
EFFECT OF FORMATIVE ASSESSMENT ON JUNIOR SECONDARY SCHOOL STUDENTS' ACADEMIC PERFORMANCE IN SOCIAL STUDIES IN ONDO STATE

¹Osalusi. F. M. And ²Ajibefun M. B.

¹Dept. of Social Science Education, Faculty of Education, Ekiti State University, Ado - Ekiti.

E-mail: osalusiflo2009@gmail.com

²School of Management Technology, Federal University of Technology, Akure, Ondo-State

E-mail: mboseajibefun@yahoo.com

Abstract

This study investigated the effect of formative assessment on Junior Secondary School students' academic performance in Social Studies in Ondo State. The study adopted quasi-experimental design. The population consisted of all Junior Secondary School Three (JSS3) students in all public secondary schools in Ondo Central Senatorial District of Ondo State. The sample of the study is made up of 80 Junior Secondary Schools class three Social Studies students selected from two local government areas in Ondo Central Senatorial District of Ondo State using multi stage sampling procedure. Achievement Test in Social Studies (ATSS) was used to collect relevant data for this study. The data collected were subjected to t-test analysis 0.05 level of significance. The findings revealed that students exposed to formative assessment performed better than those exposed to conventional method of evaluation. There was also no gender difference on academic performance of students in Social Studies exposed to formative assessment and conventional method of evaluation. Based on the findings, it was recommended, among others, that the use of formative assessment should be encouraged by school management in Social Studies class in order to achieve better performance. In addition, each chapter in Social Studies textbook should be followed by assessment questions.

Key words: Formative Assessment, Summative Assessment, students, Social Studies and Academic Performance.

Introduction

The success of any reform in the educational system is its ability to improve the attainment of learning outcome. The reform of the curriculum for human development and social responsibility is not just to provide access for students but also about developing critical competence and knowledge for sustainable growth. A quality assessment package, such as Formative Assessment Package, which would serve as a framework for teachers in giving direction to the implementation of educational programmes is therefore required because curriculum contents and objectives that are not attained and assimilated by students can lead to poor performance

According to Ozturk (2006), Social studies is a discipline with the aim to raise effective citizens who can solve problems by deciding on

information in changing national and international circumstances almost in every aspect which uses the information and techniques from human and Social Sciences. The relevance of formative assessment in the teaching and learning of Social Studies needs not be over emphasized, considering the enormous positive influence they exert on the general performance of students' Researchers such as Oluwatayo (2007) and Huhta (2010) supported this by stating that formative assessment eliminate test anxiety among students. To them test anxiety originates from fear and negative emotional reactions. Anxiety is associated with panic, nervousness, restlessness, helplessness, trembling and confusion that arise in students when Social Studies tests are mentioned. This is mostly observed when students do not possess the knowledge of the content to be assessed. Huhta (2010) opined that the

techniques to be applied in reducing test anxiety as identified in literature are formative assessment, frequent testing, relaxation techniques, adequate preparation for tests, mental and physical preparation, change of attitude, and effective study habits (Oluwatayo, 2007), specifically, the use of formative assessment has been advocated for reducing students' test anxiety and improving their performance in the subject.

Oluwatayo (2007) identified the two types of assessments as summative and formative. Formative assessment is commonly referred to as assessment for learning, in which the focus is on monitoring student response to, and progress with instruction. It provides immediate feedback to both the teacher and the student regarding the learning process. It is a wide variety of methods that teachers use to conduct in-process evaluation of student comprehension, learning needs, and academic progress during a lesson, unit, or course. When teachers know how students are progressing and when they are having trouble, they can use this information to make necessary instructional adjustment, such as re-teaching, trying alternative instructional approaches, or offering more opportunities for practice.

Oluwatayo (2007) went further to note that formative assessment encompasses lesson plans with on-going classroom oral questioning, discussions, quizzes, evaluation, assignments and tests, that keep students and teachers informed of students' progress towards meeting learning objectives. It also includes weekly tests, immediate feedback and remediation and re-teaching of concepts that were not learnt. The utilization of formative assessment in the teaching-learning process involves breaking up the subject content into smaller hierarchical units for instruction, specifying objectives for each unit, designing and administering formative tests, offering group based

remediation in areas where students are deficient, and finally administering a summative test on completion of all the units. This is based on the assumption that regular assessment of students' progress assists greatly in monitoring their progress and improving their learning and performance

Ideally, information gathered in formative assessments is used to shape strategies for improvement at each level of the education system. At the classroom level, teachers gather information on students' understanding, and adjust teaching to meet identified learning needs. At the school level, school leaders use information to identify areas of strength and weakness across the school, and to develop strategies for improvement. At the policy level, officials use information gathered through national or regional tests, or through monitoring of school performance to guide investments in training and support for schools and teachers, or to set broad priorities for education. In this way, summative evaluation is used formatively at each level of the system - student learning, school improvement and systemic improvement. Formative assessment offers a powerful means for meeting goals for high-performance, high-equity of student outcomes, and for providing students with knowledge and skills for lifelong learning (Centre for Educational Research and Innovation CERI, 2008).

The major aim of formative assessment is to collect detailed information that can be used to improve instruction and students learning while learning is taking place. What makes an assessment formative is not the design of a test, technique, or self-evaluation, but the way it is used i.e., to inform in-process teaching and learning modifications.

Formative assessment is typically contrasted with summative assessment. The former supports teachers and

students in decision-making during educational and learning processes, while the latter occurs at the end of a learning unit and determines if the content being taught was retained (Ainsworth, 2006). Formative assessment is not distinguished by the format of assessment, but by how the information is used. The same test may act as either formative or summative. However, some methods of assessment are better suited to one or the other purpose.

The features that distinguish formative assessment from summative assessment are outlined by Stiggins (2005). Traditionally, summative assessment is administered after learning is supposed to have taken place in order to determine whether or not learning occurred. Formative assessment, in contrast, is conducted while the learning process is ongoing. It is meant to promote student achievement, rather than simply measure or rank it. The formative assessment approach is qualitatively different from summative assessment with students assuming a distinctively active role in the process.

Teachers' feedback on students' work should shift away from simply assigning a grade and move toward written comments that inform students what was done well and what can be done to improve on aspects where the students are still not meeting objectives. Even summative assessments can have formative value if teachers engage students in reflective activities to evaluate the work they completed and plan for improved future achievement.

Formative assessment is more valuable for day-to-day teaching when it is used to adapt the teaching to meet students' needs. Formative assessment helps teachers to monitor their students' progress and to modify the instruction accordingly. It also helps students to monitor their own progress as they get feedback from their peers and the teacher. Students also find

opportunity to revise and refine their thinking by means of formative assessment.

Formative assessment appears to be critical to students' learning outcome in Social Studies. Therefore, the present study investigates the effects of formative assessment on secondary school students' performance in Social Studies.

Statement of the Problem

Average performance of Nigerian students in Social Studies has been the concern of all stakeholders in education industry. One of the major problems identified is poor assessment method adopted by many Social Studies teachers in secondary schools. It seems formative assessment has not been taken seriously in Social Studies and this could have affected the academic performance of secondary school students in Social Studies. Consequently, this study endeavoured to assess the effects of formative assessment on students' academic performance in Social Studies in secondary school in Ondo State

Purpose of the Study

The study investigated the effects of formative assessment on the academic performance of Ondo State secondary school students in Social Studies. It also determined the difference in the pre-test and post-test of students exposed to formative assessment and the conventional method of evaluation. It further examined the interactive effects of gender on the academic performance of students exposed to formative assessment in Social Studies and conventional method of evaluation.

Research Hypotheses

Based on the problem and purpose of this study the following hypotheses were generated:

1. There is no significant difference in the pre-test mean scores of students exposed to formative assessment and conventional method.

2. There is no significant difference in the post-test mean scores of students exposed to formative assessment and conventional method.
3. There is no significant difference in the pre-test and post-test mean scores of students exposed to formative assessment.
4. There is no significant difference in the pre-test and post-test mean scores of students exposed to conventional method.
5. There is no significant gender difference in the academic performance of students exposed to formative assessment.
6. There is no significant gender difference in the academic performance of students exposed to conventional method.

Research Design

The research design adopted for this study is quasi - experimental pre-test and post-test two group design (one experimental group and one control group).

The pattern of the design is as shown below.

O_1 X_1 O_2 : Experimental group
(Formative Assessment)

O_3 - O_4 : Control group
(Conventional method)

Where

O_1 , O_3 , - Pre-test (Performance before treatment)

O_2 , O_4 , - Post-test (Performance after treatment)

X_1 - Treatment via Formative Assessment

- - Control group: Conventional Method

Population, Sample and Sampling Techniques

The population consisted of all Junior Secondary School Class Three (JSS 3) students in all public secondary schools in Ondo Central Senatorial District of Ondo State. The sample of this study is made up of 80 students selected from four public secondary schools in Ondo State, Nigeria. The sample was selected using multistage sampling procedure. In stage one, two

Local Government Areas were randomly selected from Ondo Central senatorial district. In stage two, two public secondary schools were randomly selected from each of the two local government areas chosen for the study. In stage three, twenty students were selected from each of the schools using stratified random sampling technique. Purposive Sampling technique was used to group the schools into different experimental and control groups.

Instrumentation

The instrument used for this study is Achievement Test in Social Studies (ATSS). The instrument was self-designed by the researcher and it was used for pre-test and post-test. The content of ATSS used for pre-test was reshuffled for the post-test in order to prevent carry-over effect. The instrument was validated by content validity method. It was given to three Social Studies teachers to ascertain the content validity of the instrument. Split half method was used to ascertain the reliability and Pearson Product Moment Correlation statistics formula was used to establish the reliability coefficient which yielded a co-efficient 0.84.

Experimental Procedure

To carry out the research in the schools, the researcher obtained permission from the authorities of the four schools. The study was carried out in three phases:

Phase I: Pre-treatment Stage

The researcher administered pre-test instrument. The instrument used was Achievement Test in Social Studies (ATSS) for all the students. A day workshop was organized for each of the research assistants on formative assessment and conventional method of evaluation.

Phase II: Treatment Stage

- a) Experimental group (Formative Assessment): the experimental group was taught using the Formative Achievement Package.

Students in the experimental groups were exposed to the instructional units using the lesson plan for six weeks. There was formative assessment during instruction aimed at monitoring students' learning progress, to detect their strengths and weakness. The assessment also required if the students had achieved the set of instructional objectives or not. At the end of each week, a four - item weekly test was administered. After each assessment, students were given feedback on their performance in the test. The feedback was followed by discussions and correction of the test as a remediation. Discussion involved closer interaction among the students and between the teacher and the students to identify, discuss reinforce, and try to reduce tension as they solve problems and made correct responses to the test items.

b) Control Group: Conventional method of Evaluation): Students I the control group were exposed to a convectional method of teaching. This is the lecture method of teaching, where the

teacher talks and writes on the board while the students take notes. The formative assessment package was not used with these groups of students. Although they were taught all the topics using lesson plans and were given a weekly test, there were no feedback and remediation.

Phase III: Post-treatment Assessment

At the end of the treatment programme, ATSS was re-administered on the students to determine the effects of the treatment on them. The same instrument used during the pre-test was re-arranged to avoid test-wiseness and administered to the experimental and control groups

After treatment, the scores in pre-test and post-test in the two groups were collated and subjected to appropriate statistical analysis. The six hypotheses were analyzed by t-test analysis at $\alpha = 0.05$ level of significance.

Results

Hypothesis 1: There is no significant difference in the pre-test mean scores of students exposed to formative assessment and conventional method.

Table 1: t-test analysis for Pre - test Mean Scores of Students in Experimental and Control Groups

Variations	N	Mean (\bar{X})	SD	df	t_{cal}	t_{table}	Rem.
Formative Assessment	40	12.70	1.44	78	0.91	1.98	Not Significant
Conventional	40	12.43	1.26				

P<0.05

Table 1 shows that the t_{cal} value of 0.91 is less than the t_{table} value of 1.98 at 0.05 level of significance, this implies that null hypothesis is not rejected. Hence, there was no significant difference in the pre-test mean scores of students exposed to

formative assessment and conventional method.

Hypothesis 2: There is no significant difference in the post-test mean scores of students exposed to formative assessment and conventional method.

Table 2: t-test analysis for Post - test Mean Scores of Students in Experimental and Control Groups

Variations	N	Mean (\bar{X})	SD	df	t_{cal}	t_{table}	Rem.
Formative	40	25.28	1.72	78	25.79*	1.98	Significant

Assessment			
Conventional	40	16.13	1.44

*P<0.05

Table 2 shows that the t_{cal} value of 25.79 is greater than t_{table} value of 1.98 at 0.05 level of significance, this implies that null hypothesis is rejected. Hence, there was a significant difference in the post-test mean scores of students exposed to formative assessment and

conventional method. The mean score showed a significant difference in favour of formative assessment.

Hypothesis 3: There is no significant difference in the pre-test and post-test mean scores of students exposed to formative assessment.

Table 3: t-test analysis for pre-test and post-test mean scores of students exposed to formative assessment

Variations	N	Mean (\bar{X})	SD	df	t_{cal}	t_{table}	Rem.
Pre-test	40	12.70	1.44	78	35.43*	1.98	Significant
Post-test	40	25.28	1.72				

*P<0.05

Table 3 shows that the t_{cal} value of 35.43 is greater than t_{table} value of 1.98 at 0.05 level of significance, this implies that null hypothesis is rejected. Hence, there was a significant difference in the pre-test and post-test mean scores of students exposed to formative assessment. The

mean score showed a significant difference which indicate that formative assessment was very effective

Hypothesis 4: There is no significant difference in the pre-test and post-test mean scores of students exposed to conventional method.

Table 4: t-test analysis for pre-test and post-test mean scores of students exposed to conventional method

Variations	N	Mean (\bar{X})	SD	df	t_{cal}	t_{table}	Rem.
Pre-test	40	12.43	1.26	78	12.26*	1.98	Significant
Post-test	40	16.13	1.44				

*P<0.05

Table 4 shows that the t_{cal} value of 12.26 is greater than t_{table} value of 1.98 at 0.05 level of significance, this implies that null hypothesis is rejected. Hence, there is significant difference in the pre-test and post-test mean scores of students exposed to conventional method. The implication of this finding is that conventional method was effective but

it was not as effective as formative assessment strategy because the difference between the pre-test mean scores of students exposed to formative assessment was very large.

Hypothesis 5: There is no significant gender difference on the academic performance of students exposed to formative assessment.

Table 5: t-test analysis for gender difference on the academic performance of students exposed to formative assessment

Variations	N	Mean (\bar{X})	SD	df	t_{cal}	t_{table}	Rem.
Male	20	25.70	1.66	38	1.59	2.02	Not Significant
Female	20	24.85	1.73				

P<0.05

Table 5 shows that t_{cal} value of 1.59 is less than t_{table} value of 2.02 at 0.05 level of significance, this implies that null hypothesis is not rejected. Hence, there was no significant gender difference on the

academic performance of students exposed to formative assessment.

Hypothesis 6: There is no significant gender difference on the academic performance of students exposed to conventional method.

Table 6: t-test analysis for gender difference on the academic performance of students exposed to conventional method

Variations	N	Mean (\bar{X})	SD	df	t_{cal}	t_{table}	Rem.
Male	20	15.90	1.37	38	0.99	2.02	Not Significant
Female	20	16.35	1.50				

$P < 0.05$

Table 6 shows that the t_{cal} value of 0.99 is less than t_{table} value of 2.02 at 0.05 level of significance, this implies that null hypothesis is not rejected. Hence, there was no significant gender difference on the academic performance of students exposed to conventional method.

Discussion

This study revealed a no significant difference in the pre-test scores of students in Social studies exposed to formative assessment and conventional method. This implies that the groups were homogeneous at the commencement of this study. Finding 2 also revealed a significant difference in the post-test scores of students in Social studies exposed to formative assessment and conventional method. The significant difference is in favour of students exposed to formative assessment. It implies that when formative assessments are used by teachers in social studies class, it is effective than conventional method of evaluation. The result agrees with Doolittle (2004) who concluded that students exposed to formative assessment will perform better than students exposed to conventional method of evaluation in Social Studies.

Findings revealed that significant differences existed between the pre-test and post-test mean scores of students exposed to formative assessment and conventional method of evaluation in Social studies. Though a large difference existed between pre-test and post-test score of students

exposed to formative assessment, unlike conventional method of evaluation where the difference was minimal. This implies that formative assessment are more effective than conventional method of evaluation. This agree with the submission of Christiana Amaechi, Ugodulunwa, Uzoamaka, Priscilla & Okolo (2015) and Ajogbeje (2013) who observed that formative assessment greatly influenced students' academic achievement.

Furthermore, the study revealed that there was no significant difference between male and female in Social Studies on the academic performance when exposed to formative assessment. This is in accordance to Christiana Amaechi, Ugodulunwa, Uzoamaka, Priscilla & Okolo (2015) and Allal & Lopez (2005), who concluded that there is no gender disparity when students are exposed to formative assessment. In addition, it was revealed that there was no significant difference between male and female in Social Studies on the academic performance when exposed to conventional method of evaluation. The result was agrees with Christiana Amaechi, Ugodulunwa, Uzoamaka, Priscilla & Okolo (2015) who concluded that there is no gender disparity when students are also exposed to conventional method of evaluation.

Conclusion

It can be concluded from the findings that the use of formative assessment is very effective in increasing students' academic performance in Social Studies. Formative assessment is thus effective in the teaching and learning of Social Studies than the conventional method of evaluation. There is also no gender disparity in students' response to formative assessment and conventional method.

Recommendations

Based on the findings from this study, it is hereby recommended that the use of formative assessment should be encouraged by the school management in Social Studies class in order to achieve better performance. The Ministry of Education should give teachers adequate orientation through seminars and workshops to update their knowledge in the use of formative assessment. In addition, Social Studies textbook publishers should end each topic in their textbooks with end of chapter assessment.

References

- Ainsworth, L.B. (Eds.) (2006). *Improving formative assessment practice to empower student learning*. Thousand Oaks, CA: Corwin.
- Ajogbeje O. J. (2130). Effect of Formative Testing with Feedback on Students' Achievement in Junior Secondary School in Ondo State Nigeria: *international Journal of education Research* 2 (2), 08 -20.
- Allal, L. & Lopez, L.M. (2005). Formative assessment of learning: A review of publications in French In *OECD (Ed.) Formative assessment: Improving leaning in secondary classrooms* (pp. 241 - 264). France: OECD Publishing.
- Center for Educational Research and Innovation (CERI) (2008). *Assessment for learning; Formative Assessment*. OECD/ CERI International Conference. *Learning in the 21st Century: Research, Innovation and Policy*. OECD, Paris. 1 - 24.
- Christiana Amaechi, Ugodulunwa, Uzoamaka, Priscilla & Okolo (2015). Effect of Formative Assessment on Test Anxiety and Performance of Junior secondary school students in social studies in Jos, Nigeria. *Journal of Research and Methodology in Education*, 3(1), 114-119.
- Doolittle, P. E. (2004). The need to leverage theory in the development of guidelines for using technology in social studies teacher preparation. [Online serial].
- Huhta, A. (2010). Diagnostc and formative assessment. In Spolskey B. and Jult F.M. (Eds) *the Handbook for Educational linguistics*. Oxford: Blackwell Publishing Ltd.
- Oluwatayo, J.O. (2007). Continuous assessment scores as predictors of students grade in senior school certificate chemistry examination, *Journal of Research in Education, International Research and Develop-ment Institute* 4(20), 81 - 84.
- Ozturk, R. (2006). Comparing multimedia and traditional instructional materials. *Teaching of Instruction*, 26, 58-61.
- Stiggins, R.J. (2005). From formative assessment to assessment for learning: a path to success in standards-based schools. *Phi Delta Kappan*, 87(4), 324 - 328,