Perception of Formative Evaluation Practices and Students' Academic Performance In Junior Secondary Certificate Examination in Social Studies

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Abstract

The study explored the extent to which students' academic performance in Junior Secondary Certificate Examination (JSCE) in social studies is differentiated by their perception of teachers' formative evaluation practices. A sample of 300 Junior Secondary Three (JS-3) students was surveyed. The subjects responded to a questionnaire on teachers' formative evaluation practices while their academic performance was determined by their scores in social studies in JSCE. Students' academic performance in social studies differed significantly on the basis of their perception of teachers' formative evaluation practices. Students who perceived their teachers' formative evaluation practices as "enhancing to learning" (positive) performed better than their counterparts who viewed same as "not enhancing to learning" (negative). Implications for research and practice in teaching-learning processes are suggested.

Keywords: Perception, formative evaluation, academic performance, social studies

1.0 Introduction

Evaluation is generally understood as testing, that is, a reliable procedure for collecting summative data, but it can also refer to the making of inferences based upon students' performances on "authentic" learning activities, whether the inferences are for summative or formative purposes (Erwin and Knight, 1995). Continuous quality improvement in formal learning depends upon well-conceived approaches to evaluation that have both formative and summative functions. Learning takes place in a context and within a system (Kaplan and Owings, 2001). Phenomenographic research into learning has strongly suggested that students' learning approaches are affected by their intellectual environment of which evaluation is a part (Erwin and Knight, 1995). The environment in this context could be regarded as a system. Hence, if one part of the system (the goal of learning) is out of order with other parts (students' perception of the academic activities, instructional strategies, learning tasks and evaluation processes) then it will be lacking in impact.

Evaluation is vital to the education process. If educators understand curriculum better, then they can equally understand the formative and summative purposes of evaluation and the significance of arrangements for the assessment of students' learning for continuous quality improvement in education. In talking about the implementation of school curriculum, it is useful to differentiate between the 'planned', the 'delivered' and the 'received' curriculum, as well as to think about the 'used' curriculum. The scare quotes indicate that both 'delivered' and 'received' are misleading metaphors (Erwin and Knight, 1995).

When educators have planned a curriculum, they do not deliver it to learners like the postal service delivering a parcel. It is widely recognized that implementing plans involves changing them in many ways. It would be better to speak of ***created*** rather than of delivered curriculum. If educators are interested in quality, then they need to look not just at paperwork, but also at the ways in which the curriculum is created through the actions of the teachers.

Likewise, what is created by the teacher is not what the learner 'receives' for it is well known that human cognition is an active process whereby new information is processed, stored and understood in relation to learners' own mental structures (Huitt, 2003). Learners transform what it is they are expected to learn often in some rather unexpected ways (Halpern, 2004). This is further explained by the cognitive theory of learning.

Cognitive theory uses the metaphor of "humans as information processors" (Mayer, 1998:17). That is, human thought and behaviour are explained by positing how the human mind processes the information it experiences and retains. Empirical investigations of information processing theory have resulted in many principles regarding the nature of human thought and behaviour (Doolittle, 2004). The first principle simply states that the degree to which knowledge and experience are processed is related to the quality of remembrances that result (Craik and Lockhart, 1972). Craik and Lockhart referred to this phenomenon as "depth of processing" where depth refers to the degree of mental effort exerted, and the quantity and quality of mental resources utilized during learning event. Increased mental processing would result in increased meaningful learning and retention.

The second principle states that processing that is elaborate leads to increased learning. Specifically, elaborative processing that is self-generated and personally relevant results in increased memory retention (Stein and Brandsford, 1979). Students learn more both qualitatively and quantitatively when they relate and integrate their own personal knowledge to current experiences, especially when the students are responsible for the "relating" and "integrating" as opposed to the teacher simply providing relevant examples.

The third principle addresses an aspect of mental structure. Specifically, individuals organize knowledge according to schema and scripts which influence how new knowledge is retrieved (Bower, Black and Turner, 1979). An important aspect of these mental structures, schemas, and scripts, is their ability to influence both how individuals perceive a given situation and what they infer from that situation (Ausubel, 1968).

In evaluating students' academic performance, in any subject curriculum, rather than envisaged the assessment of the 'received' curriculum, educators might speak of the ***understood***
curriculum based on the cognitive theory using humans as information processors (Craik and Lockhart, 1972; Anderson and Bower, 1972, Stein and Brandsford, 1979; Brewer and Treyen, 1981). Educators interested in the quality of learning are naturally interested in the quality of the understood curriculum. The implication is that where the quality of learning is being judged, then the evidence needs to be provided showing what has been learned (the understood curriculum) and only then is evidence for what was created by the teacher, and what had been planned.

Ideally, information gathered in assessments and evaluations 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).

1.1 Evaluation Purposes in School Curriculum

Evaluation can have a formative function, which is to say, it can help teachers to improve their teaching and learners to improve their learning. Cowie and Bell (1999) define formative assessment as "the process used by teachers and students to recognize and respond to student learning in order to enhance that learning, during the learning" (p. 103). Valid and reliable evaluation data inform teachers what has been understood, thereby illuminating the extent of the gap between the planned, the created and the understood curricula. In this way, formative evaluation can make for better learning in the future by helping teachers to see where the course needs to be strengthened. It typically involves qualitative feedback (rather than scores) for both students and teachers that focuses on the details of content and performance (Huhta, 2010).

Formative evaluation is diagnostic, identifying what learners do not know, as well as that which they do well enough. Feedback is vital to formative assessment, but not all feedback is effective. Feedback will inform students how well they are progressing. Feedback needs to be timely and specific, and should include suggestions for ways to improve future performance. Good feedback should be tied to explicit criteria regarding expectations for students' performance, thus making the learning process more transparent, and modelling "learning to learn" skills for students (CERI, 2008).

In their review of the English language literature, Black and William (1998) identified a number of studies conducted under ecologically valid circumstances (that is, controlled experiments conducted in the students' usual classroom setting and with their usual teacher) to support the fact that not all feedback is effective. For instance, "ego-involving" feedback rather than feedback on the task at hand appeared to have a negative impact on performance (Boulet, 1990). Students also obtained better results when they were working toward process goals rather than product goals, and when tracking progress toward overall goals of learning (Schunk, 1996). Grades may actually undermine the positive help of specific feedback on tasks (Butler and Winne, 1995).

In the French – speaking research community in Europe, considerable attention has been devoted in recent years to regulating learning and teaching in the classroom (Allal, Cardinet, and Perrenoud, 1979). Attempts had been made in particular to identify the way in which evaluation practices are integrated into the daily functioning of the classroom (Perrenoud, 1984) and to define the types of regulation that result from teachers' formal and informal assessment procedures (Allal, 1988).

Armitage (1967) remarked that "evaluation is pointless unless it is directed toward assessing pupils' progress toward goals defined in the objectives of social studies" (p. 46). It is a hollow routine unless evaluation critically analyses learners' growth toward desirable understandings, attitudes, behaviours and skills inherent in the basic concerns of social studies (Dunfee, 1965). Due to the broad nature of the purpose of the social studies, "a wide variety of evaluative techniques and procedures must be used to appraise the growth of pupils" (Husbands, 1961:235).

In a survey conducted by Stiggins and Bridgeford (1985), nearly all teachers – across elementary, junior high and senior high grades – reported of a high level of use of procedures classified as "structured and spontaneous performance assessments" based on observation and rating of students' behaviour and products (p. 279). Airasan (1984) observed in several studies that, in particular, teacher-made objective tests represent significant components of most teachers' evaluation strategies. Although teacher-made test (unit test, mid-terms, finals) take on increasing importance in junior and senior high school, spontaneous and structured performance assessment remain major factor in the assignment of grades and the reporting of results to parents (Stiggins and Bridgeford, 1985) and may include aspects of students' behaviour such as participation in class discussion or completion of homework (Haertel, 1986).

Meta-analysis of studies into formative assessment have indicated significant learning gains where formative assessment was used across all content areas, knowledge and skill types, and levels of education (Black & William, 1998). In his review of the research, Crooks (1988) reports that effects sizes for summative evaluations are consistently lower than effect sizes for formative assessments. In short, it is formative assessment that has a strong research base supporting its impact on learning (Marzano, 2006).

Evaluation also has summative purpose, which is to say that it provides end-of-course information about learners' achievements. It not only certifies these achievements but it also provides performance indicators that have a myriad of policy and management uses (Erwin and Knight, 1995). Summative evaluations are used to measure what students have learnt at the end of a unit, to promote students, to ensure they have met required standards on the way to earning certification for school completion or to enter certain occupations or as a method for selecting students for entry into further, education. Ministries or departments of education may use summative assessments and evaluations as a way to hold publicly funded schools accountable for providing quality education (CERI, 2008). Increasingly, sub-regional summative assessments – such as Senior Secondary School Certificate Examination conducted by the West African Examination Council for the former British West African colonies (Nigeria, Ghana, Sierra Leone and Gambia) and Liberia – have been important for comparing national education systems to developments in Nigeria with other countries.

Summative evaluation needs to be based on evidence of *learning outcomes,* directly providing evidence about the core business of school, which is student learning. Summative results, when embedded in the wider teaching and learning environment, are more likely to be used formatively. They also help to lower the stress of tests, which can have a negative impact on the self-esteem of lower achieving students (EPPI-Centre at the Institute of Education, University of London, June 2002). In part, this is an ethical requirement in that a teacher has a professional responsibility to do what works best.

Considering teacher's role in the implementation of any school curriculum, summative evaluation data can help to "determine if the content being taught was retained" (Ainsworth and Viegut, 2006:23). On the basis of the above literature review, it is appropriate to hypothesize that there will be no significant difference in students academic performance in Junior Secondary Certificate Examination in social studies based on their perception of teachers' formative evaluation practices.

1.2 Purpose and Significance of the Study

The main purpose of the study was to investigate the extent to which students' academic performance in Junior Secondary Certificate Examination (JSCE) in social studies is differentiated by their perception of teachers' formative evaluation practices. Specifically, the study aimed at identifying effective and ineffective Social Studies curriculum implementation based on students' perception of teachers' evaluation practices. In this conceptualization, effective implementation of Social Studies curriculum was associated with students' rating of teachers in the formative evaluation practices as reflected in their performance in a standardized Social Studies Junior Secondary Certificate Examination which was the summative evaluation conducted at the end of a 3-year prescribed period of study.

The findings of this study will contribute to the existing research on the impact of formative assessment on general students' achievement (Black and William, 1998; Crooks, 1988). The findings will also provide feedback to teachers on the need to modify subsequent teaching-learning activities and experiences as well as help to improve students' meta-cognitive awareness of how they learn. The research question is: What role does students' perception of teachers' evaluation practices (formative) play on their academic performance in Junior Secondary Certificate Examination (summative evaluation) in Social Studies? Since evaluation and assessment of students' learning are essential aspects of the teachers' pedagogical activity, it is hoped that a better understanding of this relationship would yield valuable insight for researchers concerned with the ways in which students' learning is assessed as it constitutes a sensitive set of indicators of the quality of the students' experience.

2.0 Methodology

2.1 Subjects

The sample in this study consisted of 300 (150 male and 150 female) Junior Secondary Three (JS-3) students drawn from public secondary schools in Akwa Ibom State of Nigeria. Stratified random sampling technique was used to obtain the sample for the study. All the 300 participants completed the 15-item Likert-type rating scale designed by the researchers to elicit information on students' perception of teachers' formative evaluation practices.

The possible responses to the rating scale items ranged from 5 (strongly agree) to 1 (strongly disagree). However, the rating scores were reversed for negative statements. The neutral score was 3, thus, the composite score for each participant's rating ranged between 75 (maximum) and 15 (minimum). A favourable direction for teacher's evaluation practices was therefore placed between 46 and 75 while unfavourable perception was between 15 and 45. Sixty-five percent (194) of the sample indicated favourable disposition while 35% (106) was of unfavourable perception. All the participants in the study offered social studies as one of the core subjects in the junior secondary curriculum; their age averaged 13 years.

2.2 Hypothesis

The study tested one null hypothesis at the 0.05 level of significance which reads: There is no significant difference in students' academic performance in Junior Secondary Certificate Examination in social studies based on their perception of teachers' formative evaluation practices.

2.3 Instrumentation

The research instruments consisted of "Formative Evaluation Rating Scale" and the "Social Studies Summative Evaluation Scores".

2.3.1 Formative Evaluation Rating Scale

The rating scale contained 15 items of a 5-point Likert scale with declarative statements on teachers' formative evaluation practices. Content validity was established by a panel of experts consisting of university faculty members in the Tests and Measurement Unit of the Department of Educational Foundations. Five options were available for rating ranging from "strongly agree" (5 points) to "strongly disagree" (1 point). Pilot testing for suitability and reliability was carried out with junior secondary students in schools not included in the sample. Cronbach alpha reliability coefficient for the formative evaluation rating scale was 0.82.

2.3.2 Social Studies Summative Evaluation Scores

The social studies end-of-programme (Junior Secondary Three) examination scores of the sample in the Junior Secondary Certificate Examination of 2010/11 academic session which was set and marked by the Examination Unit of Akwa Ibom State Ministry of Education provided the summative evaluation data for the study.

2.4 Data Collection

Data were collected with the assistance of subject masters in the schools involved in the study. A duration of 15 minutes was allowed for the completion of the formative evaluation rating scale. Participants' summative evaluation scores in social studies were culled from the Ministry of Education examination records.

2.5 Data Analysis

Data were described using means and standard deviation. The independent t-test was used to establish the significant difference in students' academic performance in Social Studies based on their perception of teachers' formative evaluation practices of either "enhancing to learning" (Positive) or "not enhancing to learning" (Negative).

3.0 Result

Data in Table 1 indicate that there was significant difference in the academic performance mean scores of students in the Junior Secondary Certificate Examination in social studies based on their perception of teachers' formative evaluation practices ($t = 12.40$, $p < 0.05$). Students with positive predisposition to the teachers' formative evaluation practices performed better than their counterparts who perceived the practice as not enhancing to learning (negative) (63.08 vs. 40.38).

4.0 Study Limitations

The finding of this study suggests interesting difference among students' academic achievement in summative evaluation in social studies programme in respect of students' perception of teachers' formative evaluation practices. However, it is worthy to note that the study has some limitations associated with the sample of students in the analysis, the data collection methods and the overall study design approach.

The sample for the study was drawn from a set of students primarily in the public secondary schools. The finding may not generalize to students with different characteristics, such as those who attend private and more advantaged staffed schools (model secondary schools).

The data used in the analyses were based on students' emotional – reports (with exception of academic performance data). They did not involve examination of students' continuous assessment records (formative evaluation) only students' perceptions of formative evaluation practices. Without additional data, it is difficult to determine to what extent teachers demonstrated high-quality pedagogy and objective assessment of students' learning under formative evaluations. Hence, the validity of the participants' responses becomes susceptible.

Finally, the source of the data collected and the data analyses used here cannot yield definitive conclusions. While the ex-post facto design allows for testing hypothesis based on the construct of the independent variable (perception of teachers' formative evaluation practices) which had already occurred and is investigated retrospectively, only with caution should the finding be interpreted as causal. It is possible for a condition to precede an outcome without causing the outcome.

5.0 Discussion of Results

The result of the data analysis indicated that students' perception of teachers' formative evaluation practices has a role to play in differentiating their academic performance in summative evaluation as typified in this study predicated on the Junior Secondary Certificate Examination result in social studies. Subjects who rated the teachers on this criterion as positive performed better than those who perceived same as negative. This finding supports the contention that the way students approach learning is often shaped by the evaluation tasks, and the way they feel about their learning and themselves as learners is also shaped by the evaluation task (Erwin, 1995). Because students' perceptions of their capacity for success are key to their engagement in school learning, formative evaluation strategies should be designed to enhance students' feelings of accomplishment. Teachers whom students see as supportive and who set clear expectations on learning should help create an atmosphere in which students feel in control and confident about their ability to succeed in future educational endeavours (Akey, 2006).

The finding of this study supports the assumption that evaluation can have a formative function, which is to say that it can help the learners to improve their learning (Erwin, 1995; Allal, 1988). The situation which arises when a mark or grade is returned to a student is at first sight a simple application of an essential 'feedback' process; a method by which students are informed on how well they are progressing (CERI, 2008). The feedback serves as a reality test and a motivator for further learning. In this study it could be concluded that students who perceived their teachers' formative evaluation practices as "enhancing to learning" (positive) and have it reflected in their better performance in social studies summative assessment examination might be those who found such evaluations and feedbacks inspiring and boosting to their studies. Weiner (1979) pointed out that the causes to which students attribute their success or failure affect their future performance. Verbal persuasion, especially praise and encouragement from significant others, for example teachers, may help to link perceived results to causes that will increase students' motivation (Boekaerts, 1991). Motivation is crucial to cognition and performance because motivation directs individuals' behaviour. Competence - related beliefs are motivational because when learners believe they can accomplish a given task or activity they are more likely to continue to do the activity, overcome obstacles to complete it, and choose more challenging activities on subsequent occasions. (Wigfield, Battle, Keller, and Eccles, 2000).

The low performance of the negative raters of the teachers' formative evaluation practices could be accounted for as an expression of the way the students approached their learning and the perception of their likelihood of failure. The reflection of the students' negative rating of the teachers' formative evaluation practices on their low performance in the achievement test indicates such students' lack of self-efficacy. Self efficacy according to Bandura (1982) refers to a person's specific beliefs about his/her ability to perform certain actions or bring about intended outcomes. As might be expected, it could have been the academically weak students who rated their teachers' formative evaluation practices as "not enhancing to learning" (negative) in defence for their intellectual inability hence, their low performance in the summative evaluation examination.

Students' beliefs about their competence and their expectations for success in school have been directly linked to their emotional states that promote or interfere with their ability to be academically successful (Akey, 2006). Students who believe they are academically incompetent tend to be more anxious in the classroom and more fearful of revealing their ignorance (Abu-Hilal, 2000; Harter 1992; Hembree 1988). In addition, such students are more likely to avoid putting much effort into a task so that they can offer a plausible alternative to low ability or lack of knowledge as an explanation for failure – for example, "I could have done it if I tried, but I didn't feel like doing it (Covington, Spratt and Omelich, 1980).

In sum, the difference in the academic performance mean scores of the students in this study could be attributed to the psychological mediator of the relationship between students' self-concept and academic achievement.

Also, it would be logical to assume that the extraneous effect of the personal value of the social studies curriculum content might have contributed to the students' mode of perception of teachers' formative evaluation practices hence the reflection on their performance differences. The low performance of the subjects who rated the teachers' formative evaluation negatively could therefore be interpreted to mean that such students might not have found something of meaning and value for themselves in what was taught in social studies programme, whereas their counterparts did. This assumption is consistent with research findings that "children's reasons or purposes for engaging (or not engaging) in achievement activities are crucial to their motivation. Individuals must value the activity, have goals for doing it, or find it intrinsically or extrinsically motivating in order to engage in it" (Wigfield, Battle, Keller and Eccles, 2000:4).

6.0 Implications for Research and Practice

Evaluation of students' learning is an essential part of the teaching process. It has been contended that the quality of learning and the evaluation systems used in schools are conceptually related. The finding of this study has important implications for understanding how students perceive the feedback they obtain from teachers for their learning. The process, it seems, borders on students developing a sense of efficacy and confidence about their ability to do well in academic work. When students become confident in their ability to succeed, they become more involved and learn more. On the other hand, students are not likely to attempt educational tasks when the feedback from learning indicates that they cannot succeed. The implication for practice is that the earlier schools and teachers begin to build students' confidence in their ability to do well, the better off students will be.

The finding of this research also makes a case that topics corresponding to major components of teachers' evaluation strategies should be treated in greater detail both in pre-service and in-service training. This will help to expose educators to the fact that evaluation of learning should be sensitive and constructive because any assessment has an emotional impact. Hence, the importance of learner's motivation must be taken into account.

Irrespective of the form of evaluation envisaged, it is relevant to allow students express their views on the teaching strategies used. These views should be analyzed by the experienced teachers of the school who will make appropriate recommendations to the teachers concerned to help improve upon their teaching skills. Teachers need expansion repertoires to meet identified student needs. They need a healthy repertoire of approaches to setting up learning situations and responding to students' learning needs. Teachers and researchers may form a healthy partnership for research in this area. Formative evaluation requires greater transparency in teaching and learning. The approach is ideal for researchers who may wish to investigate the practice of teaching and learning in normal classroom settings.

In order to improve the quality of social studies learning, students should be given useful feedback on their work through discussion with their teachers and their peers. This will enable learners to receive constructive guidance about how to improve their learning. The finding of this study makes a case that formative evaluation practices have a significant impact on student learning there is a need therefore for further studies which may address connections between students' emotions and learning. The connections between positive emotions and improved learning are a major theme of neuro-scientific research on learning. This research, along with work in the area of educational psychology, can bring to the fore the need for further studies on the effect of different formative evaluation methods on students' emotions, motivation, self-concept and academic achievement.

Finally, formative evaluation of students' work in social studies should be approached more as a process of decision-making rather than as a process of measurement. Hence, teachers need to pay close attention to helping students understand their own learning and develop appropriate strategies for "learning to learn" skills – skills that are increasingly necessary as knowledge is quickly outdated in the information society (CERI, 2008).

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Table 1

Mean, standard deviation and t-test analysis of summative evaluation performance scores in social studies by students' perception of teachers' formative evaluation practices.

Evaluation Practices	N	Mean	SD	t-value
Positive	194	63.08	14.18	12.40*
Negative	106	40.38	15.62	

***p < 0.05 df = 298**