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UTILIZING DEPED ONSE SEGMENT FOR DENGUE AWARENESS AND PREVENTION CAMPAIGN FOR GRADE 9 STUDENTS OF MATI NATIONAL COMPREHENSIVE HIGH SCHOOL

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ABSTRACT: This study aimed to enhance dengue awareness and prevention skills among Grade 9 students through the implementation of the DepEd Onse Segment for Dengue Awareness and Prevention Program. A quasi-experimental one-group pretest-posttest design was employed to assess the program's effectiveness. Data collected from participants were analyzed using paired-samples t-tests to determine statistical significance. Results from the paired-samples t-test analysis revealed a statistically significant increase in posttest scores compared to pretest scores among Grade 9 students. These findings demonstrate that the DepEd Onse Segment for Dengue Awareness and Prevention Program is effective in improving students' dengue awareness and prevention skills, suggesting its potential value as an educational intervention in school-based health promotion initiatives.

Keywords: *DepEd Onse segment, dengue awareness, prevention program, pretest-posttest design, quasi-experimental study*

Background of the Study

Dengue fever represents the most prevalent mosquito-borne viral disease globally, affecting millions of people annually

(World Health Organization, 2020). The disease's severity was first recognized during dengue epidemics in the Philippines and Thailand in the 1950s, when dengue hemorrhagic fever (DHF) and dengue shock syndrome were identified as potentially fatal complications (Rigau-Pérez, 2006; Clyde et al., 2006).

Recent global data from the World Health Organization (WHO) underscore the escalating nature of this public health crisis. From January 1 to October 29, 2022, there were 193,010 dengue infections and 629 deaths (case fatality rate of 0.3%), representing a 194% increase compared to the 65,684 cases reported during the same period in 2021. This dramatic surge highlights the urgent need for effective prevention and awareness programs.

The Philippines faces a particularly severe dengue burden, with the disease serving as a major cause of hospitalizations and fatalities, especially among children. According to data from the Department of Health's Epidemiology Bureau, dengue-related mortality increased significantly in 2022, with a case fatality rate of 0.3% and at least 613 deaths recorded over a ten-month period (Villanueva, 2022). The situation has been further complicated by the COVID-19 pandemic, as Seposo (2021) observed that the resurgence of COVID-19 cases and vaccine rollout may have impacted dengue surveillance and control efforts in late 2021.

The dengue crisis is particularly acute in lower-income countries, including Malaysia, Vietnam, and the Philippines, where inadequate health facilities and limited economic resources exacerbate the problem (Shepard et al., 2016). This economic dimension underscores the importance of cost-effective prevention strategies, particularly educational interventions that can reach large populations.

Educational Response and Program Context

Recognizing the critical need for public health education during the pandemic, the Department of Education (DepEd) Region XI launched an innovative broadcasting program called "Diri sa DepEd Onse." This live program, aired every Friday at 3:00 PM on DepEd Region XI's official Facebook page, represented a strategic adaptation to pandemic-era communication challenges.

As part of the Davao Region's online broadcast initiative, the City of Mati Communication Team contributed relevant educational segments, including "Doc Maya is In," which provided health and safety information to the public. Among the topics featured was a comprehensive dengue awareness and prevention program, designed to address the growing health concerns in the region.

The timing of this educational intervention proved particularly relevant for Mati City, which recorded 403 dengue cases from January to October 2022, according to the City Health Office. April Delagua, disease surveillance officer of the City Epidemiology Surveillance Unit (CESU), identified minors as comprising the majority of dengue cases, with children aged five to ten years representing the most vulnerable population group.

Research Rationale and Objectives

Given the alarming dengue statistics and the disproportionate impact on young people, there is a critical need to evaluate the effectiveness of educational interventions targeting school-age populations. The DepEd Onse segment on dengue prevention presented a unique opportunity to assess how media-based educational programs can enhance students' awareness and prevention knowledge.

This study was designed to investigate the effectiveness of the DepEd Onse Segment for Dengue Awareness and Prevention Program in improving the dengue-related knowledge and prevention skills of Grade 9 students at Mati National Comprehensive High School. By focusing on this age group, the research addresses a crucial gap in dengue prevention education while contributing to the broader understanding of effective health communication strategies in educational settings.

Innovation, Intervention and Strategy

The integration of technology in educational settings has fundamentally transformed teaching and learning processes. Fisher et al. (2014) highlighted how classrooms are increasingly adopting technological tools for instruction, necessitating shifts in teachers' roles as learners become more engaged in self-assessment through technology. This technological integration has proven particularly effective in enhancing student engagement, as evidenced by Carstens et al. (2021), who found

that teacher participants reported increased student interest when learning incorporated technology. Students utilized technology for various educational purposes, including project development, collaborative work with peers and adults, reading activities, and specialized applications such as mathematics learning centers.

Building upon this technological pedagogical framework, this study implemented the DepEd Onse Segment for Dengue Awareness and Prevention Campaign as an innovative educational intervention for Grade 9 students at Mati National Comprehensive High School. The intervention leveraged multimedia technology to deliver health education content in an accessible and engaging format, aligning with contemporary educational practices that emphasize technology-enhanced learning.

The intervention strategy employed a systematic three-phase approach: pre-assessment, intervention delivery, and post-assessment. Initially, participants completed a pretest to establish baseline knowledge levels regarding dengue awareness and prevention. Subsequently, students viewed the "Doc Maya is In" segment program, which provided comprehensive information about dengue prevention strategies. Finally, participants completed a posttest to measure knowledge acquisition and retention following the intervention.

Research Questions

This action research aimed to evaluate the effectiveness of the DepEd Onse Segment for Dengue Awareness and Prevention Campaign in enhancing Grade 9 students' knowledge at Mati National Comprehensive High School. The study specifically addressed the following research questions:

1. What are the pretest and posttest scores of Grade 9 students before and after the intervention?
2. Is there a statistically significant difference between pretest and posttest scores following the intervention?

Research Methodology

Research Design

This study employed a quasi-experimental one-group pretest-posttest design to evaluate the effectiveness of the DepEd Onse segment intervention. This design was

selected as it allows for the measurement of change within a single group over time while accounting for potential confounding variables inherent in educational settings.

Participants

The study involved 50 Grade 9 students from Mati National Comprehensive High School during the 2022-2023 academic year. Participants were selected from two intact class sections: 25 students from Grade 9-Empathy and 25 students from Grade 9-Humility. This purposive sampling approach ensured adequate representation while maintaining practical feasibility within the school context.

Instrumentation

A researcher-developed 20-item assessment instrument was utilized to measure students' dengue awareness and prevention knowledge. The instrument underwent rigorous validation processes to ensure content validity and reliability:

Content Validation: Three expert validators, comprising high school nurses and School Health Coordinators, reviewed the instrument for content appropriateness, clarity, and alignment with learning objectives.

Pilot Testing: The instrument was pilot-tested with a separate group of Grade 9 students from Mati National Comprehensive High School to assess item clarity, difficulty level, and overall instrument reliability.

Parallel Forms: Both pretest and posttest versions maintained identical format, assessment items, and difficulty levels to ensure measurement consistency and minimize testing effects.

Data Collection Procedures

Ethical Considerations: Prior to data collection, appropriate approvals were secured from the Schools Division Superintendent, Division Research Coordinator, School Head, and Class Advisers, ensuring compliance with institutional research protocols.

Implementation Timeline: Data collection was conducted from October to December 2022, with the posttest administered during the second week of November 2022, allowing sufficient time for knowledge consolidation following the intervention.

Data Collection Process:

1. **Baseline Assessment:** Students completed the pretest to establish initial knowledge levels regarding dengue awareness and prevention
2. **Intervention Delivery:** Participants viewed the DepEd Onse segment "Doc Maya is in" focusing on dengue awareness and prevention strategies
3. **Post-Intervention Assessment:** Students completed the posttest to measure knowledge gains following the intervention

Data Analysis

Quantitative data analysis techniques were employed to address the research questions:

Descriptive Statistics: Means, standard deviations, and frequency distributions were calculated for both pretest and posttest scores to provide comprehensive descriptions of participant performance.

Inferential Statistics: Paired-samples t-tests were conducted to determine whether statistically significant differences existed between pretest and posttest scores, thereby assessing intervention effectiveness.

Statistical Software: Data analysis was performed using appropriate statistical software to ensure accuracy and reliability of results.

Table 1. Descriptive Statistics of the Participants

	Mean	**Number of Students**	**Standard Deviation**
Pretest	9.58	50	2.70
Posttest	14.20	50	2.66

To evaluate the effectiveness of the DepEd Onse segment on dengue awareness and prevention program, a paired-samples t-test was conducted on data from 50 Grade 9 students. This analysis examined whether there was a statistically significant difference between pretest and posttest scores following the educational intervention.

The descriptive analysis revealed notable improvements in student performance following the intervention. Participants demonstrated considerably higher mean

scores on the posttest (M = 14.20, SD = 2.66) compared to the pretest (M = 9.58, SD = 2.70). This represents a mean increase of 4.62 points, or approximately 23.1% improvement in dengue awareness and prevention knowledge.

The paired-samples t-test results indicated a statistically significant difference between pretest and posttest scores, $t(49) = -4.62$, $p < .001$ (two-tailed). The magnitude of this difference was substantial, with participants showing marked improvement in their dengue awareness and prevention knowledge following exposure to the DepEd Onse educational segment.

The effect size for this intervention can be calculated using Cohen's d, which would provide additional insight into the practical significance of these findings beyond statistical significance.

The statistical analysis provides strong evidence supporting the effectiveness of the DepEd Onse segment as an educational intervention. The significant increase in posttest scores ($p < .001$) indicates that the multimedia educational program successfully enhanced students' understanding of dengue awareness and prevention strategies.

The improvement from a mean score of 9.58 to 14.20 out of a possible 20 points suggests that students moved from below-average performance (approximately 48% correct) to above-average performance (approximately 71% correct) following the intervention. This substantial improvement demonstrates the potential value of technology-enhanced health education programs in school settings.

The consistency of improvement across participants, as evidenced by the statistical significance despite the relatively small sample size (n = 50), further supports the intervention's effectiveness and suggests that the results may be generalizable to similar educational contexts.

Table 2. Results of paired-samples t-test of the Informants

Test	Number of Students	Mean	Standard Deviation	t	Df	p-value
Pretest	50	9.58	2.70	-4.62	49	0.00
Posttest	50	14.20	2.66			

The paired-samples t-test results demonstrate a statistically significant improvement in Grade 9 students' dengue awareness and prevention knowledge following implementation of the DepEd Onse educational intervention. The substantial increase from pretest (M = 9.58) to posttest (M = 14.20) scores provides compelling evidence that multimedia-based health education programs can effectively enhance student learning outcomes in public health topics.

These findings suggest that the DepEd Onse segment successfully addressed key learning objectives related to dengue awareness and prevention. The significant improvement in student performance indicates that the multimedia format effectively communicated complex health information in an accessible and memorable manner, supporting the integration of technology-enhanced pedagogical approaches in health education curricula.

The positive outcomes observed in this study align with established educational technology research. Stakkestad and Størdal (2017) identified multiple mechanisms through which technology enhances academic performance, including increased information access and the provision of digital tools that improve learning effectiveness. The current findings support this theoretical framework, as the DepEd Onse segment provided students with accessible, multimedia-enhanced content that facilitated improved comprehension of dengue prevention strategies.

The effectiveness of the intervention can be understood through the lens of multimedia learning theory, which posits that combining visual and auditory information channels enhances cognitive processing and retention. The DepEd Onse segment's integration of video, audio, and visual elements likely contributed to the observed learning gains by engaging multiple sensory modalities simultaneously.

While the current study focused on public school students, previous research has highlighted potential disparities in technology access and utilization. Monserate (2018) observed that private school students often demonstrate higher academic performance partly due to greater access to technological resources and higher self-efficacy in technology use. However, the significant improvements observed in this study suggest that when technology-enhanced educational interventions are properly

implemented and accessible, public school students can achieve substantial learning gains comparable to those in more resource-rich environments.

It is important to acknowledge that the positive outcomes observed in this study contrast with some research highlighting potential negative effects of technology use. Mahmoodi et al. (2018) and Saunders and Vallance (2017) identified associations between excessive technology use and adverse mental health outcomes, including social isolation, fatigue, and poor achievement. However, these concerns primarily relate to recreational or excessive technology use rather than structured, educational applications as employed in this study.

The apparent contradiction between this study's positive findings and research highlighting negative technology effects underscores the critical importance of distinguishing between educational and recreational technology applications. The DepEd Onse segment represents a structured, curriculum-aligned educational intervention with specific learning objectives, rather than unguided technology exposure. This purposeful, time-limited, and educationally-focused approach likely contributes to the positive outcomes observed while avoiding the potential pitfalls associated with excessive or inappropriate technology use.

The study's findings have several important implications for educational practice and health promotion in school settings:

Pedagogical Innovation: The success of the DepEd Onse intervention demonstrates the potential for innovative multimedia approaches to enhance traditional health education delivery, particularly for topics requiring behavior change and practical application.

Scalability and Accessibility: The broadcast format of the DepEd Onse segment offers significant potential for widespread implementation, allowing effective health education to reach large student populations with minimal additional resource requirements.

Public Health Education: The substantial improvement in dengue awareness and prevention knowledge suggests that school-based multimedia interventions could

serve as valuable components of broader public health initiatives, particularly in regions with high dengue prevalence.

The current study's rigorous experimental design and statistically significant results provide strong evidence for the intervention's effectiveness. However, future research should consider longitudinal follow-up assessments to evaluate knowledge retention and behavioral application of learned prevention strategies.

Additionally, comparative studies examining the relative effectiveness of different multimedia formats or delivery methods could provide valuable insights for optimizing educational interventions. Research exploring the intervention's effectiveness across different grade levels, socioeconomic contexts, and geographic regions would further enhance understanding of its broader applicability.

ACTION PLAN

Area of Focus	Objectives	Activities	Resources	Time Frame	Estimated Cost
School Learning Action Cell (SLAC) on Utilizing DepEd Onse Segment on Dengue Awareness and Prevention Program	Equip teachers with skills in using DepEd Onse Segment on Dengue Awareness and Prevention Program	Conduct School Learning Action Cell (SLAC)	MOOE	January 2023	1,000
Dissemination of Results	Conduct information dissemination on the results of the action research	Conduct Training/ Webinar	MOOE	January 2023	1,000
Wider Dissemination of Results	Conduct Division /District Level information dissemination on the results of the action research	Conduct Training/ Webinar	MOOE	February 2023	1,000

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