

Brigada Eskwela Implementation as a Predictor of School-Based Risk Management Effectiveness in the Bangsamoro Educational Landscape

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ABSTRACT

Brigada Eskwela has progressed into a community-based activity that engenders a sense of shared responsibility in improving the circumstances of public schools within the Philippines. This research, following various policies and guidelines pertaining to aspects of disaster risk reduction and management, examined the relationship between the implementation of Brigada Eskwela and the effectiveness of risk management within schools within the Bangsamoro Autonomous Region, particularly within the local public schools within the Rajah Buayan District, Maguindanao del Sur. Utilizing a descriptive-correlational research approach, this study surveyed local administrators of public schools utilizing validated instruments that assessed the overall effectiveness of Brigada Eskwela implementation and school-based risk management strategies. Findings indicated that Brigada Eskwela was generally well implemented, with stronger performance in planning, organization, and monitoring processes than in stakeholder participation and resource mobilization. School-based risk management was perceived as effective, especially in disaster preparedness, physical risk reduction, and overall school safety. The findings indicated a weak but statistically significant relationship between Brigada Eskwela implementation and risk management effectiveness, which suggests the impact of community participation in improving school safety. The research also emphasizes the need to improve stakeholder participation, mobilize resources, and respond to emergencies as a means of improving a more supportive learning environment. The findings have contributed to an advancement in the literature on community-based educational projects, particularly disaster risk management, in precarious educational communities.

Keywords: *Brigada Eskwela, school-based risk management, disaster risk reduction and management, community participation, school safety, Bangsamoro Autonomous Region in Muslim Mindanao*

1. Introduction

Over the years, Brigada Eskwela has evolved from a simple cleaning and beautification activity within a week's time. It has become a happy occasion where students, teachers, school administrators, parents, members of the community, barangay officials, non-government organizations, religious groups, and the private sector come together. This program initiated by the Department of Education has become an integral part of community development, where the local communities are engaged to address the needs of public schools nationwide.

Disaster risk reduction and resilience in the education sector are also widely recognized globally as significant strategies in achieving a safe learning environment and the continuity of education for children. In this connection, the Comprehensive School Safety Framework (CSSF), which is promoted by UNESCO's Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector, adopts a comprehensive strategy in disaster risk reduction and the safety of students all over the world (18). In the Philippines, for example, the Philippine Disaster Risk Reduction and Management Act of 2010 (14) and DepEd memos prescribe and enforce strategies for school safety and disaster risk. The Department of Education (DepEd) has aligned itself with the national directives on DRRM and has issued DepEd Order No. 37, s. 2017, which embodies a comprehensive framework for Disaster Risk Reduction Management for Basic Education (8). This framework mandates the creation of DRRM organizational structures, systems, protocols, and practices in all offices and schools of the DepEd. Because of the high

susceptibility of educational institutions to the negative effects of disasters, such as natural calamities and infrastructure deterioration, there is a need to investigate the existing policies on disasters in the Philippines (4). The Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) has a complex socio-political setting. The region is vulnerable to natural and human-induced disasters, economic instability, and changing governments. These make the region vulnerable to disasters and educational performance. Displacement due to conflict, climate change, and resource deprivation in institutions are also concerns that make the region vulnerable. These make it difficult to implement disaster risk reduction and management programs in communities and schools (5).

Rajah Buayan District of Maguindanao del Sur Province, a region that has always been vulnerable to natural disasters and socio-political instabilities, is the context of the study. Despite the existing vulnerability profiles for the municipalities within the Rajah Buayan District, there is a lack of empirical research. The research gap is on the relationship between the activities of Brigada Eskwela such as stakeholder engagement, school preparation, and risk reduction, and the changes in risk management in schools, as measured by the UNHCR Municipality Profile in 2025 (19).

In summing up, despite the increasing number of researches being conducted on DRRM, the number of empirical research studies is still limited in investigating the relationship between the level of Brigada Eskwela implementation and the level of DRRM capabilities of public school administrators. This serves as a challenge for the researcher to further investigate the Brigada Eskwela program implementation as a tool for enhancing risk management in Bangsamoro educational institutions.

Statement of the Problem

1. What is the level of Brigada Eskwela implementation in terms of:
 - 1.1 Stakeholder participation;
 - 1.2 Resource mobilization;
 - 1.3 Planning and organization;
 - 1.4 Implementation's Monitoring and documentation?
2. What is the degree of school-based risk management effectiveness in terms of:
 - 2.1 Physical risk reduction;
 - 2.2 Disaster preparedness and readiness;
 - 2.3 Safety compliance and response capacity;
 - 2.4 Perceived school safety level?
3. Is there a significant relationship between the level of Brigada Eskwela implementation and school-based risk management effectiveness?

2. METHODOLOGY

2.1 Research Design

To gain a better insight into the research subject, a descriptive-correlational research design was employed to determine the extent of certain perceptions or the existence of certain strategies of the quantitative approach. The research design was employed to determine the relationship that exists between two or more variables and the extent of this relationship. The research design was also employed to determine the nature of the relationship that exists between variables. Descriptive-correlational is a research design that allows for the systematic study of the relationship that exists between variables as they exist in nature (15). This research design is particularly applicable in education and social sciences, where it is not possible or ethical to manipulate variables. It allows for the determination of the relationship between the changes of variables, which is extremely valuable information that aids in the development of theories and new approaches in interventions.

Moreover, the significance of using valid survey questionnaires cannot be emphasized enough, as mentioned in the study, in order to ensure the accuracy of the data collected (12). The study was based on the opinions of educators regarding approaches to inclusive education and proved the efficacy of a survey questionnaire in successfully collecting opinions from educators on the subject. The authors of the study explain that a quantitative survey offers a broader perspective on education trends as it enables the comparison of different groups.

2.2 Respondents and Sampling Technique

The principals of public schools, School Brigada Eskwela Coordinators, School Disaster Risk Reduction Management Coordinators (SDRMM), classroom teachers, and parents of eleven elementary schools and two secondary schools in Rajah Buayan District, Division of Maguindanao del Sur, BARMM, are among the respondents of this study.

Thirteen (13) principals, thirteen (13) school brigade eskwela coordinators, thirteen (13) school disaster risk reduction management coordinators, thirteen (13) classroom teachers, and eight (8) parents from the Rajah Buayan district comprised the sixty (60) participants of the study. Moreover, these participants were chosen for the study because of the significant roles they play in disaster risk reduction activities, program implementation, school management, and stakeholder engagement. As such, they are the most credible sources of information for assessing the Brigada Eskwela program's effectiveness in disaster risk reduction at the start of the school year. Purposive sampling, particularly in educational and implementation studies, can be applicable if the purpose of the research is to choose participants who can provide relevant and information-rich data about the subject matter of the study (13). In addition, purposive sampling and total enumeration have been used in this educational research to select participants who have specific knowledge and experience that are directly related to the objectives of the research, such as coordinators, school administrators, and stakeholders who are involved in school programs (20). Therefore, the selective sampling of principals, coordinators, teachers, and parents is in line with the best practices of sampling in research that requires in-depth information from individuals who are most knowledgeable about the implementation and impact of school initiatives.

2.3 Research Instrument

The adapted questionnaires used in conducting the survey consisted of items that employed the use of the Likert scale in determining the level of agreement or disagreement and effectiveness or ineffectiveness on various dimensions, such as Brigada Eskwela Implementation as a Predictor of School-Based Risk Management Effectiveness in the Bangsamoro Landscape, in a move to quantify the data on the opinions of educators on the Brigada Eskwela Program.

The effectiveness of the Likert-scale questionnaire in determining the perceptions of teachers on Brigada Eskwela Implementation as a Predictor of School-Based Risk Management success is underscored in a study conducted (17). As per the study, the level of agreement among educators on various dimensions of the program, including stakeholder engagement, resource mobilization, planning and organization, and monitoring and documentation of implementation, can be measured effectively by using the questionnaires. On the other hand, the following also give a clear picture of the success of School-Based Risk Management. As per the study, a methodological approach using the Likert scale makes it possible to gather information on the opinions of teachers, which could be essential in pointing out the flaws in the design of the program.

2.4 Data Gathering Procedure

The data gathering process is shown in the waterfall chart. In order to conduct the survey, the researcher asked for permission from the District Lead Principal and the College of Graduate School Dean's office to conduct the survey. The researcher chose the respondents from eleven (11) elementary schools and two (2) secondary schools in the Rajah Buayan district of the Schools Division of Maguindanao del Sur after asking permission from the lead principal's office. The respondents were thirteen principals, thirteen school brigade eskwela coordinators, thirteen school disaster risk management coordinators, thirteen selected teachers, and eight parents. The validity and reliability of the data gathered can be enhanced by defining the selection of respondents and by planning the data gathering process (9).

The researcher was able to design the research instrument after he had identified the respondents. After that, he was able to administer the survey questionnaire to the respondents. Therefore, in an attempt to manage and organize the data that was gathered, the researcher was able to quickly collect the completed questionnaire. It is important to ensure that the data collection process is transparent and legitimate in order to ensure that ethical standards are adhered to, as stated (6).

Finally, the data that was gathered was tabulated, analyzed, and computed using specific statistical treatment tools to gain substantial results.

2.5 Statistical Treatment

After gathering the data, the researcher employed descriptive statistics to establish the means, medians, standard deviations, and ranges for the variables. To establish the relationship between the independent and dependent variables, correlation analysis and Pearson correlation coefficients will be used.

The key variables involved in descriptive statistics are: Means: This is the average value of the responses in relation to the variable, which indicates the central tendency; for instance, the mean score will indicate the general opinion held by the teachers in relation to their satisfaction with the program using a likert scale. In addition, the degree to which the data points are dispersed around the average is indicated by the standard deviations. This will imply that

the results are closer to one another in comparison to the averages if the standard deviation is on the lower end, whereas if the standard deviation is high, it will imply that all the results are quite distinct and different from one another (10). Additionally, the range is one of the significant measures of variation, with the assistance of which it would be possible to ascertain the extent of the variation in the data, which has already demonstrated the differences in relation to the extreme values and hence brought more depth to the research data in relation to the averages (16). By the assistance of the descriptive statistics, the research data would be summarized in more significant ways with the assistance of the measure of variation, i.e., the range, in relation to the dispersion of the results in the research data. In order to understand more about the correlation in relation to the variables, the research will be conducted in relation to the correlation with the assistance of the Pearson correlation coefficient.

Below is the instrument used in evaluating the level of Brigada Eskwela implementation strategies and the effectiveness of School-Based Risk Management, based on various indicators.

Table 1. Scale, mean range, and verbal interpretation.

Numerical Rating	Mean Range	Verbal Description	Interpretation
5	4.20-5.00	Strongly agree	Meets 91-100% of the quality expectations
4	3.40-4.19	Agree	Meets 75-90% of the quality expectations
3	2.60-3.39	Neutral	Meets 60-74% of the quality expectations
2	1.80-2.59	Disagree	Meets 35-59% of the quality expectations
1	1.00-1.79	Strongly disagree	Meets only below 34% of the expectations

3. RESULT AND DISCUSSION

The data collected by the researcher are presented, analyzed, and interpreted in this chapter as per the order in which the problem statements of the study were provided.

3.1 Level of Brigada Eskwela Implementation Strategies

Indicators	Mean	SD	Verbal Interpretation
Stakeholder Participation	3.14	0.59	Neutral
Resource Mobilization	2.87	0.59	Neutral
Planning and Organization	3.73	0.56	Agree
Implementation's Monitoring and Documentation	4.37	0.52	Strongly Agree
Overall Mean	3.53	0.56	Agree

The result of the survey on the extent to which the methods of implementation of Brigada Eskwela are implemented in the four significant aspects: participation of stakeholders, mobilization of resources, planning and organization, and monitoring and documentation of implementation, is shown in Table 3.1. The total mean, which is under the Agree category, is 3.53 with a standard deviation of 0.56. This shows that the methods of implementation of Brigada Eskwela are successful. The consistency of the opinions of the respondents on the strengths and weaknesses of the program in relation to development is shown by the low standard deviation, which shows the consistency of the opinions of the respondents.

The differences in the level of effectiveness in the fields of implementation are emphasized by the comparison study of the individual indicators. With the highest mean score ($M = 4.37$, $SD = 0.52$) and Strongly Agree verbal interpretation, implementation monitoring and documentation was found to be the strongest dimension. This emphasizes the significance of the strict implementation of policies, monitoring, and documentation, as well as the

effective use of documentation for future improvements. Similarly, the Brigada Eskwela operations are well-organized, in accordance with the school safety and DRRM plans, and implemented with clear responsibilities and deadlines, as per planning and organization, which received a positive rating ($M = 3.73$, $SD = 0.56$), interpreted as Agree. These two dimensions emphasize that the internal management and process aspects of the program are well-organized and effectively implemented. Effective implementation strategies should have a holistic approach, where the strengths in some dimensions, such as stakeholder engagement, can be utilized to compensate for the weaknesses in other dimensions, such as resource availability, as suggested by various researchers (11).

On the other hand, resource mobilization ($M = 2.87$, $SD = 0.59$) and stakeholder participation ($M = 3.14$, $SD = 0.59$) were both rated as Neutral. This is an indication that while there is some form of participation and resource mobilization, it may not be at a level that is sufficient enough to support the objectives of the program. The challenges in developing and utilizing material and economic resources, as well as mobilizing parents and stakeholders, are indicated by the neutral responses.

Generally, the results showed that although the planning, monitoring, and documentation process of Brigada Eskwela is very effective, there is still a need for improvement in terms of stakeholder engagement and resource mobilization in order to have a more sustainable and balanced strategy implementation. In relation to the most recent study that emphasizes the significance of having a comprehensive, dynamic, and well-supported strategy, the above-mentioned points can help improve the overall effectiveness of strategy implementation (2).

3.2 Extent of School-Based Risk Management Effectiveness

Indicators	Mean	SD	Verbal Interpretation
Physical Risk Reduction	4.04	0.54	Effective
Disaster Preparedness and Readiness	4.06	0.51	Effective
Safety Compliance and Response Capacity	3.50	0.55	Effective
Perceived School Safety Level	4.33	0.50	Effective
Overall Mean	3.98	0.52	Effective

Physical Risk Reduction, Disaster Preparedness and Readiness, Safety Compliance and Response Capacity, and Perceived School Safety Level are the four major indicators that provide a comprehensive appraisal of the respondents' perceptions on the effectiveness of risk management in schools, as shown in Table 3.2. Using the interpretation scale created (3.40-4.19), the mean scores for Disaster Preparedness and Readiness ($M = 4.06$, $SD = 0.51$) and Physical Risk Reduction ($M = 4.04$, $SD = 0.54$) both fall within the "Effective" level. These results show that schools have generally embraced disaster preparedness and that they have attempted to reduce physical risks. The small standard deviations of these results also show that the perceptions of the respondents are not very different from each other, showing that risk management strategies are being uniformly applied or that the respondents have similar experiences.

Moreover, Safety Compliance and Response Capacity, on the other hand, has a comparatively lower mean score ($M = 3.50$, $SD = 0.55$), although it is still rated as "Effective." This finding clearly shows that despite the availability of safety processes and mechanisms, there may be some concerns that still need to be worked upon, such as employee-related training, the uniformity of the implementation of safety processes, and response mechanisms. There may be some disparities in the allocation of resources, support, or implementation that may be the cause of slightly higher variability in responses, which show variations in perceptions related to safety compliance and response capacity.

Thus, it is essential to highlight that the Perceived School Safety Level has the highest mean score ($M = 4.33$, $SD = 0.50$), which falls under the "Very Effective" category (4.20-5.00). This indicates that most of the respondents feel safe in the school environment, which is an indication of the overall positive impact of the risk management strategies implemented. The effectiveness of school-based risk management strategies is evident by the fact that the grand mean is 3.98 ($SD = 0.52$), which is rated as "Effective." All these findings indicate that there is a need to continue developing, especially in terms of safety compliance and response preparedness, in order to improve school safety outcomes despite the fact that the current risk management system is effective in promoting safety and preparedness (1), a school can be considered safe if it offers a learning environment that ensures the education, health, safety, and security of children are ensured both in regular and disaster situations. Furthermore, it is a student body that is committed to building a safety culture and is informed about the risks as well as equipped to handle

disaster situations. Finally, there are no gaps in disaster situations, and the children are able to return to their education in a safe environment.

3.3 Relationship Between the Level of Brigada Eskwela Implementation and the Extent School-Based Risk Management Effectiveness?

	N	Mean	SD	r value	p value	verbal interpretation	Adjectival equivalent
Brigada Eskwela Implementation	60	3.528	.482				
				.200	.097	Significant Correlation	Low positive
School-Based Risk Management Effectiveness	60	3.989	.319				

.05 level of Significance (2 tailed)

The correlation of the level of Brigada Eskwela implementation and the extent of risk management effectiveness is shown in Table 3.3. For both variables, 60 respondents were considered. More effective organizational practices that can also be used in other tasks such as risk management are shown in studies that found schools with high levels of Brigada Eskwela implementation have improved school environments (3).

Moreover, the implementation of the Brigada Eskwela program is generally conducted at a high level with moderate response variability, as indicated by the mean score of 3.528 with a standard deviation of 0.482. School-Based Risk Management Effectiveness, on the other hand, has a higher mean score of 3.989 with a standard deviation of 0.319, indicating that the respondents agreed that risk management procedures in schools are very effective. The Brigada Eskwela program implementation and school-based risk management effectiveness has a weak positive relationship, as indicated by the correlation analysis's Pearson correlation coefficient ($r = .200$). This indicates that there is a similar, if small, improvement in the effectiveness of school-based risk management as the Brigada Eskwela program implementation.

In addition, based on the above table, it can be noted that the calculated p-value of .097 is statistically significant at the significance level of .05 (two-tailed test). This implies that the implementation of the Brigada Eskwela program is significantly related to the effectiveness of risk management in schools, and it is not likely to occur by chance. In addition, research studies on the management of disaster risk reduction in Philippine public schools have identified that the systematic implementation of DRRM procedures such as planning, awareness, and preparedness can enhance the overall safety and responsiveness of schools to risks (7).

In conclusion, the results show that although the deployment of Brigada Eskwela is effective in improving the efficacy of school-based risk management, the relationship is not that strong. This means that although Brigada Eskwela is an effective program in making schools safe and prepared for risks, there might be other factors as well that can help in the effectiveness of school-based risk management. To know more about the relationship between community-based programs like Brigada Eskwela and effective risk management strategies, future research studies can be conducted on other variables or factors.

4. CONCLUSION

Based on the results obtained from the study, the implementation of Brigada Eskwela approaches is generally well-implemented, with the procedural aspects of planning, organization, and monitoring/documentation rated higher Agree to Strongly Agree than mobilization and participation Neutral. The techniques of implementation of the level of implementation are also generally moderate, indicating organized but not maximized procedures. In relation to the grand mean of 3.98 (Effective), the schools are generally effective in relation to the reduction of physical hazards, improvement of emergency preparedness, compliance with safety, and positive perception of school safety. However, there is still a need for improvement in the area of safety compliance and response, specifically in the area

of emergency functions and the improvement of collective responses. The effectiveness of Brigada Eskwela implementation and risk management had a low positive correlation, which indicated that the contribution of the community effort is small but significant. In order to further improve the school safety and resilience, it is recommended that the area of stakeholder engagement and mobilization, as well as emergency preparedness, should be improved.

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