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Development and Validation of Maria Aurora National High School Online Portal

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ABSTRACT: This research focused on the development and validation of Maria Aurora NHS Online Portal (MANHSOP) that serves as an online platform for a more inclusive program dissemination and implementation in terms of school governance and curriculum and instructions. The data were gathered from three hundred fifty- seven (357) respondents comprising ICT experts, teachers, parents, and learners of Maria Aurora NHS. The MANHS Online Portal was developed using AGILE model with the following phases: plan, design, develop, test, deploy, review, and launch. Participants were asked to assess the technical features of the developed MANHSOP based on ISO 25010 quality standards such as security, usability, reliability, portability, functional suitability, and performance efficiency as well as the implication in terms of implementation. The implementation of MANHSOP was very satisfactory and fully met its intended indicators.

The study found the online portal highly successful, meeting all technical standards from functionality to security. Maria Aurora National High School's governance and curriculum benefited significantly. Improving communication and maintaining a competitive edge, it provides essential, convenient support for students, educators, and the school's overall institutional growth.

This study suggests that MANHS may allot sufficient fund for the web portal's development to purchase a domain name that will be active for at least two years (renewable) which will benefit the student body and the community at large. MANHS may implement an in-service training program focused on using MANHSOP. Future researchers may add features like alumni records, feedback forms, and a faculty-staff directory.

KEYWORDS: AGILE model, Efficiency, Functionality, ICT experts, Portability, Reliability, Security, Usability

INTRODUCTION

Educational web portals have the potential to bridge the gap between "digital natives" and "digital immigrants." These portals can provide teachers with technologies and targeted digital resources to add to their pedagogical strategies aimed at motivating and engaging this new generation of learners. Educational web portals can also create learning communities by promoting and extending parent-teacher-community dialogues beyond the rigid physical boundaries of elementary school classrooms (Preiser-Houy, Lara and Russell, Margaret, 2011). Portals are the sites that act as an entrance to other sites on the internet; they bring information from various sources in a coherent, united and logical way. Users obtain information on education, news, and updates. They also provide standard-based means to end users via an array of platforms including mobile phones.

Due to their many advantages and benefits in enhancing the educational system, online portals in schools have grown in popularity (Budiyanto & Sholeh, 2021). The use of online learning portals, like the learning house portal, has been widely acknowledged as an additional learning platform for students in Indonesia. Moreover, Online platforms have become a vital part of our lives in the current technological era, serving a variety of objectives, including education. As noted by Dijck and Poell, teachers and students are increasingly depending on these platforms as a valuable source of education (Farhi et al., 2022).

Maria Aurora National High School (MANHS) is a fast-growing public secondary school in Maria Aurora. It has been one of the large schools in the municipality that has maintained its status in terms of providing quality education and population and still growing. The school has one thousand two hundred (1,200) learners, and seventy-five (75) teaching personnel. It caters both Junior High School and Senior High School learners. For many years, the school encountered challenges on how to promote school programs and activities and respond to the inquiries of stakeholders, and learners pertaining to school background, policies, and admission requirements. This situation pushed the researcher to design, develop and innovate an online portal for the community that will be utilized by Maria Aurora National High School for the first time. This research is important to establish the feasibility of continuing collaboration between the school and community with its meaningful contribution to the body of knowledge as regards to the use of web 2.0 technologies.

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Based on the backgrounds, the researcher is motivated to develop a useful online portal for Maria Aurora National High School (MANHS). Moreover, the said online portal is deemed necessary for the following reasons: (1) provide convenient support for the learners, (2) educate and keep the community updated, (3) cost and effective promotion and marketing, (4) improve communication with clientele, (5) keep the edge of competitors and (6) increase learner's confidence including the parents and teacher as a whole.

LITERATURE REVIEW

Foreign Literature

In recent times, one has seen the drastic rise of digital content. Educational institutes have also adapted to this new change. As the learning happens on a virtual basis, each institution has its own preferred set of applications for emulating the physical activities in the digital platform. As these services are provided by third party applications, it takes time to get them resolved. Apart from the academic aspect, the extra-curricular activities such as the club activities have also taken a hit. For an offline event, usually these clubs go canvassing class-by-class to spread the word of their upcoming event. In the online mode, the club heads are at a loss on how to promote and gain participants to their events. It is often the case that students cannot access their attendance at all and often must rely on third-party apps to manually track their attendance. In cases of online lectures/meetings, they don't have a portal where they can track their schedule. Clubs are a vital part of a student's life in college. It is through these clubs that students get to network with their seniors and peers. These clubs are usually present in various categories, and they conduct events that propel the college student in the right direction with respect to their career. Club-related information is often scarce in the online mode, and there is no one place to go to get to know the clubs of the college. To overcome all these hurdles faced by different factions of the institution, a web portal which will simplify and fast-forward the different activities performed has been proposed. In addition to that, when a student wishes to express the concerns, there isn't a digital grievance redressal system in place. By having a single place to access all the above (and not limited to those features), the portal helps each student simplify their college life. The potential advantages for both students and educators are revealed by a thorough literature analysis on the adoption and efficacy of online portals in educational contexts. Online portals can improve student engagement, ease communication between professors and students, allow simple access to educational resources, and encourage individualized learning experiences, according to research (Alfaruque et al., 2022).

Furthermore, in the study of web portal for secondary schools in Serbia, Vukovic, V., et al., (2016), identification and placement of several stakeholders in the secondary education development function are necessary due to the abundance of data and information. The lack of sufficient and pertinent information prevents educators, parents, community leaders, government officials, business representatives, and other stakeholders from managing and making wise (high-quality) decisions. The lack of high-quality collaborative information services and inadequate institutional support are the main causes of this, as they would prevent people from improving their level of knowledge using properly obtained and unified data. Based on the poll results, students anticipate that the platform will have features for managing used documents and contents, as well as those that are just saved for later use or exchange. It will also include features for tracking document flows and archive search. The platform facilitates not just the cooperation of all parties but also the sharing of expertise and information. Using blogs, forums, audio and video presentations, polls, and other web 2.0 communication tools, this type of work fosters and strengthens their collaboration. Additionally important materials for the execution of specific tasks and procedures in secondary education are news and information.

There are still issues that need to be resolved, such as accessibility, cost effectiveness, and encouraging interaction and collaboration among the various stakeholders, even though online learning has been found to be effective in terms of student involvement and learning outcomes. The research also emphasizes the significance of institutional regulations and pressures in motivating academics to move their instruction to online platforms (Niculescu et al., 2017).

According to Bajana, et al (2022). The technological tool Google sites is important in the teaching-learning process, on the other hand, it is obtained that teachers do not have adequate knowledge about the management of these tools, which is why the application of specialized training is necessary in the use of Google sites. It is concluded that it is necessary to apply the Google Sites Tool in the academic context since there is sufficient evidence that denotes a potential benefit for the teaching-learning process. It is obtained that teachers do not have adequate knowledge about the management of these tools, which is why it is necessary to apply specialized training in the use of Google sites. It is concluded that it is necessary to apply the Google Sites Tool in the academic context since there is sufficient evidence that denotes a potential benefit for the teaching-learning process. It is obtained that teachers do not have adequate knowledge about the management of these tools, which is why it is necessary to apply specialized training in the use of Google sites. It is concluded that it is necessary to apply the Google Sites Tool in the academic context since there is sufficient evidence that denotes a potential benefit for the teaching-learning process.

Web Portal features as a knowledge management system in school education

As reiterated by Singh, Thakur, & Rao, Durga (2016), web portals and their vital roles as a knowledge management system in the schools provides a gate way to access information as well as search, analytical and communication center for the target users. It is important for the schools to have emphasis on knowledge sharing for supporting the students to access the required resources and information. A Web portal or public portal refers to a Web site or service that offers a broad array of resources and services, such as e-mail, forums, search engines, and online shopping malls. The first Web portals were online services, such as AOL, that provided access to the Web, but by now most of the traditional search engines have transformed themselves into Web portals to attract and keep a larger audience. Web portals become significant because of students gets to the required information on-line. It is indispensable that schools have a dynamic association with the understudies by sharing the sorted-out knowledge by means of the portal and help the understudies from untidy information on the Web. There are different sorts of web portals with different utilities that give advantages to the clients. Every client can have his or her own unmistakable meaning of web portals. Essentially, a portal is a passage to online network available resources through the Intranet, extranet or Internet, Accordingly, a basic site page could change this definition, as could an unpredictable website included of a huge number of site pages. The early portals were extremely basic, offering their individuals a static perspective of substance from a little number of sources. For the most part, a web portal permits the clients to get to information from shifted

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sources in an incorporated way. Aside from the standard internet searcher, web portals give different administrations, for example, email, news, stock costs, information, and diversion, contingent upon the way of business of the portals host establishments.

According to Grady (2016), systems development is the art and science of creating man-made systems to satisfy predetermined needs. It is a problem-solving process where we bring to bear appropriate elements of mankind's knowledge base to create new knowledge specific to the problem and, as a result, define a solution to the problem.

Tarud (2021), defines information systems as essential to modern business, government, education, health care, and more. If you use a smartphone or a computer, you are likely interacting with and benefiting from an information system. Hi-Tech technology evolves quickly. Sometimes in order to stay competitive, your business needs to update to a new information system design to access new tools and software.

According to M. Roszak et al (2016), with a growing emphasis on lifelong learning, distance education is making inroads into the university education sector. An e-learning portal and other resource management tools are necessary for distance learning, which also calls for well-organized organization. Universities that are just starting the process of implementing the portal may run into a lot of organizational and technological problems. This paper was written with an eye on educational institutions where several academic staff members with limited funding implement the portal under inexperience. The authors highlight a few crucial concerns, including assessing the requirements of the school for technology-enabled distant learning servers, selecting a technologically sound portal, providing support for the standards or features required for an appropriate curriculum, and managing users. The frequently overlooked issue of portal management is also included in the text. The authors go on to discuss the uses of computational clouds for distant learning, as well as how they might be implemented in educational settings. It is rather uncommon to find a solution like this, especially in Eastern and Central European nations.

A website-based information system boosts data administration efficiency, especially when it comes to student information. To achieve the goal of having an effective school management system, the system should have elements that improve the quality of schoolwork (Dewantara, Piarsa, & Buana, 2019).

For Bangladeshi teachers, the Teachers' Portal (teachers.gov.bd) is an online platform meant to store and retrieve digital educational materials on many disciplines that are beneficial for both student learning and classroom instruction. Teachers around the nation can more easily network professionally thanks to the platform. The purpose of this study is to ascertain, from the viewpoint of teachers, the advantages of using this Portal and the accompanying difficulties. Using a mixed methods research methodology, the study involved interviews and consultations with N = 410 teachers, head teachers, teacher educators, and experts from primary, secondary, madrasa, and vocational educational institutions. Data were gathered via focus group discussions (FGD), phone interviews, online questionnaires, Key Informant Interviews (KII), in-person interviews, and sizable consulting workshops. The findings imply that instructors are inspired to use the Portal since its resources foster students' creativity and motivate them to actively participate in their education in the classroom. In addition, it gives teachers a lot of control. On the other hand, important obstacles include poor Internet speed, equipment unavailability, power outages, technical difficulties, excessive Internet costs, and poor internet connectivity. In summary, the Teachers' Portal is a major force behind the transformation of Bangladeshi education and the provision of high-quality education for the next generation (H. Henrik et al., 2018).

Alatawi, S., Abdullah, N., & Miskon, S. (2020) conducted research on student portal usage and its issues: a case study on Saudi Arabia universities, academic perspective. Considering how quickly information and communication technologies (ICTs) are developing, businesses must have websites. The Saudi Arabian Ministry of Education has implemented a policy encouraging universities to embrace ICT to enhance their online presence and services. Despite having a strong ICT infrastructure, Saudi Arabian universities nevertheless have poor university portal utilization. This study attempts to determine the present state of student portal usage, content problems that Saudi Arabian university students encounter, and solutions for these problems to generate high-quality portal material that can entice students to use the student portal. The results show that there is a deficiency in training and direction, awareness of using ICT, and material on student portals. By improving the content's quality, the institution may create a better portal for its students and raise user happiness among students. Student portals are currently the most widely utilized web discovery tool for the efficient and successful delivery of information to students. In addition to electronic resources, it offers an improved online environment that: lets users concentrate on making productive use of the collections available on the portal; enhances learning and research activities by granting timely, appropriate access to relevant and acceptable resources. The study concluded that to support students with their academic demands and provide them with high-quality portal information, the student portal needed to be enhanced. According to the results, there are a few problems that students run into when utilizing the student portal, including: a lack of awareness and substance, inadequate training and direction, etc. Therefore, to enable the proper use of the site, further work will need to strengthen the student portal. Therefore, by making improvements to the student portal, institutions in Saudi Arabia will be able to build high-quality portals for their students and boost student satisfaction with the portal.

Awareness about the Online Security Threat and Ways to Secure the Youths

Everyone is concerned about the threat to online security, but young people are particularly vulnerable since they spend so much time online. Furthermore, most young people are ignorant of the risks and security threats connected to using electronics and the Internet. Even if there are steps that can be taken to lessen certain hazards, young people are extremely vulnerable if they are unaware of these steps. Nonetheless, young people are aware of and utilize the usage of strong passwords and password characters that are more than three types. This acts as a barrier against dangers from the outside. Furthermore, one of the study's conclusions showed that young people maintain their smartphones and other devices up to date with the newest operating systems and applications. For both the users' and the devices' safety, this is crucial. The degree of awareness regarding the use of firewalls for security and protection is high. However, the results show that a relatively small percentage of young people have really utilized firewalls to secure and protect their smartphones and other devices. Therefore, if precautions are not taken, simply being aware of the danger and security threat would not resolve any linked difficulties. Because most young people lack awareness and sufficient information, there is cause for concern regarding data storage and security. Only a small percentage of young people have their social media or smartphone data encrypted and locked down. The usage of network intrusion detection software and network monitoring are not as common among young people.

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This raises questions about potential security threats or other concerns related to using mobile devices, the Internet, and other technologies. To create a secure online environment, young people need to be properly informed on security risks and threats. If not, young people will keep utilizing technology and the Internet, putting them at risk for a variety of risks and threats (Nidup, Y., 2021).

Mobile Web School – Parent – Teacher Interaction Portal

The goal of this research study was to create a mobile-web school parent-teacher interaction portal that would give teachers, parents, and kids a supportive atmosphere for communication as well as useful management tools. Educators and parents can utilize their smartphones to visit the website and take advantage of the services offered by the system. In a similar vein, the system's features might satisfy the administrator. The system was developed using the Rapid Application Development Methodology (RAD) to assess the functional requirements and to elaborate the analytical models to provide the system's implementation specifications. The primary programming language utilized in this study was PHP Hypertext Processor, or PHP for short, and the database used to store important data on the system was MySQL. Similarly, the developer has access to a common set of layouts, UI widgets, and interaction thanks to jQuery mobile. Asynchronous Javascript (AJAX) and Cascading Style Sheets (CSS) were also utilized. The system was also developed using a few tools, including PHP designer, starUML, and VertrigoServer. To ascertain the needs of the intended application, fact-finding tools like interview and observation techniques were employed. Surveys were employed to gauge the system's effectiveness based on end users' assessments. Similar tools were employed throughout the project study. Eclipse served as the primary integrated development environment (IDE) for the system, EasyPHP served as the local web server for testing, and StarUML let the proponent model the system project. According to the ISO 9126 standard and the assessors' ratings, the proposed system satisfies every functional criterion that was identified throughout the project research. The goal of designing and developing the mobile web school parent-teacher interaction portal was to provide users with an online communication system that had an intuitive and user-friendly layout. Based on the tabulated evaluation and the users' high level of acceptance, the project's proponent felt that the study had achieved its goals and served its purpose. Thus, the advocate strongly suggests that a large number of people make use of the mobile web school parent-teacher interaction portal (Quy Bui, A., 2012).

School Portal: Managing School through Portals

As reiterated by Gopinath, A., Kaliamoorthy, P., & Ponnapa, PG (2023), collaboration and communication between the school, instructors, parents, non-teaching personnel, and students are made possible by an online management system for smart schools. These portals have visually appealing user interfaces and provide a wealth of basic functions that are simple to use along with affordable options. An essential channel of communication for parents, teachers, and students is provided by the educational portals, which include features like a learning management system, news, notices, schedules, medical forms, and real-time notifications. Teachers, parents, and students each have their own login choices on school websites. A dependable platform that allows parents to view their children's academic information is a parent portal. Real-time access to school data and student activities, such as enrollment and registration, attendance records, fee payments, school news, communication, and parent-teacher communication, is provided via these secure systems. Additionally, the site gives parents access to the student's academic achievement, study resources, notification center, and curriculum details. Sophisticated online learning portals designed with students in mind offer assistance and direction during their whole academic journey. Students can access and manage their admissions process, assignments, schedules, online and offline class sessions, attendance, and many other possibilities with the use of school portals.

Local Literature

Studies found that there is a need for technology amalgamation in education to comply with the guidelines presented in CMO no. 4 s 2020 and cater the 21st century learners. The Web Application for Industrial Technological Education (WAITE) is an online platform for undergraduate and graduate studies. It was planned based on the needs of teachers and learners of flexible learning. The WAITE was rated excellent by the teachers and students alike based on its instruction use and by the IT professionals on its technical characteristics based on ISO 9126-1 standards. The overwhelmingly positive comments and suggestions given by the respondents show the endorsement of this scrupulous niche for the use of technology in pedagogy, specifically, for online learning management systems like the WAITE, (Pasion, 2022).

In the study of Grepon, B., Baran, N., Gumonan, K., Martinez, A., & Lacsa, M. (2019) entitled Designing and Implementing e-School Systems: An Information Systems Approach to School Management of a Community College in Northern Mindanao, Philippines cited, the use of technology to update school facilities has a significant impact on student accomplishment; therefore, the need to develop an integrated School management system based on a centralized database will improve the quality of school services.(Balcita and Palaoag, 2020). This means that one of the most important aspects of developing and implementing efficient information systems for schools is to start with the genuine needs of the school, which include classroom needs and building educators. (Breiter and Light, 2006) and student needs (Reddy and Rathna, 2020).

Mercado, C., and Genove, G., (2006) stated that, web portal technology allows educational institutions to assimilate all information and services used by their communities and present these in a seamless, self-service web environment that tenders an exclusive experience to every user.

Web Usability

According to Esmeria and Seva (2017), websites are expected to provide the users a satisfying experience at the least. Different websites may require different usability characteristics. Therefore, interface designers are required to really be supplied with the correct information on the needs of the users. Defining the perfect usability heuristics to evaluate certain websites is far from being a crowded area for research. There is that constant need to design better heuristic that can translate the way people see things. Another area that researchers may investigate is the identification and testing of the most appropriate usability measurements. Approaches such as AHP, multiple regression, and QFD are only applicable with the assumptions of independence and linearity in different usability dimensions. This cannot be generalized and must be proven true in all aspects. Some usability dimensions are notably dependent with one another. In addition, derivation of a single usability index that represents all areas of web usability is another field that needs to be explored. The use of six-sigma process and getting the weighted average may be used as baseline to derive a better measure of usability index.

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Every postsecondary institution has an information component within its online academic portal. academic data in a variety of formats, such as showing every student's profile, which comprises academic activity of students, instructors, and support personnel. When it comes to implementing web-based services, national institutions' online academic portal system is still ineffective. The researchers' goal is to create an Android-based national university academic portal system that would enable users and students to access academic portals online from any location without requiring them to open the National University website. The application trial results can accurately display all academic data with 100% precision. The PHP programming language, PostgreSQL, and Android Studio are then used in the design of this application. The waterfall research approach is used, consisting of multiple stages of research, including data collecting, literature review, application building, and system testing. Online academic portal systems based on Android are the study's output (Batu Bara et al., 2020).

According to Secreto and Pamulaklakin (2015), Information and administration, guidance and counseling, and teaching and tutoring are the primary institutional frameworks for learner support. The way the UP Open University operates within the framework of online education known as open and distance e-learning (ODeL), where the majority of its both academic and non-academic procedures are carried out online. It has created an internet The Academic Information Management System, or AIMS, is the entry point to the academic operations at the university. One element of the Online Student Portal (OSP) is the method for the pupils. OSP provides features including grade viewing, online registration, seek their documents, fee payment, and information hub. The research examined the students' contentment with the security, usability, efficiency, look, and operation of the site. A continuing undergraduate and graduate students (n=147) participated in an online survey were admitted before the portal's launch; therefore, they had already encountered both online and manual procedures. The survey was carried out in 2013 between September 26 and October 3, 2013. Approximately 85% of respondents to the study expressed a general level of satisfaction or pleased with the portal's overall experience. Ninety percent of all those involved discovered. The site is both economic and educational. Participants viewed the gateway as a generally a practical and efficient source for precise and timely information regarding their academic records, extracurricular activities, performance, and other pertinent data learning exchanges. Due to these characteristics, the site has become a crucial resource for student support. might improve the online learners' educational experience.

Conceptual Framework

AGILE development approaches prefer to create requirements and solutions through collaboration and self-organization as opposed to producing fully documented software upfront. The AGILE model is an approach to software development that emphasizes workable software above software with all its features and encourages the employment of independent, cross-functional teams (Subramaniam & Lim, 2022).

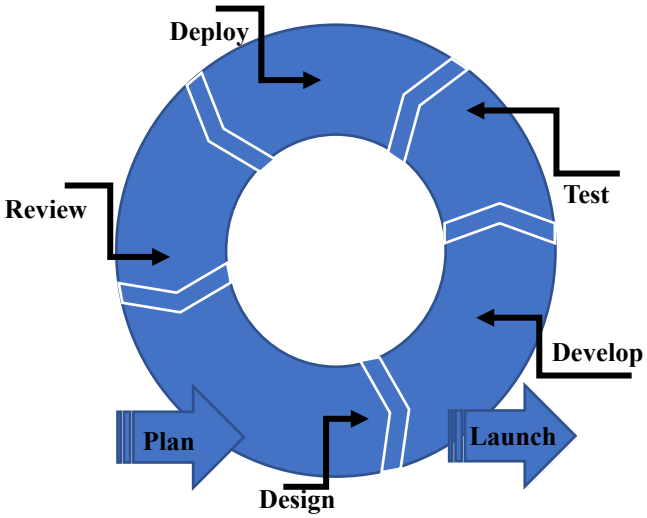


Figure 1. Paradigm of the Study

The researcher adopted AGILE Model which incorporates seven-phase process: plan, design, develop, test, deploy, review, and launch. This model helped to design the Maria Aurora National High School Online Portal to fulfill the needs of learners, teachers and especially the community. At the end of each phase, the system goes through the stages of evaluation and revision before proceeding to the next phase making it an ever living and never-ending model. The purpose of the online portal along with the target users was determined. The MANHS online portal was planned and designed using AGILE model. In the development of the portal, various aspects were considered and used the ISO 25010 Standards in terms of security, usability, reliability, portability, functional suitability, and performance efficiency. This was developed by utilizing google site and PHP language together with the validation instrument. The testing of the online portal was run through the help of the respondents. After these phases, the MANHS online portal was used and deployed to the school allowing stakeholders, parents, teachers, learners, and administrators to experience the online portal by logging in and exploring its features. The final stage was reviewing wherein all comments and suggestions of the respondents were considered along with the results of the findings for the improvement and for effective launching of the MANHS online portal. Data backup and restore are already included to avoid data loss if there is a failure of the hardware device.

Research Problem

This research focused on the development and validation of Maria Aurora National High School online portal.

Specifically, the study sought to answer the following research questions:

1. How may the MANHSOP be developed in terms of the following phases of the AGILE model:

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1.1. plan;
1.2. design;
1.3. develop;
1.4. test;
1.5. deploy;
1.6. review, and
1.7. launch?

2. How may the technical features of MANHSOP be validated by ICT experts, teachers, parents, and learners using ISO/ IEC 25010 software product quality in terms of:
2.1 security;
2.2 usability;
2.3 reliability;
2.4 portability;
2.5 functional suitability;
2.6 performance efficiency?

3. What are the implications of the developed online portal in MANHS for the school governance and curriculum and instructions?

MATERIALS AND METHODS

This chapter presents the methods and procedures used in the study. It includes the research design, locale of the study, respondents of the study, population and sampling techniques, instrumentation, data gathering procedures and statistical treatment of data.

Research Design

This study was conducted primarily to develop and validate the Maria Aurora National High School Online Portal. This research utilized developmental research design. According to Galman & Rosario, 2021, understanding and enhancing the many steps and procedures involved in producing a tool or product are the main goals of this kind of research. Developmental research is a systematic investigation that places an emphasis on the development and assessment of educational processes, products, and programs. It tries to make certain that these procedures, products, and programs satisfy the requirements for internal coherence and effectiveness. Further, this study followed the product- development wherein the product developed went on the process of planning, developing, designing, testing, deploying, reviewing, and launching.

Research Locale

The researcher conducted this study within the municipality of Maria Aurora, Aurora. The target participants were the ICT experts, teachers, learners, and parents of Maria Aurora National High School during the school year 2025 – 2026. The locality of Maria Aurora became the subject of the study due to several remote Barangays where learners came from. Thus, this brought fast, easy and accurate information dissemination of school announcements during regular classes and class suspension due to calamities without compromising both the school and stakeholders' security and privacy.

Participants

The participants of this study were categorized into four (4) groups, namely: teachers, learners, parents and ICT experts. All participants had direct connections with Maria Aurora National High School.

The researcher used a sample size calculator to determine the desired number of respondents from the population and chosen using clustered - sampling. A big population was divided by the researcher into smaller groups known as clusters under probability sampling technique called cluster random sampling. The clusters were then randomly selected to form a sample. When the population and the required sample size are exceptionally big, cluster sampling is usually used (Simkus, J. 2023).

There were one hundred forty-six (146) learners, one hundred forty-six (146) parents, sixty-three (63) teachers, and two (2) ICT experts. Similar number of parents were considered based on the total number of learners. However, based on selecting sample size for both parents and learners, a random sampling method was employed. The parents of the chosen student- participants were automatically the subject of the study. Hence, a total of three hundred fifty- seven (357) both parents, learners and teachers as well as the ICT experts had participated in this study.

Research Instruments

The instrument used is the checklist type survey questionnaire. Questions were arranged and carefully prepared to gather data based on the study. The first part of the questionnaire included their name, occupation, and educational attainment. The second part contained the assessment and validation of Maria Aurora National High School online portal in terms of security, usability, reliability, portability, functional suitability, and performance efficiency. The questionnaire was validated by the expert and pre- tested to teachers, learners and parents not included in the sample size.

Data Gathering Procedures

Upon the approval of the data gathering instrument or questionnaire, the researcher asked permission from the Dean of the Graduate School of Nueva Ecija University of Science and Technology, through his adviser, to gather initial data from the target respondents. Upon the approval of the Dean, a letter was made and sent to the school to get the list of teachers, and both parents and learners after which the participants were determined for pilot testing. When permission had been granted, the researcher proceeded to the respondents and explained to them the purpose of conducting the study and the importance of answering all the items truthfully by assuring them that the confidentiality of all information obtained will be adhered. Likewise, the grades of the learners will not be affected in the conduct of the study. Hence, the researcher administered questionnaires to the target participants and immediately clarified matters pertaining to it, while ample time was given to them to complete the surveys and to ensure accurate responses.

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Ethical Concerns

This study was conducted in conformity with Republic Act No. 10173, otherwise known as Data Privacy Act of 2012, an act protecting individual personal information in information and communication systems in the government and private sector. In conformity with the Act, the researcher has secured informed consent from all participants of the study prior to their participation. The researcher has also ensured the anonymity of the respondents. Confidentiality of information was upheld and gathered data were used only for research purposes. Hence, materials used in this study were properly cited following the APA referencing system.

RESULTS

In this section, the researcher presents the analysis and interpretation of data about the development and validation of Maria Aurora National High School Online Portal (MANHSOP).

Development of the Maria Aurora National High School Online Portal (MANHSOP) based on the AGILE model.

This phase comprised the seven stages of AGILE model: Plan, Design, Develop, Test, Deploy, Review, and Launch.

Plan

In this phase of development, the researcher gathered needed data to create and formulate concepts for the Maria Aurora National High School Online Portal in a way that could be acceptable to the community and experts.

The researcher came up with ideas and plans by himself considering the needs of the community and learners. According to (Harappa, 2022) planning is a basic component of project management. It is the process of creating a roadmap to decide which actions need to be taken to achieve a specific goal. Planning is fact-based and it increases our chances of success. The target user and the purpose of the online portal is to educate and keep the community updated, cost, and effective promotion and marketing, improve communication with clientele, keep the edge of competitors, and increase learner's confidence including the parents and teacher as a whole.

To create a successful plan, one must apply logical reasoning to factually analyze the steps that need to be taken. One must also account for any unforeseen situations. One's ability to make good plans increases with practice. Those who are in the habit of making plans are aware of previously experienced circumstances that are likely to be encountered during the execution of the plan.

Design

The design phase focused on the simple and unique design of the online portal that suitable for all users. The researcher utilized google site as the main page of the online portal and other web pages done through coding using PHP language to execute columns and tables of the online portals.

Design is the practice of conceiving and planning what doesn't exist. This is a broad term that can be applied to creating structures, environments, interfaces, products, services, features and process.



Figure 4. Designing of MANHSOP

Development

In this phase, several things were considered according to the aspired design and purposes. It also included the process of how the online portal may be accessed and used by the user as well as the testing of the system.

Utilizing Google Site

In this part, the researcher utilized the google site to develop the home page of the online portal, created different tabs and imported login page used to monitor the users for security purposes. Utilizing Google Sites to its fullest extent is essential to building a user-friendly and engaging platform. To achieve this, a simple, user-friendly layout must be created, along with mobile optimization and seamless connection with other Google Workspace capabilities.

Accessibility and user experience were improved by incorporating functions like a central dashboard for students, teachers, and administrators as well as secure login methods.

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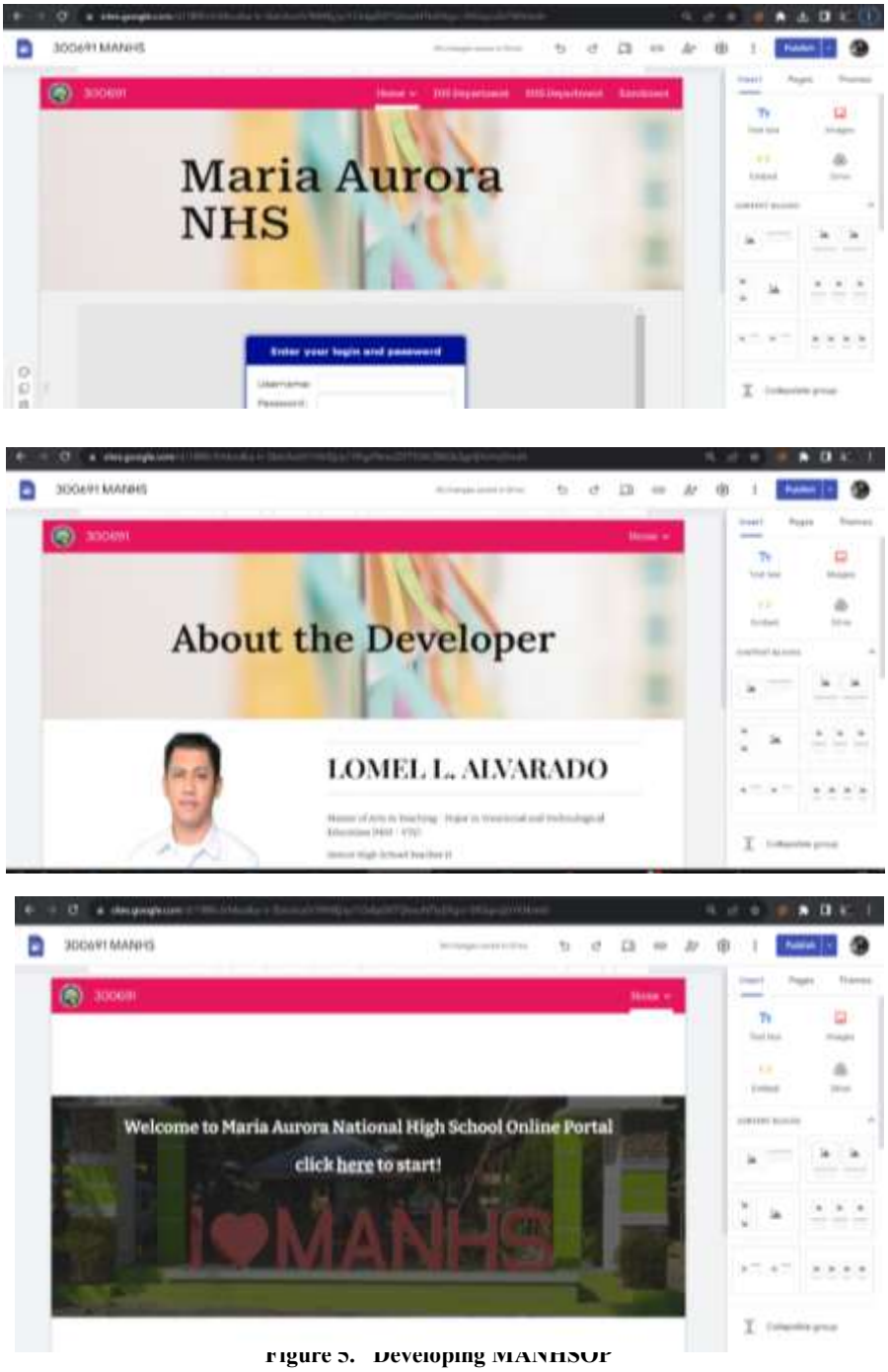


Figure 5. Developing MANHSOP

Testing

Testing is the practice of making objective judgments regarding the extent to which the system meets, exceeds, or fails to meet stated objectives. Testing is a process of measuring the properties or performance of products. Product testing is any process through which a researcher measured a product's performance, safety, quality, and compliance with established standards. (Ipsos Encyclopedia, 2016).

Web testing is designed to check all aspects of the web application's functionality, including looking for bugs with usability, compatibility, security, and general performance. (Katalon.com)

The generated online portal was tested by ICT experts, teachers, learners, and parents throughout this crucial stage of web development so that any potential faults could be fixed right away. Testing is used to gauge and examine the effectiveness, dependability, or quality of an online portal, particularly before to implementing it widely or in practice. The online portal underwent tests, and for each trial that was put into action, several issues were found and fixed.

Deployment

Deployment in software and web development means pushing changes or updates from one deployment environment to another. When setting up a website you will always have your live website, which is called the live environment or production environment. While deployment

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models can vary, the most common is the classic “left to right” deployment model when working with multiple deployment environments. In this model, changes are made in local, development, or staging environments (depending on the setup) and pushed from left to right through the different environments ending up in the live environment. Once this deployment process has been completed the new changes will be visible in the live environment. A deployment plan should include rules for when to deploy from local environments to development or staging sites as well as schedules for when new changes can go to a live environment. By having a set plan you reduce the risk of conflicts between different changes and make sure the deployment process is as smooth and easy as possible. (Umbraco.com)

During the pilot testing, the researcher explained the goal of the online portal and showed to the ICT experts, teachers, learners, and parents how to access and utilize the Maria Aurora National High School Online Portal (MANHSOP). The operation of each indication was also clearly discussed. The researcher also demonstrated how to access three users with various roles and objectives (guests, employees, and administrator). The panelist then answered the researcher's question right away.

Review

In this phase, the researcher analyzes and interprets the replies provided by the respondents on the validation tool during the deployment phases. A physical copy of instrument and a Google Form were the two types of evaluation instruments employed in the study. The hard copy of instrument was utilized by the respondents who wanted to react to the questions as soon as possible after reading and accessing the MANHSOP. However, some of the respondents like teachers and learners preferred to use the tool using a Google form rather than the actual tool because of their availability and due to their teaching load.

Launching

To finally validate the security, usability, reliability, portability, functional suitability, and performance efficiency of Maria Aurora National High School Online Portal (MANHSOP), the researcher conducted final testing or launching of the online portal. The researcher asked the respondents to validate the Maria Aurora National High School Online Portal. This was done by administering questionnaires to the respondents and a follow-up for improving the online portal according to their inputs.

Hence, the following figures showed how the researcher launched Maria Aurora National High School Online Portal (MANHSOP). Respondents are as follows: ICT experts, teachers, parents, and learners.



Figure 06. The Maria Aurora National High School Online Portal (MANHSOP) as demonstrated by the researcher to the ICT experts



Figure 07. The Maria Aurora National High School Online Portal (MANHSOP) as demonstrated by the researcher to the teachers



Figure 08. The Maria Aurora National High School Online Portal (MANHSOP) as demonstrated by the researcher to the parents

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Figure 09. The Maria Aurora National High School Online Portal (MANHSOP) as demonstrated by the researcher to the learners.

Validation of Maria Aurora National High School Online Portal (MANHSOP) in terms of the following:

The validation of the Maria Aurora National High School Online Portal (MANHSOP) consisted of software product quality in terms of its security, usability, reliability, portability, functional suitability and performance efficiency. The MANHSOP was validated by the ICT experts, teachers, parents, and learners of Maria Aurora National High School.

Security

Security refers to the technical characteristics of the MANHSOP to be safe in terms of technical faults and consistently. This feature was described in the research instrument focusing on the security of the online portal.

Table 1. Validation on Security of the MANHSOP by the Respondents

Descriptors of Security	IE	VI	T	VI	P	VI	L	VI	AWM	VI
1. Individual user accounts are in place for systems containing confidential data.	4.00	HS	3.73	HS	3.83	HS	3.87	HS	3.86	HS
2. MANHSOP has straight-through processing where users can log in to a single	3.50	HS	3.81	HS	3.79	HS	3.83	HS	3.73	HS

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account and access all the system pages.										
3. MANHSOP is capable of clearly monitoring all users who access the system.	3.50	HS	3.76	HS	3.76	HS	3.85	HS	3.72	HS
AWM	3.67	HS	3.77	HS	3.79	HS	3.85	HS		
Overall Weighted Mean									3.77	HS

Legend: AWM – Average Weighted Mean, VI-Verbal Interpretation, IE- ICT Experts,
T – Teachers, P – Parents, and L – Learners

Usability

Usability refers to the technical description of the MANHSOP utilized by specified end-users to achieve specified goals. This feature was described in the research instrument focusing on the usability of the online portal.

Table 2. Validation on Usability of the MANHSOP by the Respondents

Descriptors of Usability	IE	VI	T	VI	P	VI	L	VI	AWM	VI
1.The MANHSOP is user friendly.	4.00	HU	3.67	HU	3.75	HU	3.86	HU	3.82	HU
2. The MANHSOP is pleasing and aesthetically satisfying.	3.50	HU	3.62	HU	3.66	HU	3.73	HU	3.63	HU
3. The MANHSOP is easy to learn by specified users and it meets their satisfaction.	4.00	HU	3.67	HU	3.67	HU	3.77	HU	3.79	HU
4. The MANHSOP is easy to use.	4.00	HU	3.70	HU	3.78	HU	3.79	HU	3.82	HU
AWM	3.88	HU	3.66	HU	3.72	HU	3.79	HU		HU
Overall Weighted Mean									3.79	HU

Legend: AWM – Average Weighted Mean, VI-Verbal Interpretation, IE- ICT Experts,
T – Teachers, P – Parents, and L – Learners

Reliability

Reliability refers to the technical characteristics of MANHSOP to be safe in terms of technical faults and consistently operable if fixed. This description was described in the research instrument focusing on the reliability of the online portal.

Table 3. Validation on Reliability of the MANHSOP by the Respondents

Descriptors of Reliability	IE	VI	T	VI	P	VI	L	VI	AWM	VI
1.The MANHSOP consistently run into its desired purpose.	3.50	HR	3.62	HR	3.62	HR	3.75	HR	3.62	HR
2. The MANHSOP operates as intended despite the presence of technical faults.	3.50	HR	3.75	HR	3.60	HR	3.70	HR	3.64	HR

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3. The MANHSOP is operational and accessible when required for use.	3.50	HR	3.68	HR	3.58	HR	3.70	HR	3.62	HR
4. The MANHSOP needs consistency under normal operation.	4.00	HR	3.68	HR	3.61	HR	3.75	HR	3.76	HR
AWM	3.63	HR	3.68	HR	3.60	HR	3.72	HR		
Overall Weighted Mean									3.66	HR

Legend: AWM – Average Weighted Mean, VI-Verbal Interpretation, IE- ICT Experts,
T – Teachers, P – Parents, and L – Learners

Portability

Portability refers to the technical characteristics of the MANHSOP to be compatible and easy to access. This feature was described in the research instrument focusing on the portability of the online portal.

Table 4. Validation on Portability of the MANHSOP by the Respondents

Descriptors of Portability	IE	VI	T	VI	P	VI	L	VI	AWM	VI
1.The MANHSOP can be accessed easily.	3.50	HP	3.71	HP	3.68	HP	3.80	HP	3.68	HP
2. The MANHSOP can be used by other devices effortlessly.	4.00	HP	3.62	HP	3.62	HP	3.70	HP	3.74	HP
3. The MANHSOP can be accessed at all times.	3.50	HP	3.73	HP	3.73	HP	3.73	HP	3.67	HP
4. The MANHSOP was compatible in other devices like mobile phones, laptop, tablets, etc.	4.00	HP	3.71	HP	3.66	HP	3.77	HP	3.77	HP
AWM	3.75	HP	3.69	HP	3.67	HP	3.75	HP		
Overall Weighted Mean									3.72	HP

Legend: AWM – Average Weighted Mean, VI-Verbal Interpretation, IE- ICT Experts,
T – Teachers, P – Parents, and L – Learners

Functional Suitability

Functional Suitability refers to the technical description of the MANHSOP to perform its intended functions and purpose.

Table 5. Validation on Functional Suitability of MANHSOP by the Respondents

Descriptors of Functionality	IE	VI	T	VI	P	VI	L	VI	AWM	VI
1.The MANHSOP features are very-organized with specific functions appropriate for the portal.	3.50	HF	3.73	HF	3.69	HF	3.87	HF	3.70	HF
2. The log in/ sign up page of MANHSOP is easy to access.	3.50	HF	3.62	HF	3.60	HF	3.79	HF	3.61	HF
3. The MANHSOP facilitates the accomplishment of	3.50	HF	3.73	HF	3.77	HF	3.77	HF	3.69	HF

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specified tasks and objectives.										
4. The different tabs are easy to access and cover all the specified tasks and user objectives.	3.50	HF	3.84	HF	3.75	HF	3.69	HF	3.70	HF
5.MANHSOP provides timely and relevant information for the user.	3.00	HF	3.49	HF	3.68	HF	3.82	HF	3.49	HF
AWM	3.40	HF	3.68	HF	3.70	HF	3.79	HF		
Overall Weighted Mean									3.64	HF

Legend: AWM – Average Weighted Mean, VI-Verbal Interpretation, IE- ICT Experts,
T – Teachers, P – Parents, and L – Learners

Performance Efficiency

Performance Efficiency refers to the technical characteristic of the MANHSOP to execute its functions effectively and efficiently. According to Affordable Usability website, efficiency is a measure of how well a website does what it should do. Assuming that the utility and effectiveness goal are fulfilled, efficiency is the next usability goal to take into consideration. This description was presented in the research instrument focusing on the efficiency of the developed online portal.

Table 6. Validation on Performance Efficiency of the MANHSOP by the Respondents

Descriptors of Efficiency	IE	VI	T	VI	P	VI	L	VI	AWM	VI
1. The MANHSOP quickly responds to its processing time when performing its purposes.	3.50	HE	3.65	HE	3.64	E	3.70	HE	3.46	HE
2. The MANHSOP meets the amount and types of resources when performing its functions.	3.50	HE	3.63	HE	3.55	HE	3.71	HE	3.60	HE
3. The MANHSOP meets the maximum requirements of effective online portal.	3.50	HE	3.70	HE	3.56	HE	3.73	HE	3.62	HE
AWM	3.50	HE	3.66	HE	3.58	HE	3.71	HE		
Overall Weighted Mean									3.61	HE

Legend: AWM – Average Weighted Mean, VI-Verbal Interpretation, IE- ICT Experts,
T – Teachers, P – Parents, and L – Learners

Table 7. Summary of Validation on the Technical Characteristics of the Maria Aurora National High School by the Respondents

Technical Characteristics	Overall Weighted Mean	Verbal Interpretation
1. Security	3.77	Highly Secured
2. Usability	3.79	Highly Usable
3. Reliability	3.66	Highly Reliable
4. Portability	3.72	Highly Portable
5. Functional Suitability	3.64	Highly Functional
6. Performance Efficiency	3.61	Highly Efficient
Overall Weighted Mean	3.70	

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DISCUSSION

Validation of Maria Aurora National High School Online Portal (MANHSOP) in terms of the following:

Security

As shown in Table 1, data revealed that the security feature of the Maria Aurora National High School Online Portal gained an average weighted mean of 3.77 or Highly Secured. ICT experts, teachers, parents and learners provided a Highly Secured rating with an AWM of 3.67, 3.77, 3.79 and 3.85, respectively.

The respondents gave the newly developed online portal their highest grade of 3.85, indicating that it is continuously highly secured, operable, and secure when used as required.

The verbal description of Highly Secured is consistent with the total weighted mean of 3.77. According to statistical evidence, the Maria Aurora National High School Online Portal complied with the consistency requirements of ISO 25010.

These results denoted that the newly developed Maria Aurora National High School Online Portal follows the requirements for consistency under normal operation. It is user accounts are in place for systems containing confidential data; has straight-through processing where users can log in to a single account and access all the system pages; and is capable of clearly monitoring all users who access the system.

IT security is a set of cybersecurity strategies that prevents unauthorized access to organizational assets such as computers, networks, and data. It maintains the integrity and confidentiality of sensitive information, blocking the access of sophisticated hackers. (cisco.com)

Additionally, to safeguard private data and guarantee a secure environment for staff and students, school websites must be secure. Therefore, it's crucial to put mechanisms in place such user authentication, encryption methods, and firewalls to protect the privacy and confidentiality of data kept on the portal. (Stoilova et al., 2020)

Usability

As shown in Table 2, the usability of Maria Aurora National High School Online Portal gained an average weighted mean of 3.79 which was verbally described as Highly Usable. Likewise, ICT experts, teachers, parents and learners provided a rating of Highly Usable with an AWM of 3.88, 3.66, 3.72 and 3.79 respectively.

The respondents' highest AWM of 3.88 implied that the developed online portal is operational and accessible when required for use and consistently reliable its desired result while the lowest rating of 3.66 or Highly Usable denoted that the presence of technical faults is expected.

The findings of this study are supported by Munk et al, 2020, wherein effectiveness and user satisfaction of an online portal are significantly influenced by its usability. Users could have trouble locating the information they need or finishing tasks effectively without a user-friendly interface and simple navigation. Prioritizing usability during portal design is essential for web developers to prevent losing users' attention or infuriating them and to ensure the establishment of a user-friendly, highly functioning, and effective online environment. The ease of access offered to end users is a crucial component of usability, since a poorly designed portal may result in the loss of potential clients or users.

Even if a portal has good functionality, poor usability might cause people to lose interest and quit. This emphasizes the value of a user-friendly interface and simple navigation in online design. Usability also becomes much more crucial in the context of secondary school web portals. A user-friendly design is crucial for students, teachers, and parents who are using the portal to obtain crucial educational tools and information. It guarantees that consumers can quickly discover what they need, finish jobs quickly, and have a satisfying experience all around.

Reliability

As shown in Table 3, the respondents rated the reliability of the Maria Aurora National High School Online Portal with an overall average weighted mean of 3.66 which was verbally described as Highly Reliable. Likewise, ICT experts, teachers, parents and learners provided a rating of Highly reliable with an AWM of 3.63, 3.68, 3.60, and 3.72 respectively.

As a result, the students gave the newly developed online portal their highest rating of 3.72, indicating that it is Highly Reliable when needed for use and consistently reliable in producing the desired result; on the other hand, they gave the Maria Aurora National High School online portal their lowest rating of 3.60, indicating that it operates as intended despite the presence of technical faults, which was still interpreted as Highly Reliable.

The verbal description of Highly Reliable is consistent with the total weighted mean of 3.66. This statistical evidence showed that the Maria Aurora National High School Online Portal complied with the reliability requirements of ISO 25010.

Further results showed that, when used normally, the newly developed online portal complies with the requirements for consistency. Although there may be technical issues, it continuously serves the intended purpose and functions as projected. It is also accessible and operable when needed for use.

Based on the study conducted by Munk et al., 2010, another crucial factor to consider is the reliability of the school's web portal. Students, teachers, and administrators will always have uninterrupted access to information and resources through a reliable school portal. Implementing a portable internet portal for schools can also improve individualized instruction because it provides constant access to learning materials regardless of location or device. Consistent website uptime, quick page loads, and secure data transmission should all be considered when assessing an online portal's reliability. To ensure peak performance and reduce downtime, the infrastructure of the web portal should also undergo routine maintenance and updates. An online portal's mobility is essential to assuring its reliability.

Portability

As shown in Table 4, the portability of the MANHSOP gained an average weighted mean of 3.72 which was verbally described as Highly Portable. Similarly, The ICT experts, the teachers, parents and learners provided a Highly Portable rating with an AWM of 3.75, 3.69, 3.67 and 3.75 respectively.

The overall weighted mean of the respondents is 3.72 which was verbally described as Highly Portable. This statistically shows that the portability of the researcher's developed Maria Aurora National High School online portal met the ISO 25010 quality standards for portability.

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Finding revealed that the newly developed Maria Aurora National High School online portal is highly portable. According to Alexander Gillis, (2023) software portability is important for applications, as the ability to work on other desktop and mobile platforms increases user flexibility and the application's potential user base. Building software with portability in mind can save developers time and overhead when moving new software across an environment.

Additionally, McBrayer et al., 2023 reiterated that portal's importance has grown due to its adaptability and user-friendliness. A portable web portal for schools enables students, instructors, and administrators to access crucial information and resources from any location at any time, which is made possible by the expanding usage of technology and devices like laptops, tablets, and smartphones. This makes it possible for instruction and communication to continue without interruption for students whether they are on campus, at home, or even traveling.

Functional Suitability

As shown in Table 5, teachers, parents, ICT experts and learners responded with an average weighted mean of 3.68, 3.70, 3.40, and 3.79 respectively with a verbal interpretation of Highly Functional. The respondents' highest rating of 3.79 indicates that MANHSOP features are extremely organized and have functions that are appropriate for the portal, while their lowest rating of 3.40, or Highly Functional, indicates that MANHSOP still offers users timely and pertinent information.

The verbal description of Highly Functional was consistent with the total weighted mean of 3.64. This statistical inference suggested that the researcher's online portal's functioning complied with the ISO 2510 quality requirements for its intended use.

The findings of the study implied that the recently created online portal for Maria Aurora National High School was very functional and had characteristics that were appropriate for the portal. The MANHSOP log-in/sign-up page is simple to find. As a result, MANHSOP makes it easier to complete stated activities and user objectives; tabs are accessible and cover all of the specified duties and user objectives; and MANHSOP gives the user timely and appropriate information.

The abovementioned findings were supported by McBrayer et al., 2023, where functionality of the school's online portal enables students to access resources and catered to their needs, resulting in individualized learning experiences. A portable web gateway for schools also makes it easier to incorporate technology into the classroom. Putting in place a mobile web gateway for schools can also improve individualized instruction.

Performance Efficiency

As reflected in Table 6, the respondents' validation on the efficiency of the Maria Aurora National High School Online Portal revealed that the overall average weighted mean is 3.61, or Highly Efficient. Likewise, teachers rated it with an AWM of 3.66 or Very Efficient while the ICT experts, parents and learners rated it Highly Efficient with an AWM of 3.50, 3.58 and 3.71 respectively.

The weighted average of all the respondents is 3.61, which was characterized as Highly Efficient verbally. This statistical inference suggested that the MANHOP's effectiveness complies with ISO 25010 quality criteria.

Additional findings suggested that the recently created web portal for Maria Aurora National High School responds and processes in a timely manner and at a high throughput rate when serving its functions. Additionally, the online portal used the right kind and amount of resources to carry out its tasks. The online platform met all requirements and carried out its tasks properly and efficiently.

Another significant benefit of putting such a system in place is the effectiveness of the school's web portal. Online portals for education can simplify information access and dissemination by giving students, teachers, and administrators a centralized location to simply explore and discover the materials they require. This enables quick changes and communication, ensuring that everyone is on the same page, in addition to saving time and reducing the administrative workload. A portable internet portal for schools also improves student and teacher collaboration and communication. Implementing a mobile web portal for classrooms can also improve individualized instruction. Online school portals provide a consolidated platform that makes it possible for administrators, instructors, and students to communicate quickly and effectively (Olaniran & Maphalala, 2020).

Summary of Validation on the Technical Characteristics of the Maria Aurora National High School by the Respondents

As shown in Table 7, the overall technical characteristics of the MANHSOP gained a weighted mean of 3.70. Security, usability, reliability, portability, functional suitability, and performance efficiency as essential features of the online portal equally got the highest scale with an AWM of 3.77, 3.79, 3.66, 3.72, 3.64, and 3.61 respectively.

These findings also suggested that there is no question about the web security, usability, reliability, portability, functional suitability, and performance efficiency for ICT experts, teachers, parents, and students. Therefore, the MANHS web portal is extremely important for the welfare of the entire population.

The implication of the Maria Aurora National High School Online Portal to school governance and curriculum and instructions.

The newly developed MANHS online portal contains data and information such as learning resources, announcements, events and activities of the school. All features of the online portal adhere to ISO 25010 standard which addresses security, usability, reliability, portability, functional suitability, and performance efficiency. These aspects of MANHS online portal effectively suit to the needs of the schools in terms of curriculum implementation and governance operations. Withs regard to the consistent results of the findings, all facets of the MANHS online portal exhibited high results implying that there is a greater efficiency when this portal is used in the school. In lieu of the curriculum implementation, MANHS online portal provides substantial platform for a centralized storage of data where learning resources and other materials along with announcements and events pertaining to the teaching and learning process are properly considered and addressed. Hence, MANHS online portal plays significant role in school governance. The usability, reliability, and performance efficiency of the online portal are rooted in the ultimate mission and goal of the school in fostering collaboration in implementing school activities and programs. Its portability and functional suitability link to address problems of the community in terms of connectivity. Thus, proven effective that the MANHS online portal plays a vital role in fast, safe, and reliable information dissemination for the entire community and for effective learning to happen even amid varied learning delivery modalities.

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Additionally, by incorporating blockchain components into the portal, resources may be used more efficiently to exchange and process educational data, which is crucial in the context of a continuous education system (Kozhasheva et al., 2022).

CONCLUSION

The development and validation of the Maria Aurora National High School Online Portal highly met the approval of ICT experts, teachers, parents, and learners as evidenced in the results of their validation. The findings of the validation of the Maria Aurora National High School Online Portal were highly functional, highly efficient, highly reliable, highly secured, highly usable, and highly portable. The findings on school governance and curriculum and instructions of the Maria Aurora National High School Online Portal were timely, clearly provided the necessary information for the community and met the satisfaction of the ICT experts, teachers, parents, and learners as evidence of the result of their validation. Having been validated with a positive result, the Maria Aurora National High School Online Portal may provide convenient support for the learners, educate, and keep the community updated, cost and effective promotion and marketing, improve communication with clientele, keep the edge of competitors. Maria Aurora National High School Online Portal have no own domain name.

Recommendation

MANHS may have enough money set aside for the web portal's development to purchase a domain name that will be active for at least two years (renewable). In order to better serve the student body and the community at large, MANHS may encourage its faculty and staff to utilize the MANHS web portal on a regular basis and to stay updated about reliable information sources.

MANHS may create and implement an in-service training program that highlights the use of the Maria Aurora National High School Online Portal (MANHSOP). Features like an alumni compilation, a customer feedback form, and the MANHS Faculty and Staff Directory may be added by future researchers. The MANHS Online Portal needs to have its own domain name in accordance with the experts' suggestions.

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