

Effect of Interactive Teaching on Pupils' Activeness in Learning: A Case of Primary Schools in Korogwe District, Tanzania

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Abstract: This study sought to establish the effect of interactive teaching on primary school pupils' activeness in learning in Korogwe District, using the descriptive survey design. The study employed a self-constructed questionnaire as source of data. The target population was 31,400 Class Six pupils in 346 Primary Schools. Twenty schools with 2,570 pupils were randomly selected to constitute a sample from which 346 pupils were randomly selected to constitute the actual sample. Two education experts checked the content of the questionnaire against research questions and provided opinions on how the instrument would be improved. The Cronbach's alpha of greater than 0.7 was established prior to actual data analysis. Data was analyzed through descriptive statistics and Pearson Correlation. The study established that while teachers applied the interactive teaching approach and pupils were active in the process of learning, the interactive teachings influenced pupils' activeness in learning. Therefore, it is recommended that teachers should continue using the interactive teaching approach as it influences pupils' activeness in the process of learning.

Keywords: Interaction; activeness; participation; performance; constructivism.

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Introduction

While teaching processes can affect learning effectiveness, this study sought to explore the effect of interactive teaching approach on pupils' activeness in learning. A series of studies has proven the power of interactive teaching approaches toward learning effectiveness and subsequent academic performance (Senthamarai, 2018; Giorgdze & Dgebuadze, 2017; Kennewell, 2015). According to Senthamarai (2018), interactive teaching is one that engages learners in the process of learning rather than delivering ready-made materials for learners' consumption. In that sense, the teacher and the learner have to take active roles in the process of teaching and learning. The author particularly argues that interactive teaching approach is a new approach that fosters interaction among learners as teachers lead the process of learning. In this type of approach, "the teacher must

use particular methods to encourage discovery learning" (p. 36). The interactive teaching approach helps learners to become more engaged in learning and retain more information.

According to Senthamarai (2018, p. 36), interactive teaching has specific characteristics which can be observed in the process of teaching and learning. These characteristics include the teacher becoming a facilitator, learners becoming active participants in the process, the use of questions to stimulate learning, engagement in hands-on activities and application of appropriate learning resources. Additionally, Giorgdze and Dgebuadze (2017) consider interactive learning as an interaction between the teacher and learners with the purpose of transferring appropriate skills, knowledge and values to the learners for effective learning to take place. The authors established that when interactive approach is effectively used, learners afford to

acquire new materials, to memorize concepts for a longer period of time and to retain the gained knowledge into practical application in real life situations. Therefore, interactive teaching involve the teacher and the learner who come together as partners in the process of teaching and learning. Kennewell (2015) maintains that high quality interaction between the teacher and learners is an important element for effective teaching and learning to be realized. The author defined interactive learning as a situation where classroom settings motivate a whole class of learners to actively participate in the learning process.

A number of studies in various countries have shed light on the essence of interactive learning. Njagi (2017), for instance, investigated on techniques used in teaching English spoken language in primary schools' Standard One in Mwea East District, Kirinyaga County, Kenya using a descriptive approach and a questionnaire as source of data. The study established that most Standard One teachers did not use interactive techniques as stipulated in the syllabus. Furthermore, teachers found difficulties in involving learners in the suggested interactive activities during the teaching and learning process. The study recommended that teachers need to prepare for oral lessons and use interactive activities and appropriate teaching and learning resources to enhance a dialogue among learners so as interaction can be enhanced and effective learning can be realized.

Husnaeni (2016) studied on the Enhancement of Mathematical Critical Thinking Ability of Aliyah Madrasah Student Model using Gorontalo by Interactive Learning Setting Cooperative Model. The results showed that learning with ILSC models is better than learning through conventional method if optimized interactivity in the process of teaching and learning has to be realized and effective learning has to take place. Yusuph (2015) assessed the impact of interactive learning activities on students' performance in reading comprehension. The study found that interactive teaching activities have a positive impact on students' reading comprehension among high secondary schools in Kaduna in Nigeria. The study recommended teachers to continue using interactive teaching approaches in order to promote long term students' reading comprehension. Similarly, Tlhoale et al. (2014) investigated the impact of interactive engagement methods on students' academic achievement and found that interactive learning

approaches have a positive impact on students' learning outcomes through learners' engagement which in turn contributes to improvement of academic performance. Mohafa et al. (2022) evaluated the influence of interactive simulation teaching methods on learners' academic performance in Lesotho, Tanzania. Through use of Analysis of Variance and t-test, the study established that simulation learning approaches help to improve students' academic performance. The study recommended that simulation learning should be used in science subjects.

Delija and Kecira (2013) investigated on Integrating Language Learning Strategies to Promote Active Cooperative Language Learning, involving a sample of 60 students from high schools in Tirana and Shkoder who ranged from 14 to 16 years of age. The study established that interactive teaching strategies have a strong impact on students' motivation, which leads them towards active cooperative learners. Therefore, it is important for teachers to use interactive teaching approaches for learners to cooperate and for effective learning to be realized. For that matter, Husnaeni (2016) recommended that schools should continue to apply interactive learning approaches in order to realize learners' cooperative and active engagement in learning activities.

Active Learning Concept

There is a difference between active and Passive Learning. As the names suggest, active learning is one in which learners play roles in the process of learning while passive learning is one in which learners become simply recipients of information with very limited actions in the process of learning. Learning through active approaches leads into maximized learning outcomes. Açıkgöz (2003) as cited by Pekdoğan and Kanak (2016, p. 232) defined active learning as a learning process in which the learner bears the responsibility of the learning process, is provided with an opportunity to make decisions and to make self-regulation about various aspects of the learning process. Through active learning, learners are encouraged to use their mental skills through complicated instructional tasks during learning. This suggests that the rate of learners' activeness is determined by the approach used by teachers. This fact has been supported by Siburian et al. (2018) who did a practical study on the influence of realistic mathematical approach toward students' mathematical connections ability. The study established that the average score of

students' mathematical connection ability taught with realistic mathematics learning was 79.6 while the average score of mathematical connection ability taught with conventional learning was 72.0.

According to Narayanan and Adithan (2012, p. 27), "the need of the hour is knowledge construction that can be achieved through active learning strategies like discussions, role play, group work, problem based learning and project based learning." The authors further argued that learners' engagement is a successful indicator of classroom instruction and called upon educators to embrace active teaching approaches for learners to actively engage in the process of learning. However, active learning is only made possible through availability of appropriate learning resources. This idea is supported by Torre (2013, p. 160) who argued that "emergence of technological breakthroughs in information technologies allows teachers to modify the traditional teaching methods through which the growing educational needs are satisfied using new tools and resources that will make the teaching and learning environments more flexible." Therefore, active learning must be supported by learning tools which can also be referred to as instructional media that encourage learners to participate. The study of Yenyet (2021) discovered that large class size, lack of administrative support and lack of materials or equipment needed to support active learning negatively affected the rate of learners' participation in the process of learning.

Studies have revealed that problem solving approaches of teaching enhance the rate of learners' participation and results into maximized leaning outcomes. The study of Lin (2017), for instance, investigated whether an English reading course integrated with the problem-based learning approach could foster foreign language learners' reading comprehension ability, strategy use, and active learning. The study established a significantly higher degree of active English learning when problem solving approaches were employed in the process of teaching and learning. According to Russell (2021), there is a difference between active and passive learning. The author differentiates active from passive learning in that active learning is learner-centered while passive learning is teacher centered. Another difference is that active learning requires students to think, discuss, challenge and analyze information while passive learning requires learners to absorb, assimilate, consider, and translate information. Active learning encourages

conversation and debate while passive learning encourages active listening and paying attention to detail. Finally, active learning activates higher-order thinking while passive learning just helps students to retain.

Theoretical Underpinnings

This study was informed by the constructivism learning theory. According to Phuong (2018, p. 703), constructivism theory holds that "each learner creates their relative reality or at least understands it based on their knowledge and experience." Phye (1997) argued that constructivism is both learner centered and process oriented teaching whereby learners are guided to actively participate and construct the knowledge through the influence of the teacher. The theory recognizes the central role of the learner in all parts of the process of constructing, reconstructing and enacting knowledge. A number of studies such as Ngussa and Makewa (2014); Ngussa and Chiza (2017) and Ngussa and Lyimo (2019) proved that constructivism approach leads to maximized learning outcomes. The studies indicated that when constructivism approach is used in the teaching and learning process, learners become active and the learning effectiveness is enhanced. According to Anh (2019), constructivism theory helps teachers to identify experiences and knowledge of learners, facilitate student-centered teaching activities, support learners in gaining new knowledge and helps them learn more effectively through hands on activities.

Eze et al. (2019) conducted a study on relative effectiveness of constructivism and meta-learning teaching methods on students' academic achievement and retention in basic electricity in technical colleges. The study revealed that constructivism teaching method improved technical college students' achievement in basic electricity. Since constructivism approach involves opportunities for learners to do while the teacher plays the role of guiding, the approach closely relates with interactive approach and yields positive results in terms of fostering students' activeness in the teaching and learning process.

A study by Ngussa and Makewa (2014) on constructivism experiences in teaching-learning transaction in selected Tanzanian secondary schools established that teachers employed constructivism principles and student academic performance was influenced by teaching modalities, active participation and classroom setup. Furthermore,

high performing learners in the study tended to engage in active participation more frequently than their lower performing counterparts. Based on the findings, the study recommended that “classroom sessions should be dominated by activities that lead learners to actively seek solutions to existing problems and discover new information through a varied range of guided activities” (p. 1). This suggests that the knowledge construction by learners has to be done under the guidance of teachers, thus, learners should not be left alone to do as they wish without proper direction. Therefore, both the teacher and the learners need to be active in the process of teaching and learning whereby the teacher plays the role of proper guidance.

Since reviewed literature did not establish studies on pupils’ learning activeness in relation to teaching approach, this study sought to establish the effect of interactive teaching on pupils’ activeness in learning among primary schools in Korogwe, Tanzania. The study was guided by the following three research questions: (1) To what extent do teachers use the interactive teaching approach in the teaching and learning process? (2) To what extent are pupils active in the learning process? (3) Is there a significant relationship between the interactive teaching approach and pupils’ activeness in learning?

Methodology

Research Design

The study employed the descriptive survey design under the quantitative research approach. To determine the effect of interactive teaching approach on students’ activeness in learning.

Population and Sampling

The target population for this study was 31,400 Class Six pupils in 346 Primary Schools in Korogwe District. Twenty schools with 2,570 pupils were chosen from which 346 pupils were randomly selected to constitute the actual sample. The study employed a self-constructed questionnaire as a method of data collection.

Validity and reliability

Two research experts provided opinions on how the instrument could be improved prior to data collection. To ensure reliability of the questionnaire, data was analyzed through the Statistical Package for Social Sciences (SPSS). The reliability test yielded the Cronbach’s Alpha of 0.7 which indicates that the questionnaire was appropriate for data collection.

Statistical Treatment of Data

Treatment of data involved both descriptive and inferential statistics. The first two research questions involved mean scores and standard deviation while the third research question involved the Pearson correlations test to determine the interrelationship between the independent and the dependent variables.

Ethical Considerations

The study ensured confidentiality and privacy of participants as names of participants and selected schools were undisclosed. Moreover, the researcher obtained a research permit from Korogwe District Council. Voluntary participation was also practiced.

Findings and Discussion

This section presents findings of the study guided by three research questions:

Table 1: Perception of students on the Interactive Teaching Approach

SN	Questionnaire Item	Mean	Std. Dev	Interpretation
1	Classroom Sessions are dominated by a number of activities	3.02	.93222	Agree
2	Teacher is creative and sensitive in the teaching-learning process	2.85	.82141	Agree
3	My teacher uses problem-solving approaches in teaching	2.80	.80582	Agree
4	My teacher uses strategies that encourage me to participate	2.75	.88728	Agree
5	My teacher meets learners at the point of their needs	2.67	.93776	Agree
6	Pupils ask questions during teaching-learning sessions.	2.56	.78624	Agree
7	My teacher uses demonstrations while teaching	2.52	.83460	Agree

Research Question 1: To what extent do teachers use the interactive teaching approach in the teaching and learning process?

This research question sought to establish the extent to which teachers used the interactive teaching approach in the teaching and learning

process. Responded were given a questionnaire which had seven items and were required to indicate whether they strongly disagreed (1), disagreed (2), agreed (3) or strongly agreed (4) with the statements as indicated in table 1. The mean score interpretation was as follows: 3.50-4.00=

strongly agree, 2.50-3.49= agree, 1.50-2.49= disagree and 1.00-1.49 strongly disagreed.

Results that are presented in Table 1 indicate that the mean scores ranged between 2.50 and 3.49 which suggest that respondents agreed with all the statements in the table. Particularly, they agreed that classrooms sessions are dominated by a number of activities (3.02), teachers are sensitive in the teaching and learning process (2.85), teachers use problem solving approaches in teaching (2.80), teachers use strategies that encourage learners to participate (2.75), teachers meet learners at the points of their needs (2.67), that pupils ask questions during the teaching and learning process (2.56) and that teachers use demonstrations while teaching (2.52). Therefore, teachers used the interactive teaching approach, characterized by a number of activities, creativity and sensitiveness, problem solving opportunities, encouraging learners to participate, meeting learners at the point of their needs, opportunity for learners to ask questions and the use of demonstration in the process of teaching. These findings are worth noting due to the fact that when interactive approach is effectively used, learners afford to acquire new materials, to memorize concepts for a longer period of time and to retain the gained knowledge into practical

application in real life situations (Giorgdze & Dgebuadze (2017).

Research Question 2: To what extent are pupils active in the learning process?

This research question sought to establish the activeness of pupils in the process of learning. Respondents were given a questionnaire which consisted of seven items about activeness in learning and were needed to indicate whether they strongly disagreed (1), disagreed (2), agreed (3) or strongly agreed (4) with the statements as indicated in table 1. The mean score interpretation was as follows: 3.50-4.00= strongly agree, 2.50-3.49= agree, 1.50-2.49= disagree and 1.00-1.49 strongly disagreed.

Table 2 indicates that the mean scores for the first four items ranged between 3.50 and 4.00 which suggest that respondents strongly agreed with the four statements in the table. Particularly, they strongly agreed that they performed well in examinations (3.69), they were eager to continue with studies in the next level (3.69), they performed well in quizzes, tests and assignments, (3.67) and they completed and returned individual assignments on time (3.50).

Table 2: Pupils' Activeness in the Learning Process

SN	Questionnaire Item	Mean	Std. Dev	Interpretation
1	I perform well in examinations	3.69	.49560	Strongly Agree
2	I am eager to continue with studies in my next level	3.69	.59901	Strongly Agree
3	I perform well in my quizzes, tests and assignments	3.67	.51200	Strongly Agree
4	I complete and return individual assignment on time.	3.50	.62895	Strongly Agree
5	My performance is better than of pupils from other schools	3.49	.71119	Agree
6	My teachers and parents are satisfied with my performance	3.34	.87767	Agree
7	My academic performance keeps increasing from day to day	3.15	.75024	Agree

The mean score for the last three items was between 2.50 and 3.49 which indicates that pupils' performance was better than of pupils from other schools (3.49), teachers and parents were satisfied with the performance (3.34) and their academic performance kept increasing from day to day (3.15). The fact that pupils either strongly agreed or agreed with all the statements in table 2 indicates that students were active in the learning process and their performance was promising.

The established activeness of students was characterized by good performance, eagerness to continue with further studies, good performance in quizzes, tests and assignments, completing and returning individual assignments on time and

improvement in academic performance. The activeness of the learners and subsequent good performance is likely to have been propelled by the interactive teaching approach as revealed in the first research question. This is supported by Ngussa and Makewa (2014), Ngussa and Chiza (2017) and Ngussa and Lyimo (2019) whose findings proved that constructivism approach leads to maximized learning outcomes and that when constructivism approach is used in the teaching and learning process, learners become active and the performance is enhanced.

Research Question 3: Is there a significant relationship between the interactive teaching approach and pupils' activeness in learning?

This research question sought to establish the relationship between the interactive teaching approach and pupils' activeness in learning. The intention of this question was to determine whether interactive teaching approach triggers pupils' activeness in the process of learning as indicated in table 3. This question called for testing of the

following null hypothesis: There is no significant relationship between interactive teaching approach and pupils' activeness in learning. The hypothesis was tested through the Pearson Product Moment Correlation Coefficient as indicated in table 3.

Table 3: Relationship between interactive teaching approach and students' activeness in learning

		Teaching Approach	Performance
Teaching Approach	Pearson Correlation	1	.503**
	Sig. (2-tailed)		.000
	N	346	346
	Sig. (2-tailed)	.000	.000
	N	346	346
Performance	Pearson Correlation	.503**	1
	Sig. (2-tailed)	.000	
	N	346	346

The existing correlation would be either positive or negative and was interpreted under the following criteria: $\geq .70$ = strong correlation, $\geq .50$ = moderate correlation and $\leq .50$ = weak correlation. Table three indicates the Sig of .000 which is lesser than the critical value (.05) and the Pearson Correlation of .503 which is greater than .50 suggesting a significant moderate and positive correlation between interactive teaching approach and students' activeness in learning. The positive correlation suggests that the more the interactive teaching approach is used, the more the activeness of pupils in the learning process. This finding relates with previous study findings which revealed that interactive teaching approaches which involve problem solving methods enhance the rate of learners' activeness and result into maximized leaning outcomes. Likewise, the study of Lin (2017) established a significantly higher degree of active English learning when problem solving approaches were employed in the process of teaching and learning.

Conclusions and Recommendations

This section presents conclusions and then gives the corresponding recommendations, based on findings.

Conclusions

It is concluded that teachers used the interactive teaching approach which was characterized by a number of activities, creativity and sensitiveness, problem solving opportunities, encouraging learners to participate, meeting learners at the point of their needs, opportunity for learners to ask questions and the use of demonstration. Pupils were active in the

process of learning. The activeness was characterized by good performance, eagerness to continue with further studies, good performance in quizzes, tests and assignments, completing and returning individual assignments on time and improvement in academic performance. There is a significant moderate and positive correlation between the interactive teaching approach and students' activeness in learning. The more the interactive teaching approach, the more the activeness of pupils in learning. Therefore, interactive teachings approach influences pupils' activeness in learning.

Recommendations

Based on the findings, it is recommended that teachers in schools under investigation should continue using the interactive teaching approach as the approach influences pupils' activeness in the process of learning and fosters good performance.

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