Use of Websites in School Management: An Effort to Build School Readiness in the Era of 4.0

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Abstract

This article provides an overview of several aspects related to websites, which include: first, understanding the website; second, the criteria for a good and quality website; third; the benefits of the website for educational institutions; fourth, a web-based school information system; fifth, school web development in learning activities; and sixth, the basic principles of school web management. This study was conducted using the library method, where the author collects various materials such as books and scientific articles, which are further elaborated to obtain a broader and deeper understanding of the use of websites in school management. The results of the study show that: first, it is a very complex device because it combines various domains through the internet network, resulting in complex data in the form of text, images, video, audio, and animation. Second, a good school website must meet the following criteria: easy, navigation structure, graphic design, content, compatible, fast, functional, accessible to everyone, and interactive. Third, the school website is an important tool in school management, not only internally but also externally. Fourth, the impact of IT advances has reached various areas of life, so schools should have web-based information systems. Fifth, the school web must be developed in the school's main business domain, namely education and learning. Sixth, to ensure the occurrence of web-based school management, the basic principles of school web management must be carried out properly.

Keywords: School Management, ICT, Website, Quality
Penggunaan Website dalam Pengelolaan Sekolah: Suatu Upaya Membangun Kesiapan Sekolah di Era 4.0

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Abstrak


Kata Kunci: Manajemen Sekolah, TIK, Website, Kualitas
Introduction

Advances in information technology have spurred changes in various aspects of life, both personal and communal. Personally, the influence is on lifestyle, not only in gaining access to information technology products, but also following the messages that accompany these technology products (Ngafifi, 2014). Communally, the influence of advances in information technology affects perspectives or methods in maintaining community continuity. In short, whether personal or group, the influence of information and communication technology cannot be avoided.

The achievements in information technology have been used by various agencies to improve the quality of their institutional management. One of the institutions that is "going with the flow" of the use of information technology is an educational institution. In educational institutions that are managed by the state, the use of information and communication technology is very massive (Wardiana, 2002). For example, schools under the Ministry of Education and Culture, the use of information technology are coordinated directly by the Ministry of Education and Culture. So that schools are "forced" to implement IT-based school management.

Through presidential decree (Keppres) No.1 of 2014, the National Information and Communication Technology Council (Detiknas) was formed which carries out the vision of accelerating the growth of information and communication technology in Indonesia efficiently by making national ICT policies through synchronization of ICT programs across ministries and institutions. Detiknas is tasked with ensuring that all processes of each component of the ICT blueprint run effectively, through the e-leadership method which has the authority to make cross-departmental decisions. In addition, professional support is needed to formulate policies and communicate it to all stakeholders.

Based on Presidential Decree No. 20 of 2006, DeTIKNas on duty:

a. Formulating general policies and strategic directions for national development through the utilization of information and communication technology;

b. Conduct studies in determining steps to resolve strategic problems that arise in the context of developing information and communication technology;
c. Conduct national coordination including with Central / Regional Government agencies, State-Owned Enterprises / Owned / Regional Enterprises, Business World, Professional Institutions, and the information and communication technology community, as well as society in general;
d. Provide approval for the implementation of cross-departmental information and communication technology programs to make it effective and efficient (RI, 2006).

Furthermore, in Presidential Decree No. 1 of 2014 Detiknas duties are as follows:
a. Formulating general policies and strategic directions for national development, through the development of information and communication technology including infrastructure, applications and content;
b. Conduct studies, evaluations, and input in determining steps to resolve strategic problems that arise in the context of developing information and communication technology;
c. Conducting national coordination with Central / Regional Government agencies, State Owned Enterprises / Regional Owned Enterprises, Business World, Professional Institutions, and society in general in the framework of developing information and communication technology and empowering the community; and
d. Provide approval for the implementation of cross-ministerial information and communication technology development programs to make it effective and efficient (Indonesia, 2014).

As a response to the formation of the National Information and Communication Technology Council, various ministries and institutions in formulating strategic planning always place ICT in an important position. One of them can be seen in the 2015-2019 Ministry of Education and Culture's Strategic Plan which places ICT as an important part of efforts to improve the quality and equity of education programs, especially the 9-year basic education program. No less important is the strengthening of good institutional governance (Kebudayaan, 2015). This is based on the national education development policy which includes: expansion and equitable access to quality education; improving the quality, relevance and competitiveness of education; and strengthening governance and accountability and public image (Indonesia, 2003). It is in this context that the ICT policy for National Education was formulated, covering:
Utilization of ICT for equitable distribution and expansion of access, and utilization of ICT to improve the quality of relevance and competitiveness. Utilization of ICT to strengthen governance, accountability, and public image.

Large benefits are the hope of the education ministry's policy which requires the use of information technology in schools. However, school readiness is needed, especially human resources managing IT-based educational facilities. This paper attempts to describe a web-based school information system by exploring the following aspects:

1. Website and website quality criteria
2. Benefits of websites for educational institutions
3. Web-based school information system
4. School web development in learning activities
5. The basic principles of school web management

Get To Know The Website

"Website or shortened to web, can be defined as a set of pages consisting of several pages containing information in the form of digital data in the form of text, images, video, audio, and other animations provided via the internet. More specifically, websites are pages that contain information displayed by browsers such as Mozilla Firefox, Google Chrome or others (Abdulloh, 2015). While nesabamedia.com provides an explanation of the website as follows:


The development of the website is in line with the development of internet technology, making it possible to develop it for various purposes as in the following review:

A website is usually publicly accessible. Most websites can be accessed via public internet protocol (IP) in an internet network. However, it does not rule out that the website is accessed offline via a LAN network. Websites can be in the
form of personal, commercial, governmental and other websites that are made for the benefit of profit or non-profit which are published in general. In addition, websites can also be created for special purposes such as entertainment, education, and also social interests (Nesabamedia, 2018).

From its basic form, the website is divided into two, namely static websites and dynamic websites. Static website pages will not experience changes in content (website content) or layout when a data request occurs to the web server. Pages will only change if the manager makes changes to website content manually. Changes are usually made using the help of a text editor or website design program such as Adobe Dreamweaver. Any information displayed on a static website is arranged in a markup language such as HTML. For that, if the slightest change is needed, it can only be done by a web designer or web programmer. Static website pages are much simpler, tend to be more secure from hacker attacks, are less prone to technical errors, and are easier to read by search engines like Google. The advantages of static websites are fast to develop, efficient to develop, and efficient when stored on web hosting. While the shortcomings of a static website are that it requires special experts to make changes, the site becomes less useful for visitors, the website content is outdated (Progresstech, 2018).

Dynamic web is a web whose content or content can change at any time. Because in dynamic web creation technology has been designed as easy as possible for users or users who use the web. The content contained on the dynamic web is also stored in a database, so even people who cannot code can change the content without having to master a web programming language which is commonly called coding. Changing content or documents in a dynamic web is arguably easier than a static web that requires special expertise in the scripting section of the web. A dynamic website is generally created using a specific Compact Management System (CMS) with data storage in a database (such as MySQL) and usually this web is also composed of programming languages such as HTML, CSS, PHP, JavaScript and associated with MySQL databases. The characteristics of a dynamic web, among others:
1. Using a web programming language such as PHP, HTML and others.
2. Has a database.
3. The content in it can come from visitors and it can also be from a database.

The advantages of a dynamic website include: 1) The content and layout can change or change; 2) Using dynamic html (DHTML); Using server programming to manage data changes; 3) Can use a CMS to change the content or content of the website; 4) Web content and page layout are made separately, so that loading on the page is faster; 5) Can use the database to store content or contents; 6) Can facilitate 2-way communication between admin and visitors (web visitors); 7) The newest content is always in the top or first order because it is to clarify the updated content. While its disadvantages are very complex, making it difficult to search for Search Engines (Pertiwi & Dewi, 2016).

Criteria For a Good and Quality Website

Suyanto in Pertiwi (Pertiwi & Dewi, 2016), mention some of the criteria for a good website, as follows:

1. Usability, is the user's experience in interacting with an application or website so that the user can operate it easily and quickly. To achieve the ideal usability level, a site must meet the following five conditions:
   a. Easy to learn. By putting the most important content at the top of the page so that visitors can find it quickly.
   b. Efficient in use. By providing only the necessary links so that visitors can reach the required information quickly and easily.
   c. Easy to remember. By not making many noticeable changes to the site, especially in navigation.
   d. Low error rate. By avoiding links that don't work (broken links) or the page is still under construction.
   e. User satisfaction. This must be considered because it relates to the continuity of the website. Therefore a website should be easy to use by users. In the sense that users must be able to find what they are looking for, download it quickly, know when they are finished, and be able to easily notify the website or content they find to other users, this is a promotion for that site.
2. Navigation System (structure). Navigation structure is a sequence of information flow from a multimedia application. By using a proper navigation structure, a multimedia application has a clear
direction and direction of information. The navigation aspect relates to the way or mechanism of movement from one site to another (menu system) in a website system. The ease of navigation on the website is related to the appearance of the website. Navigation helps users find their easy way around the website in order to quickly find what they need. Navigation can be displayed in various media such as text, images or animation. Requirements for good navigation: Easy to learn, consistent, allows feedback, appears in context, provides other alternatives, requires time and action calculations, provides clear visual messages, uses clear and easy-to-understand labels, supports user goals and behavior.

3. Graphic Design, a good design should at least have a good and consistent color composition, consistent graphic layout, easy-to-read text, use of graphics that strengthen text content, use animation in the right place, animated content that strengthens text content, and overall form a harmonious pattern.

4. Contents, message or content is the main thing of a site, because it must be interesting, relevant, and appropriate for the target audience of the intended site. The writing style used must also match the target website users. The website should have an archive of old data content. For the objectivity and accuracy of the information contained in the content, it is better if the content is the result of compiled data and strengthened by the opinion of the authorities so that the information displayed can be trusted and relevant.

5. Compatibility, meaning the website must be able to be opened in various types of browsers. Making it easier for users to perform a search on any browser.

6. Loading Time, the loading process must be fast even though the content and website design is attractive, sometimes it doesn't get enough attention from internet visitors. This does not happen when the site loads fast, including opening images. A website that appears quickly is likely to be revisited with an attractive content and appearance.

7. Functionality, the website can perform its function properly. This means that the website can perform its functions according to the desired purpose when creating a website.

8. Accessibility, website pages must be used by everyone, regardless of age and physical condition. Infrastructure barriers must also be
considered, such as slow internet access, computer specifications, browser usage, and so on, which can affect a person's access, including various new technologies such as mobile phones based on Android or IOS. The website must also be accessible through this technology.

9. Interactivity, interactivity is things that involve website users as a user experience with the website itself. The basis of interactivity is hyperlinks (links) and feedback mechanisms. Hyperlinks are used to take visitors to news sources, further topics, related topics, or others. The advantage of this feedback mechanism is that users can notify the manager if there are errors on the website, dead links, or other errors. Users can also provide criticism / suggestions for the progress of the website.

The criteria above show the complexity of a website that must be developed at a school. However, creations can be made in order to cover weaknesses on the school website. This is of course very much determined by the quality of the school website manager.

Benefits of the Website for Educational Institutions

According to Amalia (Amalia, 2018), The existence of school websites is now increasingly needed along with the advancement of internet technology which is easily accessible by all people. The many benefits of the school website that can be taken, not a few government and private schools have used the facilities of this school website. The school website basically aims to:

1. Support the Ministry of Education's program in optimizing the Internet in the school environment.
2. Improve the quality of school managers, teachers, students and other school equipment.
3. Reducing the negative effects of internet use by expanding the education modules.
4. Popularize the internet.

With the existence of internet connectivity in schools and the formation of the school website, some of the benefits that can be obtained include:

1. As a school promotion medium (increasing school prestige) which emphasizes the advantages of the school both in its learning facilities and activities.
2. As a medium of electronic communication between schools, agencies and other private institutions. In this case, the school web is an interactive medium in the form of brainstorming, impressions and messages, electronic mail or media for gathering between educators, students, alumni, parents and the surrounding community.

3. Speed up the delivery of information both between schools, agencies or parents (community).

4. Educators can share their knowledge on the school web media.

5. As an alternative learning media (variations of learning so it is not boring).

6. As an alternative learning medium, the existence of a school website allows for the e-learning process or learning via the internet. The presentation of this web-based e-learning can be more interactive, where information (learning material) can also be realtime. Likewise with the communication, although not face-to-face, discussion forums can be done online and in real time. This e-learning system has no access restrictions, this is what allows learning to be done in more time (Amalia, 2018).

Some of the benefits of electronic learning or e-learning, including:

1. Learning from anywhere and anytime (time and place flexibility).

2. Increased learning interactions between students and teachers or instructors (interactivity enhancement).

3. Reach students in a broad range (global audience) (Amalia, 2018).

The following is a school website material that is usually prepared in making a school website:

1. School profile includes background, brief history, vision and mission, organizational structure, school teaching staff, school facilities.

2. Academic, including: educational programs, curriculum, extracurricular activities, education calendar.

3. Student affairs, including: Student Rules, Daily activities, List of students / students, List of Alumni

4. External activities, including: Charity activities, Rihlah / educational visits.

5. Important information, including: Technical acceptance of new students or online registration, announcement of exam results or selection results.
6. Supporting articles for the school website

**Web-Based School Information System**

The movement for massification of school information systems has been promoted in various parts of the world, especially in developing countries which for some time have experienced a slowdown in advances in information technology. This awareness has been spearheaded by the state in order to ensure better institutional governance. Nigeria gives an example of this where the country has pioneered the reform of information systems in education at all levels as support for decision making (Syahrul, 2017).

The Web-based School Information System is a means to display data about schools, such as school profiles, student manual data, teacher and employee data, lesson schedules, and so on, by utilizing web engineering technology. One example of a Web-based School Information System is SISKO (School Information System). SISKO is capable enough to display relevant school data. The data displayed in SISKO must always be updated. This data update process can be done on the Admin computer, which can be placed in the Administration Room or other rooms. Furthermore, if there are guests or visitors who want to see school profile data, they can be directed or invited to the nearest bridge computer. Furthermore, guests are welcome to select and see the data displayed (Akhwan, 2018). With the availability of an information system on the school website, the school concerned will benefit from the findings of Nugraha's research in Surakarta as follows:

1. A school information system that is useful for making it easier for the public to find school information for their children.
2. The system created makes it easy for schools to carry out school promotions without having to do direct counseling to the community.
3. Based on black box testing, applications that have been made meet the necessary needs. The system runs well according to the purpose of making the system.
4. The web-based school information system in Surakarta assists the community in accessing school information based on school profiles, school excellence and school facilities (Nugraha & Nurgiyatna, 2016).
School Web Development in Learning Activities

Website as a strategic tool in today's schooling, continues to experience developments. Not only in the context of providing information or conducting information transactions between internal schools and stakeholders, but it has penetrated into learning areas, for example e-pedagogy (Simuth & Schuller, 2012).

In this context, Wijaya builds the point of view that the paradigm of the education system, which was originally based on traditional reliance on face to face only, has turned into an education system that is not limited by space and time with a touch of the world of information technology, especially the cyber world. The cyber-based education system is referred to and is known as e-learning. There are limitations in the face-to-face-based traditional teaching and learning process which is limited by time and space, so e-learning is here to anticipate this. With the teaching and learning process is no longer limited by space and time so that the relationship between students and teachers can be done anytime and anywhere (Wijaya, 2012).

Wijaya also quoted Kevin Kruse who said that in one of his writings entitled "Using the Web for Learning" which was published on the e-learningguru.com website, web-based learning often has many benefits for its students. If designed properly and appropriately, web-based learning can be fun learning, has an element of high interactivity, causes students to remember more subject matter, and reduces operational costs that are usually incurred by students to take part in learning (Wijaya, 2012).

Based on his study, Wijaya in his study concluded, among others:

1. The teacher views the web-based e-learning model as a good model because it is not only a learning development for students but also a vehicle for developing self-competence as a professional teacher. Various learning objectives can be accommodated by this model such as students can think creatively and actively, and students can learn according to the level of learning speed of each student itself, and various other things. Based on the research, it can be concluded that teachers who have high dedication and responsibility for improving the quality of learning will see this model as a way to develop their abilities, make innovation and development in learning.
2. Students view the web-based e-learning model with the principles of e-pedagogy as a fun learning experience, and they are directly involved in learning and shaping their own learning experience. Based on the results of the study, it can be concluded that with a web-based e-learning model with the principle of e-pedagogy student interest in learning is increasing, the learning process is felt to be interesting and not boring because students are actively involved in learning (Wijaya, 2012).

Meanwhile Muhson also put forward the idea of developing information technology-based learning media (Muhson, 2010). Muhson sees that in order to increase the effectiveness and efficiency of learning, it is necessary to develop various creative and innovative learning models. This needs to be done so that the learning process does not seem less attractive, monotonous and boring so that it will hinder the transfer of knowledge. Therefore, the role of the media in the learning process is important because it will make the learning process more varied and less boring. The rationalization of this idea is related to the results of Eyler and Giles’ research which prove that the effectiveness of learning is influenced by the media used by the teacher. They found that the learning model that was located at the top of the cone, namely learning that only involved verbal symbols through the presentation of the text, was the one that produced the highest level of abstraction. The most effective learning is learning that is at the base of the cone, which is directly involved with purposeful learning experiences. The level of abstraction in this learning model is very low, making it easier for students to absorb new knowledge and skills (Muhson, 2010).

Muhson concluded that learning media can be a vehicle for channeling messages and learning information. Learning media that are well designed will greatly help students digest and understand the subject matter. The function of the media in learning activities is not just a teaching aid for the teacher but as a carrier of learning information / messages. Each type of learning media has its characteristics, advantages and disadvantages. That is why it is necessary to have a systematic planning for the use of instructional media. In addition, in this era of globalization and information, the development of learning media is also increasingly advanced. The use of Information Technology (IT) as a learning medium is already a requirement. Although IT-based media design requires special skills,
this does not mean that the media is avoided and abandoned. IT-based learning media can be in the form of internet, intranet, mobile phone, and CD Room / Flash Disk. The main components include the Learning Management System (LMS) and Learning Content (LC). No less important is that the use of economic learning media can facilitate the learning process and optimize learning outcomes for that, as educators should be able to choose and develop the right media so that the learning process can run more effectively and efficiently (Muhson, 2010).

**Basic Principles of School Web Management**

The website has very diverse communication functions. We can view the website as a promotional medium, or the website as a medium for information disclosure or even both. Especially in the banking industry where the aspect of information disclosure is regulated in detail, even down to the disclosure of information on bank products. Through the website, all stakeholders related to the company can find any information, anytime, accurately and adequately (Hasan, 2018). This is in line with Utari's findings, that the background of organizing school websites is the condition of competition between schools, awareness of the need to establish communication with external parties, the existence of supporting facilities and human resources, and the implementation of interactive, independent and distance learning models in the form of e-learning. The use of the website as a media for public relations by packaging the contents of the message and appearance by paying attention to the characteristics of the school to build a positive image. Management of website management personnel in order to support the function of public relations activities is still marked by human resource and funding constraints for compensation, absence of clear job descriptions, and incomplete evaluation (Utari, 2001).

In general, an agency's website management activities start from the procurement process to website maintenance and content management. The procurement process starts from determining the need for specifications, price request, setting the owner estimate, aanwijzing / pitching to submitting proposals for selected partners / consultants. In determining potential third parties, it can be assessed from the legality of the company, the experience or portfolio of the company, and the concepts and offers submitted. Website
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Maintenance includes website domains, servers, databases, anti-virus, anti-hacking, and website reporting, and includes content management or managing updating and uploading of the content or contents displayed (Hasan, 2018). Compare with Umar who conducted a study on Content Management System (CMS) (Umar, Winiarti, & Sitindon, 2004).

Agencies that want to keep business secrets or company secrets to create their own website and manage them, without the help of consultants. However, with the consideration of maintaining the risk so that our company website is not down, it is not susceptible to attack by hackers and viruses, it is better if the management of the website is outsourced to a consultant, if indeed a company does not have the competent resources to fully manage the company website internally (Hasan, 2018).

In various universities (for example), websites have been developed in such a way as to reach various activities of the academic community. Not only providing general information, the website has been developed more specifically, for example for supervisory activities of leaders (Syahrul, Alim, Pairin, & Nur, 2019). In addition, the measurement of the performance of lecturers and employees can also be done with applications linked on the college website (Akib, Karno, Erdiyanti, Syahrul, Badarwan, & Murniati, 2020).

Closing

The development of information and communication technology has influenced various areas of human life. Educational institutions must responsively take advantage of these advances productively, both in school management activities, and specifically in learning activities that are innovative, comfortable, and enjoyable for students. The existence of a school web which is commanded by the ministry of education and culture should trigger an increase in school performance and productivity. This condition illustrates that schools (in various lines and levels) must keep pace with technological advances, make adjustments, to make them more competitive. One of the fundamental efforts that need to be done is to build a school website, which is designed to be developed according to school needs. Of course, schools must provide skilled personnel who can manage the school website in a directed way. In this context, the educational
personnel needed are no longer in conventional administrative affairs, but master the latest technology.

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