



SEW: School Event Website Development and Validation

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Abstract

School event awareness plays a crucial role in fostering student engagement and holistic development. However, many institutions, including Bataan National High School – Senior High School (BNHS-SHS), continue to rely on inefficient traditional methods of event dissemination. This study aims to design, develop, and validate a School Event Website (SEW) to enhance event coordination and accessibility for BNHS-SHS students. A preliminary survey conducted among 147 student participants revealed significant gaps in communication. Specifically, 56.47% reported a lack of timely event updates, 64.63% found the announcement methods ineffective, and 74.83% experienced difficulties with online registration. The study follows research and development (R&D) design, incorporating the Web Development Life Cycle (WDLC) to systematically create SEW. A sequential exploratory mixed-method approach was employed, involving surveys, interviews, and expert validation to assess SEW's content, functionality, and usability. By addressing inefficiencies in school event management, this research seeks to bridge the communication gap and improve student participation. Findings from the Development Phase Evaluation highlighted the need for essential website features such as an event calendar, a search function, and a user-friendly interface. The Website Usability and Functionality Validation among students and experts (mean score: 3.81/5) indicated that SEW was generally functional and accessible but required improvements in loading speed (3.48) and navigation intuitiveness (3.64). Content accuracy and responsiveness received positive feedback, with accessibility rated the highest (4.06). The study concluded that SEW effectively enhanced event awareness and engagement but required further optimization in speed and user navigation. It recommended implementing technical improvements, clearer event details, and regular website updates to maximize usability. By addressing communication gaps in school event management, this research contributed to the advancement of digital event platforms in educational institutions.

Keywords

School Event Website; Event Awareness; Student Engagement; Web Development Life Cycle; Digital Event Management

1. Introduction

School event awareness plays a crucial role in enhancing student engagement and holistic development. Globally, event management systems have been developed to address inefficiencies in traditional event coordination. Events serve as an integral component of modern education, fostering social interaction, leadership, and extracurricular involvement [1]. School event awareness provides valuable opportunities for students to explore interests beyond the

classroom, whether in sports, arts, or clubs, contributing to their overall growth [2]. However, traditional event management methods, such as paper-based announcements, have become increasingly inefficient due to delays and limited accessibility [3]. Event awareness refers to the recognition, understanding, and knowledge of an event within a particular context. It entails individuals or groups being informed about the occurrence, significance, and impact of an event. This awareness can span various domains, including social, cultural, political, and commercial activities, and is influenced by multiple factors such as media coverage, marketing strategies, and word-of-mouth communication [4]. Key aspects of event awareness include recognition of the event, comprehension of its purpose or impact, sources of information, and timing of the event.

At the national level, studies have revealed that Philippine schools still rely on manual event management methods, leading to delays and communication gaps. It was found that universities using traditional encoding and announcement methods face challenges in promoting events effectively, which hinders student participation [5]. It was also emphasized that manual event coordination leads to errors, reducing efficiency and accessibility for students [6]. To address these limitations, digital solutions such as the E-Ganapp system have been introduced in some institutions. E-Ganapp provides an innovative alternative to paper-based event management by offering seamless online registration, event tracking, and automated notifications, ultimately improving student engagement and administrative efficiency [7].

Despite advancements in event management systems, many secondary schools in the Philippines, including BNHS-SHS, continue to face challenges in disseminating event information. A preliminary survey was conducted among BNHS-SHS students to identify existing gaps. Aside from the firsthand experiences of the researcher, the results of the preliminary survey, conducted with a total of 147 student participants, revealed that 56.47% of participants disagreed or strongly disagreed with receiving timely updates about school events, while 64.63% found the current announcement methods ineffective. Furthermore, 68.03% reported difficulties in locating registration forms, and 74.83% encountered issues with online event registration. Notably, 93.20% of student participants agreed or strongly agreed that a dedicated website for event details and registration would be beneficial. Additionally, it is important to note that some participants did not respond to every item, with the percentage of non-responses ranging from 9% to 15% across different survey items. These findings underscore the necessity of a user-friendly platform to enhance awareness and student engagement in school activities.

Inspired by these studies and the preliminary findings, this research aimed to design, develop, and validate a SEW for BNHS-SHS. Given the inefficiencies of the current event management practices, there was an urgent need for a digital solution that enhanced event awareness and streamlined event coordination. The primary objective of this study was to develop an efficient web-based event management system that improved awareness and enhanced student engagement in school activities.

1.1 Statement of the Problem

This study specifically aims to answer the following questions:

- (1) How is SEW developed through the Web Development Life Cycle?
 - (1.1) Information Gathering
 - (1.2) Planning
 - (1.3) Designing
 - (1.4) Content Creation
 - (1.5) Development
 - (1.6) Testing
 - (1.7) Maintenance and Improvement
- (2) How can the developed SEW be validated in terms of:
 - (2.1) Content
 - (2.2) Functionality
 - (2.3) Usability
 - (2.3.1) Responsiveness
 - (2.3.2) Speed
 - (2.3.3) Accessibility

1.2 Conceptual Framework

The researcher employed the Input-Process-Output (IPO) paradigm to systematically develop and validate the SEW. This conceptual framework outlined the study's structured approach, ensuring that each stage contributed to the final validated output. Illustration 1 provided a general overview of how the study was conducted. The input stage began by identifying the research gap through first-hand experience, supported by the results of a preliminary survey. It also included data from the open-ended WDLC interview guide, which was used in the development of the SEW. Additionally, it incorporated findings from the Validation Likert Scale questionnaire and feedback gathered from participants and validators.

The Process stage started with the administration of a preliminary survey questionnaire to confirm the identified research gap. This was followed by the development and validation of the SEW to ensure its effectiveness and applicability. Finally, the Output stage presented the final product of the study—the validated SEW, which had undergone rigorous evaluation and refinement based on the collected data and feedback.

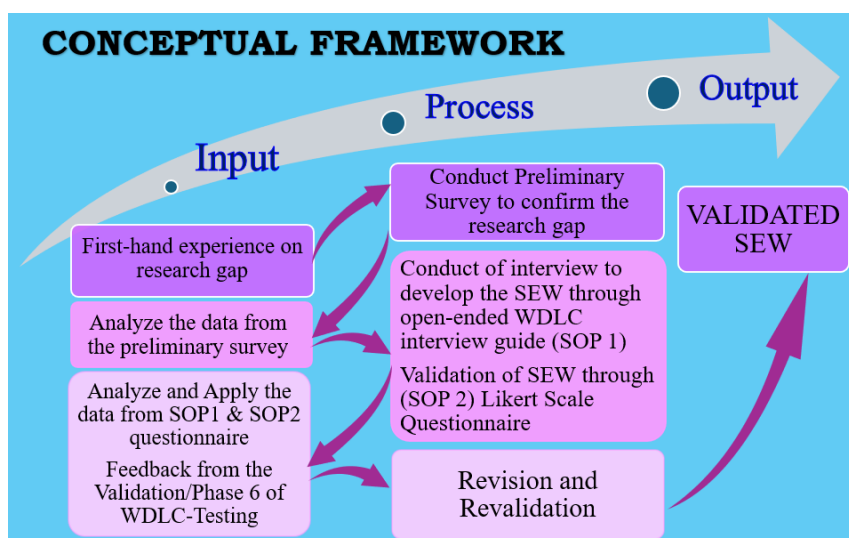


Figure 1. Conceptual Framework.

2. Methods

2.1 Design and Sample

This study employed an applied research approach, as it aimed to develop and validate a practical solution—the SEW—to address communication and event registration challenges at BNHS-SHS. Applied research was designed to solve real-world problems by developing and implementing new methodologies, technologies, or practices [8]. The development of SEW aligned with this objective by providing an innovative digital solution to improve event awareness and student engagement. While primarily applied, this study also incorporated elements of a basic research approach. Basic research sought to expand theoretical knowledge without immediate practical applications [9]. In this context, the present study explored the theoretical foundations of web development methodologies, user experience design, and communication strategies within an educational setting. Understanding these principles contributed to the broader academic discourse on how digital solutions enhanced communication and engagement in schools. The study adopted a research and development (R&D) design, which is formative in nature. This design involved iterative cycles of development, evaluation, and refinement to ensure the effectiveness of the final product [10].

Data collection included both qualitative and quantitative methods. Specifically, it utilized a sequential exploratory mixed method [11]. This design was used because it allowed for the initial exploration of qualitative data to inform and guide the development process, followed by quantitative validation to ensure the efficacy, and gathered feedback for improvement. The sequential approach provided a comprehensive understanding of the research problem by integrating insights from both qualitative and quantitative data. As mentioned above, the present study was also

anchored and followed the WDLC, a structured framework that guided the systematic creation and validation of SEW [12].

The WDLC consisted of the following phases:

- (1) Information Gathering: This phase involved the primary goals and objectives of SEW, determining the target audience, outlining the key features and content of the SEW, such as a list of events.
- (2) Planning: This phase focused on defining the estimated timeline for SEW development, the deliverables, the budget, and delineating tasks among the SEW project team.
- (3) Designing: This phase emphasized selecting design tools and software for SEW, specifying main design elements (such as colors, fonts, and images), structuring the user interface (UI) and user experience (UX) for usability and responsiveness.
- (4) Content Creation: This phase involved determining what type of content (text, images, videos) would be included in SEW, and developing relevant event-related content for the website.
- (5) Development: This phase focused on selecting appropriate technologies and frameworks for SEW, managed the front-end and back-end development, followed coding standards and best practices, and documented the development process for maintainability and future reference.
- (6) Testing: This phase involved evaluating the website's functionality, usability, and responsiveness through pilot testing and validation by experts.
- (7) Maintenance and Improvement: This phase included gathering feedback and recommendations from pilot testing and validation for improvement.

2.2 Participants

This study employed purposive sampling, a non-probability sampling technique, to select participants based on their direct involvement and relevance to the study [13]. This approach ensured that individuals contributing to the design, development, and validation of the SEW provided meaningful insights.

The participants were as follows: SHS Students—must have been BNHS-SHS students. They were involved in the preliminary survey and validation phases. At least 30 students were selected to validate the content, functionality, and usability (responsiveness, speed, and accessibility) of SEW. Event Organizers—may have included student leaders, teachers, or faculty members organizing official BNHS-SHS activities/events to be featured on the website. They participated in an interview during the development phase. At least one organizer per academic strand (STEM, HUMSS, ABM, GAS) was selected. IT Specialists—at least one IT specialist validated the SEW's technical functionality and effectiveness during the development and validation phases.

This study integrated applied and basic research, developing a practical digital event management system while contributing to the theoretical understanding of web-based engagement in education. The purposive selection of participants ensured a comprehensive evaluation, aligning SEW's development with the needs of its intended users.

2.3 Instruments

This study utilized three research instruments to gather data relevant to the design, development, and validation of the SEW at BNHS-SHS. These instruments were structured to align with the study's specific objectives and ensured comprehensive data collection.

2.3.1 Preliminary Survey Questionnaire

The Preliminary Survey Questionnaire was designed to confirm the existence of a research gap and assess the necessity of SEW in the locality. This instrument consists of 20 Likert-scale items measuring students' perceptions of the accessibility of school event information and the ease of event registration. The data collected established whether current methods were sufficient and if a dedicated website was a viable solution.

2.3.2 Interview Guide

The WDLC Interview Guide was an open-ended questionnaire aimed at gathering qualitative insights into the development of SEW using the WDLC. This instrument was administered to event organizers, IT specialists, and students who provided essential inputs on content structuring, design considerations, development processes, and usability factors. The questionnaire followed the seven phases of WDLC—Information Gathering, Planning, Designing,

Content Creation, Development, Testing, and Maintenance & Improvement—to ensure the website is systematically developed based on stakeholder needs.

2.3.3 Validation Survey Questionnaire

The Validation Survey Questionnaire was employed to assess SEW's effectiveness in terms of content, functionality, and usability (responsiveness, speed, and accessibility). Adapted from established evaluation models such as WebQEM [14, 15] and the System Usability Scale (SUS) [16], this instrument used a Likert-scale format to obtain structured feedback from students, teachers, and IT experts. The results determined whether SEW met its intended objectives and identified areas for further refinement.

By employing a combination of quantitative and qualitative research instruments, this study ensured a rigorous evaluation of SEW from initial conceptualization to final validation, supporting both theoretical insights and practical applications in school event management.

2.4 Data Gathering Procedure

The data gathering process for this study involved multiple phases, ensuring a thorough and comprehensive approach to developing and validating the SEW. The following steps outline the procedure:

Seeking Permission: Prior to data collection, formal permission was sought from the school administration of BNHS-SHS to conduct the study. This included approval to survey students, interview event organizers, and IT specialists, and to pilot test the developed website. Additionally, informed consent was obtained from all participants, ensuring they were fully aware of the study's purpose and their role in it.

Preliminary Survey: Initially, a preliminary survey using a Likert scale was conducted among at least 30 BNHS-SHS students. This survey aimed to determine the need for a website in the locality, providing initial quantitative data to confirm the research gap and inform subsequent phases. The survey results helped establish whether there was a significant demand for the SEW.

Qualitative Interviews: Following the preliminary survey, qualitative interviews were conducted with selected participants, including event organizers, teachers, students at BNHS-SHS, and external IT specialists in web development. The interviewees were chosen based on their involvement in school events and their ability to provide detailed information about the events to be included on the website. The interviews followed an open-ended interview guide, gathering insights to guide the development of the website according to the WDLC model.

Website Development: Based on the insights gathered from the qualitative interviews, the SEW was developed. This phase involved iterative cycles of design, implementation, and refinement, ensuring the website met the needs of its intended users.

Validation Survey: After developing the website, a Likert scale questionnaire was employed to validate the SEW. At least 30 BNHS-SHS students and at least one IT specialist participated in this validation phase. The survey assessed the website's content, functionality, usability (responsiveness, speed, and accessibility), and overall effectiveness. The data from this phase was analysed using descriptive statistics to quantify the results and gather feedback for improvement.

Data Analysis: The data collected from the surveys and interviews was analysed using both qualitative and quantitative methods. Qualitative data from the interview was analysed and thematized to identify key insights that would aid in the development of SEW. Quantitative data from the Likert scale questionnaires were analysed using descriptive statistics, providing a numerical summary of the participants' responses.

This sequential exploratory mixed methods approach allowed each phase to inform the next, ensuring a more comprehensive and in-depth understanding of the research problem and facilitating the effective development and validation of SEW.

3. Results and Discussions

The Development Phase focused on gathering user needs and structured the SEW based on the WDLC using the open-ended interview guide questionnaire. The Validation Phase using Likert Scale Survey Questionnaire was conducted among key participants to validate the website's effectiveness in terms of content accuracy, functionality, and usability. The corroborated findings offered valuable insights into the strengths of SEW while highlighting key areas for further enhancement.

Data collected from research team discussions, IT specialists, and initial users' feedback highlighted the essential features, usability concerns, and technical considerations for SEW implementation.

Phase 1 - Information Gathering: Identifying User Needs

The Development Phase Evaluation revealed a need for essential features such as an event calendar, search functions, and a user-friendly interface. This aligned with studies [1] that emphasized the importance of initial research in web development to ensure relevance and usability. The preliminary survey findings (56.47% lacked timely updates; 74.83% had registration difficulties) confirmed the necessity of SEW, supporting research by [6], which highlighted communication gaps in school event management.

Phase 2 - Planning: Structuring an Effective Platform

The Planning Phase involved outlining SEW's framework, including its navigation system, branding, and accessibility. However, Website Usability and Functionality Validation revealed navigation challenges (Mean: 3.64), suggesting that initial planning should have emphasized a more intuitive menu structure. This was consistent with [5], who argued that well-planned web architecture reduced user confusion and enhanced engagement.

Phase 3 - Designing: Addressing UI/UX Considerations

SEW's design followed a simple, student-friendly layout using blue, white, and candy colors for trust and engagement. However, findings revealed that loading speed (3.48) and layout adjustments (3.75) needed improvement. This reinforced the importance of user experience (UX) optimization in the design phase, as highlighted by [4], who found that slow-loading pages reduced user retention rates.

Phase 4 - Content Creation: Enhancing Information Clarity

Validation Survey responses confirmed that while content was generally reliable (Mean: 3.86), some users felt that necessary event details were missing (3.73). This aligns with [17], who stressed that structured and complete event descriptions increased student engagement. To improve SEW, clearer schedules, venues, and contact details should be added.

Phase 5 - Development: Functionality and Coding Challenges

SEW was developed using WordPress and Enfold, following a no-code approach. Despite its effectiveness, the Mean score of 3.52 for technical stability under the Functionality Validation Survey indicated occasional glitches in registration and navigation. Kent et al. [5] emphasized that iterative debugging during development was critical to ensuring seamless operation—a step that should be strengthened in future SEW iterations.

Phase 6 - Testing: Identifying and Resolving Issues

Testing through Validation Likert Scale Survey Questionnaire revealed that while SEW was accessible (4.06) and responsive (3.74), speed (3.48) was a recurring concern. The findings aligned with [10], who noted that continuous testing ensured website efficiency and functionality. Future refinements should include performance monitoring and page speed optimizations.

Phase 7 - Maintenance and Improvement: Ensuring Sustainability

The Maintenance & Improvement Phase focused on user feedback collection and website updates. Weekly monitoring and structured feedback mechanisms were implemented to refine SEW continuously. Research by [3] highlighted the importance of long-term system updates in digital platforms, reinforcing the need for ongoing improvements.

More so, the website received an overall mean score of 3.81/5, indicating that while it was generally functional, areas such as loading speed and navigation required improvement.

Table 1. Validation Likert Scale Survey Questionnaire Result

Evaluation Criteria	Mean Score (1-5)	Interpretation
Content Validation	3.86	Reliable, but missing details
Functionality	3.66	Moderate, navigation issues
Usability	3.81	Generally effective
Responsiveness	3.74	Works across devices
Speed	3.48	Requires optimization
Accessibility	4.06	Highly accessible

Table 1 showed the content validation results, which indicated that while the information provided on SEW was generally accurate (Mean: 3.86), some users found certain event details to be unclear (Mean: 3.73), suggesting a need for more comprehensive descriptions. In terms of functionality, the website's navigation system required improvements (Mean: 3.64), and minor technical issues were reported (Mean: 3.52), highlighting the necessity for further refinement. The usability assessment confirmed that SEW was generally effective (Mean: 3.81); however, speed performance (Mean: 3.48) required optimization to ensure a smoother user experience. On the other hand, responsiveness received a satisfactory rating (Mean: 3.74), confirming that the website adapted well across different devices. These findings aligned with [10], who emphasized that regular maintenance and performance monitoring were essential for long-term usability and user satisfaction.

4. Conclusion and Recommendations

4.1 Summary of Findings

The study aimed to develop, validate, and assess the SEW for BNHS-SHS. The survey results provided valuable insights into the effectiveness of the platform in terms of content, functionality, and usability.

- (1) Content Accuracy and Completeness: Users found the content relevant and accurate (Mean: 3.86), but additional details were needed.
- (2) Functionality and Navigation: The navigation system scored 3.64, suggesting room for improvement in user flow and intuitiveness.
- (3) Usability and Performance: While accessibility was a strength (4.06), speed issues (3.48) and minor technical glitches need to be resolved.

4.2 Conclusion

The research findings confirmed that SEW was a functional and beneficial tool for event awareness and management at BNHS-SHS. However, improvements in website speed, navigation, and technical stability were necessary for optimal performance. The study's outcomes aligned with existing literature on digital event management systems, reinforcing the importance of structured web development methodologies like WDLC.

4.3 Recommendations

To enhance the effectiveness of SEW, the following recommendations were proposed:

- (1) Optimize Website Speed: Reduced loading times by compressing images, minimizing scripts, and leveraging caching mechanisms.
- (2) Enhance Navigation: Introduced clearer menu structures, breadcrumbs, and a search function to improve information retrieval.
- (3) Improve Content Completeness: Ensured that event details included clear schedules, locations, and relevant contacts.
- (4) Address Technical Issues: Implemented regular maintenance and bug testing to minimize glitches and user frustration.
- (5) User Feedback Integration: Collect continuous user feedback to enhance website usability and accessibility over time.
- (6) Implications for Future Researchers
 - Advanced UX Design Strategies: Incorporating AI-based chatbots or personalized event recommendations to improve interactivity.
 - Mobile Application Integration: Developing a mobile app version of SEW to increase accessibility and engagement.
 - Comparative Studies: Evaluating SEW against other school event management systems to identify best practices and potential areas for further refinement.

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