THE RELATIONSHIP BETWEEN CLASSROOM INTERACTION PATTERNS AND STUDENTS' ACADEMIC ACHIEVEMENTS IN SOCIAL STUDIES

Fan Akpan Fan; S. D. Edinyang and Iwara E. Ubi

Abstract

The article reports on the results of a study which investigated the relationship between the teacher-students classroom interaction patterns and students' academic achievements in social studies. 70 teachers and 2128 Junior Secondary School 111 students drawn from 70 schools in the three educational zones in Cross River State were involved in the study. The research involved the collection of data using Flanders Interaction Analysis Categories System and social studies Academic Achievement Test. The data collected were subjected to Pearson Product Moment Correlation analysis: The findings did not reveal any significant relationship between the interaction patterns and students' academic achievements in social studies. The research has suggested that curriculum, instruction, materials, in and outside the school system, can make but essential contributions to social studies educational programmes and hence the level of students' academic attainment.

Introduction

Interaction is the process of face-to-face action which can be either verbal, channelled through written or spoken words, or non-verbal channelled through touch, proximity, eye-contact, facial expressions, gesturing and so on. The interaction pattern is conceived as an identifiable short chain of events that occur frequently enough to be of interest and which can be given a verbal label. It is a cooperative learning through structured instructional strategies which emphasize active learning through interpersonal interaction where students act as partners with the teacher and each other. The teacher is seen as constantly assessing the situation, processing information about the situation, making decision about what to do next, guiding action on the basis of this decision and observing the effects of the action on students (Clark & Yinger, 1979). Gallagher and Aschner (1963) developed analysis of classroom interaction which focused on the relation of productive thought processes in pupils to verbal interaction in the classroom. The Flanders' Interaction Analysis Categories (FIAC) was developed by Ned Flanders in 1956 with a focus on what teachers say inside the classroom and the consequences for pupil achievement and involvement. Brophy and Good (1970) developed the Dyadic Verbal Interaction Category System (DVICS) which contained ten categories.

Statement of the Problem

This study feels that the present level of Social Studies students' academic achievement can be raised if teachers take great pains to improve upon their interaction patterns with students. Indeed, the quality of students' academic outcome in Social Studies is a function of various interwoven teacher-student interaction process variables in both classroom with walls and classroom without walls. The fundamental question therefore is: do the classroom interaction patterns determine the level of Social Studies academic achievements among students?

Literature Review

Students' achievement in secondary school subjects is of interest to researchers, educationists and parents alike. Correlates of academic achievements in secondary school subjects in many disciplines have been identified. For example, findings have shown the contribution of student factor, school factor and home environment to students' achievement in various disciplines (Chacho, 1981; Touray, 1982; Odubumii, 1983; Onocha, 1985; Umoinyang, 1999). A relatively new approach to the study of teaching assumes that what teachers do is affected by what they think. This approach, which, according to Clark and Yinger (1979) emphasizes the processing of cognitive information, is concerned with teachers' judgement, decision-making, and planning. The study of the thinking processes of teachers - how they gather, organize, interpret and evaluate information - is expected to
lead to understandings of the uniquely human processes that guide and determine their behaviour. The student is an intriguing puzzle for teachers. Sometimes, when teachers have arranged the most stellar teaching imaginable, students do not get the point. And, fortunately even when we feel we have botched instruction, they often learn in spite of our failure (Winne & Marx, 1979). Teachers strive to help students achieve a variety of goals, both personal and academic.

According to Nigeria Educational Research Council (1980) the teaching of social studies should involve students in problems of their community and build confidence and attitudes in them for adult life. Teachers are a critical factor in successful curriculum implementation. Data collected from Cross River State School Management Board showed that in 2005/2006, 1811 NCE teachers were posted from primary schools to teach in secondary schools; 205 staff were transferred from different ministries in the State and 368 from various local governments to teach in secondary schools. Most staff in the latter categories had B.Sc Agriculture and without teaching experiences. It must be pointed out that curriculum-specific in teaching competencies entail knowledge of the subject matter. Also, lack of actual experience in the classroom means that teachers venture into the classrooms with a simplistic view of teaching and a sorely and patently inadequate basis for using the knowledge they possess as they lack professional preparation in child psychology and learning theories.

Teachers are the main determinants of quality of education. If they were apathetic, uncommitted, uninspired, lazy, un motivated, immoral, antisocial, the whole nation is doomed. If they were ignorant in their discipline and impart wrong information, they are not only useless but also dangerous. The kind of teacher trained and posted to the schools may well determine what the next generation will be. Indeed, all teachers are expected to have some understanding of body of knowledge and theory relating to human learning, to the psychology of children and to measurement and evaluation of learning.

Cooperative learning in Social Studies is categorizable into two, namely, whole class and small group or committee work. Given the overloading of Social Studies classrooms in Nigeria where the students' ratio far outstrips the available number of teachers, large or whole class in learning pursuits is counterproductive. What is therefore best for effective social studies teaching-learning situation is task-focused committee work or small group cooperative effort with commitment to results-oriented problem-solving through sharing of ideas (Slavin, 1984). Dike (1989) attests to the fact that most Social Studies teachers today in Nigeria employ the expository methods with emphasis on sheer dispensing of knowledge. This is not the emphasis of social studies as it relates to the expository method in modern Social Studies classrooms. Expository method in the context of social studies teaching interactive process, according to Mezieobi (1994), connotes a two-way knowledge or information sharing between the teacher and the students or among the students in a reasonably democratized collaborative learning atmosphere in which the learner is actively participating; the teacher or the learners could be the source of knowledge stimulation; and knowledge, facts or information learned are not just for mere knowledge acquisition sake; they are for critical, reflective thinking geared towards problem resolution.

Reviews of research on teaching suggest that teacher characteristics play a very crucial role in determining how much students learn (Gage, 1963; Ifejika, 1990). These authors submit that teacher characteristics do not, however, account for much of the variance in teacher and pupil output. The interactive process involved in teaching-learning situations are of different patterns. They have different characteristics and are differentially effective. Each interactive pattern has its own demands on the teacher but more on the learner. The degree of learner-involvement in each interactive pattern goes a long way to determine the knowledge, skills and attitudes acquired hence the need and focus of this study.

Learning is a reorganization of the perceptual, conceptual, thinking and purposive actions which guide the learner in making more desirable and personally satisfying adjustments — cognitive, affective and psychomotor - in both the specific and related task contexts. Learning amidst attainment of competence in learning are dependent on the extent and degree of the learners involvement with the learning task. Such factors as learner anxiety, self-concept, level of social interaction play central roles in the learning process.

Teachers set up the pattern of general behaviour during the teaching and learning process. On the other hand, pupils set up certain types of conduct to match these patterns. As a result, students participate at various levels in different classes and react differently to different teachers. This combined instructional pattern and pupil participation lead to a specific classroom environment featuring specific interaction patterns. Wright and Nuthal (1970) carried out studies on the
relationships between teachers' behaviour and pupils' achievement in three experimental science lessons. Pupils sampled (N = 296) were chosen from Standard Three classes. Teachers sampled (N = 17) used for the study were selected in such a way as to provide for a maximum variation in teaching behaviour. They made the following observations: significant pupil achievement "at the time of observation" was identified with teachers who asked relatively direct (closed) questions more than open questions; involved more pupils by redirecting each question to several pupils who were relatively more indirect in their reaction to pupil responses; experienced teachers asked more of the open questions than the inexperienced teachers though this behaviour did not relate positively with pupil achievement. They related to other long-term cognitives; the tendency to ask one question at a time correlated positively with achievement while the tendency to ask several questions correlated negatively with achievement. McDonald (1976), in another study, observed the relationship between teaching performances and pupils' achievement in Reading and Mathematics and reported that multiple and stepwise regression of the observation data collected indicated that teaching performance accounted for about half of the variance in the mean scores in Mathematics, and only 10% of the variance in Reading. Teaching and task organization, Doinike (2002) asserts, derive from the type of leadership styles exercised by the teacher. Integrative teaching style as opposed to dominative style is adjudged better, but each teacher blends his/her own style. Indeed, classroom climate is an important teaching-learning variable that has achievement implications.

Hypothesis

HOI: There is no significant relationship between the classroom interaction patterns and students' academic achievements in Social Studies.

Methodology

Sample: The sample of the study comprised 70 Social Studies teachers and 2,128 students. The teachers comprised 22 male teachers and 48 female teachers. Their educational attainment was primarily the Nigeria Certificate in Education (NCE) and a University degree.

Instruments

The two instruments used to obtain data for this study were; (i) Flanders Interaction Analysis Categories (FIAC), and (ii) Social Studies Academic Achievements Test (SSAAT)

FIAC was used in the coding of teacher-student classroom interactions as contained in the observation schedule. The work of Ali (2006) informed the researcher's choice of FIAC. AH affirms that 'Flanders' 1970 well-developed schedule for making observations on pupils' behaviour in class is a useful observation tool (p. 107). This author further states that Flanders Interaction Analysis Categories (FIAC) is an unsealed classification of pupils' behaviour to be observed while teaching is going on. FIAC contains ten categories of teacher-students' classroom behaviour which lie along a dimension of "influence". Categories 1 - 4 represent indirect influence in varying degrees; category I allowing the pupil the most freedom, category 4 the least. Categories 5 to 7 represent increasing amount of direct influence. Categories 8 and 9 represent direct levels of teacher-influence as inferred from pupils' behaviour. Category 10 is an escape category for unclassifiable three-second periods. FIAC was trial-tested and reliability coefficients of the inter and intra observers' consistency scores falling between .081 and 0.90 obtained.

SSAAT was a-fifty multiple choice items for measuring students' achievements. Each of them had options A - E.

Data Collection

The researcher and the aids trained by him on the recording procedure visited the sampled schools, where they went into the classrooms at the beginning of each lesson to be observed and sat in an unobtrusive position at the back or corner. Such a sitting arrangement enabled them to hear the teacher and the students. In order that the teachers were convinced that the interest of the observers were impersonal and that the teachers' privacy would be respected, the observers mingled socially with the teachers (observed) informally in the teachers' rooms at the school. They coded the classroom events or interactions using Flanders interaction analysis categories (FIAC) by indicating with the stroke the behaviour that occurred. The observed events were recorded after every three seconds. Each teacher was observed in only a lesson that covered 40 minutes. As much as possible, the observers avoided any form of distraction during the observation periods and were to appear casual so as to minimize the "Hawthorne effect". The SSAAT was administered with the assistance of the
Social Studies teachers.

Data Preparation

The data gathered on the classroom observations were tabulated and converted into composite matrix of interaction behaviour categories by teachers. Two indices: the indirect-direct (I/D) ratio and the direct-student talk (D/ST) ratio, were computed for each teacher using the following respective relations:

\[
\text{I/D ratio} = \frac{\text{Sum of categories 1, 2, 3, 4}}{\text{Sum of categories 5, 6, 7, 8, 9}}
\]

\[
\text{D/ST ratio} = \frac{\text{Sum of categories 5, 6, 7}}{\text{Sum of categories 8, 9, 10}}
\]

Each correct answer in SSAAT attracted one point.

The data were coded, analyzed and the hypothesis tested using Pearson Product Moment Correlation analysis at the 0.05 level of significance. The results are presented in Table I.

Table 1: Pearson Product Moment correlation analysis of students' academic achievements in Social Studies and classroom interaction patterns (N = 70),

<table>
<thead>
<tr>
<th>Variables</th>
<th>Academic achievements</th>
<th>Zx² (Sy²)</th>
<th>Zxy</th>
<th>r</th>
<th>sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>199.841 -.656</td>
<td></td>
<td></td>
<td>.412*</td>
<td></td>
</tr>
<tr>
<td>I/D Ratio</td>
<td>-.100 .216</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>199.841130.419.174</td>
<td>2805.266</td>
<td>174</td>
<td>.149*</td>
<td></td>
</tr>
<tr>
<td>D/ST Ratio</td>
<td>&lt; 05 df=68 r =</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in Table 1 indicate that the calculated r values are -.100 and .174 for I/D ratio and D/ST as indices of interaction pattern respectively. This means that whereas the relation between academic achievements and I/D ratio is negative, that between academic achievements and D/ST ratio is positive. The negative relationship implies that academic achievements decreases with increasing I/D ratio and vice versa. In other words, as teachers use more of indirect relative to direct teaching strategies, the students mean academic achievements tend to decrease and vice versa.

On the other hand, the positive relationship implies that students' mean academic achievements increases or decreases with the D/ST ratio. That is, the students mean academic achievements increases or decreases as the teachers talk much more or less than the students. The calculated r values are, however, not significant, implying that the observed negative and positive relationships could only be due to chance. In other words, students' academic achievements are not significantly related to classroom interaction patterns. The null hypothesis is therefore upheld.

Discussion

The result of this study offers a confirmation of an earlier submission by Ene-Ebutte (1986) that the interaction pattern is negatively related to students' academic achievements. On the other hand, Anderson, Evertson and Brophy (1980) have observed among teaching behaviour and academic outcomes in Mathematics that classes that have elements of both the direct instruction model and the indirect model are supportive in their relative strengths.

Factors influencing students' academic performance have been extensively investigated (Buswell, 1953; Coleman, 1959; Clossen, Tomaro & Spear, 1969; Dreeben & Walpole, 1990). These studies have revealed the influence several variables have on students' academic performances. It is known that the level of available resources and intensity of resource utilization, teacher personality, motivation and values; classroom climate, pupil-teacher ratio; sex, age and locality, have all tended to influence the academic performances of students (Gagne, 1965; Cherry ho lines, 1966; Austin, 1965).

Learning should be useful, interesting and as far as possible, take into consideration the needs of individuals within the group. It is not uncommon in Nigerian classroom setting to find an economist being called upon to teach mathematics or a historian to teach Social Studies or a Physics master to teach Chemistry. The fact remains that where a teacher is teaching a subject in which he
lacks a firm grip of the subject matter, learning will not be effectively engaged in. Also, poor health habit of a learner has been found to negatively correlate with efficient study habits and adequate self-concept. Certain traumatic events in the family which coded into the repertoire of the learner in his impressionable years may even affect his style or learning throughout life. Students' academic achievements in any particular subject are products of various factors, one of which might be the pattern of classroom interaction. There are some extraneous variables that come into play i.e. students' socio-economic background, exposure by schools to useful literature, the influence of peer group, the location of the school and the students' innate abilities. Thus, Uche (2004) asserts every learner is the product of his genetic characteristics, his social background and cultural milieu. Not all students learn at an equal speed. Indeed, the socio-economic status of the family has a great influence on the child's learning. Adepoju, (1996) in a study, concluded that malnutrition does affect a student's class activities. Parents who are rich provide adequately for the physical and educational needs of their children. The children are well fed and they receive proper medical attention. Children from such families have access to radio, newspapers and magazines, television, toys, library and other materials that stimulate learning: a desideratum for effective learning of Social Studies. On the contrary, children from poor socio-economic backgrounds suffer physical and psychological deprivations. The necessary learning facilities are far from their reach. They learn with tears and are not likely to do well in school learning. The relationship between interaction patterns and students' achievement is not totally direct.

**Recommendations**

The paper considers the following recommendations apposite.

* Teachers of Social Studies should de-emphasize the lecture method. They should imbibe the philosophy and new orientations in the teaching-learning process which emphasize interactive skills. The needed awareness can be created through refresher courses or training programmes which help the teachers to monitor their classroom behaviour.

* A class ought to be organized so that as little opportunity as possible is afforded for disruption of work, or interruption, noise and disorderly behaviour.

* No effective teaching can be achieved unless it is related to individual differences in children, especially in regard to their unique intelligence and experience. There is therefore the need to study students' characteristics in relation to their academic attainment.

* A teacher should always ask himself several questions: Is he, for instance, familiar with the content of what he is to teach? How will he communicate in the particular language he uses for instruction? Will he have sufficient patience, imagination, flexibility and enthusiasm in his relationship with his students?

* In every lesson, a teacher should ensure that teaching aids and materials are available and ready for use.

* Effective teaching arrests the attention of the students and provokes their interest. Some aspects of effectiveness include planning students’ activities, the supervision of class activities, vigilance in anticipating possible disturbances, fairness and firmness.

**Conclusion**

A conception consistent with the data generated from this research points to the fact that teacher interaction patterns in Social Studies classrooms do not substantially vary. The major conclusion forwarded by this research is that of a non-significant relationship between the classroom interaction patterns and students' academic achievements in Social Studies. Because of the significant role interaction patterns could play on Social Studies achievements and the productive results that could be obtained from the interactive mode or pattern, instructional designers would need to prepare instructional packages that could ensure that, to a substantial degree, teachers adopt the democratic and or integrative pattern of interaction. This is not, however, to deny the inevitability of the dominative mode. This research has further suggested that curriculum, instruction and instructional materials can make but essential contributions to Social Studies educational programme. Curriculum identifies what is taught; instruction encompasses planning and implementing the teaching - learning transactions; and instructional materials provide the physical media through which the intents of the curriculum, mediated instructionally, are experienced.
References


Ifejika, A. I. (1990, August). Teacher and student factor in the implementation of science, technology and mathematics curricular objective of the 90s. Paper presented at the 31st Annual
Convention/Conference of Science Teachers Association of Nigeria (STAN), Benin.


