

EFFECTS OF TEACHING APPROACHES ON STUDENTS' ACADEMIC PERFORMANCE FROM SELECTED PUBLIC SECONDARY SCHOOLS IN ARUMERU DISTRICT, TANZANIA

Pascah Kimeli¹, Joshua Kuboja²

University of Arusha, Faculty of Education

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Abstract: This study was conducted to investigate the “Effects of Teaching Approaches on Students’ Academic Performance from Selected Public Secondary Schools in Arumeru District, Tanzania”. A total of 95 respondents were sampled from three selected schools which had a population of 124 teachers. Data was analyzed using the Pearson Product Moment Correlation Coefficient and was used to determine the relationship between the variables. The findings revealed that student centred approach in teaching has more impact on academic performance than teacher centred approach. The study recommends that the Ministry of Education to see to it that teaching approaches are revisited and exposed to teachers through regular trainings and workshops to ensure that student’s academic performance is a priority. The study also recommends that a teacher–centered approach should be used minimally to avoid teacher monopoly of the knowledge, instead, students must be encouraged to become the masters of their own density rather than depending on teachers as one source of knowledge. The study further recommends the use of technology such as the use of computers to help teachers minimize interaction with students.

Keywords: Teaching approaches, students’ academic performance.

1. INTRODUCTION

Education stands as a cornerstone of human development and societal progress, with the quality of instruction serving as a vital determinant of educational outcomes. The role of teaching approaches in shaping students' academic performance has been a subject of enduring interest and significance in the field of education. From traditional teacher-centered methodologies to modern student-centered paradigms, the spectrum of teaching approaches utilized in classrooms today is diverse and dynamic. Understanding the impact of these approaches on students' academic achievement is paramount for educators, institutions, policymakers, and researchers alike (Hattie, 2009). Teaching approaches are sets of principles used by educators to engage students, enhance understanding, and promote effective knowledge transfer.

Teacher-centered and student-centered approaches are two distinct instructional paradigms that shape the way teaching and learning occur in the classroom (Gillespie, 2017). The teacher-centered approach places the educator at the epicenter of the learning process. In this paradigm, the teacher is the primary source of knowledge and authority in the classroom. Pedagogical activities are primarily driven by lectures, presentations, and the transmission of information from teacher to student. Students are expected to be passive recipients of knowledge, absorbing and regurgitating information, with limited autonomy over their learning experiences.

Conversely, the student-centered approach shifts the locus of control from the teacher to the learner. This paradigm emphasizes active student engagement, critical thinking, and problem-solving. Educators in this approach serve as facilitators who guide and support students in their learning journeys. Students are encouraged to take ownership of their education, set goals, explore topics of interest, and participate actively in the learning process (Booth and Koedinger, 2013 and Soltis, 2009).

Teaching approaches can influence the way students engage with course material, comprehend concepts, and retain information. On the global level, the United Nations Educational, Scientific and Cultural Organization (UNESCO) Strategy of 2014-2021 advocates for learner-centered and inclusive teaching approaches that facilitate learners engage in the learning process to effectively acquire values, attitudes, and skills that can bring a positive transformation in society (UNESCO, 2014).

Studies by Giata and Emanuelsson (2018) and Levonen (2020) have shown that developed countries with high-performing education systems such as Sweden, Finland, and Germany implement teaching approaches that cater for the learning needs of students. For instance, in Sweden teachers and students collaborate in planning learning activities (Giata & Emanuelsson, 2018). Finland not only promotes holistic teaching approaches that promote the cognitive, academic, and social development of students as human beings, learners, and citizens (Lavonen, 2020). As a result, Finland is ranked as a high-performing education system with students scoring high performance in reading, science, and mathematics subjects (OECD, 2010). In Denmark teaching approaches that incorporate daily physical activity (PA) have been introduced in public schools since 2014. All subject teachers in Denmark are required to include physical activity in teaching (Knudsen *et al.*, 2018). Despite the slow adaptation rate, PA-based teaching approaches have been recommended to be effective in promoting not only the physical but also the cognitive and academic development of students (Knudsen *et al.*, 2021).

On the regional level, the African Union's Continental Education Strategy for Africa (2016-2025) emphasizes teaching approaches that address learning challenges experienced by students such as difficulties in retaining knowledge, lack of vocational skills, and minimal priority of special needs students (AU, 2016). Contrary to the AU recommendations, African countries apply didactic teaching approaches that not only encourage passive learning but also play a minimal role in promoting successful academic performance for the majority of students. Studies done in African countries such as South Africa, have shown that teachers typically use a question-response teaching approach to control classroom interactions (Ngubane *et al.*, 2020).

Similarly, a study by Christine *et al.* (2019) has indicated in Kenya teachers apply a lecturing, question-and-answer learning approach which is centered on teachers (Christine *et al.* 2019). While the didactic approach allows a teacher to maintain order, it limits students' creativity and critical thinking. Moreover, the didactic teaching approach discourages successful academic performance (*ibid.*). Likewise in Uganda, a study by Kokangora (2019) has shown that public schools largely apply traditional teaching approaches which prepare learners to reproduce learning materials rather than becoming independent thinkers. Learners fail to contribute to teaching-learning activities resulting in poor academic performances (Kokangoro, 2019).

Tanzania's education system has passed through various reforms which have influenced teaching approaches. After its independence in 1961, Tanzania adopted education for self-reliance policy which emphasized practical-oriented teaching approaches that aimed at preparing students to become self-reliant (Sanga, 2016). The Education and Training Policy of 1995 aimed at promoting the development of human resources for national development. The policy also emphasized the use of teaching methods that promote linkage between theory and practice (URT, 1995). In 2005, the Tanzania Institute of Education (TIE) revised secondary school curricula into competence-based curricula (CBC), aiming to equip graduates with knowledge and life skills to succeed academically and socially in the competitive and dynamic world (Kitta & Tilya, 2018).

Despite the efforts made to improve the quality of education in Tanzania, teaching approaches are still teacher-centered. Research such as Timothy (2011) and Banda (2011) have indicated that despite a change in curriculum that requires a shift in teaching approaches, secondary school teachers in Tanzania have persisted in using traditional methods of instruction. These methods primarily revolve around teacher-centered techniques including lectures, demonstrations, and brainstorming. Paulo and Tilya (2014) teachers commonly rely on explaining or demonstrating concepts while writing notes on the chalkboard for students to copy. Occasionally, teachers incorporate closed-ended oral questions focusing on recall rather than fostering critical thinking among students. A few researchers such as Mbedule (2020) and Mbuti (2022) have shown that public secondary schools in Dar es Salaam and Korogwe District respectively apply interactive teaching approaches that have a significant effect on active learning.

There is limited understanding of the effects of teaching approaches on academic performance among public secondary schools in Arumeru District. Particularly, public secondary schools in Meru District Council in Arumeru District in Arusha region have demonstrated varied levels of academic performance in Form Four National Examination Results. The variations are evident in discrepancies in academic performance between arts subjects (such as civics and history), and Basic Mathematics.

Appendix II shows that most of the schools with exception of Kisimiri, performed lower in in Basic Mathematics Subject while performed relatively higher in arts subjects such as Civics and History. This trend raises a research question as of whether teaching approaches are attributed to the discrepancies in academic performance. Previous researchers such as Michael (2014) and Mhagama (2015) have indicated that poor performance in Basic Mathematics Subject in Tanzania is caused by factors such poor teaching environments, limited self-practice among students, poor background in Mathematics, shortage of teaching and learning facilities and low level of teachers' motivation. Despite the ongoing discussions and reforms in education, there are still gaps in our understanding of the effects of teaching approaches on students academic performance. Questions arise regarding the optimal blend of teacher-centered and student-centered methods, the adaptability of different approaches across diverse student populations, and the long-term effects of these methodologies on students' academic trajectories. In line of this, the study investigates the effects of teaching approaches on academic performance from selected public secondary schools in Arumeru District.

Statement of the Problem

Teaching approaches have significant effects on academic performance (Timothy (2011; Banda, 2011). Particularly public secondary schools in Arumeru District in Arusha region have demonstrated varied levels of academic performance between Basic Mathematics and other subjects such as Civics and History. While performance in Basic Mathematics is relatively low across most of the schools, performance of Civics and History Subjects is relatively higher (NECTA, 2020). Despite the trend, there is scant empirical literature about the effects of teaching approaches on academic performance among public secondary schools in Arumeru District. Recent studies by Mbedule (2020) and Mbuti (2022) have shown the positive effects of interactive teaching approaches on academic performance in public secondary schools in Tanzania. However, such studies only covered Dar es Salaam and Tanga Region.

Therefore, the current study expands the existing empirical literature by determining the extent of usage of teaching approaches, assessing the effects of various teaching approaches on academic performance, establishing factors contributing to the persistent usage of teaching approaches on improving academic performance among public secondary schools in the Arumeru District in Tanzania.

2. REVIEW OF RELATED LITERATURE

Theoretical Literature Review

This study is guided by constructivism theory. Several influential theorists and researchers developed the constructivism theory in education. The key figures associated with the development of constructivism include Jean Piaget and Lev Vygotsky. Jean Piaget (1896-1980) proposed a constructivist teaching approach through which children actively construct their knowledge and understanding of the world through their experiences and interactions with others (Gray & Macblain, 2012). Piaget emphasized a student-centered approach where the role of the teacher is to encourage cognitive development and foster active participation of students in teaching and learning activities (Fosnot, 2015).

Lev Vygotsky (1896-1934) emphasized sociocultural teaching approach. Vygotsky proposed the concept of the zone of proximal development (ZPD), which refers to the range of tasks that a learner can perform with guidance and assistance from more knowledgeable others (McClellan, 2023). A sociocultural approach to teaching involves teachers facilitating group learning activities, discussions, and collaboration among their students (Bergin & Bergin, 2018). The approach helps to create a sense of community in the classroom, students are allowed to learn from one another and build upon their collective knowledge (Kail & Cavanaugh, 2016). This approach allows for a more collaborative learning experience, where students can engage with their peers and develop important social and communication skills (Coon & Mitterer, 2014). Additionally, the sociocultural teaching approach can help to foster a sense of belonging and inclusivity among students, which can ultimately lead to higher levels of engagement and academic performance (Kail & Cavanaugh, 2016).

Constructivism theory has several strengths. First, it acknowledges various teaching approaches that can enable students to acquire, process, and utilize knowledge based on their prior experiences. Secondly, the theory provides lenses for understanding teaching approaches that align with the needs of students. Despite the strengths, constructivism theory does not acknowledge contextual factors that can affect teaching and learning approaches. The theory does not take into complexity of knowledge areas that may limit students' ability to work independently without teachers' supervision (Akyol & Fer, 2010) Without proper guidance from teachers, students may reinforce inaccurate information acquired from prior experience.

This theory is relevant to this study because it highlights the role of different teaching approaches. Hence, the theory will guide the analysis of the effects of teaching approaches on academic performance. This study will use constructivism theory as a lens to assess the effects of different teaching approaches on student academic performance in Arumeru District. The study will examine whether instructional methods that align with constructivist principles, such as student-centered learning, project-based learning, or problem-based learning, lead to higher levels of understanding, critical thinking skills, and retention of knowledge among students.

Empirical Literature Review

Several studies have investigated the effects of teaching approaches on academic performance. Onzi et al. (2023) examined the relationship between different teaching approaches and student engagement in secondary schools in Arua City in Uganda. Specifically, the study focused on the correlation between constructivist teaching approaches, behaviorist teaching approaches, and the level of student engagement. The study used a quantitative research approach which involved a correlational research design to examine the relationship between teaching approaches and student engagement. Data was obtained using a self-administered questionnaire from a sample size of 341 students selected randomly from a population of 3487 students drawn from seven government secondary schools.

The study found a positive and significant relationship between constructivist teaching approaches, such as active, collaborative, and contextual learning, and student engagement. The study also found no significant relationship between behaviorist teaching approaches (continuous practice, immediate feedback, and reinforcement) and student engagement. The strength of the study is based on data analysis. The study carried out both descriptive and inferential analyses which provide comprehensive and detailed insights. However, the study had a limited demographic scope. The study was conducted on secondary school students in Arua City, Uganda. Hence, the conclusions may not apply to other areas in the country.

A study by Oke (2020) assessed the effects of teaching approaches on academic performance among government secondary schools in Ibarapa East Local Government in Nigeria. The study applied a quantitative research approach which involved structured questionnaires in data collection and the use of descriptive and inferential statistics in data analysis. The study revealed that the teacher-centered approach was the least effective method in promoting academic performance. In terms of strength, the study applied experimental design which facilitated analysis of cause-effect relationships between variables. However, the study had geographical limitations. Hence, the findings were not generalized beyond the study's scope.

Christine et al. (2019) assessed the influence of teaching approaches on students' academic performance in Kiswahili subjects in public and private secondary schools in the Lang'ata sub-county in Kenya. The study used a mixed-method design that constituted interviews and questionnaires in data collection. The study revealed that teachers combined both traditional and interactive learning approaches. Traditional teaching approaches involved the use of lectures, questions and answers, and guided group work. The interactive learning approaches involved the use of demonstrations and role plays. The study further found that interactive teaching approaches have positive effects on students' performance by boosting confidence and enhancing knowledge retention.

In addition to the above, Kangu (2015) examined the effectiveness of teaching strategies employed in science classrooms for deaf students at Rev. Muhoro Secondary Schools for the Deaf in Nyeri County in Kenya. A Descriptive Case Study design was utilized to investigate this phenomenon. The study sampled 56 respondents including a school principal, teachers, and students. Data collection methods included the use of questionnaires, interviews, and lesson observations. The findings of the study revealed that a learner-centered teaching approach was found to be the most effective method in influencing academic performance in science subjects.

In Tanzania, studies have attested effects of various teaching approaches on academic performance in secondary schools. (Mbedule, 2020) conducted a study to determine the influence of Student-Centred Learning (SCL) methods on student's academic performance in Basic Mathematics in Dar es Salaam secondary schools. The study findings have shown that student-centered teaching methods such as Problem-Based Learning (PBL), Jigsaw, Discussion, and Role Play were employed in teaching Mathematics subjects. The study concluded that the SCL methods were influential in academic performance in terms of promoting collaboration, and cooperation, among teachers and students for effective results in Mathematics subject. In terms of strengths, the study applied experimental design which helped accurate assessment of teaching approaches. In terms of limitations, the study had a limited scope of only four secondary schools. The limited scope could not allow the generalization of findings to the entire population of secondary schools in Dar es Salaam region.

Kayega and Wandela (2021) assessed the role of teaching approaches in mastery of Biology subject among students in public secondary schools in Morogoro Municipality in Tanzania. The study applied a case study research design and involved 121 respondents including heads of schools and teachers. Data was collected using a combination of interviews and questionnaires. The study found that the use of lecturing approaches, and questions and answering approaches has negative effects on academic performance resulting in students' failure. Such methods discouraged critical thinking and problem-solving skills resulting in poor academic performance.

3. METHODOLOGY

This study used a correlation design. The population of the study is 3 schools with 124 teachers. A sample size of 95 teachers was used that was selected randomly. Data were collected using questionnaires. Data were analyzed using correlation analysis technique to test the effects of teaching approaches on academic performance. A reliability score of 0.82 was obtained and therefore considered reliable. Data were analyzed using Product Moment Correlation Coefficient (rho) analysis.

4. DATA ANALYSIS, RESULTS, AND DISCUSSION

Research Question: *Is there relationship between teaching approaches and academic performance in the selected public secondary schools in Arumeru District?*

The question was answered by testing the hypothesis which stated *There is no significant relationship between teaching approaches and academic performance in public secondary schools in Arumeru District.* To determine the relationship between variables, the researcher used the Product Moment Correlation Coefficient (rho).

Teaching Approaches versus Academic performance

Table 1: Correlations between variables

	Teacher centered Approach	Student Centred Approach	Academic Performance
Teacher Centred Approach Pearson Correlation	.309*	.629*	.309**
Sig. (2-tailed)	.043	.000	.000
N	95	95	95
Student Centred Approach Pearson Correlation	1		
Sig. (2-tailed)		.000	.629**
N	95	95	95
Sig. (2-tailed)	.000	1	.000
N	95	95	

Note: ** Statistically significant at 0.01 and * statistically significant at 0.05

Source: Field data, 2023

As indicated in Table 1 there is a direct correlation between the teaching approaches with the academic performance of students ($r = .309$; $\text{Sig} = .000$ and $r = .629$; $\text{Sig} = .000$) which is less than the p-value of .05, Therefore, we reject the proposed hypothesis and maintain that there is a significant relationship between teaching approaches and the academic performance of students. This implies a positive directed relationship between using student centred approach ($r = .629$) than using teacher centred approach ($r = .309$ having a weak relationship).

The findings are in harmony with Christine et al. (2019) who assessed the influence of teaching approaches on students' academic performance in Kiswahili subjects in public and private secondary schools in the Lang'ata sub-county in Kenya and confirmed the relationship between teaching approaches and students' academic performance. Similarly, the findings are supported by Kangu (2015) that a learner-centered teaching approach is the most effective method in influencing academic performance in science subjects. In similar vein, the findings are supported by Mbedule (2020) study that concluded that the SCL methods were influential in academic performance in terms of promoting collaboration, and cooperation, among teachers and students for effective results in Mathematics subject.

5. CONCLUSION

This study employed correlational design and the data were collected through close-ended questionnaire. A total of 95 respondents were sampled from a population of 1263 teachers located in Arumeru public secondary schools. The findings of the study revealed a positive, and yet significant relationship between using student-centred approach ($r = .629$) than using teacher centred approach ($r = .309$). These findings suggested that using student-centred approach could promise good results than dwelling on teacher centred approach which most teachers prefer using. The study concludes that student-centred approach has proved to yield good results if well administered by teachers.

6. RECOMMENDATIONS

Based on the findings, this study recommends that the Ministry of Education see to it that teaching approaches are revisited and exposed to teachers through regular training and workshops to ensure that students' academic performance is a priority.

The study also recommends that teacher-centred approach should be used minimally to avoid teacher monopoly of the knowledge, instead, students must be encouraged to become the masters of their own destiny rather than depending on teachers as one source of knowledge.

The study further recommends the use of technology such as the use of computers to help teachers minimize interaction with students. Computer based approach can equip students to become innovative of their own.

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