

Teachers-as-Action Researchers in Reflective Teaching Approach: Intervening for Preschool Children's Social Emotional Competences in Molo Sub-County, Kenya

Kingaru Thumbi¹, Jane Ciumwari Gatumu², Evanson Muriuki Muriithi²

¹Department of Education, Kenya Methodist University, Meru, Kenya

²Department of Educational Communication and Technology, Nairobi University, Nairobi, Kenya

Email address:

kingaruthmb@gmail.com (K. Thumbi), jgatumu@uonbi.ac.ke (J. C. Gatumu), evanson.muriuki@uonbi.ac.ke (E. M. Muriithi)

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Abstract: This study examined teachers-as-action researchers in reflective teaching approach on preschool children's social emotional competences (SECs) in Molo Sub-County in Kenya from 71 preschool children and 4 teachers. Methodologies used were; quasi-experimental design with pretest posttest model, a training module for preschool teachers, Devereux Student Strengths Assessment (DESSA), preschool teachers' semi-structured interview schedule and documentary analysis for preschool teachers. The study sample was portioned into a treatment class and a control class. Teachers in the treatment class were trained to be classrooms' action researchers in reflective teaching approach and to deliver explicit lessons that teach preschool children's SECs while finding occasions for learners to reinforce their use in the course of the day. DESSA pretest and posttest were administered to all children in a span of three months between pretest and posttest. The social emotional composite scores obtained were converted to Standard *T*-score for data analysis using ANCOVA test. The study found statistically significant difference in the class where teachers were trained compared to the class where they were not. Semi-structured interviews and documentary analysis were also conducted in both classes. From the findings, teachers' action research in reflective teaching approach could be effective in teaching preschool children's SECs in the Sub-County. This takes place through growth and development of children's social emotional cognitive schema and professionally for teachers. The study recommends preschool teachers' to be trained and quality assured by both the National and County Governments in action research in reflective teaching approach for children's SECs. This should happen through regular in-service training in teachers' action research, teachers' action research workshops and teachers' action research seminars. Teachers' action research in reflective teaching approach and children's SECs scholarly materials should be made available in preschools offices/libraries and resource centers in the Sub-county to enable teachers to have a local resource.

Keywords: Action Research, Teachers-as-action Researchers, Reflective Teaching Approach, Children's Social Emotional Competences

1. Introduction

Critical dimensions for professional development of teachers that have captured the educational community for the last 80 years are reflective practice approach and action research [1]. It was Stenhouse's (1975) idea of teachers' action researcher that the two came most grippingly into a link [2]. According to reference [3], reflective teaching is a combination of critical inquiry, conscious consideration of

the ethical implications and consequences of teaching practice and deep examination of personal beliefs and assumptions about human potential and learning. In the same breath, action research is a sustained, intentional, recursive, and dynamic process of inquiry in which the teacher takes an action purposefully and ethically in a specific classroom context to improve teaching/learning and hence move towards uniting theory and practice [4, 5].

Teachers' action research borrows from improved theory

of constructivism which argues that human generate knowledge and meaning from interaction between their experiences and their ideas [6]. Stenhouse (1981) believed that teaching should be based on research and the classroom is a natural laboratory for the study of teaching/learning [7]. In the same vein, Lüdke (2001) viewed teachers' action researchers as professionals, who like artists, seek the best ways to reach students. Doing classroom research includes knowing what the problem is in the classroom and how that problem can be addressed in order to improve the teaching and learning process [8].

Mills [9] urges that in education, the objective of action research is to determine means that can improve children's lives. In the same line, Hensen [10] points out that action research can improve lives of professionals who work within educational systems and has been linked to professional growth and development of teachers. Further, action research process has been modeled to be spiraling, cyclical [11], a research cycle [12], and helical [13]. Hensen [10] point out that action research supports teachers to: build new knowledge from their classrooms, encourages thinking and reflective teaching, enlarges teachers' pedagogical repertoire, places teachers in charge of their craft, strengthen the link between practice and learners achievement, nurtures openness for new ideas and learning new things, and gives teachers ownership of effective practices.

Cochran-Smith and Lytle [14] groups' teachers' research into two categories: Conceptual research- focuses on teachers' interpretations of the assumptions and characteristics of classroom and school life and/or the research itself. Empirical research- which refers to the collection, analysis, and interpretation of data gathered from teachers' own schools and classrooms. In this category are listed three types of research: journals, oral inquiries, and classroom/school studies. Journals are teachers' written explanations of classroom life, including observations, experience analysis, interpretations and reflections of teachers' practices. Oral inquiries are teachers' oral examinations of classroom/social issues, contexts, texts, and experiences including collaborative analyses and interpretations and explorations between cases and theories. Classroom/school studies are teachers' explorations of practice-based issues using data based on observation, interview, and document collection involving individual or collaborative work. This paper, reports both empirical and conceptual teachers' action research under cyclical action research on preschool children's social emotional competences (SECs).

Over the past few decades, multiple surveys indicate that educators, parents, and the public recognize the need for a broad educational agenda to not only improve academic performance but also to enhance students' SECs, character, health, and civic engagement [15, 16]. According to reference [17], students who do not learn how to solve social and emotional problems effectively are at risk for increased special education referrals, loss of instructions, decrease in friendship and overall loss of self-esteem. In addition, such children are more likely to develop more serious problem in

life. A review of 180 school programmes in classroom based programming conducted by CASEL (Collaborative for Academic, Social and Emotional Learning) in the United States found out that students in SECs learning programmes, demonstrated improvement in multiple areas of their personal, social and academic lives. Further, positive academic results were consistent across social-economic levels: urban, sub-urban and rural locations and in ethnically diverse settings [18]. In yet another study, students from low social-economic areas showed the greatest level of gains and teachers rated students who received skills in SECs as more socially capable and less aggressive [17]. According to studies [18, 19], teachers cannot transmit SECs if they are not empowered enough professionally and preschools should consider ways of promoting and developing of children's SECs. In the same breath, Weissberg, Durlak, Domitrovich and Gullotta [20] point out that one of the most prevalent approach involves training teachers to deliver explicit lessons that teach preschool children's SECs and then finding opportunities for learners to reinforce their use during the course of the day.

Literature review indicates that teachers-as-action researchers in reflective teaching approach is not intersected with preschool children's SECs in Kenya. There is also scanty research in reflective teaching approach in Kenya preschools [21]. In a report by Republic of Kenya [16], it is evident that many children lack SECs important for future overall life's success. In Molo Sub-County, families have faced social disruptions for the last two and a half decades especially 1992, 1997 and 2007/2008 [22]. Although, some of the affected families relocated, majority was resettled in the years 2010, 2013, 2014 and 2015 [23]. Social disruptions comes along with children lacking basic needs, security needs, self-esteem needs, emotional regulation and attention as is the case of most preschool children in this Sub-County. The objective of the study therefore was to determine whether preschool children's SECs pre-intervention mean scores are significantly different from post-intervention mean scores in classes where teachers are action researchers and in classes where they are not.

2. Method

2.1. Design

Quasi experimental design with a pretest-posttest group model was employed. The sample was selected through stratified simple random sampling and simple random sampling from preschools in the Sub-County. The sample was portioned into a treatment and a control class. The treatment class was referred to as teachers-as-action researchers' class. The class that was not intervened was referred to as the control class. Level of SECs was measured in all the children participants at the beginning of the study and considered as pre-intervention scores. Training teachers to become teachers' action researchers in reflective teaching approach was introduced to the treatment class with monthly

follow ups. Level of SECs after training teachers was measured to all the children in the sample after three months and considered as post-intervention scores. The treatment effect was determined by comparing the SECs mean score in the control class to the SEC mean score in the teachers-as-action researchers' class after subtracting SECs scores obtained at the beginning of the study in both classes [24].

2.2. Participants

The sample comprised of 71 children and 4 teachers where, 35 children and 2 teachers were in the treatment class while 36 children and 2 teachers were in the control class.

2.3. Data Collection

A training module was used to train teachers in the treatment class. It was based on Dewey [25] and Schön [26] ideas on reflective professional/teacher, Kolbs [27] the cycle of reflection, the concepts of action research and teachers'-as-action researchers [10, 28, 12], children's SECs [29], importance of children SECs [18] and how to combine teachers' research with preschool children's SECs. Further, teachers were trained how to deliver explicit lessons on preschool children's SECs and to find occasions for children to strengthen their use during the day. It had been validated by a panel of early childhood specialist and piloted in a different preschool in the Sub-County. Teachers attended a two days training sessions in plenary and thereafter, monthly follow ups were done by researchers.

Devereux Student Strengths Assessment (DESSA) a behaviour rating scale that assesses children's SECs was adopted. It is a 72-item standardized, norm-referenced, strength-based behavior rating scale that yields an overall total score called the social emotional composite. It contains eight domains that measures SECs: optimistic thinking-attitude of confidence and hopefulness about self and life situations, self-management- success in controlling emotions and behaviors, goal-directed behavior- initiation of and persistence in task completion, self-awareness- realistic understanding of strengths and limitations, social-awareness-capacity to interact with others respectfully, personal responsibility- care and reliability in actions contributing to group efforts, decision making- problem solving, and relationship skills- actions that promote positive connections with others [29]. DESSA is 5-point Likert scale ranging from never = 0, rarely = 1, occasionally = 2, frequently = 3, very frequently = 4. Items are summed to raw scores which are converted to *T*-scores. It was administered to the children one week before teachers training (pre-intervention scores) and the last week of the study (post-intervention scores) to all children.

A semi structured interview schedule allowed the researchers to gain insights, comparisons and contrasts between the treatment and control classes [30]. It was validated by a panel of early childhood specialist. It was found reliable through testing and retesting with a reliability

coefficient of 0.83. Further, the researchers used documentary analysis as indirect technique to facilitate more insights. It contained templates to fill on what teachers had documented on action research on preschool children's SECs. The researchers trained an independent rater to analyse and score the teachers' documents independently. Piloting established that it had an inter-rater reliability index of 0.81.

2.4. Data Analysis

DESSA pre-intervention and post-intervention raw scores converted to *T*-Scores and analysed using Analysis of Covariance (ANCOVA) to test statistical significance difference using Statistical Package for Social Sciences version 21.0 for Windows. Data gathered from semi-structured interviews schedules was also analysed. For documentary analysis, a table of presence and absence of records was constructed and average values for the researchers and the independent rater calculated. Results from both instruments made meaning of differences in mean scores and statistical significant difference obtained by ANCOVA test.

3. Result

The children mean scores in the treatment class were found to be higher than the control class. Secondly, the social emotional level of children in the treatment class rose higher than in the control class as shown in Table 1. There was also a significant difference in mean scores between the treatment class and the control class as shown in Table 2. Teachers in the treatment class had more documents related to teachers' action research compared to teachers in the control class as shown in Table 3. Lastly, interviews conducted indicated that teachers in the treatment class had more tools to teach children's SECs than in the control class.

4. Discussion

From the computed children's mean scores, the control class had 47.861 at pretest and 47.972 at posttest while the teachers-as-action researchers' class had 48.029 at pretest and 50.886 at posttest. The mean score difference between pretest and posttest was 2.857 and 0.111 for teachers-as-action researchers and control classes respectively. Teachers-as-action researchers' class had higher mean scores at both time points. The greater mean score difference treatment class could be attributed to teachers' action research.

Teachers-as-action researchers and control classes levels of children's SECs before and after intervention scores as shown in Table 1. The numbers of children in both classes are indicated against each SECs level. Children's SCEs levels are grouped as follows: Children in need for instructions scored below 40 *T*-scores, typical children scored between 41 and 59 *T*-scores while strengths children scored 60 and above *T*-scores [29].

Table 1. Levels of children’s Scores in SEC Before and After 3 Months Intervention for Teachers-as-Action Researchers and Control Classes by Number of Children.

Levels of children’s SECs	Teachers-as-action researchers’ class		Control class	
	Before treatment	After 3 months treatment	Before treatment	After 3 months without treatment
Need for instructions	3	1	2	2
Typical	32	30	34	33
Strengths	0	4	0	1
Total number of children	35	35	36	36

Table 2 indicates that 3 children in the teachers-as-action researchers’ class were in need of instructions by scoring below 40 *T*-scores in the DESSA pre-intervention, of these; 2 transited to the typical level after intervention. Before treatment there were 32 typical children in the teachers-as-action researchers’ class, where 4 transited to strengths level after intervention. There were no strengths in this class before intervention. In the control class only 1 child transited from typical level to strengths level without intervention. There were more transitions in the teachers-as-action researchers’ class towards strengths level compared to the control class which could be attributed to use of teachers’ action research.

The underlying assumption of homogeneity of variance for

ANCOVA was tested using Levene’s test of equality of error variance. This was done by testing the null hypothesis that the error variance of the dependent variable is equal between classes. The error variances are not significantly different, $F(1, 69) = 0.154, p > 0.05$. To find out whether there was interaction between the DESSA pre-intervention *T*-scores and post-intervention *T*-scores in the classes, a test of assumption of homogeneity of regression slopes was carried out. Results indicate that there was no significant interaction of regression slopes in the classes, $F(1, 67) = 2.335, p > 0.05$. To test the effect of teachers’ action research on children’s SECs while controlling for SECs before intervention; an ANCOVA test was conducted as shown in Table 2.

Table 2. ANCOVA Analysis for the Effect of Teachers-as-Action Researchers on Children’s Scores in SECs.

Dependent Variable: Dessa post-test						
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1970.552 ^a	2	985.276	66.296	.000	.661
Intercept	79.470	1	79.470	5.347	.024	.073
Dessapretest	1819.912	1	1819.912	122.456	.000	.643
Group	136.226	1	136.226	9.166	.003	.119
Error	1010.603	68	14.862			
Total	176306.000	71				
Corrected Total	2981.155	70				

a. R Squared = .661 (Adjusted R Squared = .651)

Table 2 shows the group source (labeled group on the SPSS output) evaluates the H_0 that the means scores of the teachers-as-action researchers and the control classes are equal. The results of the analysis indicate that there was a significant effect of teachers’ action research on preschool children’s SECs after controlling the effect of teaching SECs without teachers’ action research, $F(1, 68) = 9.166, p < .05, partial \eta^2 = .119$.

In order to confirm actual employment of teachers’ action research; records on teachers’ action research on children’s SECs from the treatment and control classes were analysed. Table 3 shows the average score obtained by the researchers and a trained independent rater. A maximum score of 30.0 was required- indicating very intense teachers’ action research. Each of the six entries had a maximum score of 5.0.

Table 3. Analysis of Records Kept by Teachers-as-Action Researchers’ Class and Control Class on Teachers’ Action Research for Children’s SECs.

Teachers-as-action researchers’ records	Score for teachers-as-action researchers’ class	Score for control class
Text book related research records on children’s SECs	3.0	2.0
Internet related research records on children’s SECs	4.0	0.0
Research related to teachers’ action research on children’s SECs from:		
Textbooks	4.0	0.0
Internet	4.0	0.0
Other sources (magazines, journals and newspapers)	2.0	1.0
Challenges of teaching children’s SECs through teachers’ action research	4.0	0.0
Score	21.0	3.0
Maximum score	30.0	30.0

Table 3 displays that teachers in the treatment class had action research entries in their notebooks especially, from textbooks and internet searches on children social emotional learning through teachers’ action research. The teachers had

a list of websites dealing with preschool children’s SECs and developmental issues for example from; www.csefel.uiuc.edu, www.kidmatter.edu.au and www.bullyingnoway.gov.au. Records on research based

practices for early childhood programmes from Center on the Social and Emotional Foundations for Early Learning (CSEFEL) among others. These included strategies that promote and/or support children's SECs using local resources. One of the teachers had notes on how to teach children's SECs through play, dance, pretend play, drama, emoji feeling faces, happy and scared activities while the other teacher had notes on conflict and anger management and how to help children develop emotional awareness and emotional coping skills. Both teachers had notes made from searches on teachers' research through action research from internet. One of the teachers documented important requirements for teachers' action research for children's SECs: *A notebook- for observations and insights, iPhone to search the internet, to take photographs and capture videos in order to reflect on them later and a colleague to network with.*

They also had notes from internet searches on challenges that teachers face when teaching children's SECs. One of the teachers had written on her notebook that most children from her catchment area live in poverty. In relation to this she had written down what she had found in her searches: *Poverty can come along with children's uncertainty and unmet needs; can experience trauma that can bring feelings of hopelessness which affect relationships and interactions; can have problems in emotional regulation and attention.* Along the same notes, she had written what she was doing (her insights to solving the problem): *Strategies from CESLFEL that promote SECs for children living in poverty.* The teacher had also written what she had realised through action research: *Children are learning SECs better in activities such as pretend play; happy, sad and scared activities songs and dances.* The treatment class had a score of 21 (70.00%) to a maximum of 30 compared to teachers in the control class who had very little documentation on teachers' action research. Only one teacher had some notes on children's SECs from the recommended text and from a newspaper with a mean score of 3 (10.00%) to a maximum score of 30. According reference [31] on attributes of a reflective practitioner; teachers should take action to align with new knowledge and understanding as shown by teachers' records in the treatment class.

Preschool teacher's interviews were conducted after DESSA posttest in both classes. In the treatment class, teachers had a positive attitude towards use of action research which also facilitated them to keep a vast with the learning of children's SECs and their own growth and development as teachers. They stated that they researched in the internet, textbooks and other sources; for example, magazines and journals. They also said that they taught children's SECs through explicit lessons and strove to find occasions for children to strengthen the competences in the course of the day. This was whenever they found opportunities in the classroom, eating, resting time as well as when they had activities in the school field. According to teachers in this class, children appeared to show improvement in the SECs with continuous follow ups. Further, they said that action

research facilitated them to retrospect on their own teaching and which enabled them to deal with children's SECs challenges.

They further, stated that by employing action research they were able to identify children's SECs as they evolved in class and find ways of fostering them. This was in line with Farrell [5] who argued that the purpose and intent of action research is not the development of universal principles to be applied in all teaching situations but to build and verify a coherent explanation of how a particular classroom works. One of the teachers stated: *Before training, I did not know I can be a teacher-action researcher, this has helped me to find solutions to children SECs problems and to help those who are good by constantly looking up for solutions in the internet using my phone, text books and asking those who know.* Furthermore, preschool teachers in the treatment class pointed out that they were able to recall and follow children's SECs for example; optimistic thinking, personal responsibility, goal directed behavior among others in the course of teaching.

From answers provided by teachers in the control class, they appeared not to be conversant with use of teachers' action research in reflective teaching approach. They were also weak in relation to children's SECs are concerned and stated that in teaching children, they focused on the academic component. They were not keen to teach children's SECs and doing so using only the recommended text. They appeared to leave social emotional aspects of children to mature largely on their own. A teacher stated: *I do not research on children SECs. I do not know how I can do it, but we have a textbook which I usually use.* Further, they did not show how they used explicit lessons to teach children's SECs or mark out opportunities for learners to strengthen the competences. In relation to these, another teacher stated: *I do not plan lessons on children's SECs, there is much to be done in academics among other things but I do teach them these skills once in a while.* This could explain the lower mean scores obtained by this class which was significantly lower than the treatment class. This study echoes what has been studied by scholars and researchers in reflective teaching approach and, children's SECs [14, 4, 5, 20] and point out that teachers' action research in reflective teaching approach could be effective in teaching preschool children's SECs in Molo Sub-County.

5. Conclusion

The findings of this paper indicate that action research was employed by teachers in teachers-as-action researchers' class as opposed to the control class and could be effective in scaffolding preschool children's SECs. Further, teachers' action research is significantly superior to ordinary approaches to teaching children's SECs. When SECs are taught by critically reflective teachers through explicit lessons and occasions found for children to strengthen their use during the course of the day, they progress, understand and hold these competences better. This occurs through better

construction of cognitive schema to which these competences are embedded. Preschool teachers also grow and develop professionally by being accurately aware of their practice and continuous learning.

Against the background of these research findings, preschool teachers in the Sub-County should be trained on action research in reflective teaching approach in order to become teachers' action researchers through regular in-service training on teachers' action research, teachers' action research workshops and teachers' action research seminars. The National and Nakuru County Governments should spearhead the preschool teachers' training and further, maintain and improve quality of teachers' action research in reflective teaching approach in preschools for children's SECs. Lastly, scholarly materials on teachers' action research, reflective teaching approach and teachers-as-action researchers on preschool children's SECs should be made available to preschool libraries/offices, resource centers/libraries in order for teachers to have local resources in the Sub-County.

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