

Disaster Management Preparedness and Its Implications on Teaching and Learning Outcomes in Pre-primary Schools in Thika, Kiambu County, Kenya

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Abstract— In Kenya, disaster management education has been incorporated in the School Safety Standards Manual. However, most pre-primary schools still experience cases of disasters. The purpose of this study was to assess disaster management preparedness and its implications on teaching and learning outcomes in pre-primary schools in Thika, Kiambu County, Kenya. The study was guided by The Chaos Theory of Disaster Management. The study adopted mixed research methodology and applied concurrent triangulation design. The target population comprised of 22 headteachers and 350 pre-primary school teachers all totaling to 372 from which a sample of 112 respondents were selected using the Central Limit Theorem. Stratified sampling was applied to create five strata based on the number of zones in Thika Sub-county. Questionnaire was used to collect data from pre-primary school teachers whereas interview was used to collect data from headteachers. Data analysis began by identifying common themes. Qualitative data was analyzed thematically based on objectives and presented in narrative forms whereas the quantitative data was analyzed descriptively using frequencies and percentages using Statistical Packages for Social Sciences (SPSS Version 23) and presented using tables. The study established that teaching and learning outcomes of learners in pre-primary schools has been all time low with many pre-primary school learners registering poor grades in basic numeracy, language and creativity skills. The study also established that levels of disaster management planning in pre-primary schools is very low, inadequate staff training on disaster management, inadequate disaster management facilities and negative staff attitude towards disaster management. The study recommends that pre-primary school management should devise strategies for improving the dwindling levels of teaching and learning in pre-primary schools. The management of pre-primary schools should design a simple guide map and ensure that labels and signage can be easily understood by everybody within the school compound. The County Governments should develop a disaster management training module for teachers and other support staff on how to handle accidents or disasters in case one happens. The Ministry of Education should enforce stricter adherence to Standards Safety Manual (2008) designed for all schools from pre-primary to secondary as a strategy for creating a learner-friendly environment.

Index Terms— Disaster Management Preparedness, Teaching and Learning Outcomes, Planning, Staff Training, Staff Attitude and Provision of Facilities.

I. INTRODUCTION

Disaster management preparedness is viewed as the readiness in ensuring mitigation or prevention, awareness, response and recovery in case of an emergency. Cognizant of these assertions, Borland (2008) posits that such preparedness encompasses the body of policy and administrative decisions and operational activities which pertain to the various stages of a disaster. In educational institutions such as schools and pre-primary schools, a safe and secure environment is a prerequisite for effective child development as well as teaching and learning. According to Scotland School Estate (2003), schools are generally considered to be safe havens for millions of children and the greatest socializing institutions after the family. However, the recent experiences with natural disasters, in-school violence, acts of terrorism, and the threat of pandemic diseases such as cholera, fire breakouts and flu demonstrate the need for schools all over the world to be prepared for all hazard crisis possibilities. However, the extent to which disaster management preparedness influence teaching and learning outcomes in pre-primary schools is yet to be fully explored. Despite the inclusion of disaster management in schools' Safety Standards Manual, disasters still face most pre-primary schools (Borland, 2008).

A study conducted in the Netherlands by Cooper (2005) revealed that there is a fundamental link between day-to-day emergency preparedness in pre-primary schools and teaching and learning outcomes. Cooper (2005) asserts that threats to the safety and security of children and school property can arise from natural hazards such as earthquakes, floods and storms or from human actions such as vandalism, arson, and violence. In keeping with these assertions, while catastrophic events and human tragedies cannot be eliminated entirely, there is a role for facility designers, headteachers, emergency response teams and post-crisis intervention in mitigating their negative impact. To corroborate these assertions, Downs (2010), in a study carried out in Czech Republic, asserted that pre-primary schools that are well-prepared for an individual emergency involving a child or staff member are more likely to be prepared for complex events and disasters.

Downs (2010) further indicated that there is a great regard for the role of school safety in creating environments conducive for children's learning outcomes. Such learning environments provide for children's needs so that they can

perform to the best of their ability and register impressive academic grades (Cooper, 2005). Thus, an unsafe pre-primary school environment poses great threat and anxiety in both teachers and children and causes lots of damage to schools and education systems. However, Cooper (2005) fails to articulate how such damages impact on teaching and learning outcomes. In Tanzania, FEMA (2010) notes that, in the event of a school disaster, children are the most affected, schooling systems disrupted thus affecting a fundamental right of children to education; hence learners register dismal teaching and learning outcomes. Guidance for standard operating procedures in response to different types of disasters and emergencies in pre-primary schools is a pre-requisite for localization at the pre-primary school and local community level. In Kenya, pre-primary school education is not only a fundamental right for every child but also an indispensable element for learning at subsequent levels of education (Belmont, 2007). Crucial as it is, pre-primary school education has received the least support within the Kenyan education sector and for long was not included in the Free Primary Education Programme (UNDP, 2008). Therefore, issues of importance such as safety of pre-primary schools and its importance on children's learning outcomes have not been given adequate attention.

In study conducted in Kiharu Division, Mwangi (2008) revealed that children of early age are vulnerable to threats such as inappropriate school facilities and infrastructure. These may include poorly constructed classrooms and playing grounds, insufficient and broken-down toilet facilities, inadequate and inappropriate desks and other furniture (Mwangi, 2008). In Thika Sub-county, the safety of pre-primary school children at all times and everywhere therefore cannot be over emphasized. It is in this respect that the government of Kenya launched the School Safety and Standard Guidelines for Kenya in January of 2006 (Republic of Kenya, 2008). The launch of the policy underscores the government commitment to the safety and overall welfare of pre-primary school children. Children's Act 2001 emphasizes on the need for children to be offered any form of protection against any impending danger. These documents are geared towards providing a rallying point to reflect on children's safety. However, much needs to be done to mitigate incidences of disasters such as accidents and injuries to children through carefully thought out measures and strategies. Thus, this study sought to investigate the levels of disaster management preparedness and its implications on teaching and learning outcomes in pre-primary schools in Thika Sub-county, Kenya.

II. STATEMENT OF THE PROBLEM

Safety in pre-primary schools form an integral and indispensable component of the teaching and learning process. It is therefore important that schools foster safe and secure school environments to facilitate learners' environment, retention, completion and hence quality education (Republic of Kenya, 2008). However, teaching and learning outcomes in such pre-primary schools have been and continue to be low. That is, learners manifest diminished cognitive development, dismal basic numeracy, language and

creativity skills. In the same vein, despite the inclusion of disaster management in schools' Safety Standards Manual, disasters still face pre-primary schools. Most empirical studies observe that most pre-primary schools have had cases of threats to safety that emanate from within the pre-primary school environment such as accidental injuries caused by insect bites, weak railings, sharp objects, poor ventilation among others which have rendered the child insecure while in school. Despite these observations, there is neither a coordinated policy framework nor a legal basis for the current disaster management system in pre-primary schools. Besides, it is not known how disaster management preparedness influence learning outcomes of children in pre-primary schools. Therefore, this study sought to assess the influence of disaster management preparedness on teaching and learning outcomes in public pre-primary schools.

Theoretical Framework

The study was guided by the Chaos Theory which was postulated by Gleick (1987). This theory holds that small differences in the initial conditions produce great ones in the final phenomenon. Gleick (1987) states that Chaos theory is a scientific principle describing the unpredictability of systems. Its premise is that systems sometimes reside in chaos, generating energy but without any predictability or direction. According to this theory, chaos is the irregular, uncertain discontinuous aspect of change within the confines of a patterned whole. In this context, this means that disaster and emergency situations epitomize the unpredictability or the non-linearity of human events. Disaster management in schools involves different stakeholders, that is, learners, teachers, non-teaching staff, parents and school communities who need to be coordinated to reduce vulnerability to disasters for schools. Thus, the rationale of using this theory in this study was that it underscored the fact that disaster management preparedness in terms of planning, staff training, attitudes and provision of disaster management facilities is critical in enhancing teaching and learning outcomes amongst pre-primary school learners.

Delimitations of the Study

The researcher intended to conduct the study in public pre-primary schools in Thika Sub-county only. Data was only collected from headteachers and pre-primary school teachers. This study exclusively focused on levels of disaster management preparedness, the disaster management planning, staff training, attitudes and provision of disaster management facilities as the independent variables whereas teaching and learning outcomes constituted the dependent variables. The study adopted mixed methods approach and thus apply concurrent triangulation research design. Questionnaires were used to collect quantitative data from pre-primary school teachers and interview guides were used to gather qualitative data from headteachers.

III. RESEARCH METHODOLOGY

The study applied mixed methodology and concurrent triangulation design. The study targeted 372 respondents comprising of 22 headteachers and 350 pre-primary school teachers. The Central Limit Theorem was used to sample 112 respondents comprising of seven headteachers and 105

pre-primary school teachers. Stratified sampling was applied to create five strata based on the number of zones in Thika Sub-county. All headteachers from the sampled pre-primary schools were purposively selected considering the pre-primary schools which have experienced cases of disasters. From each zone, 21 pre-primary school teachers were selected using simple random sampling in order to avoid feeling of bias and favoritism. This sampling procedure enabled the researcher to realize a sample of seven headteachers and 105 pre-primary school teachers. Questionnaires were used to collect data from pre-primary school teachers and interview guide for headteachers. Qualitative data was analyzed thematically along the study

objectives and presented in narrative forms whereas the quantitative data was analyzed using descriptive statistics with the help of Statistical Package for Social Science (SPSS 23) and presented using tables.

IV. RESULTS AND DISCUSSIONS

In this study, 105 questionnaires were administered to the pre-primary school teachers. In return, 104 questionnaires were filled and returned by the teachers. The researcher also interviewed five headteachers which yielded response rates shown in Table 1;

Table 1: Response Rates

Respondents	Sampled Respondents	Those Who Participated	Achieved Return Rate (%)
Headteachers	7	5	71.4
Pre-primary School Teachers	105	104	99.0
Total	112	109	97.3

Table 1 shows that headteachers and pre-primary school teachers registered a response rate of 97.3% which lends credence to the assertions of Creswell (2009) that a response rate above 75.0% adequate for generalization of the study outcomes to the target population.

Levels of Disaster Management Preparedness in

Table 2: Levels of Disaster Management Preparedness in Pre-primary Schools

Levels of Disaster Management Preparedness	Ratings	
	Adequate %	Not Adequate %
Disaster management planning	25.0	75.0
Staff training on disaster management	20.0	80.0
Availability of disaster management facilities	30.0	70.0
Staff attitude towards disaster management	35.0	65.0

Table 2 reveals that three-quarters (75.0%) of the pre-primary school teachers indicated that the levels of disaster management planning are not adequate whereas only a quarter (25.0%) indicated that levels of disaster management planning are adequate. On staff training, majority (80.0%) of the pre-primary school teachers noted that levels of staff training on disaster management is not adequate whereas only 20.0% responded in favor. From Table 3, majority (70.0%) of the pre-primary school teachers indicated that disaster management facilities are not adequate in preprimary schools. Only 30.0% reported that disaster management facilities are adequate. On staff attitude, close to two-thirds (65.0%) of the pre-primary school teachers noted that staff attitude towards disaster management is not satisfactory whereas only 35.0% indicated positive attitude towards disaster management. These findings are inconsistent with the assertions of Alexander (2002) that disaster and emergency management is both the organization and management of responsibilities, as well as resources, for dealing with all aspects of emergencies, with a special focus or emphasis on preparedness, response and rehabilitation. These findings indicate that stakeholders in pre-primary school education should be given a high priority in all aspects

Pre-primary Schools

Objective one was: assess the levels of disaster management preparedness in pre-primary schools. Descriptive data was collected from pre-primary school teachers, organized into specific thoughts and results are shown in Table 2;

including disaster prevention, mitigation and preparedness.

Thematic Analysis of Levels of Disaster Management Preparedness in Pre-primary Schools

During the interviews, the headteachers however, refuted claims that the levels of disaster management preparedness is inadequate. Headteachers reported that they have disaster management plans such as guide maps and designs for learners and staff safety.

However, they admitted that most of the school staff have not undertaken any viable training on disaster management. On further probing, they observed:

“In my school, staff has not been trained on disaster management training and lack skills to mitigate disasters in case they happen. My school even lacks the pre-requisite disaster management facilities to help reduce cases of disasters”

These views indicate that stakeholders in pre-primary school education should be given a high priority in all aspects including disaster prevention, mitigation and preparedness.

Teaching and Learning Outcomes in Pre-primary Schools

Objective two which this study sought to achieve was: assess the levels of teaching and learning outcomes in pre-primary schools. This was measured in terms of basic

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numeracy, language and creativity scores and the results are shown in Table 3;

Table 3: Teaching and Learning Outcomes in Pre-primary Schools

Test Items	Ratings				
	SA %	A %	U %	D %	SD %
Pre-primary school pupils manifest low grades in basic numeracy skills such as number sensing, ordering, number operations and counting	75.0	11.5	4.5	7.5	1.5
Pre-primary school pupils manifest poor reading skills such as phoneme awareness, phonetics, vocabulary, picture reading or recognition of words	88.5	2.5	1.5	4.5	3.0
Pre-primary school pupils manifest poor writing skills such as forming words, fill-in spaces, joining syllable to make words and sentence construction	83.5	5.5	2.5	4.5	4.0
Pre-primary school pupils manifest poorly developed oral skills such as storytelling, sound recognition and attentiveness	65.5	11.5	4.0	13.0	6.0
Pre-primary school pupils manifest low creativity skills such as coloring, pattern formation, drawing and crayon etching and printing	60.5	11.5	5.5	13.5	9.0
Pre-primary school pupils manifest low cognitive skills such as recalling, rephrasing and problem-solving abilities	55.5	14.5	3.0	14.5	12.5

Table 3 reveals that majority (75.0%) of the pre-primary school teachers strongly agreed with the view that pre-primary school pupils manifest low grades in basic numeracy skills such as number sensing, ordering, number operations and counting as did 11.5% who agreed. However, only a paltry 4.5% were undecided, 7.5% disagreed whereas 1.5% strongly disagreed. These findings corroborate the assertions of Holcombe, Wolery and Katzenmeyer (2012) that pre-primary school learners manifest diminished cognitive development, dismal basic numeracy, language and creativity skills. Majority (88.5%) of the pre-primary school teachers strongly agreed with the view that pre-primary school pupils manifest poor reading skills such as phoneme awareness, phonetics, vocabulary, picture reading or recognition of words as did 2.5% who agreed. However, only a paltry 1.5% were undecided, 4.5% disagreed whereas 3.0% strongly disagreed. Majority (83.5%) of the pre-primary school teachers strongly agreed with the view that pre-primary school pupils manifest poor writing skills such as forming words, fill-in spaces, joining syllable to make words and sentence construction as did 5.5% who agreed. However, only a paltry 2.5% were undecided, 4.5% disagreed whereas 4.0% strongly disagreed. This implies that teaching and learning outcomes of pre-primary school learners is low, wanting and thus there is need to address the quality of education offered in pre-primary schools by adopting a common curriculum which is easily supervised.

Majority (65.5%) of the pre-primary school teachers strongly agreed with the view that pre-primary school pupils manifest poorly developed oral skills such as storytelling, sound recognition and attentiveness as did 11.5% who agreed. However, only a paltry 4.0% were undecided, 13.0% disagreed whereas 6.0% strongly disagreed. From Table 4.3, majority (60.5%) of the pre-primary school teachers strongly agreed with the view that pre-primary school pupils manifest low creativity skills such as coloring, pattern formation, drawing and crayon etching and printing as did 11.5% who agreed. However, only a paltry 5.5% were undecided, 13.5%

disagreed whereas 9.0% strongly disagreed. Table 3 further reveals that majority (55.5%) of the pre-primary school teachers strongly agreed with the view that pre-primary school pupils manifest low cognitive skills such as recalling, rephrasing and problem-solving abilities as did 14.5% who agreed. However, only a paltry 3.0% were undecided, 14.5% disagreed whereas 12.5% strongly disagreed.

These findings are consistent with the assertions of Rubin and Coplan (2000) that teaching and learning outcomes represent one of the essential building blocks for transparent higher education systems and qualifications. Teaching and learning outcomes-based approaches have implications for curriculum design, teaching, learning and assessment, as well as quality assurance. Thus, these findings affirm the fact that teaching and learning outcomes in pre-primary schools is low with pre-primary school learners manifesting diminished cognitive development, dismal basic numeracy, language and creativity skills.

Thematic Analysis of Teaching and Learning Outcomes among Pre-primary Learners

During the interviews, the headteachers also admitted that many pre-primary school learners have poor basic numeracy skills. One headteacher, H1, observed,

“In my school, many pre-primary school learners find it difficult to handle mathematics’ concepts in grade I. This implies a clear lack of basic numeracy skills at pre-primary school levels”.

Headteachers further noted that pre-primary school pupils manifest poor reading skills such as phoneme awareness, phonetics, vocabulary, picture reading or recognition of words. They also noted that most of the pre-primary school pupils also manifest poor writing skills such as forming words, fill-in spaces, joining syllable to make words and sentence construction. On listening skills, the headteachers further indicated that pre-primary school pupils manifest poorly developed oral skills such as storytelling, sound recognition and attentiveness. When probed further, the headteachers observed that many pre-primary school learners manifest low creativity skills such as coloring, pattern

formation, drawing and crayon etching and printing. Many pre-primary school learners manifest low cognitive skills such as recalling, rephrasing and problem-solving abilities as did 14.5% who agreed. When probed further, they noted,

“Pre-primary school pupils manifest low creativity skills such as coloring, pattern formation, drawing and crayon etching and printing. For example, in my pre-primary school, learners manifest low cognitive skills such as recalling, rephrasing and problem-solving abilities”.

These views imply that teaching and learning outcomes-based approaches have implications for curriculum design, teaching, learning and assessment, as well as quality

assurance. Hence, these views point to the fact that teaching and learning outcomes in pre-primary schools is low with pre-primary school learners manifesting diminished cognitive development, dismal basic numeracy, language and creativity skills.

Disaster Management Planning in Pre-primary Schools

Objective three which the study intended to address was: assess the levels of disaster management planning in pre-primary schools. Descriptive data was collected from pre-primary school teachers and results are shown in Table 4;

Table 4: Levels of Disaster Management Planning in Pre-primary Schools

Test Items	Ratings				
	SA %	A %	U %	D %	SD %
Pre-primary schools rarely formulate policies as a way of preparedness for disaster management	75.0	11.5	4.5	7.5	1.5
Setting rules and regulations for disaster management is not a common practice in pre-primary schools	88.5	2.5	1.5	4.5	3.0
In pre-primary schools, there are few well-designed guide maps as means of disaster management preparedness	83.5	5.5	2.5	4.5	4.0
There are little resources allocated for disaster management in pre-primary schools	65.5	11.5	4.0	13.0	6.0

Table 4 reveals that majority (75.0%) of the pre-primary school teachers strongly agreed with the view that pre-primary schools rarely formulate policies as a way of preparedness for disaster management as did 11.5% who agreed. However, only a paltry 4.5% were undecided, 7.5% disagreed whereas 1.5% strongly disagreed. These findings corroborate the findings of a study conducted in Paris in which Baltas (2004) established that there should be policies, plans and guidelines on disaster preparedness in order to achieve school’s academic objectives. Baltas (2004) identified designing of guide maps designating planned evacuation routes, assembly areas, utility shut-off valve, first aid stations and designated areas for prolonged staff and children’s care. Hence, these findings point to the fact that drawing up of safety plans for pre-primary schools is an important step towards ensuring learner and staff safety in such schools.

Majority (88.5%) of the teachers strongly agreed with the view that setting rules and regulations for disaster management is not a common practice in pre-primary schools. 2.5% of the teachers agreed. 1.5% of the teachers were undecided, 4.5% of teachers disagreed whereas 3.0% of the teachers strongly disagreed. These findings further corroborate the assertions of Baltas (2004) that disaster management plans should clearly communicate evacuation alarm information in the plan, allocate resources for emergency for the smooth running of the system, schools with staff or learners with special needs must direct special attention to the disposition and needs of these staff and learners, copies of each school disaster plan should be distributed to every staff member, one copy filed and another sent to local law enforcement and also on all notice boards

and a state of high alert should be in place. In other words, pre-primary schools, while preparing the disaster plans should determine which natural and technological disasters are possible in their areas. Thus, these findings indicate that pre-primary schools that are well-prepared for an individual emergency involving a pre-primary schooler or staff member are more likely to be prepared for complex events such as community disasters. In other words, pre-primary schools with such levels of disaster management plan enhance their children’s socio-emotional development and more so learning outcomes. Majority (83.5%) of the pre-primary school teachers strongly agreed with the view that, in pre-primary schools, there are few well-designed guide maps as means of disaster management preparedness. 5.5% of the pre-primary school teachers agreed. 2.5% of the pre-primary school teachers were undecided, 4.5% disagreed whereas 4.0% of the pre-primary school teachers strongly disagreed.

These findings further lend credence to the assertions of Baltas (2004) who identified designing of guide maps designating planned evacuation routes, assembly areas, utility shut-off valve, first aid stations and designated areas for prolonged staff and children’s care. This implies that arrangements must be made to provide for accountability of staff and learners, orderly release of learners to parents and guardians and temporary shelter, should it be needed. Majority (65.5%) of the pre-primary school teachers strongly agreed with the view that there are little resources allocated for disaster management in pre-primary schools. 11.5% of the pre-primary school teachers agreed. 4.0% of the pre-primary school teachers were undecided, 13.0% of pre-primary school teachers disagreed whereas 6.0% of the pre-primary school teachers strongly disagreed. These findings thus lend credence to the assertions of Action Aid (2014) that school

disaster planning is considered a facet of larger community planning and, therefore, requires coordinated planning and allocation of community resources. This implies that for effective disaster management, there is need for all stakeholders to ensure that adequate resources are availed.

Thematic Analysis of Disaster Management Planning in Pre-primary Schools

The headteachers were also interviewed on the question of disaster management planning in pre-primary schools. However, the headteachers refuted the claims that they rarely manipulate policies for disaster management. On further probing, headteacher, H2, noted,

“Besides the Ministry of Education Policy on school safety, every school is required to have a plan on emergency preparedness. In my school, we have a well-designed safety policy which is geared to ensure that learners and support staff are safe”.

Headteachers’ views further affirm that drawing up of safety plans for pre-primary schools is an important step towards ensuring learner and staff safety in such schools. On setting of rules and regulations, the headteachers discounted the view that they rarely set rules and regulations which are aimed at reducing incidences of disasters. On further probing, headteacher, H3, observed;

“In my pre-primary school, we have rules and regulations on how every learner, teaching and non-teaching staff should conduct themselves. We have placed notices in strategic places within our school with restrictions on areas which should be avoided. These are geared towards reducing cases of accidents and thus, improve overall safety of learners and

staff”

These views point to the fact that disaster management plans should clearly communicate evacuation alarm information in the plan, allocate resources for emergency for the smooth running of the system, schools with staff or learners with special needs must direct special attention to the disposition and needs of these staff and learners, copies of each school disaster plan should be distributed to every staff member, one copy filed and another sent to local law enforcement and also on all notice boards and a state of high alert should be in place. On resource allocation, headteachers also noted that many pre-primary schools do not have enough resources allocated for disaster management. One headteacher, H4, observed;

“In order to ensure learner and staff safety, I need enough resources to provide all the equipment needed for safety standards. Our school budget is strained and, in most cases, little resources are allocated for disaster management”.

Headteachers’ views attest to the fact that, for effective disaster management, there is need for all stakeholders to ensure that adequate resources are availed.

Staff Training on Disaster Management in Pre-primary Schools

Objective four: establish whether staff has had training on disaster management in pre-primary schools. Descriptive data was collected from pre-primary school teachers, organized into specific thoughts and results are shown in Table 5;

Table 5: Staff Training on Disaster Management in Pre-primary Schools

Test Items	Ratings				
	SA %	A %	U %	D %	SD %
Skills acquired by school staff on disaster management contribute to reduced accidents in pre-primary schools	80.5	8.5	1.5	5.5	4.0
Skills acquired by school staff on disaster management contribute to overall learner safety in pre-primary schools	78.5	14.5	2.5	3.0	1.5
Experience of school staff on disaster management contribute to reduced accidents in pre-primary schools	69.5	12.0	2.0	10.0	6.5
Staff experience on disaster management contribute to overall learner safety in pre-primary schools	60.5	10.5	3.5	11.5	14.0

Table 5 reveals that majority (80.5%) of the pre-primary school teachers strongly agreed with the view that skills acquired by school staff on disaster management contribute to reduced accidents in pre-primary schools as did 8.5% who agreed. However, only a paltry 1.5% were undecided, 5.5% of the pre-primary school teachers disagreed whereas 4.0% of the pre-primary school teachers strongly disagreed. The study also found that majority (78.5%) of the pre-primary school teachers strongly agreed with the view that skills acquired by school staff on disaster management contribute to overall learner safety in pre-primary schools. At the same time, 14.5% of the pre-primary school teachers agreed. However, 2.5% of pre-primary school teachers were undecided, 3.0% of the pre-primary school teachers disagreed whereas 1.5% of

the pre-primary school teachers strongly disagreed.

These findings further corroborate the assertions of Nderitu (2009) that rehearsal optimizes the effectiveness and efficiency of response and that the more frequent the rehearsals, the more internalized the process and by extension the better the performance. In other words, crowd control should become a major component of security personnel training. This implies that the learners, teachers and non-teaching staff should have first aid training so as to assist during emergencies. Majority (69.5%) of the pre-primary school teachers strongly agreed with the view that experience of school staff on disaster management contribute to reduced accidents in pre-primary schools. 12.0% of the pre-primary school teachers agreed. However, 2.0% of the pre-primary school teachers were undecided, 10.0% of the pre-primary

school teachers disagreed whereas 6.5% of the pre-primary school teachers strongly disagreed. Majority (60.5%) of the pre-primary school teachers strongly agreed with the view that staff experience on disaster management contribute to overall learner safety in pre-primary schools. On the same breath, 10.5% of the pre-primary school teachers agreed. However, 3.5% of the pre-primary school teachers were undecided, 11.5% of the pre-primary school teachers disagreed whereas 14.0% of the teachers strongly disagreed. These findings are consistent with the findings of a study carried out in Czech Republic in which Downs (2010) established that, without adequate training and experience, panic may also grip inexperienced, untrained rescuers as well as ill-equipped personnel. Such a scenario impact on learners' socio-emotional and cognitive development besides teaching and learning outcomes. This indicates that each staff member should be made aware of his or her responsibilities and the lines of authority should be known and written at strategic places. In other words, pre-primary school staff should be empowered to implement any of the emergency procedures.

Thematic Analysis of Staff Training on Disaster Management in Pre-primary Schools

On staff training on disaster management in pre-primary schools, headteachers also responded in favor of the view that skills acquired by school staff on disaster management contribute to reduced accidents in pre-primary schools and contribute to overall learner safety in pre-primary schools. On further probing, one headteacher, H5,

“Though rarely done, training is very important in equipping my staff with skills which enable them to reduce

cases of injuries and accidents and ensure that learners are safe”.

These views attest to the fact that rehearsal optimizes the effectiveness and efficiency of response and that the more frequent the rehearsals, the more internalized the process and by extension the better the performance. This indicates that a concerted effort must be made to educate and train staff and learners in emergency procedures, otherwise in the event of a disaster, a period of panic and uncertainty may crop up before any action can be taken. Headteachers also indicated that lack of experience on disaster management amongst most of school staff makes it difficult to reduce cases of accidents. One headteacher, H6, admitted;

“Many school staff have no experience on how to handle cases of accidents and emergencies and containing such incidences becomes a major problem whenever one occurs”.

This indicates that each staff member should be made aware of his or her responsibilities and the lines of authority should be known and written at strategic places.

Availability of Disaster Management Facilities in Pre-primary Schools

Objective five: determine the availability of disaster management facilities in pre-primary schools. Descriptive data was collected from teachers and results are shown in Table 6;

Table 6: Availability of Disaster Management Facilities in Pre-primary Schools

Test Items	Ratings				
	SA %	A %	U %	D %	SD %
Provision of fire extinguishers and smoke detectors contribute to reduced accidents in pre-primary schools and overall learner safety	59.5	15.5	4.5	11.5	9.0
Provision of alarm systems contribute to reduced accidents in pre-primary schools and overall learner safety	56.5	23.5	2.5	9.5	8.0
Provision of perimeter walls contribute to reduced accidents in pre-primary schools and overall learner safety	61.5	14.5	4.0	11.5	8.5
Provision of lightning arrestors contribute to reduced accidents in pre-primary schools and overall learner safety	55.5	13.5	5.5	14.5	11.0
Provision of water points contribute to reduced accidents in pre-primary schools and overall learner safety	50.5	21.5	3.5	10.5	14.0

Table 6 reveals that a fair majority (59.5%) of the pre-primary school teachers strongly agreed with the view that provision of fire extinguishers and smoke detectors contribute to reduced accidents in pre-primary schools and overall learner safety. 15.5% of the pre-primary school teachers indicated agreed. However, only a paltry 4.5% of the pre-primary school teachers were undecided, 11.5% of the pre-primary school teachers disagreed whereas 9.0% of the

pre-primary school teachers strongly disagreed. A fair majority (56.5%) of the pre-primary school teachers strongly agreed with the view that provision of alarm systems contribute to reduced accidents in pre-primary schools and overall learner safety. 23.5% of the pre-primary school teachers agreed. However, 2.5% of the pre-primary school teachers were undecided, 9.5% of the pre-primary school teachers disagreed whereas 8.0% of the teachers strongly disagreed.

These findings thus lend credence to the findings of a study carried out in New Jersey, USA in which Srednicki (2002) established that most pre-primary schools do not have adequate firefighting equipment nor reliable alarm systems, though safety equipment in schools and other public places should be mandatory in preparation for disasters. Srednicki (2002) enumerates that such equipment includes fire extinguishers, fire blanket, alarms, sand, water points and hoses. Smoke detectors can also be used to sense and warn people in cases of fires thus increasing chances of survival. These facilities and equipment must be properly marked and appropriate signs placed in conspicuous points of a building. Majority (61.5%) of the pre-primary school teachers strongly agreed with the view that provision of perimeter walls contribute to reduced accidents in pre-primary schools and overall learner safety. 14.5% of the pre-primary school teachers agreed. However, 4.0% of the pre-primary school teachers were undecided, 11.5% of the pre-primary school teachers disagreed whereas 8.5% of the pre-primary school teachers strongly disagreed. These findings are in consonance with the assertions of Noji (2013) that, in Ghana, for evacuation, a disaster supplies kit may be prepared and for sheltering purposes a stockpile of supplies may be created. These findings affirm the fact that material resources are very important in emergency situations geared towards making pre-primary schools safe havens for teaching and learning.

Majority (55.5%) of the pre-primary school teachers strongly agreed with the view that provision of lightning arrestors contribute to reduced accidents in pre-primary schools and overall learner safety. 13.5% of the pre-primary school teachers agreed. However, 5.5% of the pre-primary school teachers were undecided, 14.5% of the pre-primary school teachers disagreed whereas 11.0% of the pre-primary school teachers strongly disagreed. The study revealed that a fair majority (50.5%) of the pre-primary school teachers strongly agreed with the view that provision of water points contribute to reduced accidents in pre-primary schools and overall learner safety. 21.5% of the pre-primary school teachers agreed. However, 3.5% of the pre-primary school teachers were undecided, 10.5% of the pre-primary school teachers disagreed whereas 14.0% of the pre-primary school teachers strongly disagreed.

These findings corroborate the assertions of Action Aid

(2014) asserts that schools' preparedness focuses on preparing pre-requisite equipment and procedures for use when a disaster occurs. These findings point to the fact that resources for disasters, once they are ready play a critical role in ensuring timely and efficient delivery of disaster response efforts so as not disrupt teaching and learning in most schools.

Thematic Analysis of Availability of Disaster Management Facilities in Pre-primary Schools

During the interviews, headteachers observed that many schools do not have fire extinguishers and smoke detectors. On further probing, one headteacher, H7, noted:

“In my school, we do not have fire extinguishers and smoke detectors which can be used in cases of fire emergencies. This leaves our school vulnerable in case of fire breakouts”.

Headteachers' views indicate that most pre-primary schools do not have adequate firefighting equipment nor reliable alarm systems, though safety equipment in schools and other public places should be mandatory in preparation for disasters. Headteachers also indicated that provision of perimeter walls contributes to reduced accidents in pre-primary schools and overall learner safety. However, they observed:

“Though important in curbing incidences of accidents and improve learner safety, my school does not have a complete perimeter wall. We only have a live fence which is porous and the school can be accessed from several entries. This has made it difficult to minimize incidences of insecurity”.

Headteachers' views further affirm the fact that material resources are very important in emergency situations geared towards making pre-primary schools safe havens for teaching and learning. Thus, many important initiatives need to be undertaken to provide material resources and trained school teachers and pre-primary school learners on the usage of equipment related to first aid, search and rescue and fire safety.

Staff Attitude towards Disaster Management in Pre-primary Schools

Objective six: assess the staff attitude towards disaster management in pre-primary schools. Data were collected from pre-primary school teachers and the results are indicated in Table 7;

Table 7: Staff Attitude towards Disaster Management in Pre-primary Schools

Test Items	Ratings				
	SA %	A %	U %	D %	SD %
School staff with positive attitudes towards disaster management contribute to reduced accidents in pre-primary schools and overall learner safety	78.0	11.0	2.5	5.5	3.0
Staff negative attitudes towards disaster management do not contribute to reduced accidents in pre-primary schools	69.5	25.5	1.5	2.0	1.5
Staff negative attitudes towards disaster management do not contribute to overall learner safety in pre-primary schools	74.5	19.5	1.5	3.2	1.3
School staff believe that pre-primary schools' preparedness has reduced disasters	67.5	23.5	2.0	4.0	3.0
School staff is rarely interested in disaster management in pre-primary schools	59.5	17.5	4.5	10.0	8.5

Table 7 reveals that a fair majority (78.0%) of the pre-primary school teachers strongly agreed with the view

that school staff with positive attitudes towards disaster management contribute to reduced accidents in pre-primary schools and overall learner safety. 11.0% of the pre-primary school teachers agreed. However, only a paltry 2.5% of the pre-primary school teachers were undecided, 5.5% of the pre-primary school teachers disagreed whereas 3.0% of the pre-primary school teachers strongly disagreed. The study revealed that a fair majority (69.5%) of the pre-primary school teachers strongly agreed with the view that negative staff attitude towards disaster management do not contribute to reduced accidents in pre-primary schools. 25.5% of the pre-primary school teachers agreed. However, 1.5% of the pre-primary school teachers were undecided, 2.0% of the pre-primary school teachers disagreed whereas 1.5% of the pre-primary school teachers strongly disagreed.

These findings are consistent with the findings of another study conducted in Sri Lanka in which Law et al (2006) established that, in evaluating success of disaster management and practices, elements are needed to be taken into consideration such as values and motives, which influence the perceptions, attitudes, induction and decisions of those who are responsible for the performance of learners in such pre-primary schools. These findings are indicative of the fact that schools' support through positive attitude towards disaster management is considered as a school's overall affective reaction to disaster management. In other words, staff attitude towards disaster management is made up of beliefs about engaging in the behavior and the associated evaluation of the belief.

Majority (74.5%) of the pre-primary school teachers strongly agreed with the view that staff negative attitudes towards disaster management do not contribute to overall learner safety in pre-primary schools. 19.5% of the pre-primary school teachers agreed. However, 1.5% of the pre-primary school teachers were undecided, 3.2% of the pre-primary school teachers disagreed whereas 1.3% of the pre-primary school teachers strongly disagreed. Majority (67.5%) of the pre-primary school teachers strongly agreed with the view that school staff believe that pre-primary schools' preparedness has reduced disasters. 23.5% of the pre-primary school teachers agreed. 2.0% of the pre-primary school teachers were undecided, 4.0% of the pre-primary school teachers disagreed whereas 3.0% of the pre-primary school teachers strongly disagreed. These findings corroborate the findings of a study conducted in Kumasi Metropolis in Ghana in which Holcombe et al (2012) revealed that, as key drivers of disaster management process, schools need to have positive attitude and appreciate that, the idea to implement disaster management is not only about disaster management use, but also about transformation of working atmosphere and attitude in their communities. This indicates that attitudes of pre-primary school staff towards disaster management contributes immensely to the successful adoption of disaster management strategies which, in turn, enhances teaching and learning outcomes. Majority (59.5%) of the teachers strongly agreed with the view that school staff is rarely interested in disaster management in pre-primary schools. 17.5% of the teachers agreed. 4.5% of the teachers were undecided, 10.0% of the teachers disagreed whereas

8.5% of the pre-primary school teachers strongly disagreed. This implies that staff attitude towards disaster management in their locality through acquiring the needed infrastructure is critical in guaranteeing teaching and learning outcomes.

Thematic Analysis of Staff Attitude towards Disaster Management in Pre-primary Schools

On staff attitude towards disaster management in pre-primary schools, headteachers observed that attitude of the staff towards disaster management is key in ensuring staff and learner safety in pre-primary schools. These views further indicate that positive attitude towards disaster management is considered as a school's overall affective reaction to disaster management. In other words, staff attitude towards disaster management is made up of beliefs about engaging in the behavior and the associated evaluation of the belief. However, the headteachers, H8, observed,

"In my school, staff are mostly concerned with teaching and do not believe that they are responsible for learner safety at school".

These views further indicate that attitudes of pre-primary school staff towards disaster management contributes immensely to the successful adoption of disaster management strategies which, in turn, enhances teaching and learning outcomes. Headteachers further noted that school staff have little interest in ensuring learner safety. This further indicates that staff attitude towards disaster management in their locality through acquiring the needed infrastructure is critical in guaranteeing teaching and learning outcomes.

V. SUMMARY OF FINDINGS AND CONCLUSIONS

From the study findings, teaching and learning outcomes of learners in pre-primary schools have been all time low with many pre-primary school learners registering poor grades in basic numeracy, language and creativity skills. Many pre-primary school learners manifest low grades in basic numeracy skills such as number sensing, ordering, number operations and counting.

Many pre-primary school learners manifest poor reading skills such as phoneme awareness, phonetics, vocabulary, picture reading or recognition of words. Planning for disaster management is a rare undertaking in pre-primary schools. From the study findings, in many pre-primary schools, staff rarely undergo training on disaster management as a way of reducing cases of accidents and improving the overall learner safety. In many pre-primary schools, disaster management facilities are rarely available and, if available, are not adequate to guarantee learner safety in case of any calamity. That is, facilities such as fire extinguishers, smoke detectors, perimeter walls, alarm systems and lightning arrestors are not always available in many pre-primary schools. This indicates that learners are vulnerable to danger. Staff attitude is key in ensuring effective disaster management in pre-primary schools. However, many staff members have negative attitude towards disaster management preparedness in many pre-primary schools.

VI. RECOMMENDATIONS

The study recommends that pre-primary schools and other education stakeholders should devise strategies for improving

the dwindling levels of teaching and learning in pre-primary schools. The management of pre-primary schools should design a simple guide map and ensure that labels and signage can be easily understood by everybody within the school compound. Stakeholders in pre-primary school education should formulate policies and plans geared towards ensuring that pre-primary schools have emergency preparedness plans which include setting regulations and availing resources to implement such disaster management plans. County Governments should develop a disaster management training module for teachers and other support staff on how to handle accidents or disasters in case one happens. Stakeholders in pre-primary school education should provide the basic disaster management facilities such as perimeter walls, fire extinguishers, first aid kits and employ a security guard who is tasked to monitor learner movements within the school compound. School staff should understand that their roles are not confined to classroom instruction only, but also extended to ensuring learner safety within the school. The Ministry of Education should enforce stricter adherence to Standards Safety Manual (2008) designed for all schools from pre-primary to secondary as a strategy for creating a learner-friendly environment.

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