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Education and Development in the Commonwealth: Comparative Perspectives

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Edited by:
Salebona Sicelo Simelane
and
Azeem Badroodien



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Prevailing interaction patterns at the pre-primary level of education in Nigeria (Monica Odinko, University of Edinburgh)

Introduction

Present day early childhood educators, researchers and psychologists share the view that young children learn most efficiently when they are engaged in quality interaction during instruction, rather than being simply receptive or passive during teaching and learning activities (Kontos and Wilcox-Herzog 1997; Vandell and Wolfe 2000). The importance of quality interactions in children's classrooms could be based on the socio-cultural theories of cognitive development and teaching. According to National Research Council Institute of Medicine (2000), advances in cognitive abilities take place in the context of the child's active interaction with others and with the environment. Such a conceptualization is also shared by Light and Littleton (1999) and Barbara, Bowman and Burns (2001) who note that cognitive development is fundamentally constituted in discourse/the social process, and through the use of tools and artefacts. Contemporary researchers also encourage methods of teaching that is rooted in learner-centred interactions involving teacher-learner, teacher-material, learner-learner and learner material interaction patterns within a context (Hayes 1999; Okpala 2002; Lybolt and Gottfred 2004).

It is often argued that children's active participation in interaction during classroom delivery is most likely to strengthen their natural disposition to learn (Katz 1987), that it forms the basis for the relationships that are established between teachers and children in the classrooms, as well as being related to their developmental status (Kontos and Wilcox-Herzog 1997) particularly in the areas of language and social competence (Obanya 2004). In fact, many child development organizations believe that the nature of child-adult interactions is one of the most important variables in determining whether early childhood education programmes are of high or low quality (UNICEF 2000; UNESCO 2005).

The foregoing underscores the need for continuous research efforts to be directed at improving how preschoolers are taught by their teachers in preschool classrooms. These efforts would be of tremendous significance in Nigeria, especially considering that until now there have been no studies on classroom interaction patterns at the pre-primary level of education in the country. The few existing studies on classroom interaction appear to be limited to secondary and upper primary school levels (Okebukola 1998; Ogunkola 1998). My research provides a description of how teachers and pupils interact during literacy, numeracy and science lessons in pre-primary classrooms in Nigeria, and specifically focuses on understanding what are the prevailing interaction patterns (use of instructional time and direction of communication) of teachers

and preschoolers during instructions in Nigerian pre-primary classrooms. Furthermore, it seeks to determine the differences in the prevailing interaction patterns while teaching the three core subjects in the curriculum: literacy skills: numerical skills and science.

Research Methodology

Sample and Sampling

The sample consisted of 2859 preschoolers, aged 4 – 5 years, and 98 preschool teachers (91 females and 7 males) in 72 pre-primary institution/classrooms across three major regions (Eastern, Western, and Northern regions) in Nigeria.

Purposive sampling was used to select a state from each of the regions of the country whereas schools and subjects were selected through stratified random sampling to ensure adequate representation of public, private, urban and rural schools.

Instrumentation

Data collection involved using Classroom Interaction Sheet (CIS) and Ten Minute Interaction Sheet (TMIS) to record the interaction patterns that involved teachers, preschoolers and teaching-learning materials. The CIS, a classroom behaviour category system instrument, consists of fifty-five sub-categories, which were grouped under five main classroom behaviour categories: (a) Teacher Whole-Class Activity, (b) Pupils Group Activities, (c) Individual Pupil Activity, (d) Teacher not Facilitate Learning and (e) confusion The TMI consists of four dimensions of classroom interactions (Context, Who To Whom, What and Qualifier) which were further sub-categorized into thirty.

The instruments were pre-tested by two trained observers in eight pre-primary classrooms (4 private and 4 public schools) in rural and urban locations. The pre-test data showed that the observers did not have any difficulties identifying and recording the behaviour categories. In addition, the data produced inter-rater reliability values of 0.91 and 0.89 (*Scott's coefficient 'p'*) for the CIS and TMI respectively.

Data Collection Procedure and Analysis

Subjects were observed over a period of fourteen weeks and two days by the investigators. Using the instruments required the observer to tick the most frequently occurring behaviour (after every ten and five seconds for the CIS and TMI, respectively) in the appropriate row where the prevalent behaviour category is described.

In each of the preschool classroom visited, one observation was carried out in each of the targeted subject areas (literacy skill, numeracy skill and science

lessons). Thus, three observations were carried out in each of the classrooms visited. In all, a total of 216 observations were made. Each lesson was recorded for thirty minutes using both instruments. During each thirty minutes observation period, the CIS was used in the first ten minutes followed by the TMI in the second ten minutes and then the CIS again in the last ten minutes.

Data analysis involved the use of frequency, percentage, chi-square, one-way ANOVA, Scheffe post-hoc test and graphical illustrations.

Results

Prevailing Interaction Patterns (Use of Instructional Time and Direction of Communication) of Teachers and Preschoolers During Instruction.

The prevailing interaction patterns during instruction in Nigerian preschool classrooms, in terms of use of instructional time, are shown in Figure 1. As shown in the Figure, teachers in Nigerian pre-primary classrooms tend to spend a larger proportion of their lesson times (44.4%) interacting (prompting learning) with the whole class whereas less proportions of the lesson time (17.2% and 13.1%) were spent on learning-facilitating activities that centred on groups of pupils and on one-to-one/individual pupil activities. However, a good proportion of the lesson time (24.0%) was spent on teacher/student non-facilitating learning behaviour while the remainder of the lesson time (1.3%) was spent on confusion.

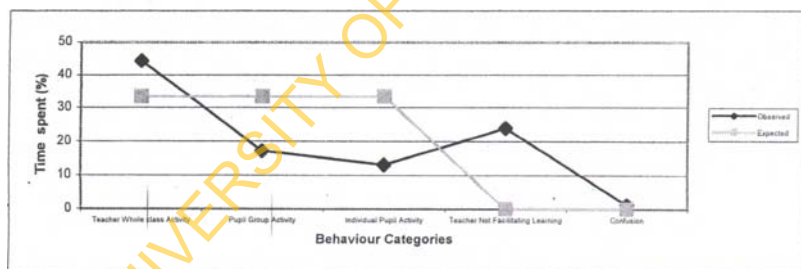


Figure 1: Use of Instructional Time in Nigeria Pre-primary School Classrooms

The direction of communication associated with the use of instructional time is shown in Figure 2. The figure reveals that 62.0% of communications during teaching were directed from teacher to pupils (43.6 % from teacher to group and 18.4% from teacher to individual pupils). The direction of communication from pupil to teacher accounted for 36.8% (group to teacher, 21.1% and pupil to

teacher, 15.7%) of the total communications whereas, less than 1.0% of the communications represented teacher communications with others.

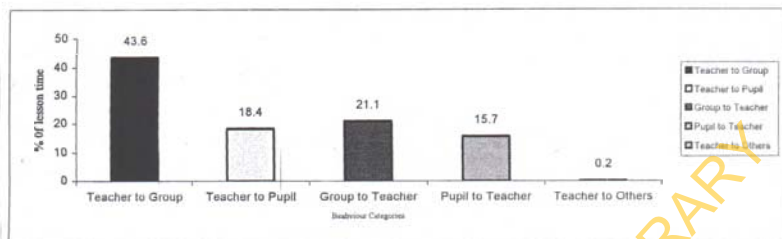


Figure 2: Direction of communication that is prevalent in Nigerian preschool classrooms

Difference in the Prevailing Interaction Patterns while Teaching the Three Core Subjects.

Subject-based group differences in use of instructional time.

The data on differences in the interaction patterns (use of instructional time) while teaching the three core subjects showed that significant group differences (based on one-way ANOVA; $p < 0.05$) in the use of instructional time were observed on only 13 of the 57 subcategories (22.8%). The 13 subcategories consist mainly of 6 subcategories under Teacher Whole Class Activity (48.9%), 3 under Pupil Group Activity (25.0%) and 4 under Individual Pupil Activity (23.5%). More specifically, the results of further analysis based on Scheffe post-hoc comparison test showed that the observed significant differences in the use of instructional time emanated mostly between science lessons and literacy/numeracy lessons (84.2%), as against literacy and numeracy lessons (15.8%). The differences were such that the preschool teachers tend to spend more of the instructional time on learning-facilitating activities during literacy/numeracy lessons than during science lessons. These differences are illustrated in Figure 3.

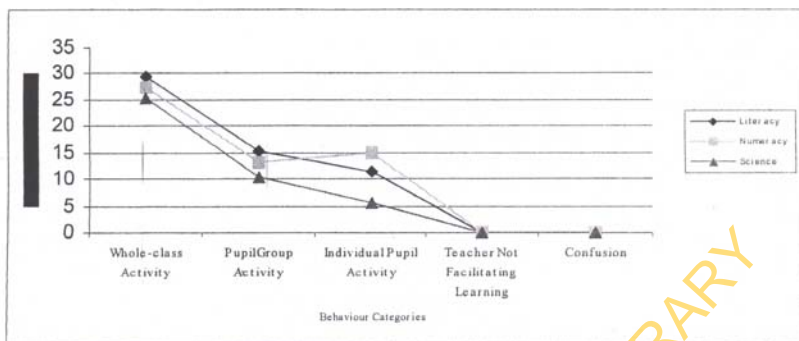


Figure 3: Subject-Group Differences in use of Instructional Time Across Behaviour Categories

Subject-Based Group Differences in Direction of Communication.

The grouping factor (the core subjects) was classified into three: literacy, numeracy and science. However, the direction of communication was classified into two: one-to-one (Teacher to pupil/Pupil to teacher); and whole class (Teacher to group/Group to teacher). There were significant group differences (based on the core subjects) in the direction of communication. As can be seen in Table 1, a greater proportion of teachers, during literacy lessons, tended to be involved in whole class (group)-directed communication while a greater proportion of teachers during science and numeracy lessons, tended to be involved in one-to-one directed communication.

Table 1: Subject-Based Group Differences in Direction of Communication.

Direction of Communication	Core Subjects			Total	Π^2
	Literacy	Numeracy	Science		
Teacher to pupil/ Pupil to teacher (One-to-one)	15	26	31	72	8.65*
Teacher to group/ Group to teacher (Group/Whole-class)	56	45	40	141	
Total	71	71	71	213	

*Significant at the 0.05 level (non-directional test; df. =2)

Discussion

The pattern of classroom interaction observed in the study, where teacher-centred activity was predominant, and where the communication flow was mainly from the teacher to the whole class with minimal one-to-one (teacher to pupil or pupil to teacher) communication, may not augur well for effective acquisition of literacy skills, numeracy skills, and science (knowing about the world around them) by Nigerian pre-school children. This is so viewed considering the situation whereby the pre-school teachers spent a high proportion of their lesson times on “teacher not facilitating learning activities” (e.g. writing on the chalkboard for the children to copy, giving directives, not using instructional materials, monologue, punishing, using negative reinforcement). Apparently, the result indicates that most of the pre-school teachers observed are yet to move away from the traditional teacher-centred approach to teaching to using the method that would be interactive in nature. The predominant approach used by the teachers appear to be influenced by the empiricists view of learning as stimulus-response where adult leads the child’s learning and dominates it with the child viewed as an empty vessel to be filled or a lump of clay to moulded into shape (Bruce, 1997, p.12). However, research has shown that this process does not promote pupil’s learning, interest and curiosity rather it hinders motivation because such uninteresting and dull learning environment makes learners to be passive and non-involvement tends to undermine the drive in learners to think for themselves (National Research Council, 2001; NAEYC, 1986).

Looking at the patterns of interactions exhibited at the pre-primary level by the observed teachers and preschoolers, one might infer that the observed teachers’ and pre-schoolers’ classroom behaviours could be seen as a reflection of the unequal power relations between adults and children in the wider Nigerian societal/cultural perspectives. The Nigerian preschool teachers appear to accommodate the cultural/societal norms for interaction whereby children are to be seen and not heard. Children, therefore, when they come to school, may well have inculcated the habit of being active listeners and passive actors who are always waiting for adults to take the lead in every social interaction. Teachers also, being part of the culture and living within the society, tend to accommodate this belief and thus transfer it to the classroom settings. Thus, since most of Nigerian children are socialized into active listeners whenever adults have something to say at home, they are likely not to feel at ease in participating actively during instructions in terms of initiating conversations, asking questions or even expressing themselves.

The tendency for the prevailing interaction patterns during instruction in Nigerian pre-primary classrooms to be sensitive to the core subjects in the curriculum (literacy skills, numeracy skills and science) is explicable considering the views of Ezeokoli (2003) that the pedagogical demands of the three core subjects in the curriculum tend to differ. In the same light, Obanya (2003), in his comments on teaching methods across the curriculum, observed that the teaching of science and mathematics (numeracy), unlike literacy, is more activity-oriented with some extra demands on hands-on-experience. However, the pre-school teachers in Nigeria by their nature (level of educational and professional training, experience, attitude to teaching profession, self concept, etc.), institutional and societal structure/supports are not sufficiently equipped to initiate and sustain child-centred, activity-oriented interaction patterns during instructional delivery in classrooms. As the teachers are prone to being at the centre stage of interaction during instruction, they are more likely to feel comfortable spending more time on teacher-centred activities during literacy lesson than during science and mathematics lessons.

Conclusion

The empirical evidence reported in this paper show that there should be some concern about the pre-school education programme in Nigeria that it may not be achieving its objective of inculcating in children the spirit of enquiry and creativity; particularly through exploration as well as teaching the rudiments of numbers, shapes and forms through play and other types of learner-centred activities. There is clearly a need to review and update the curriculum contents of teacher preparation and continuing education programmes (in-service and professional support) in both theory and practice of teaching pre-schoolers. The focus should be on producing teachers who can channel most aspects of the lesson time towards facilitating learning tasks at both individual and small group levels (with the children being at the centre stage of the interaction) without delivering monologues, using negative reinforcement, causing confusion, etc. The subsequent training and retraining programmes should, in addition, be tailored towards equipping the teachers to master how to encourage pupils to initiate activities and participate actively in classroom interactions during instruction. It also seems that the intensity of the expressed need tend to be higher for effective teaching of science and numeracy skills than for literacy skills.

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