

Kunle O. Oloruntegbe, Gazi Mahabubul
Alam, Sharifah N.A. Syed Zamri
Nigeria & Malaysia

Documentation and Management of Conflicts in Science Classrooms: Experience from Nigeria

Abstract

Issues and controversies are part of student variables and characteristics in science learning. Not many teachers are prepared for the kinds of challenges that are capable of engendering new ideas and innovations when they occur in the science classroom. This study investigated the nature of conflicts that are generated in the science classroom. One hundred and four lessons taught by 15 pre-service science teachers in a few Nigerian secondary schools were analyzed. Fifteen negative conflicts were documented. The analysis of the responses to the questionnaire administered to another sample of 220 in-service science teachers not only confirmed the extent and gave the frequency of occurrences of these negative conflicts, but ranked students' poor home background the highest cause of them. Good methods of teaching, adequately equipped laboratories, provision of an appropriate stimulating environment and training were ranked highest among the remedial strategies suggested by the respondents in tackling conflicts and controversies in the classrooms. Those useful but predictable findings are part of teachers' customary narratives. For that reason, this study sought to constitute those surface experiences afresh and at deep level perceptions and resolve the conflicts through engaging students in out-of-school activities like visits to a science museum and community exposure.

Keywords: *science classroom, nature of conflicts, classroom management, conflict resolution*

Introduction

Interaction in the science classroom has always been triple dynamics between the teacher, the learner and the learning materials (Adigwe, 2004; Anderson, 1982; Utulu, 2005 & Awotua-Etebo, 1999). The three variables interact harmoniously to produce the intended learning outcomes. Stakeholders, educationists and researchers are often concerned about making sure that these important inputs, the right calibers of teachers, quality student intake and adequate learning facilities are there for effective learning to take place. They want to be sure that there is a learning environment for students to concentrate, to invest more effort and time and to take academic work more seriously. These are challenges that teachers too have to contend with everywhere. Students' engagement in academic work, students' characteristics, teachers' characteristics and availability of learning materials, instructional strategies and assessment procedures are parameters that often attract the attention of researchers. Not many teachers prepare for occurrences outside their stated objectives, hence many educators are of the opinion that conflicts and controversies are bad, that they produce negative results and nothing else. Consequently, common wisdom implies they should be eliminated from the established framework of institutions of learning. The hypothesis is that our classrooms are alive with issues and controversies where an exploratory study could make a positive contribution to knowledge, curriculum development and curriculum implementation at the classroom level.

The presented study conducted in science classrooms in Nigeria investigated the type of conflicts and controversies that were generated, the frequency of occurrence, and the teaching-learning variables to which teachers attribute them. It also looked at preferred remedial strategies for curbing negative conflicts.

Problem of the Study

Looking and observing what goes on in our classrooms, one would be fascinated about issues that occur outside planned and intended learning outcomes. The issues could be positive or negative. We may not be able to run away from them. This is in spite of Tyler's suggestion or insistence on an "objective-oriented" model or "ends and means" affair (Tyler, 1949), that once learning objectives are formulated, a high degree of achievement must be targeted at. What happens to incidental and unplanned interjections and events that often emanate in the classrooms? Do we count them off as one of students' antics that require no attention from teachers?

How do we manage them even when they look negative so we can bring something positive out of them? These, simply stated, are the problems of this study. The purpose, therefore, is to document these issues and conflicts, noting the frequency of occurrences and managing them.

Research Questions

The following research questions were addressed in this study: What conflicts and controversies are generated in Nigerian science classrooms? What is the frequency of occurrence of those conflicts and controversies? What teaching-learning variables do teachers attribute them to? What remedial strategies are offered for curbing negative conflicts?

Methodology

Sample and sampling procedure: There were two groups of subjects for this study. One group was made up of an intact sample of 15 pre-service third year chemistry education undergraduate students/student teachers of the Science and Technical Education Department of Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria that participated in 2008/2009 and 2009/2010 Teaching Practice Exercises mounted in the Faculty of Education. The other group consisted of 220 in-service science teachers. They also were an intact sample of teachers that participated in the Science Teachers Association of Nigeria (STAN) 2010 National Chemistry Panel Workshop and Ondo STAN Zonal Science Workshop held in Akure and Ondo, respectively, the same year. The participants in the National Chemistry Panel Workshop came from 17 states of Nigeria. The student teachers were asked to document events taking place in the classroom using a prepared pro forma. The second group, the in-service teachers by experience would be able to confirm or disagree with the discovery of their pre-service counterparts. They were to do this by filling in a questionnaire which also required that they suggest remedial strategies.

Instrument: There were two types of instruments. One was a pro forma designed to document, lesson by lesson, what issues and controversies occur in science classrooms. The pre-service science teachers using the pro forma were taught to watch out for unusual events that could lead to the achievement or non-achievement of instructional objectives stated for the lessons and document the same. The other instrument was a follow-up one, a questionnaire meant to elicit responses on how

often the conflicts earlier documented by the pre-service science teachers occur in their classrooms, the teaching-learning variables such as good and poor methods of teaching, availability or non-availability of teaching-learning materials and poor home background of the students were also listed for ranking as the causes(s) of the conflicts. The remaining part solicited suggestions for remediation. The instruments were validated by giving them to three senior professional colleagues in the Department who read through and offered suggestions that were made use of in preparing the final drafts. The reliability was determined through a test-retest method with subjects outside the study samples. The coefficients of reliability were put at 0.76 and 0.81 respectively for the two instruments. The data collected were analyzed by using simple frequency count, percentage and ranking.

Results

The results were presented in answers to research questions that were raised.

Research Question 1

What conflicts and controversies are generated in Nigerian science classroom?

Documented from the 104 lessons taught by pre-service teachers are the conflicts listed below. They are rank-ordered from the most frequent (1) to the least frequent (15) as shown in Table 1.

Table 1. Ranking of the conflicts documented by pre-service teaching practice science teachers

Conflicts documented by pre-service teachers	Rank
Causing distraction in the class	1
Students not just ready to learn	2
Eating in class	3
Sleeping in class	4
Doing work outside normal class work	5
Coming late to the lesson	6
Refusal to perform given tasks	7
Fighting in class	8
Absent from class	9
Not working for lack of materials	10
Wanting to be taught in vernacular	11
Inability to contribute	12
Asking questions ahead of topic	13
Cheating during test	14
Answering phone calls	15

Causing distraction includes students stretching abnormally, making noise, applying lipstick or powder, going out of the classroom without permission, abusing other students and other similar issues, showing lack of interest, fiddling with mobile phones or engaging in activities that have no bearing with the work at hand.

Research Questions 2 & 3

What is the frequency of the occurrence of these conflicts and controversies?

What teaching-learning variables do teachers attribute these conflicts and controversies to?

The in-service science teachers’ rating of the conflicts as revealed by the questionnaire completed and returned and the teaching-learning variables they attributed the conflicts to are listed below from the most frequently occurring to the least. The variables the teachers attributed the conflicts to are also ranked. The percentage of the teachers doing so is in brackets. See Table 2.

Table 2. Rank order of a few of the conflicts and what the in-service science teachers attribute them to

Rank	Conflicts documented and presented in Table 1	Factors responsible and teachers’ ranking		
		Poor methods of teaching	Non-availability of materials	Poor home background
1	Students coming late to lesson	2 (16.7)	3 (1)	1 (83.3)
2	Students refusing to bring specimens requested by the teacher	2 (22.2)	3 (18.5)	1 (59.3)
3	Students refusing to write notes given by the teacher even when materials are available	2.5 (17.4)	2.5 (17.4)	1 (65.2)
3	Students not working/writing because there are no materials	3 (7.4)	1 (74)	2 (18.5)
5	Students waiting till the end of the lesson before showing lack of understanding	1 (50)	2 (41.7)	3 (8.3)
6	Absence from lesson			
6	Students sleeping during lesson	2 (30.3)	3 (15.2)	1 (57.6)
21	Students shouting and rejoicing having discovered new things from the learning materials	Good teaching method 1 (56.4)	Availability of materials 2 (35.9)	Good background 3 (7.7)

Table 2 shows that poor home background is the variable ranked highest by the majority of the teachers as responsible for most of the negative conflicts. Poor methods of teaching and non-availability of learning materials obtained low rank-

ing. Item 21 was analyzed under the positive variable of good methods of teaching, adequate availability of learning materials, and good home background. Good method of teaching was ranked highest, good home background lowest.

Research Question 4

What remedial strategies are suggested for curbing negative conflicts?

The remedial strategies are listed below from the most frequent to the least.

1. Lessons should be made more interesting by adopting the right method of teaching
2. Learning materials should be made available
3. Teachers should be encouraged by giving incentives
4. Teachers should be retrained through sponsorship to seminars, workshops and conferences.
5. Students should be encouraged to put more effort
6. Proper counseling of students on good behavior at home and at school.
7. Student home background to be improved
8. Teachers should take their lessons more seriously
9. Parents should support teachers in disciplining students
10. Only well-trained teachers should be employed
11. Parents should be re-orientated toward science
12. Students should be supplied with good textbooks and writing materials
13. Teachers should act as good models
14. Reward and punishment should be often used
15. Ensuring manageable teacher-student ratio
16. Attendance should be taken during lesson
17. Ensuring good teacher-student relationship
18. Inspectors should carry out routine check of teachers' work
19. Holding forums with parents and teachers regularly
20. Discourage mass promotion
21. Teach science subjects in the morning

Discussion

That negative conflicts were prevalent in 104 lessons, as shown in Table 1, is an indication that all is not well with what goes on in our science classrooms. The in-service science teachers not only confirmed the prevalence of those negative conflicts, but they attributed their occurrence mostly to the students' home

background. This explained why home background was ranked the highest cause of 14 out of 20 of such negative conflicts. That is the homes where the students came from which might not be supportive in helping their (students') academic work. This could mean that the parents were not able to meet the psychological, physiological as well as academic needs of the students before they leave homes for schools. The observations made above are in line with those by Wolfram (2005) and Tenenbaum & Leaper (2003) that students' parental home background correlates highly with their (children's) behaviour in school.

Perhaps if the parents were to do the same, they would rank the teachers as the greatest cause of the students' poor performance and misbehaviour. The response to item 21 in Table 2 is revealing as well. The teachers attributed positive conflicts to good methods of teaching; good home background of the students came at distant third. That good teaching methods top the list of the remedial strategies suggested is a pointer that the teachers acknowledged such a factor as essentially indispensable in promoting the students' science learning and enhancing their performance.

To go beyond the teachers' customary rhetoric, the author suggests the creation of "scientific distraction", use of games and simulation, open-ended scientific inquiry, scientific trips to a science museum, industries and community exposure in the classrooms, schools and communities to enhance and complement a good classroom environment. The teachers would still be needed to provide such engagements. Braund and Reiss (2006) posited that communicating science out-of-school can be exciting, challenging and uplifting, and can make a science education more authentic and real.

Conclusion and Recommendations

In this study, it has been revealed that occurrences in the classroom usually go beyond what the teachers and the schools have planned for. Some of these are negative. They were documented and reported here. At the surface, some of them look simple and trivial, but they go a long way to determine not only the level of classroom organization and students' performance but also the tone of the school. No school administrator would want to condone disorderliness and indiscipline in the school for whatever reasons. When these (indiscipline or students' misbehaviour) happen, rather than trading blames, the author suggests that the students should be engaged in and out of school to enhance their science learning and to develop in them saleable skills and good attitudes. These are recommended

for teachers, school administrators and curriculum developers as ways of helping students to actualize their potentials and fulfillment in life.

References

- Adigwe, J.C. (2004) School climate and chemistry classroom environment of senior secondary schools. *Benin J. of Ed. Stud*, 18, 1&2: 83–89.
- Anderson, C. (1982). The search for school climate: review of research. *Rev. of Ed. Res*, 52: 365–420.
- Awotua-Efebo, E.B. (1999). *Effective Teaching: Principles and Practice*. Nigeria, PortHarcourt, Paragraphics. Pp105–157
- Braund M. & Reiss M. (2006). Towards a more authentic curriculum: the contribution of out-of-school learning. *Int. J. of Sci. Edu*, 28, 12, 1373–1388
- Mendler, A.N. (2001). *Connecting with Students*. Association for Supervision and Curriculum Development, USA Alexandria, VA, pp. 23–41
- Tennbaum, H.R. & Leaper, C. (2003) Parent-child conversations about science: the socialization of gender in equities. *Dev. Psy.* 39, 1 34–47
- Tyler RW (1949). *Basic Principle of Curriculum and Instruction*. USA: University of Chicago Press, pp. 12–15.
- Utulu, R. (2005). The Influence of Classroom Environment in Learning and Behavior of Nursery School Children. In B.O.Kerr, N.A.Ada. & P. Oriese (eds) *New trends in Education; Issues and Challeges*; Nigeria, Gboko; Peach Global Publication. pp. 85–94.
- Wolfram, S. (2005). *Measuring Socio-Economic Background of Students and its Effect on Achievement on PISA 2000 and PISA 2003*. Being a paper prepared and presented during the Annual Meeting of the Americans Educational Research Association (San Francisco, CA. April 7–11, 2005)