

The Congruence between Teachers and Learners Perceptions! Exploration of Relationship between Teachers and Learners Perceptions and Mathematics Performance in Lower Primary Schools in Kenya

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Abstract

The difficulties and problems hindering good performance in mathematics by Lower Primary school children seem to emanate from teachers and learners perceptions towards mathematics learning and performance. This may be due to the fact that the methods used at lower primary don't agree with the ones initially applied by the children's teachers at preschool level. The effect of that could result in creating a negative perception towards math learning and performance hence denying children a precious start to their future mathematics performance. There is a persistent indication that a discontinuity exists between pre-school learning methods and those in the lower primary schools. Teaching methods of the lower primary should be amended to make allowance for the stages of children's development and provide opportunities to encourage children to improve in their ability to understand and apply mathematical concepts. The purpose of this study was to explore the relationship between teachers and learners perceptions and mathematics performance in Lower Primary Schools of the Makuyu Zone, Murang'a South District in Kenya. The objectives of this study were: - to evaluate the teachers' perception on the value of pre-school mathematics; and to evaluate the children's perception with regard to mathematics learning. This study used a descriptive survey design to achieve the set objectives. Purposive (deliberately) sampling was used to select a sample population of 60 pupils; a lottery (random choice) method of sampling was applied to get 30 teachers, whereas 10 head teachers were chosen through appointment (deliberate) sampling. Open-ended questionnaires to collect data from the selected teachers and head teachers were applied; and for the children's responses, an interview schedule was employed. Observational checklists were also used where archival records were to apply. To test the construct validity and reliability of the research instruments, the researchers used 'split-half'. The researchers pilot-tested the research instruments with a small representative group from the population. The data collected was analysed, using frequency counts and percentages. It was presented in tables, bar graphs, pie charts and histograms as necessary to present a better picture of the findings. This study recommends frequent mathematics methodology seminars, workshops/in-service training for lower primary mathematics' teachers. Paid study leave/time and promotions to enhance teacher motivation and creation of positive perceptions towards teaching of mathematic which will go along way in improving mathematics performance.

Keywords: Preschool; Mathematics Performance; Instructional Methods

1. Introduction

In the previous five years, Kenya has been registering a consistent deterioration in mathematics performance in its lower primary schools every year. This has been a cause of worry and a source of anxiety on the part of parents who have been seeing their children as a window of their future hope. This, study examined impact of the pre-school instructional methods on mathematics performance in lower primary schools in Kenya. Unearthing the mystery surrounding the issue with the aim of finding a lasting solution to the phenomenon is now inevitable.

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2.0. Statement problem

It was not known how preschool teachers' and learners' perceptions impact mathematics performance in the lower primary schools of the Makuyu Zone, Murang'a South District. Kenya has been registering a consistent deterioration in mathematics performance in its lower primary schools every year. This has been a cause of worry and a source of anxiety on the part of parents who have been seeing their children as a window of their future hope.

3.0. The purpose of the study

The purpose of the study was to explore the relationship between teachers and learners perceptions and mathematics performance in lower primary schools in the Lower Primary Schools of the Makuyu Zone, Murang'a South District in Kenya

4.0. Objectives of the study

1. To determine the teachers' perception on the value of pre-school mathematics in Lower Primary Schools in Kenya
2. To establish the children's perception with regard to mathematics learning in Lower Primary Schools in Kenya

5.0. Significance of study

Whilst the hope was that access to this information would result in a hundred percent enrolment rate for pre-school learning, any marked improvement in the take-up rate was to enhance a child's ability to move from pre-school to primary school with maximum benefit to the child. The study aimed at providing recommendations resulting from the findings, that the government could use to benefit the parents, teachers, community, policy makers, curriculum developers and other pre-school education stakeholders, such as Faith Based Organizations (FBOs), Community Based Organizations (CBOs), and Non- Governmental Organizations (NGOs) among others. Parents should be the ones most interested in the ECDE programme.

This study advises them on the importance of early education and the role they can play in the development and education of their children. Most ECDE centres were supported in various ways by the community, either financially or by providing the volunteers needed to run them. When the community had received information on which they can make a decision, they were more likely to be sensitive to those issues relating to children, and so be more likely to initiate and implement a more inclusive ECDE programme.

The policymakers should identify areas of concern, and address them in the best interest of the child. The curriculum developers should identify the loopholes that are present in the pre-school Mathematics curriculum and likewise address them. NGOs, FBOs, CBOs also could assist by sponsoring the training of pre-school teachers, either for in-service mathematics long courses or for short courses, to deliver quality mathematics education to pre-school children. Other development partners such as the United Nations International Children Education Fund (UNICEF), World Bank (WB) and the International Monetary Fund (IMF) could be asked to assist financially, where necessary.

6.0. Literature Review

6.1. Teachers' Perception on Preschool Mathematics

Hausfather (1996) asserted that guided instruction involves both teacher and students exploring mathematics problems together, and then sharing their different problem-solving strategies in an open dialogue. The teacher should have only one concern – the academic development of the children under his/her care, in order to promote their growth and achievement. Teaching therefore involving the interaction of so many personal and professional elements, it is impossible to separate them.

It is critical for the mathematics' teacher to have an understanding of the manipulation of teaching/learning materials, and to have a positive attitude towards teaching the bigger mathematical concepts, rather than just simple arithmetic. Therefore, both pre-school teachers and lower primary school teachers should be orientated to understand the methods they use when teaching children mathematical concepts. By so doing that would change their beliefs and attitudes, as well as the perspective they currently use in the pre-school programme.

6.2. Learners' Perception on Preschool Mathematics

As pre-school teaching becomes formal, the children's interests, ideas, and ability to absorb knowledge, should remain at the centre of providing early mathematics education. Instead, most pupils regard mathematics as the most difficult and unpleasant subject in the school's curriculum, and yet are forced to study it. Therefore, after much effort under the present system, some pupils master a few of the basic concepts and learn to use them, and eventually the more able of them manage to pass the examination. As said earlier, qualified and committed teachers should guide the children better, and stimulate them in learning to realize better academic performance by their pupils.

7.0. Research Methodology

This study used a descriptive survey design to achieve the set objectives. Purposive (deliberately) sampling was used to select sample population of 60 pupils; a lottery (random choice) method of sampling was applied to get 30 teachers, whereas 10 head teachers were chosen through appointment (deliberate) sampling. Open-ended

questionnaires to collect data from the selected teachers and head teachers were applied; and for the children's responses, an interview schedule was employed. Observational checklists were also used where archival records were to apply. To test the construct validity and reliability of the research instruments, the researchers used 'split-half'. The researchers pilot-tested the research instruments with a small representative group from the population. The data collected was analysed, using frequency counts and percentages. It was presented in tables, bar graphs, pie charts, histograms and doughnuts as necessary to present a better picture of the findings

8.0. Research Findings

Research findings were analysed using frequency counts and percentages. To present a better picture of the findings they were presented in tables, bar graphs, pie charts and histograms as necessary. The information was categorized into themes, based on objectives and was interpreted qualitatively

For those that attended preschool education the researchers wanted to know whether the former teacher was a man or a woman. Based on the findings majority of the preschool teachers were women. This finding was confirmed by 94.1% of the respondents who indicated that their former preschool teacher was a woman as compared to 5.9% of the respondents who indicated that their former preschool teacher was a man. These results are summarized in the table below.

Table 8.1 Former preschool teacher's gender

Status	Variable	Frequency	Percentage	Cumulative Percentage
Valid	Man	2	5.9	5.9
	Woman	28	94.1	100.0
	Total	30	100.0	

At the time of research study, 63.2% of the mathematics teachers were women while only 36.8% were men. On being asked the gender of mathematics teacher they would prefer, 60% of the respondents indicated they liked a woman to be their mathematics teacher as compared to 40% who said they liked a man. The summary of these results are presented in the tables below.

Table 8.2 Current mathematics teacher's gender

Status	Variable	Frequency	Percentage	Cumulative Percentage
Valid	Man	21	35.0	35.0
	Woman	36	60.0	95.0
Invalid		3	5.0	100.0
	Total	60	100.0	

Table 8.3 Mathematics teacher child likes

Status	Variable	Frequency	Valid Percentage	Cumulative Percentage
Valid	Man	22	36.7	36.7
	Woman	33	55.0	91.7
Invalid	Undecided	5	8.3	100.0
	Total	60	100.0	

Some children seem to be comfortable with their current mathematics teachers. Others seem to be not comfortable with them whereas, still some were not sure. The ultimate call here is to have every mathematics teacher to become tender to the learners, alert to their needs and desires, creative to win them in his / her pedagogical practices and resourceful in mastery of the content. This is because children would cite some of their reasons of favouring one gender of a teacher over the other because they feel that those teachers are not harsh and /or have adequate knowledge of mathematics. This could probably make positive the children's perception on mathematics' learning.

8.4 Mathematics should be taught in lower primary school

The respondents were asked their opinion on whether mathematics should be taught in lower primary school. The respondents were unanimously in agreement that mathematics should be taught in the lower primary where 100% of the respondents indicated yes and none of them indicated no. These findings are summarized in the table below.

Table 8.4 Mathematics should be taught in lower primary

Status	Variable	Frequency	Valid Percentage	Cumulative Percentage
Valid	Yes	27	100.0	100.0

As a must be taught subject, mathematics, especially at this level, if not made fun in terms of its teaching; it likely to that teaching it formerly to children will be forcing it into them so long as their interests, ideas, and strategies are not set at the centre of understanding early mathematics education. Most of them will still perpetuate the notion that mathematics is a difficult and unpleasant subject in the school's curriculum and

yet are forced to study it (Maxwell, 1983).

Pre-school mathematics teaching was rated very highly by 38.5% of the respondents while 23.1% of the respondents rated it as highly and relatively high each. Only 15.4% rated it as lowly. These findings are presented in the table below.

Table 8.5 Rating of pre-school mathematics teaching by teachers

Status	Variable	Frequency	Percentage	Cumulative Percentage
Valid	Very highly	10	38.5	38.5
	Highly	6	23.1	61.5
	Relatively high	6	23.1	84.6
	Lowly	4	15.4	100.0
	Total	26	100.0	

8.5 Child's liking of mathematics

The researchers sought to establish whether the children like mathematics. Based on the findings of this study, children like mathematics as confirmed by 78.3% of them who indicated that they like mathematics quite much and 18.3% who indicated they like mathematics very much. Only 1.7% indicated not as much and not at all each. These results are as shown below.

Table 8.6 Child's liking of mathematics

Status	Variable	Frequency	Percentage	Cumulative Percentage
Valid	Not at all	1	1.7	1.7
	Not as much	1	1.7	3.3
	Quite much	47	78.3	81.7
	Very much	11	18.3	100.0
	Total	60	100.0	

It's surprising to see that there are some children who would say that they don't like mathematics. Though a small percentage, this group is still a subject to learning mathematics. They need to perform better in mathematics not only to complement their final grades (Okumbe, 1998) but also to make sense out of mathematics in their day to day lives (Ogotu and Wandiba, 1987). A means should be devised to win this group of learners to a meaningful mathematical learning and performance.

Children were asked how often their teacher went absent and responses varied with majority (32.1%) indicating one lesson per week, 30.4% saying two lessons per week and 17.9% indicating more than two lessons per week. Only 17.9% indicated that their teacher went absent rarely. These results are as shown below.

Table 8.7 Maths teacher absence per week

Status	Variable	Frequency	Percentage	Cumulative Percentage
Valid	One lesson	18	32.1	32.1
	Two lessons	17	30.4	62.5
	More than two lessons	11	19.6	82.1
	Rarely	10	17.9	100.0
	Total	56	100.0	

The researcher wanted to know what the child does when the mathematics teacher is absent. Majority of the children (64.4%) indicated that they do other things as compared with only 18.6% of the children who said they do mathematics on their own. The results are summarized in the table below.

Table 8.8 What children do when the teacher is absent.

Status	Variable	Frequency	Percentage	Cumulative Percentage
Valid	Do mathematics on my own	11	18.6	18.6
	Read other things	38	64.4	83.1
	Alternative teacher teaches	10	16.9	100.0
	Total	59	100.0	

Asked what they felt when their mathematics teacher was absent, 88.9% indicated that they felt bad as compared to 3.7% who said they felt good. The table below presents the findings.

Table 8.9 Children’s feeling on teacher’s absence.

Status	Variable	Frequency	Percentage	Cumulative Percentage
Valid	Good	2	3.7	3.7
	Fairly good	1	1.9	5.6
	Not good	3	5.6	11.1
	Bad	48	88.9	100.0
Total		54	100.0	

An element of absenteeism is evident on teachers. Whether acute or chronic it’s explicit that mathematics lessons have been suffering. It’s clear on the side of children that they have not been happy about it but still, it’s worrying to see a segment of children saying that they feel good when their mathematics teacher is not present. This indicates that some children are ‘traditional enemies’ to mathematics. That’s why they do other things other than mathematics when their teacher is not in. this opposes Winkin’s (1975) contribution.

It also implies that quite a number of learners, on being nurtured; they can grow a faster positive attitude towards mathematics. Teachers are charged with the sole responsibility of effecting this in their mathematics classes. Parents also can’t avoid their part on the same according to Narayan and Nyaweya, (1995).

9.0. Recommendations and Conclusion

Most teachers were seen to be committed to helping their pupils to succeed in their mastery of mathematics, but if their natural ability is hindered by lack of training, then every effort should be made to help them to obtain at least minimum academic and professional qualification. To improve their perception, paid study leave/time should be provided so that the existing workforce does have the necessary methodological knowledge to teach effectively. This study recommends frequent seminars, workshops/in-service training for lower primary mathematics’ teachers. For new employees, the promotion of staff after an agreed date, it should be a requirement that they hold, or are studying for, at least the minimum agreed qualifications, both academic and professional this will go along way in enhancing teacher motivation and hence changing their perception from negative to positive one.

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