



# **Improving Teaching and Learning in Large Classes in Kenyan Primary: Creating Interaction Opportunities for Learners – An Action Research**

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## **Abstract**

The introduction of Free Primary Education in Kenya in 2003 resulted in large class of about 50-100 learners. Teachers were not prepared, nor were they supported o effectively teach and handle these classes. Teaching and learning in these classes is generally teacher centred, associated with whole class instruction, lecturing and other expository methods with minimal learner interaction, resulting in rote learning. This study sought to improve teaching and learning in large classes by creating opportunities for learner interaction. Collaborative action research with four teachers in two schools in Nairobi was adapted. This paper is based on the action research process of which pair work and group work was improved upon to create interaction opportunities for learners. Findings indicate that unlike the reconnaissance stage, which was dominated by Teacher Led Recitation (TLR) with minimal learners' interaction engagement, there were more activities of pair work, teacher elicitation and seat work. Moreover, teachers were able to diversify the type of questions asked to cater for creation of interaction opportunities among learners.

Keywords: Large Classes, Interaction, Pair Work, Group Work, Acion Research

## **Introduction**

Free primary Education was suddenly introduced in Kenya in 2003 resulting to large classes of 50- 100, and classes of over 100 were not uncommon (van't Erve, 2003). However, teachers were not professionally supported to effectively teach and handle these classes. Hence, they encounter challenges that impede good teaching and learning, particularly child-centred pedagogy that enhances learner interaction.<sup>1</sup>

As a result, as Pontefract and Hardman's (2005) study in Kenyan classrooms revealed, Kenyan classrooms are dominated by teacher-led recitation in which rote learning

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<sup>1</sup> Interaction is defined as the [verbal] exchange of information, ideas, opinions between and among learners and teachers, usually occurring with the aim of facilitating learning (The World Bank Group, n.d)

is predominant, and with little attention being paid to securing pupil understanding” (p. 87). What exists is teachers- pupil interaction which is often only cursory to enable teachers to establish shared attention (Pontefract & Hardman, 2005; Abdi-Kadir & Hardman, 2007). From my experience of working with teachers, though many are aware of the significance of learner interaction and would like to promote it in their classrooms, they are apprehensive due to the large numbers, and the complexities of managing large classes.

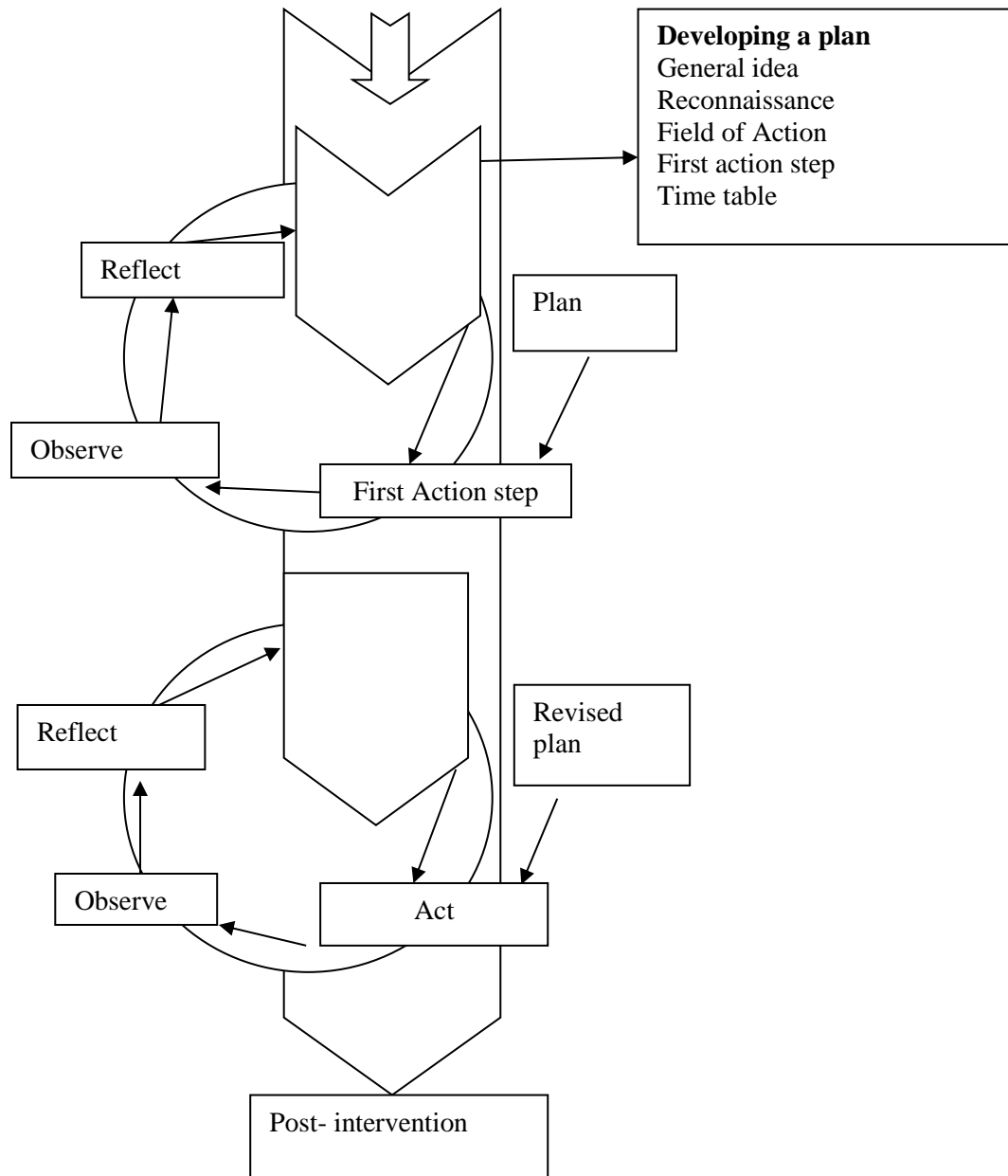
This study was a collaborative action research, with four teachers in two schools in Nairobi. Its aim was to assist teachers to modify certain teaching and learning strategies (pair work and group work) for creating interaction opportunities for learners in large classes. Therefore, action research with its empowering, liberating characteristics would not only facilitate Professional Development (PD) for teachers in this area, but also create ownership of the changed classroom practices.

This paper presents findings of the improvements and implementation of pair and group work through the cyclic process of action research for creation of interaction opportunities for learners in large classes.

### **About the Study**

The study’s main objective was to improve teaching and learning in large classes by creating interaction opportunities for learners. This was an action research conducted in two schools (A and B) in Nairobi with four teachers of social studies subject: AF, AM from school A; BF1, BF2 from school B. Kemmis, McTaggart and Retallick (2004) cyclic framework of action research of planning, action, observation, reflection and then reflection operation was adopted to guide the action research procedure as illustrated below.

**Research Spiral Process (From Kemmis et al., 2004, p. 4)**



Though action research is fundamentally grounded in qualitative paradigm, this was a mixed method study of dominant/less dominant design. Interviews, both structured and unstructured observations, document analysis and my research journal were used as methods of data collection.

### **Why a Focus on Interaction?**

Having been a teacher for many years and now a teacher educator, and having agonized and read literature on the best ways to enable children learn, Vygotsky's social constructivist theory impacted on my professional stance. I am convinced that knowledge is socially constructed, and learning occurs in a social context in interaction with other humans (Robinson, 1994). The aspect of scaffolding, of which dialogue is an important tool (Steiner and Mahn, 1996; Tappan, 1998 cited in Santrock, 2004), whether carried out by teachers or peers, can only bear tangible results when there are opportunities created for learner interaction.

In a classroom, Robinson (1994) argues that interaction is where the heart of teaching and learning lies; the classroom process becomes an active meaning-making (Petty, 2004), and learners engage in construction of knowledge as they interact verbally both with their teachers and among themselves. Through interaction, they mediate the input of new knowledge by trying to make sense of it, and relating it to what they already know (Good and Brophy, 1995). By paraphrasing the new knowledge in their own words, and considering its meanings and implications, learners make new knowledge their own (*ibid*). This is what understanding is all about (Gillies and Ashman, 2003). Therefore, I believe that systematic and structural introduction of learner interaction process in large classes, may improve teaching and learning, and perhaps impact on learner academic performance.

### **Why Action Research**

My choice of research approach is directly related to my professional interest in supporting teachers to improve their classroom practices. I had a feeling that working with teachers in their classrooms would bear more tangible acceptable results. Moreover, I was also informed by literature that this was more effective than theoretical introductions we carry out in our courses. O'Sullivan, (2004) cited in Hardman et al., (2009) argues that,

...in order to change pedagogical practices, professional development programmes need to focus on the ...classroom as the best level of intervention for improving the quality of teaching and learning by involving .... the teachers in creating a genuine teaching community through ownership of the process (p.66).

Therefore, action research with its empowering, liberating characteristics was deemed appropriate. It would facilitate PD for teachers, and also create ownership of the changed classroom practices. Robson (2002) also states that, "involving practitioners in research through following an action research model...provides an obvious means of facilitating change" (p.219), and "solutions that emerge from the research process...become much more sustainable enabling people to maintain the momentum of their activity over extended periods" (Stringer, 2007 p.21). I hope that the rigour of action research through its cyclic process of planning, acting, observing and reflecting did not only inculcate positive disposition and commitment needed for better teaching, but also equipped teachers with knowledge, skills and creativity for modifying the teaching and learning strategies for creating interaction opportunities for learners, and ultimately having ownership of the

'new' classroom process for sustainability.

### Action Research Activities

This was a collaborative action research with different activities at reconnaissance, intervention and post-interventions stages.

### Activities at Reconnaissance Stage

During this stage, interviews and classroom observations were carried out to ascertain teachers, administrators and learners' perceptions and experiences of teaching and learning in large classes, and large classroom processes/practices respectively. However, in this paper, I only present findings of classroom observations.

### Findings at Reconnaissance

Classroom observations were carried out to ascertain classroom process in terms of teacher's distribution of teaching and learning activities and types of questions asked (see figure 1 and 2 below respectively) and how these created interaction opportunities for learners.

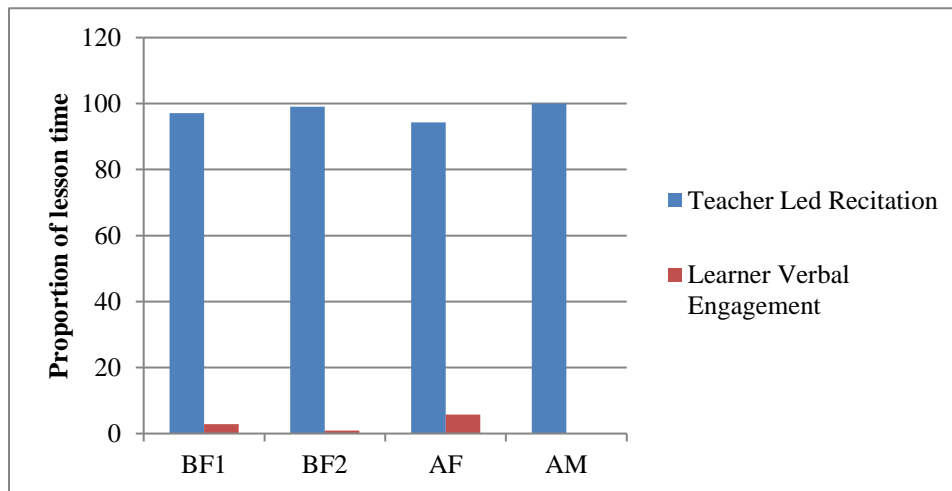


Figure 1: Distribution of teaching and learning activities

Proportions shown are cumulative period of instruction over 105 minutes of three class lessons per teacher.

Figure 1 above indicates dominance to Teacher Led Recitation (TLR) at 93.5%. This entails teacher presentation of content, interwoven with questions - answered mostly by learners. The learner verbal engagement noted was either learners reading in unison from the blackboard or charts as in the case of AF (three minutes) and BF2 (one minute)

classes. BF1 had some pair work in the first lesson which enabled few learners to interact with one another for about three minutes. This was, however, abrupt, unplanned for, and haphazardly executed.

Conclusively the dominance of TLR meant minimal creation of interaction opportunities for learners as there was more teacher talk. Teachers commonly used the lecture method, rather than teaching strategies that promote classroom interaction. These results reflect Ackers and Hardman (2010), Motseke and Maja (2019) findings in their studies on classroom interactions in Kenya and south Africa respectively where they found domination of transmissional forms of teaching, where teachers spoke most of the time while learners passively listened to the teacher with little provision of opportunity for pupils to question or explore ideas to help regulate their own thinking.

The above type of interaction was promoted by the type of questions asked by the teachers as indicated in figure 2 below.

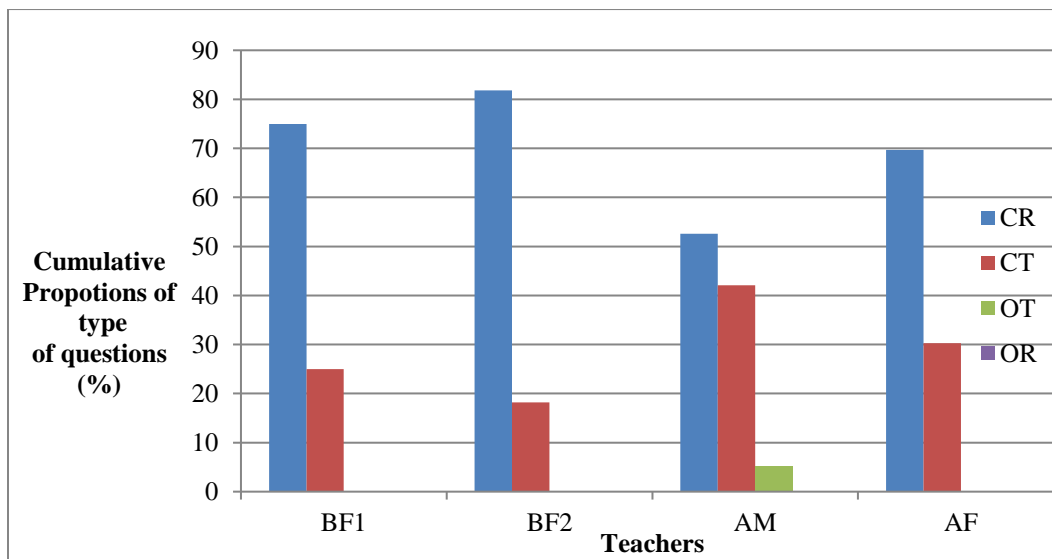


Figure 2: Cumulative Proportions of types of questions Questions asked by teachers as observed in three lessons. Questions are categorized as Closed Recall (CR); Closed Thought (CT) Open Recall (OR) and Open Thought (OP)

In Figure 2 above, while AM asked the most questions (57), of which 52.6%, 42.1% and 5.3% were of CR, CT and OT categories respectively, BF2 asked the least (11) questions- 81.8% CR and 18.2% CT categories. BF1 who had a total of 44 questions, had 75% of CR and 25% of CT categories, and AF, with 33 questions of which 69.7% and 30.3% were of CR and CT categories respectively. Whilst only AM asked OT questions, none of the teachers asked OR questions.

The foregoing reveals that closed-ended questions of the CR category directed to mostly individuals, and mostly elicited 1-3 words answers, were dominant. This process curtailed creation of interaction opportunities for most learners. Moreover, this type of questioning-answer style could not sustain verbal interaction for relatively long periods of time. This is similar to Motseke and Maja (2019) findings in their study in south Africa

where learners were mostly passive except occasionally when the teacher asked a question requiring a short answer and the learners answered in a chorus.

Additionally, the type of feedback given by the teachers did not seem to encourage learners' interaction and exploration of ideas. This was in form of praising (good, very good) or asking learners either to clap for themselves as a whole class or clapping for individuals. This type of feedback did not open up opportunities for further interaction.

Conclusively, what existed was a classroom discourse which was typical of the Initiation, Response, Feedback (IRF) interaction moves (Pontefract, 2005), by teachers Initiating questioning, directing questions to the whole class, but selecting individuals to Respond, and Feedback was mostly evaluative (Abdi-Kadir and Harman, 2007).

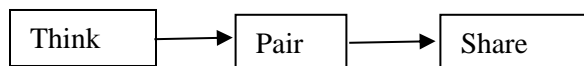
### Activities at the Intervention Stage

For creation of interaction activities pair and group work were implemented. Whilst pair work focused on either pair or individual interaction accountability, group work was modified to incorporate certain elements of cooperative learning, i.e. positive interdependence, to enhance learner interaction.

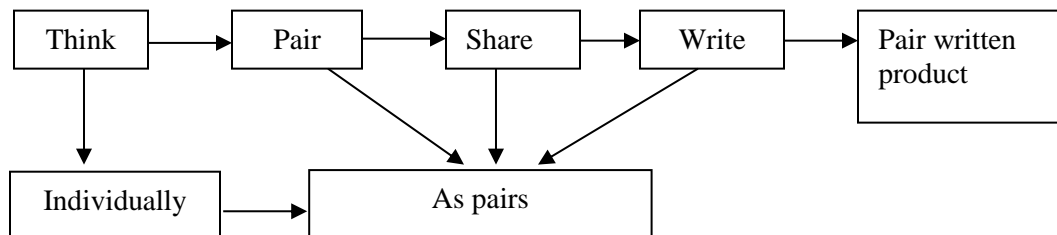
### Implementation of Pair Work

During the implementation of Pair Work (PW), simple regular pair work of think-pair-share (see illustration 1) was improved through action research cycles to think-pair-share-**write** (see illustration 2); think-**write**-pair-share (see illustration 3); and turn taking pair work (see illustration 4), which also had a pair **written** product as simplified in the illustrations below.

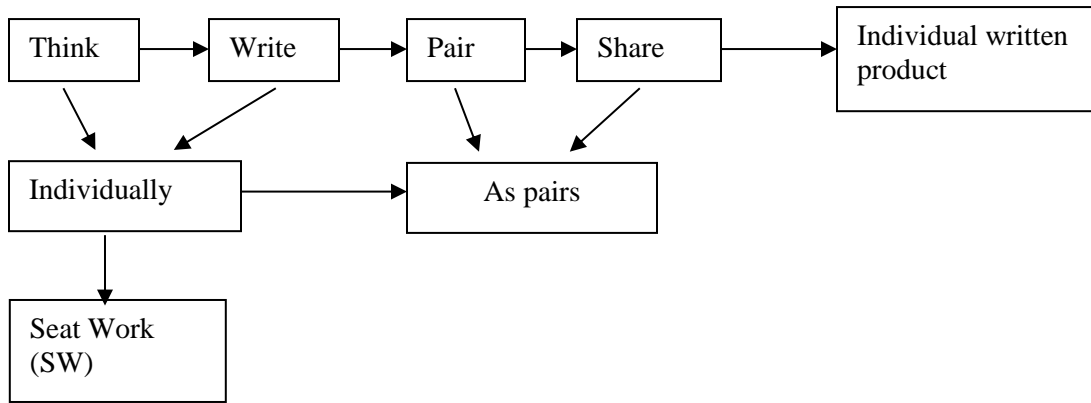
#### Illustration 1: Think-pair-share



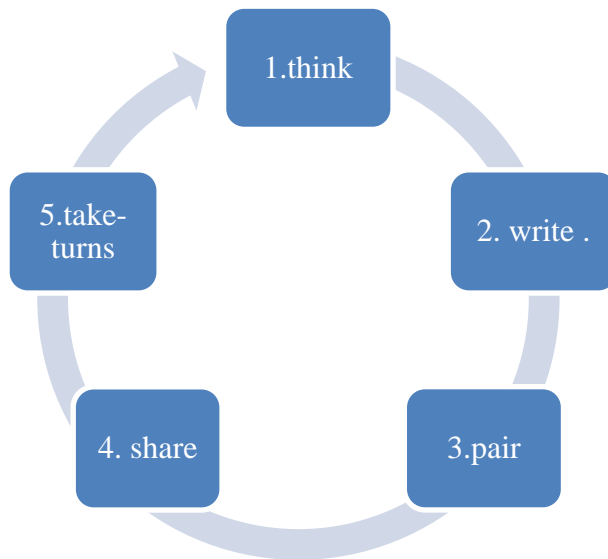
#### Illustration 2: Think-pair-share-write



**Illustration 3: Think-write-pair-share**



**Illustration 4: Turn-Taking-Pair-Work model**





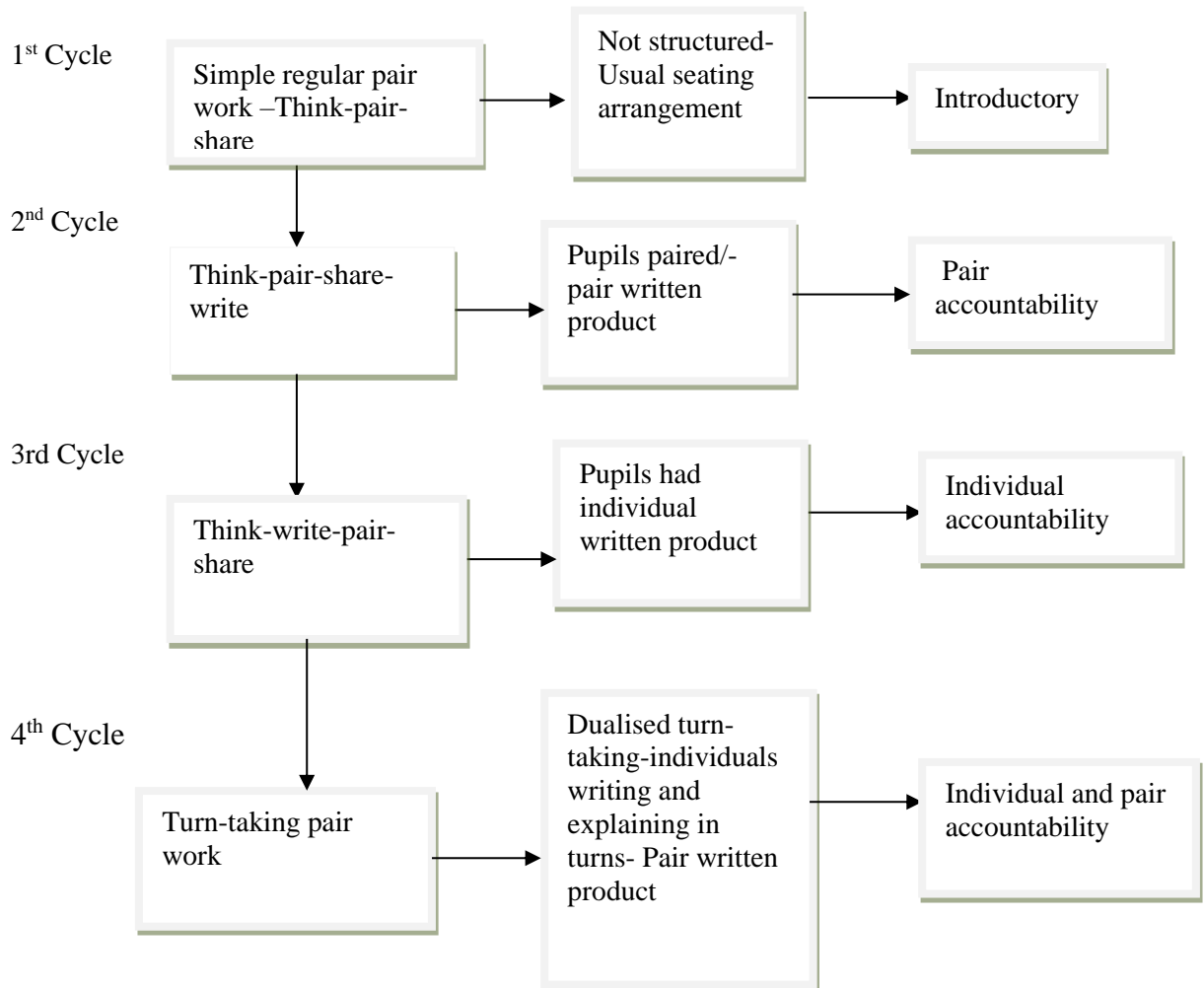


Figure 3: Cyclic Implementations of pair work

As a result of the above changes in implementing pair work as illustrated in Figure 3 above, and for creation of interaction opportunities, there were changes made by teachers in terms of their distribution of teaching and learning activities (see Figure 4) the type of questions asked (see Figure 5), and learners' responses (see Figure 6) over the cycles as illustrated below.

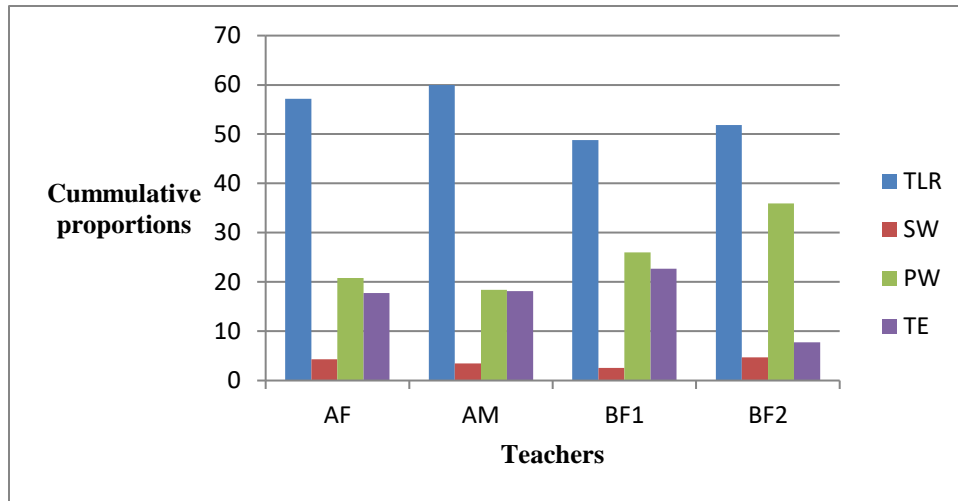


Figure 4: Teachers' distribution of teaching and learning activities over PW implementation cycles- Cumulative proportions of teachers' distribution of teaching and learning activities

Figure 4 indicates that though Teacher Led Recitation (TLR) was still the dominant activity, unlike the reconnaissance stage (see figure 1), implementation of Pair Work (PW) incorporated other activities including Seat Work (SW), and Teacher Elicitation (TE) sessions. PW which created interaction opportunities had an average cumulative proportion of 25.30% of the total time over the cycles.

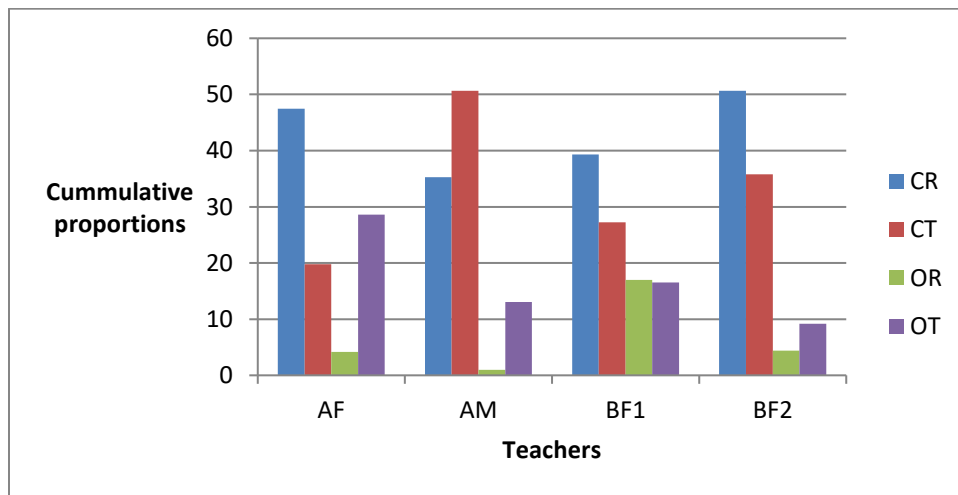


Figure 5: Teachers' types of questions over PW implementation cycles  
Cumulative proportions of types of questions

In comparison to the reconnaissance stage where most questions were of the CR category (see figure 1), PW implementation created space for a variety of questions including Open Thought (OT) and Open Recall (OR) categories (see figure 5 above). Though CR questions were dominant in AF (47.5%), BF1 (39.3%) and BF2 (50.6%)

classrooms, CT questions were relatively equally asked, with AM having the highest proportion of 50.6%, and AF the lowest of 19.8%

The aforementioned changes in the classroom process during implementation of pair work culminated in the interaction outcomes as illustrated below:

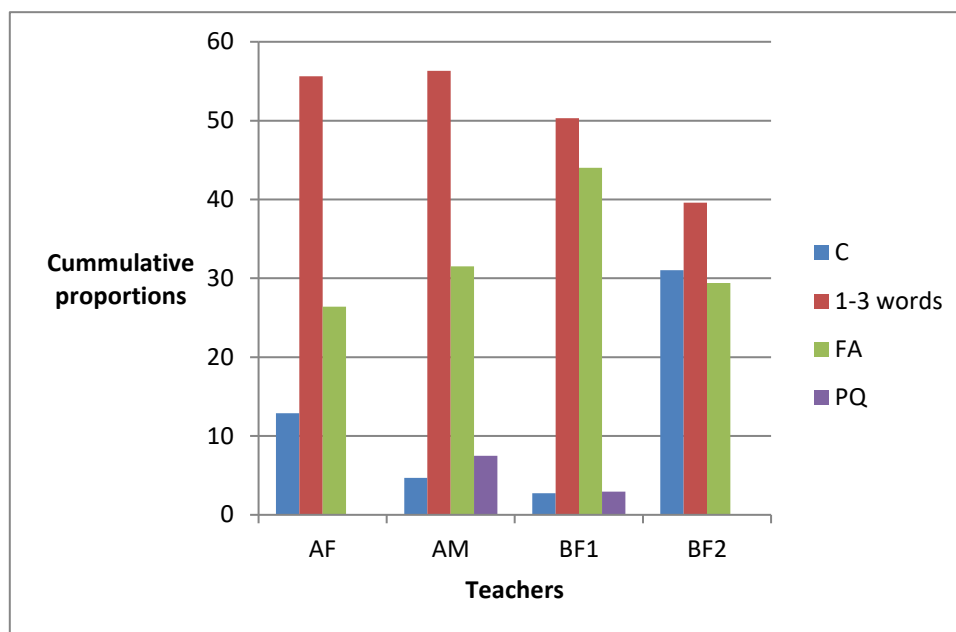


Figure 6: Types of Learners responses over PW implementation cycles  
Cumulative proportions of types of learners' responses

In comparison to the reconnaissance stage there was a significant increase in the amount Full Answers (FA) as indicated in figure 6 above. Whilst BF1 had the highest cumulative proportion of 44%, AF had the lowest of 24%. Though there is a notable reduction of chorus answers, BF2 still maintained a higher proportion. However, 1-3 word answers were still dominant. The above changes resulted to learner interaction engagement outcomes as illustrated below in Table 1 below.

Learners' interaction engagement outcomes categorized as High Engagement (HE)- 80% or more learners engaged; Mixed engagement (ME) - Any value between 80% and 20% of learners engaged; Low Engagement (LE) 20% and below learners engaged in interaction.

Table1: Cumulative pair interaction engagement outcomes

Teachers	Cycle 1	Cycle 2	Cycle 3	Cycle 3 repeated	Cycle 4
AF	HE	HE	HE	-	HE
AM	ME	HE	LE	LE	LE
BF1	ME	HE	HE	-	HE
BF2	ME	HE	LE	ME	ME



distribution of teaching and learning activities; types of question by the teachers and learners' responses to the questions as illustrated in figures 8,9 and tables 2 and 3 below).

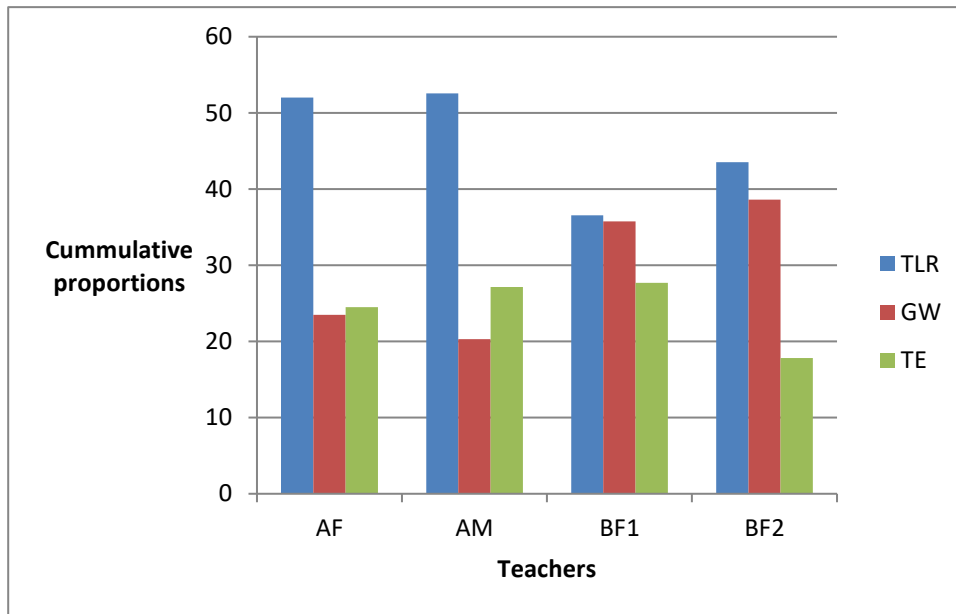


Figure 8: Distribution of teaching and learning activities over GW implementation cycles  
Cumulative proportions of distribution of teaching and learning activities

Though TLR still dominated teachers' classrooms, unlike the reconnaissance stage (see figure 1), figure 8 above indicates that an average of 29.5% of the total time over the cycles was spent on group Work (GW).

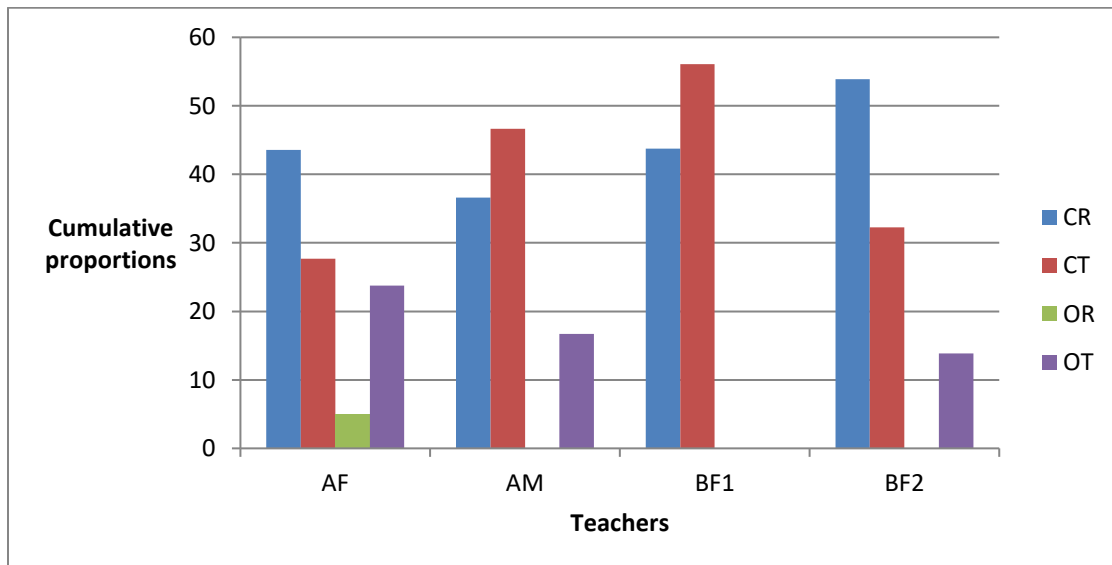


Figure 9: Types of Questions over implementation of GW cycles  
Cumulative proportions types of Questions

Figure 9 above indicates that a variety of questions were asked during group work sessions, and CT questions accounted for 40.7% of total number of questions. Apart from BF1, other teachers also asked OT questions, which were hardly asked during reconnaissance.

The aforementioned changes resulting from implementation of group work culminated in the interaction outcomes as illustrated below.

Table 2: Cumulative averages of types of learners’ written responses

Teachers	Number of groups	Average 1-3 word answers	Average Full Answers (FA)
AF	8	4.75	13.75
AM	9	5.3	5.8
BF1	10	4.8	4.4
BF2	8	5.63	12.75
Average		5.12	9.18

In comparison to the reconnaissance, the average numbers of FA significantly increased. BF1 had low averages because her questions in cycle two and three, though they enabled learners to interact, were adequately answered with 1-3 word answers.

Table 3: Cumulative group work interaction engagement outcomes

Teachers	Cycle 1	Cycle 2	Cycle 3	Cycle 4
AF	LE	HE	HE	HE
AM	HE	HE	HE	-
BF1	HE	HE	HE	-
BF2	ME	HE	HE	-

Learners’ interaction engagement outcomes categorized as High Engagement (HE)- 80% or more learners engaged; Mixed engagement (ME) - Any value between 80% and 20% of learners engaged; Low Engagement (LE) 20% and below learners engaged in interaction.

The foregoing changes resulted when group work was implemented (see table 3) and the outcomes in terms of high interaction engagement (HE) levels among learners, and an increase in the number of full answers (see table 2) to questions indicate that perhaps more meaningful interactions occurred.

### Conclusion

The implementation of improved pair and group work resulted in teachers’ diversifying their teaching and learning activities. Unlike the reconnaissance stage, which was dominated by Teacher Led Recitation (TLR) with minimal learner’s interaction engagement, there were more activities of pair work, teacher elicitation and seat work. Moreover, teachers were able to diversify the type of questions asked to cater for creation of interaction opportunities among learners. However, learners interacted at different levels

as the two strategies were implemented. Comparatively, learners interacted more and had High interaction engagements (HE) during group work sessions than during pair work sessions.

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