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TEACHERS' EFFICACY IN THE IMPLEMENTATION OF SCHOOL DISASTER RISK REDUCTION MANAGEMENT

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ABSTRACT

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This study investigates the relationship between teachers' self-efficacy and the implementation of School Disaster Risk Reduction Management (SDRRM) in public elementary schools in the Candijay District of Bohol, Philippines. Utilizing a quantitative, descriptive-correlational research design, the study involved 182 public elementary teachers selected through random sampling. Data was collected using a standardized questionnaire measuring self-efficacy based on Bandura's Instrument Teachers' Self-Efficacy Scale, alongside a modified Disaster Risk Reduction Management Evaluation tool developed by the Department of Education. Statistical analyses, including composite means and Spearman rho correlation, were employed to derive results. The findings revealed a very high level of teachers' self-efficacy (M=3.5345) and a fully implemented SDRRM with a composite mean of 3.5532. The study underscores the critical role of teachers' confidence in influencing disaster management strategies and ensuring a safe

learning environment. It also emphasizes the need for ongoing support and resources to strengthen both teacher effectiveness and school safety protocols.

INTRODUCTION

Teachers' self-efficacy is one of the contributing factors to teachers' performance, especially in ensuring the delivery of quality education and the achievement of the educational system's goals and objectives. Teachers with high levels of self-efficacy have better levels of job satisfaction and lower levels of job-related stress (Caprara, Barbaranelli, Borgogni, & Steca, 2003). Moreover, teachers perform at optimum levels when their safety and other needs are fulfilled because they have nothing to worry about the work, and instead focus solely on their academic responsibility.

Maslow's theory noted that deficiencies in the realization of different needs would occur if the safety needs of an individual are not met first (Huitt, 2004). Thus, it is imperative that an organization must provide a safe working condition. Damiao and Obaob (2014) argued that teachers are more likely to experience high levels of stress, which has adverse effects on their well-being and work performance when safety need is ignored or not valued. This will affect the entire organization if the working environment is unsafe for the learners and the teachers.

Zakariya (2020), in which the validated models of direct/indirect effects of school climate and teacher self-efficacy on job satisfaction, revealed that school climate has a strong direct impact on work satisfaction, teacher self-efficacy has a direct impact on job satisfaction and mediates the relationship between school environment and job satisfaction. This provides empirical evidence for the relationship between teacher self-efficacy, job satisfaction, and school climate among Norwegian lower secondary school teachers. Teachers can perform better and can contribute to the achievement of the schools' education system goals and objectives if they are working in a safe environment.

Schools are one of the most vulnerable sectors in a time of disaster. Hence, the fulfillment of the safety needs of teachers is hindered because of the presence of disasters at school. They are among those who often suffer the impacts of disasters brought by natural and human-induced hazards. Disasters disrupt regular school routines, destroy school facilities, and threaten the lives of children, their families, and education personnel. These situations affect teachers' performance in carrying out their duties and responsibilities in delivering quality education and planning and implementing educational programs.

According to the Asian Disaster Reduction Center (2002), Asia has experienced around 38 percent of the world's biggest natural disasters. Unfortunately, the Philippines is one of the most vulnerable countries to

disasters and hazards, not only in Asia but in the world. The country was hit with a series of natural disasters, devastating typhoons, floods, volcanic eruptions, and earthquakes in 2020, which disrupted schools' routines and threatened many people's lives. This makes the nation place greater emphasis on readiness and ability to respond effectively to any disasters.

Today, the vulnerability of schools in the Philippines to a disaster was even more felt as manifested in the devastation of super typhoon Odette in the provinces of Dinagat Islands, Surigao del Norte, Southern Leyte, Cebu, Negros Oriental, Palawan, and our very own province, Bohol. Schools suffered severe damage, even those well-built schools where roofs were blown away, and windows were shattered.

Providing safe working conditions is one of the most exemplary indications of a successful organization. Teachers need to feel a sense of security at work before performing their duties and responsibilities in the school (Eseyin, Chidinma Anieheobi, Oyemwen Osah, & Adebiyi, 2017). These situations and experiences urged the Department of Education to build school resilience, strengthen safety, and ensure a safe school environment. As a teacher, if the school environment is not safe, it will create much stress that will have an adverse effect on our welfare and performance. Teaching in a safe and secure working environment makes the work exciting and motivating. This makes teachers more efficient and effective at work and provides more input for high academic performance.

Thus, in this light, the researcher would like to conduct this study, which aims to determine the level of teachers' self-efficacy in relation to the School Disaster Risk Reduction Management implementation among public elementary schools in Candijay District, Bohol in the Department of Education. This is to assess the extent of implementation as perceived by the teachers. This study will help schools build resilience, improve school safety, and ensure a safe learning environment for students and teachers. Thus, it fulfills the safety needs of teachers and enables them to perform their duties and responsibilities at school at optimum levels. The findings of this study will serve as the basis for proposing an action plan to increase teachers' self-efficacy and school resilience.

METHODS

This study used a quantitative approach, specifically the descriptive research method, to determine the relationship between the level of teachers' self-efficacy and the level of implementation of School Disaster Risk Reduction Management. 182 public elementary teachers from the 22 elementary schools in Candijay District, Division of Bohol participated in the study. Random sampling was used to select the participants. A standardized questionnaire of Bandura's Instrument Teachers' Self-Efficacy Scale was used to determine the level of teachers' self-efficacy. On the other hand, a

modified standardized Disaster Risk Reduction Management Evaluation tool developed by the Department of Education, Regional VII, Central Visayas (Regional Memorandum No. 0285, s. 2021) was used to determine the level of implementation of the School Disaster Risk Reduction Management. A pilot test was done, and the result was subjected to Cronbach Alpha to ensure its validity and reliability. The data was tabulated, classified, analyzed, and interpreted with the help of a composite mean profile, weighted mean, Spearman rho, Chi-Square, and Friedman Test.

RESULTS AND DISCUSSION

Level of Teachers' Self-Efficacy. Teachers' self-efficacy refers to their perceived ability to influence various aspects of the educational environment. This study examines self-efficacy in seven dimensions: Efficacy to Influence Decision-Making, Efficacy to Influence School Resources, Instructional Self-Efficacy, Disciplinary Self-Efficacy, Efficacy to Enlist Parental Involvement, Efficacy to Enlist Community Involvement, and Efficacy to Create a Positive School Climate.

Findings revealed an average weighted mean of 3.5345, corresponding to a descriptive interpretation of Very High. Among the dimensions, Efficacy to Create a Positive School Climate recorded the highest mean of 3.7318 (Very High), followed by Efficacy to Enlist Parental Involvement (M=3.7146, Very High) and Disciplinary Self-Efficacy (M=3.6302, Very High). The lowest mean was observed in Efficacy to Enlist Community Involvement (M=3.0907, High), indicating relatively lower confidence in engaging the broader community.

These results underscore the critical role of a positive school climate in fostering student engagement, attendance, and academic performance (Moore & Esselman, 1994).

Nonetheless, the results also underscore the necessity of increased community engagement. Since Guhao (2016) highlighted that schools with greater community relations tend to thrive, it is crucial to emphasize the significance of this aspect in overall crisis management. Focused interventions should be created to increase teachers' effectiveness in encouraging community involvement in education.

Level of Implementation of School Disaster Risk Reduction Management (SDRRM)

Pillar 1: Safe Learning Facilities. Safe Learning Facilities include both the physical school infrastructure and the safety precautions implemented, especially in places that are prone to disasters. This covers the creation of makeshift classrooms and following safety guidelines (DepEd Order 37, s. 2015).

Results indicated a composite mean of 3.5398, interpreted as Fully

Implemented. The highest-rated aspects were ample supply of alcohol and disinfectants (M=3.7527, Fully Implemented), inventory of school buildings (M=3.7527, Fully Implemented), and strict adherence to guidelines on safe school site selection (M=3.7033, Fully Implemented). Conversely, monitoring of new school site construction for compliance with safe school site selection (M=3.3736, Fully Implemented) and financial resource allocation for unsafe school buildings (M=3.2527, Fully Implemented) received the lowest means.

The results imply that even while schools prioritize inventory control and sanitation, funding limitations continue to deter schools from fixing dangerous buildings. Masitsa (2011) emphasizes the essential importance of a secure learning environment in schools. To improve catastrophe resilience, Arup International Development (GPSS) also highlights the necessity of retrofitting and repairing school buildings on a global scale.

Pillar 2: School Disaster Management. School Disaster Management focuses on organizational structures supporting disaster preparedness and response, including the establishment of Disaster Risk Reduction Management (DRRM) coordinators and teams.

Findings revealed a composite mean of 3.5532, signifying Fully Implemented. The most notable aspects were the designation of a School DRRM Focal Person (M=3.8626, Fully Implemented), the formation of functional School DRRM Teams (M=3.8022, Fully Implemented), and the existence of contingency plans for various hazards (M=3.7527, Fully Implemented).

However, it was discovered that there was room for improvement in the availability of essential equipment like radios and fire extinguishers (M=3.2033, Moderately Implemented) and the financing sources for post-disaster interventions (M=3.3791, Fully Implemented).

These results emphasize how crucial it is the need to provide ongoing funding for disaster preparedness. According to King and Tarrant (2013), preparedness may greatly lower the risks associated with disasters and improve recovery efforts, therefore schools require sufficient resources to purchase necessary emergency supplies.

Pillar 3: School Disaster Risk Reduction and Resilience in Education. This pillar pertains to integrating disaster risk reduction and resilience education into the school curriculum and extracurricular activities.

Results demonstrated a composite mean of 3.6808, classified as Fully Implemented. The highest-rated aspects included the active participation of stakeholders in Brigada Eskwela, a national school maintenance program in the Philippines (M=3.8516, Fully Implemented), the conduct of *Brigada Eskwela* for safety and preparedness (M=3.8132, Fully Implemented), and timely submission of accurate reports (M=3.7802, Fully Implemented). The lowest-rated items were the establishment of functional early warning systems (M=3.6538, Fully Implemented), student participation in emergency drills (M=3.6374, Fully Implemented), and school DRRM team training

participation (M=3.5714, Fully Implemented).

The findings support the usefulness of school-based disaster education programs, which is consistent with Chondekar (2019), who stressed the role of educational institutions in improving disaster awareness. However, topics like daily health monitoring require further support.

School Disaster Risk Reduction Management Implementation. The overall implementation of SDRRM was assessed with an aggregate mean of 3.5908, interpreted as Fully Implemented. Among the three pillars, Pillar 3: School Disaster Risk Reduction and Resilience in Education had the highest implementation level (M=3.6808, Fully Implemented), indicating that disaster risk reduction and resilience education is well-integrated into the school system. This was followed by Pillar 2: School Disaster Management (M=3.5532, Fully Implemented), which highlights on organizational structures supporting disaster preparedness and response, and Pillar 1: Safe Learning Facilities (M=3.5398, Fully Implemented), which encompasses the physical infrastructure of schools and safety measures.

These findings show that disaster preparedness strategies have been successfully incorporated into the curricula and extracurricular activities of public elementary schools. Nonetheless, there are still issues for the allocation of financial resources and maintaining infrastructure. Proactive catastrophe preparedness measures can greatly reduce risks and hasten recovery, as King and Tarrant (2013) indicate.

Additionally, Aghaei, Seyedin, and Sanaeinasab (2018) offer all-encompassing approaches to improving disaster risk reduction instruction. Improving disaster risk reduction education is imperative to recognize the severity of these measures and highlight the necessity of greater knowledge, preparation, and institutional support.

Correlation Between Teachers' Self-Efficacy and the Implementation of School Disaster Risk Reduction Management. This section examines the correlation between teachers' self-efficacy and the level of implementation of School Disaster Risk Reduction Management (SDRRM). The analysis utilizes Spearman's rank-order correlation to determine the strength and significance of the relationship.

Table 1. *Spearman's Correlation Between Teachers' Self-Efficacy and Implementation of SDRRM (N = 182)*

Variables	Teachers' Self-Efficacy	Implementation of SDRRM
Spearman's rho		
Teachers' Self-Efficacy	1.000	.592**
Implementation of SDRRM	.592**	1.000
Sig. (2-tailed)	—	.000

***Note. p** < .01 **(significant at the 0.01 level)**.*

As shown in Table 1, the computed p-value (**p** = .000) is lower than the established significance level of .05. Consequently, the null hypothesis is rejected, indicating a significant positive correlation (**r** = .592, **p** < .01) between teachers' self-efficacy and the implementation of SDRRM. This finding suggests that teachers with higher self-efficacy are more likely to contribute to effective disaster risk reduction management within their schools. Ensuring a safe and secure learning environment allows teachers to focus on delivering quality education, ultimately supporting the achievement of educational system goals.

These findings align with the study by Zakariya (2020), which examined the effects of school climate and teacher self-efficacy on job satisfaction using a structural multigroup invariance approach. The validated models demonstrated that school climate has a strong direct impact on job satisfaction, that teacher self-efficacy directly influences job satisfaction, and that teacher self-efficacy mediates the relationship between school environment and job satisfaction. This study provides empirical evidence for the connections among teacher self-efficacy, job satisfaction, and school climate among Norwegian lower secondary school teachers.

Conversely, the study conducted by Lacks and Watson (2016) utilized a quantitative approach employing the School Climate Index tool and the Teacher Sense of Efficacy Scale to assess the relationship between school climate and teacher self-efficacy. Their findings did not establish a direct relationship between teachers' self-efficacy and school climate. However, they identified a positive correlation between teachers' self-efficacy and community engagement. These contrasting findings suggest that while self-efficacy plays a crucial role in disaster risk reduction implementation, its relationship with broader school climate factors may vary depending on contextual and methodological differences across studies.

CONCLUSIONS

The study looked at how well public elementary schools used School Disaster Risk Reduction Management (SDRRM) and how self-efficacious teachers were. The results showed that teachers had a very high level of self-efficacy, especially when it comes to interacting with parents and fostering a pleasant school climate. Their relative ineffectiveness lack attracting community participation, however, underscores the necessity of more intensive outreach initiatives.

It was determined that SDRRM was fully implemented across the three main pillars of school disaster management, school disaster risk reduction and resilience in education, and safe learning facilities. The most successful integration of these was catastrophe risk reduction education, whereas the distribution of financial resources and infrastructure upkeep were identified as the primary obstacles. These findings highlight how crucial it is to maintain

financing and take preventative action to guarantee school resilience and safety.

The adoption of SDRRM and teachers' self-efficacy was also shown to be significantly positively correlated ($r = .592$, $p < .01$). This implies that educators who have a greater sense of self-efficacy are more inclined to support their schools' readiness and reaction to disasters. The results underline the necessity of professional development initiatives that boost educators' self-assurance in interacting with external stakeholders and the school community so as to improve disaster resilience.

Although SDRRM implementation is well-established, infrastructure safety, resource allocation, and community participation all require further improvements. Improving teacher self-efficacy can be a critical aspect to consider in improving preparedness and response to disasters, especially when it comes to community involvement. For disaster risk reduction initiatives to continue to be successful and robust in the face of upcoming difficulties, schools must embrace all-encompassing, sustainable, and inclusive approaches.

RECOMMENDATIONS

The findings and conclusions provide the following recommendations to address the gap between teachers' self-efficacy and the level of implementation of School Disaster Risk Reduction Management.

1. Information and dissemination of the research findings are encouraged.
2. School administrators should prioritize improving school safety, creating a safe working environment for teachers to work effectively and satisfactorily, and contributing to the achievement of the educational system's goals and objectives.
3. One of the critical successes in the implementation of School Disaster Risk Reduction Management, specifically in integrating SDRRM in school curricula, both formal and informal, is the participation of students, parents, and other stakeholders in *Brigada Eskwela* Program. Hence, *Brigada Eskwela* Program is a big opportunity for school administrators and teachers in Candijay District to invite and establish strong linkages with external stakeholders. They should invite the church, local colleges/universities, and businesses to participate in working with the school, especially in keeping the school safe and disaster-resilient.
4. Schools should initiate a community-based program that will tap the potential of teachers to strengthen their efficacy in enlisting community involvement.
5. Schools should establish a systematic process for conducting health monitoring among the school personnel and stakeholders, especially in monitoring their daily health symptoms. The school should require the school personnel, stakeholders, and school visitors to complete

a daily health monitoring questionnaire before entering the school premises.

6. To improve school disaster management, the designated school DRRM focal person should express concern to the school administrators to purchase at least two (2) necessary and functioning equipment in case of a disaster for budget allocation.
7. Teachers perform at optimum levels when their safety is fulfilled. Hence, school administrators should find financial resources to address the need for unsafe school buildings to make schools a conducive and safe teaching-learning environment.
8. The implementation of this action plan is hereby encouraged.

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