2009). Students and Teacher Perception of the causes of Poor Academic Performance, *Journal European Social Sciences.* Vol. 13, Nigeria.

Baumgartner et al. (2002). Conducting and Reading Research in Health and Human Performance, 3rd ed. Boston: McGraw-Hill.

Brink, P. J. & Wood, M.J. (1998). Advanced Design in Nursing Research. SAGE Publications, Inc.

Dejaghere, J.G., William, R. & Kyeyune, R. (2009). Ugandan Secondary School Head teachers' Efficacy: What kind of training for whom? *International Journal of Educational Development 29(3):312- 320*. DOI:10.1016/j.ijedudev.2008.03.001

De Vaus, D. (2002). Analyzing social science data: 50 key problems in data analysis. Los Angeles: SAGE.

Dewey, J. (1938). Experience & education. New York NY: Kappa Delta Pi. ISBN.

Donna. (2009). Learning Guide 2009. The University of Adelaide.

Farkas, R. D. (2003). Effects of traditional verses Learning-styles instructional methods on middle school students. *The Journal of Educational Research, 97 (1), 42-51*.

Harrington, S.L. (2004). *An author's storyboard technique as a prewriting strategy*; The Reading Teacher, 48 (3), 283-286.

Hass, M.S. (2002*). The influence of Teaching Methods on Students' Achievement*. Unpublished Research, Dissertation Submitted to the Faculty of Virginia Polytechnic Institute and University.

Hensen, K.T. (2004). Constructivist Teaching Strategies for Diverse Middle-Level Classrooms 1st Edition. Boston, MA: Allyn & Bacon.

Hightower, A. M., Delgado, R. C., Lloyd, S. C., Wittenstein, R., Sellers, K., & Swanson, C. B. (2011). Improving student learning by supporting quality teaching: Key issues, effective strategies. Editorial Projects in Education.

Hightower, A.M. (2011), "Improving students' learning by supporting quality teaching: Key issues, effective strategies", Editorial Projects in Education.http://escholarship.bc.edu/education/tecplus/vol1/iss6/1

Government of Uganda, (1992). The government white paper on policy review commission report. Education for national integration and development. Entebbe: Uganda Publishing and Printing Corporation.

Griffin, D. (2007). *The competence and the Uncertainty of Assessment*. Students in Education Evaluation: Unpublished research of Melbourne University.

Guloba, M., Wokodola,J and Bategeka (2010). *Does Teaching Methods and Availability of*

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Resources influence Pupil Performance (Unpublished Research) in Uganda.

Ingosi, J. (2011). Instructional Strategies and Students Acquisition of Science Process Skills in Secondary Schools in Kisii Central Districts of Nyanza Province, Kenya: Unpublished Master's Thesis.

Kim, J.S. (2005). The effects of a constructivist teaching approach on student's academic achievement. *Self-Concept and Learning Strategies, Asia Pacific Education Review and Clinic*, 35 (5), 280-289.

Kimweri, P. (2004). *Adult Teaching & Learning*. The Open University of Tanzania, Dar es Salaam Tanzania.

Knowles, M. (2008). The Modern Practice of Adult Education from Pedagogy Amzon, US.

Krejcie, R.V. & Morgan.D.W. (1970). Determining Sample Size for research activities. *Educational and Psychological Measurement*, Vol. 30. Pp. 607-610.

Kumar, R. (2005). Research methodology: a step-by-step guide for beginners. London: SAGA Publications.

Lenz, B.K. (2006). Creating School-Wide Conditions for High-Quality Learning Strategy, Classroom Instruction. *Intervention in School and Clinic*, 41 (5), 461-466.

Maina, E. (2012). *Curriculum Factors Influencing Students' Performance in Mathematics.* unpoblished Master Thesis: Mason University Press.

Martin, L.A. (2005). Use of Cognitive Strategies by High School Social Study Students. *Action in Teacher Education. 26 (4), 63-73*

McClelland, D.C. (1958). Methods of measuring human motivation. In J.W. Atkinson (ED), *Motives infantasy, action and society* (pp. 7-42). Princton, NJ: D. Van Nostrand company. Inc.

MIE. (2004), Participatory Teaching and Learning, Malawi institute of Education, Malawi.

Ministry of Education, Technology and Sports. (2015). A focus on principles and practices of learners centred pedagogy as a teaching approach to achieve quality education in Uganda. Active Teaching Kampala: Design without Borders.

Muwonge, K. (2015*). Development and expansion of secondary education in Uganda, experiences and challenges*. A Seminar Paper Presented at the Annual Head Teachers Workshop in Kampala.

Naminde, F. K. (2015). Analysis of Teaching Strategies on Students' Performance in Sciences: A Case of Rev. Muhoro Secondary School for the Deaf; Nyeri County, Kenya.

Nampa, C. (2007). in Catholic *Supervision and Teachers performance founded School in Luwero District*, Unpublished Master of Education Dissertation, Makerere University, Kampala.

Nasibi, M.W. (2003). *Instructional Methods.* General Methods for Teaching Across Institution Curriculum: Strong Wall Africa.

Nsubuga, Y.K.K, (2008*). Analysis of leadership styles and school performance of secondary schools in Uganda*, Unpublished PhD Thesis, Nelson Mandela Metropolitan University.

Ndirangu, C. (2007). *Teaching Methodology*. African Virtual University, Published under Africana.

Nickerson, S. (2008-08). "Role-play: Often Misused *Active Learning Strategy*." Essays on Teaching Excellence: towards the best in the Academy, Vol. 19 No 5.

Nyagosia, P.O. (2011). Determinants of Differential Kenya Certificate of Secondary Education Performance and School Effectiveness in Kiambu and Nyeri Counties. Kenya. Kenyatta University.

Article DOI: https://doi.org/10.37284/eajes.7.2.1953

Nyeri, M.M. (2010). A review of Accelerated Christian Education Programme and the Implication of the 8. 4:4 System of Education. Unpublished Master's Thesis: Kenyatta University.

Obanya, P. (2010). Bringing back the teacher to the African school. Addis Ababa: UNESCOP.

Odiya, J. N (2009). Scholarly writing: *Research Proposals and Reports in APA and MLA* Publication Style. Kampala: Makerere University Printers.

Parliament of Uganda (2012). The Observer 16 January 2012 p1. https://www.parliament.go.ug/cmis/browser?id=0ba7a80c-dbd0-4754-bb7e2ffc470a5895%3B1.0.

Patton, A. (2012). A Work that matters. The teacher's guide to project- based learning [Electronic Version*], From*: http://www.Innovationunit.org/resources/workmatters-teacher-guide-project-basedlearning.

Prothoroe, N. (2002). More Learning Strategies for Deeper Students' Learning. The Education Digest, 68 (4), 25-28.

Ravitz, J. & Blazevski, J. (2014). Assessing the Role of Online Technologies in Project-based Learning Inter-displinary. *Journal of problem- based Learning, 8 (1).*

Stunn, Bendikt, Premuzic (2011). The Hungry Mind. Intellectual Curiosity is the Third Pillar of Academic Performance European. *Journal of Personality*, 17, 237-250. Crossref.

Telemwa, M. (2010). Performance Survey; why these districts post poor PLE grades, the Observer.

Thompson. J. (2004). Classroom teachers urgently need to know more about effective straregies for teaching English learners. (unpublished) paper USA.

Tuckman, B.W. (1994). *Conducting educational research (4th ed).* Fort Worth: Harcourt Brace College Publishers.

UNESCO (2009). 2009 World Education Conference on Higher Education: The New Dynamics of Higher Education and Research for Societal Change and Development. Paris: UNESCO.

UNESCO (1960). UNESCO Convention against Discrimination in Education. Adopted by the General Conference at its eleventh session, Paris, 14 December 1960.

Walberg, H.J. (1981). A Psychological theory of Education Productivity. In F.H. Farley & N. Gordorn (EDs*), Psychology and Education* (pp. 81-108). Berkeley, C.A.

Winter (2009). *Speaking of teaching and learning*. Magazine produced quarterly by the center for Teaching and Learning Vol. 10, No.

Zeeb, M.S. (2004). Improving students' success through matching learning and teaching styles. Retrieved from http://www.creativelearningcentre.com

