JRMSU-Dipolog Campus Website: Effectiveness and Usability Evaluation from The Perspective of The Stakeholders

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Abstract — The research study aimed to evaluate the website of Jose Rizal Memorial State University – Dipolog Campus. Evaluating the website of Jose Rizal Memorial State University – Dipolog Campus was to assess the website's effectiveness and usability based on the perception of the different stakeholders and the result would serve as the basis for further enhancement of the existing campus website. The effectiveness and usability evaluation of Jose Rizal Memorial State University (JRMSU) – Dipolog Campus website. The study on effectiveness and usability evaluation of JRMSU – Dipolog Campus website used the descriptive research method. The study used the 24-question website usability evaluation tool of Chiew and Salim (2003).

Results revealed that the JRMSU-Dipolog Campus website was perceived as very much usable among its stakeholders in terms of content, organization, readability, navigation and link, user interface design, and performance and effectiveness.

Based on the result, this study concludes that JRMSU-Dipolog Campus' website is efficient in allowing unlimited service to clients at any given time. It has been convenient and practicable for use as perceived among its stakeholders.

Thus, this recommends the following: the JRMSU-Dipolog Campus Website should maintain 24/7 web hosting to avoid lagging and the website must be accessible almost all the time and provide an immediate feedback mechanism. It should provide updates on campus developments and regularly update its website contents. The administration should appoint a faculty or personnel to take charge and regularly update the website. The stakeholders should update themselves with the current status of the university through its website.

Keywords — *JRMSU-Dipolog Campus Website, Website Evaluation, website content, website organization, website readability, website navigation and link, website user interface design, and website performance and effectiveness.*

I. Introduction

The internet and web technologies are continuously increasing as a solution to information exchange, problems and issues. Through the use of internet and web technologies, an organization can reach out to their stakeholders and provide them with general information about its products or services. It also provides opportunities of performing interactive business transactions. According to O'Leary and O'Leary (2014), the internet and the web are considered by many to be

the two most important technologies in the incoming 21st century. Indeed, it is one of the primary factors in shaping the near future. Its existence already has changed the way many people work, communicate and do business.

In recent years, one indicator of this has been a rise in the development and use of school websites (Hartshorne et al., 2008). The college web sites are often the first structured encounter a student has with a prospective college or university (Ford, 2011). According to Ford (2011), the college website is increasingly becoming a sales tool of the institution to market their services to prospective students. Furthermore, Ford (2011) stressed that almost all college websites show an informational and transactional tool for currently enrolled students. Hadjerrouit (2010) also stated that the web used as an educational tool has provided teachers with a wide range of teaching experiences that some are not possible in traditional classroom such as online presentation of information, long distance education, effective dissemination of information and interactive task-based activities. He further stressed that web-based learning resources are a powerful tool for enhancing learning experiences and improving learning outcomes.

Research revealed that school websites have not been extensively evaluated. According to Zahran et al. (2014), the evaluation of websites is too often neglected by many organizations whether public or commercial. They stressed that many developers test systems only after users report problems or encounter serious complications. Even though testing a complex web system is difficult and may be expensive, it should not be delayed. Ford (2011) also indicated that evaluation should be incorporated into web management which can most efficiently be done through the use of standardized evaluation and baseline assessment tools. According to her, one factor in determining the effectiveness of a website is to evaluate the effectiveness or usability of the organizational website.

Several researches have offered some advantages that can be gained when the usability of websites is considered. Hasan (2014) cited that addressing the usability of web sites could decrease the number of errors, improve accuracy, and encourage positive attitudes toward the target interface. Furthermore, Hasan (2014) indicated that addressing the usability of educational websites could help students to enjoy the learning experience, increase students' confidence, and encourage students to use the website. Lencastre and Chaves (2008) emphasized that usability of educational websites could help students to enjoy the learning experience, increase students' confidence and encourage students to use the website. Thus, according to Chiew and Salim (2003) evaluating the usability of a website is important. Hung and McQueen (2004) mentioned that undertaking a usability study usually needs high consumer or user involvement.

In the JRMSU's context, the system has a functional website ever since, however, it needs an update due to multi-designation of the in-charge personnel. It was observed that the previous structure consisted only of one web network with one technician. Thus, the Management Information Systems Office (MIS) office has seen the need of newly structured office with one in-charge for the website, one network, one programmer, and one campus technician.

Along with the above-mentioned scenario, this research aims to evaluate the existing website of Jose Rizal Memorial State University – Dipolog Campus. Specifically, the effectiveness and usability evaluation of Jose Rizal Memorial State University (JRMSU) – Dipolog Campus website is anchored from the Website Usability Evaluation Model of Chiew and Salim (2003) and on the taxonomy of evaluation method of Zahran et al. (2014).

Literature Review

Chiew and Salim (2003) cited that usability is one of the major factors that determines the successfulness of a website. Usability as defined in ISO 9241-11 refers to the extent to which a product can be used by specified users to achieve specific goals with effectiveness, efficiency and satisfaction in a specified context of use. Chiew and Salim (2003) had developed an evaluation tool called WEBUSE (Website Usability Evaluation Tool). It was developed based on the model shown in Fig. 1.
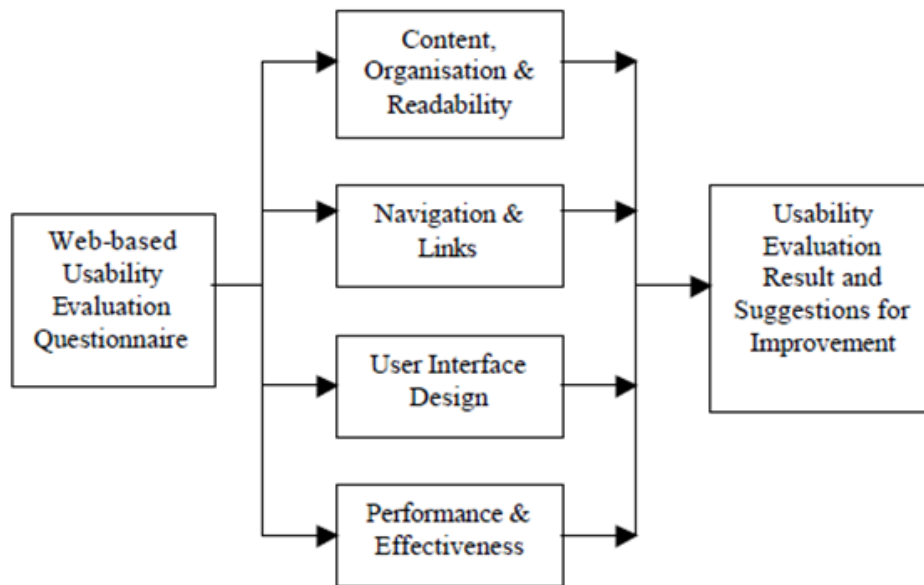

Fig. 1. WEBUSE Development Model

The table below shows the usability levels and the corresponding usability points of Chiew and Salim (2003).

Points, x	$0 \leq x \leq 0.2$	$0.2 < x \leq 0.4$	$0.4 < x \leq 0.6$	$0.6 < x \leq 0.8$	$0.8 < x \leq 1.0$
Usability Level	Bad	Poor	Moderate	Good	Excellent

On the other hand, Aladwani and Palvia (2002) conducted a study on developing a multidimensional scale for measuring user-perceived web quality. The results of their two-phased investigation uncovered four dimensions of perceived web quality which are technical adequacy, specific content, content quality, and appearance. According to them, past web quality research focuses mostly on the perspectives of web developers and designers while their study targets the

web users. They stressed that in this era of intense competition and customer responsiveness, the users are major stakeholders and should not be ignored.

Meanwhile, the results of the study of Hasan (2014) showed that the majority of the students were satisfied with the usability of the Jordanian university websites. It also showed that content and navigation were the most and second most important design categories respectively for the usability of Jordanian university websites from the viewpoint of students. The results also showed that the third, fourth and least important categories for educational websites were: ease of use and communications; design; and organisation/architecture, respectively. This research also investigated whether gender and major/specialisation had an impact on the relative importance of the developed usability criteria. The results showed that there was a statistically significant difference between males and females regarding only one category: the content. Females considered it as the most important category while males considered it as the second most important category.

In the study of Hartshorne et al. (2008), elementary school Web sites surveyed serve a variety of purposes (i.e., introducing the school, publishing student work, introducing large bodies of information, providing rich data sources for information about faculty, staff, students, and other aspects of a school). The results of their study showed that elementary schools were able to represent themselves to their audience in a logical and orderly fashion, rather than simply posting information online. Majority (72%) of elementary school Web sites contained school calendars which acted as an interface between the various stakeholders in the educational process, as well as served as information systems for site visitors. Moreover, the majority of these elementary school Web sites provided evidence of basic design principles. Three of the elements (the site has a name, Pages use an easy to read font, and all underlined text is hyperlinked) were present in 49 of the 50 sites (98%). An additional four elements (no horizontal scrolling, the text is large enough for mature readers, text and link colors are distinct from each other, and graphics are optimized for minimum download time consistent with quality) were present in every site surveyed. Hartshorne et al (2008) stressed that following the general design features for websites are important for a number of reasons. These include attracting visitors to the site, keeping visitors at the site, making the process of finding site information seamless, and addressing various accessibility issues. There are two primary approaches to support this: Contrast, Repetition, Alignment, and Proximity (C-R-A-P) and "keep it simple." Furthermore, Hartshorne et al. (2008) pointed out the benefits of school websites. These include communication to a wide audience, extended and independent learning resources for students, flexible evaluation tools for teachers, promoting increased involvement of parents, supporting student learning, showcasing student work and the school environment, and enhancing relationships between schools and other stakeholders in the educational process.

Moreover, Zahran et al. (2014) had contributed to the field of Web evaluation. They have identified existing evaluation methods and accordingly classified them into two types. The first type is website evaluation methods (WSEMs) that includes user-based Usability Evaluation Methods (UEMs) such as user testing and think aloud, evaluator-based UEMs such as heuristics

evaluation, and automatic website evaluation tools. The second type is Web evaluation methods (WEMs) including Web analytics tools (Google analytics, Alexa) and link analysis consisting of PageRank and webometrics methods. If the purpose is to redesign the website, then the scope of evaluation is WSEM, whose best evaluation methods are user testing and expert evaluation, while automatic and Web analytics tools (complementary) could provide a first insight into the status of the website. Similarly, if Web ranking and traffic statistics are of interest, then the scope of evaluation is WEMs; thus the best way is to use a Web analytics tool such as Alexa.

II. Methodology

The study on effectiveness and usability evaluation of JRMSU – Dipolog Campus website used the descriptive research method. In performing the website evaluation the researchers used the 24-question website usability evaluation tool of Chiew and Salim (2003) distributed to the different stakeholders of the University which include students, alumni, parents, partnered government agencies and private agencies or industries. This instrument tool is categorized into four namely, 1. content, organisation, and readability; 2. navigation and links; 3. user interface design; and 4. performance and effectiveness. The study utilized 200 respondents which were distributed as follows:

Table 1 Respondents of the Study

Groups	Respondents	Percent
Heads of Offices, Instructors /Parents/Guardians / Students from different courses in JRMSU-Dipolog Campus	100	50.0%
Alumni	50	25.0 %
Partnered Government Agencies	25	12.5 %
Partnered Private Agencies/Industries	25	12.5 %
Total	**200**	**100 %**

The researchers utilized the user evaluation approach which the most common, valuable and useful method was user testing. These evaluators were required to view and browse the official website of JRMSU – Dipolog Campus before they would answer the instrument.

A 5-point Likert's scale was used to measure the effectiveness and usability of the campus website. The weighted mean was used to find out the effectiveness and usability level for the four categories of usability criteria.

III. Results and Discussion

The distribution of respondents who participated in the study on the website evaluation for the Jose Rizal Memorial State University (JRMSU) - Dipolog Campus official website is displayed in Table 1 and Figure 1. Among the 200 respondents who participated in the website evaluation,

the alumni got the most number of respondents which is 27 percent from the total number of respondents. This is followed by the JRMSU Faculty and Students obtaining 23 percent and 21 percent being ranked as 2nd and 3rd respectively. The fourth most number of respondents was the private agencies or industry which obtained 12.5 percent and the fifth in ranked is the other government agencies which has 12.5% from the total number of respondents. The least number of respondents was coming from the JRMSU Unit Heads. This implies that Alumni have played their roles despite having been graduated from the Institution. This shows their great interest in the welfare of their beloved Alma Mater.
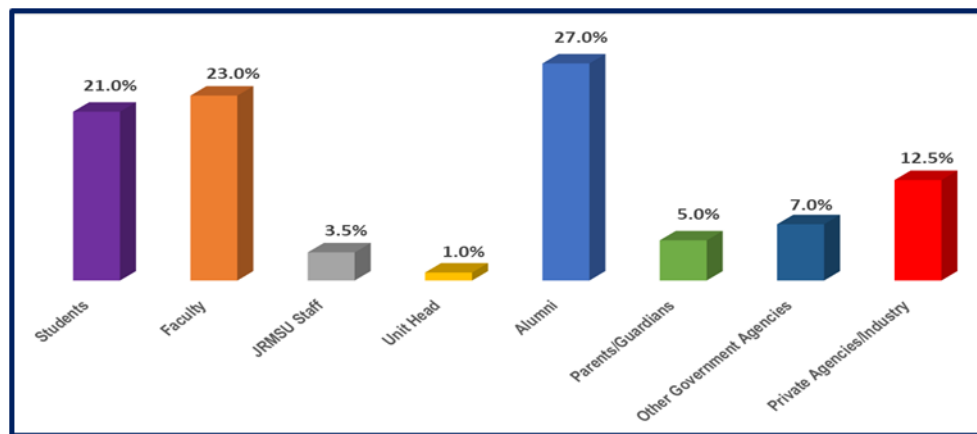
Table 1. Distribution of Respondents

Figure 1. Distribution of Respondents

Determine the campus website characteristics according to the perception of the stakeholders

The study on campus website evaluation revealed that the JRMSU-Dipolog campus website is very much usable in terms of content, organization and readability as shown in Figure 2. This website characteristics obtained a mean of 4.36. This indicated that the campus website contained most of the stakeholder's interest, the website information can be easily found and comfortable to read, and the contents are well organized which does not require scroll left and right when reading. Most importantly, it has used familiar language which makes it easier to comprehend among readers and stakeholders. This implies that the campus possesses the qualities of a website that captures the interest of the stakeholders. It means that the material on the website is easy to find and read, and the contents are properly ordered. The results corroborate with Chiew and Salim (2003) who cited that usability is one of the major factors that determines the successfulness of a website. Usability as defined in ISO 9241-11 refers to the extent to which a product can be used by specified users to achieve specific goals with effectiveness, efficiency and satisfaction in a specified context of use.
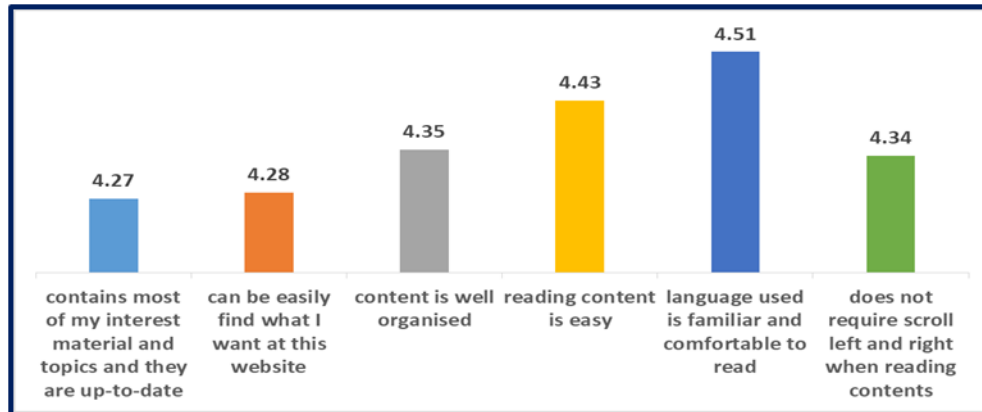
Figure 2. Website characteristics in terms of content, organization and readability

The study also disclosed that the campus website possessed website characteristics in terms of navigation and link which obtained an average mean of 4.31. This indicated that the campus website is very much usable. It allows easy navigation within the website, provides useful links to get navigated to the desired information, and does not require many browser windows when navigating. This implies further that the website has substance, structure, and readability which the stakeholders wanted the most for a website. The findings gain support from the study of Hasan (2014) who shows that the majority of the students were satisfied with the usability of the Jordanian university websites. It also showed that content and navigation were the most and second most important design categories respectively for the usability of Jordanian university websites from the viewpoint of students. The results also showed that the third, fourth and least important categories for educational websites were: ease of use and communications; design; and organization/architecture, respectively.
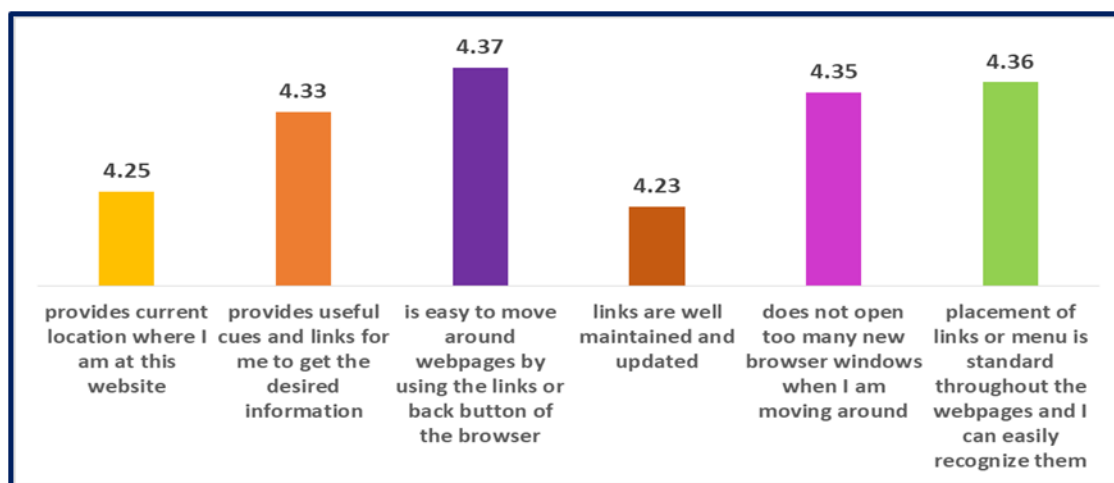

Figure 3. Website characteristics in terms of navigation and link

The result of the study also revealed that the campus website of JRMSU-Dipolog Campus is very much usable in terms of user interface design that obtained an average mean of 4.32. This means that the campus website contains attractive interface design, choice of color themes suitable

for eye comfort, does not contain web advertisements, and the website is easy to learn when being used. It implies further the importance of a friendly-user website which the JRMSU Dipolog campus' website possesses. The result corroborates in the study of Dimov (2016) entitled "The users' perspective and preference on three user interface website design patterns and their usability." The research pinpoints that although experienced Internet users find the user interface elements relatively usable some usability factors can be worked upon in the chosen design elements and pinpoints what users would want to see changed, the actual changes they want and the problems they actually encounter with the current status of the three (3) design patterns and their usability.
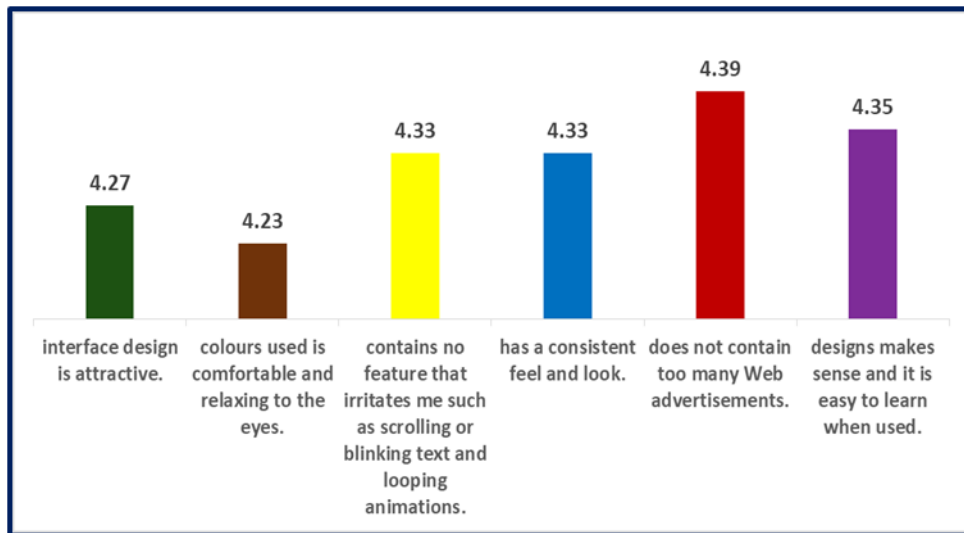

Figure 4. Website characteristics in terms of user interface design

Lastly, the campus website had also obtained an average mean of 4.31 for website characteristics in terms of performance and effectiveness. The stakeholders perceived the campus website as very much usable because it does not require much time for downloading or opening of web pages. The campus website can be accessed anytime and efficiently. This means that the website is capable of producing desired results with little or no waste of time since there is simplification of website format. It implies further that the website of JRMSU Dipolog Campus is indeed a user-friendly among its navigators-the stakeholders. This finds support in the study of Stanaland & Tan (2010) entitled "The impact of surfer/seeker mode on the effectiveness of website characteristics" which suggests that earlier research findings that supported both higher levels of interactivity and simplification of website format are in fact moderated by the user mode of the consumer.
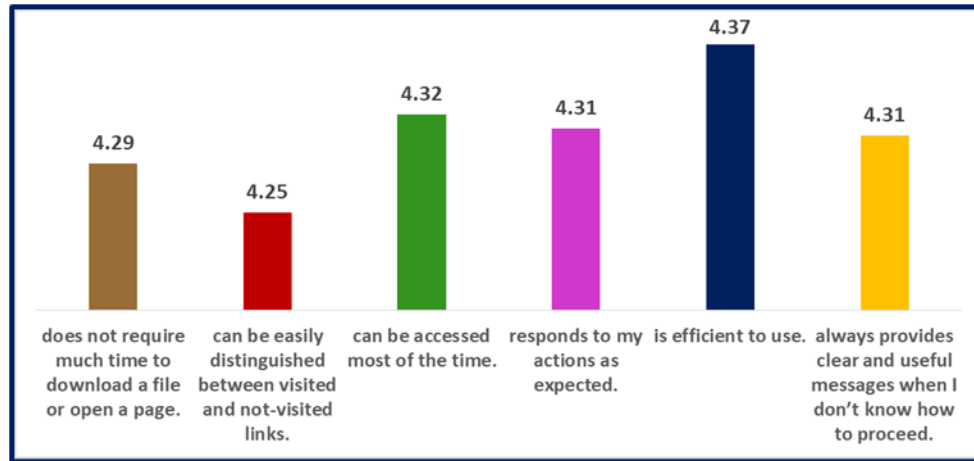
Figure 5. Website characteristics in terms of performance and effectiveness

Identify the campus website characteristics that are least addressed by the stakeholders.

The result showed that all the website characteristics in terms of content, organization and readability; navigation and link; user interface design, performance and effectiveness were addressed by the Management Information System Office of Jose Rizal Memorial State University-Dipolog Campus for their campus website. All these website characteristics obtained a mean for very much usable. This means that the campus' website is capable of producing desired effects among its stakeholders. Thus, the website has been convenient and practicable for use as perceived among its stakeholders. Moreover, it implies further that the overall package of the campus' website of JRMSU Dipolog is worth emulating. According to Tarafdar & Zhang (2008) in their study entitled *"Determinants of reach and loyalty—A study of website performance and implications for website design",* the performance of websites in terms of the extent to which they can attract and retain traffic, strongly influences the volume of business transacted on them. Identification of factors that influence website performance is therefore necessary, for appropriately focusing website development efforts toward specific design parameters and including relevant performance-influencing features within the website.

Determine the missing content items as perceived by the stakeholders.

The website evaluation has gathered the missing contents that must be incorporated to the campus website as mentioned by the different stakeholders. These are the following:

a. **24/7 Web hosting**. The following were the statements of the stakeholders:

> *"Website must be well-maintained to avoid lagging. Websites must be accessible almost all the time. Overall, congrats for the job well done!"*

> *"All websites should be easily accessible."*

b. **Immediate Feedback Mechanism.** The following were the statements of the stakeholders:

"If in case there is a clarification, questions or concerns. I hope there is an immediate feedback."

"Quick response at all times. Salamat"

"Please respond to every student queries"

c. **Updates on Campus Developments.** The following were the statements of the stakeholders:

"More updates news about the development of the campus."

"Just a few updates about the latest development and post would make the website perfect."

d. **Regular Updating on Website Contents.** The following were the statements of the stakeholders:

"There are tabs that have no content and the news articles are not updated."

"Maybe more activities and engagements should be posted at the site. Encourage the students to promote the site."

e. **System Maintenance.** The following were the statements of the stakeholders:

"When clicking the news headline, the reader is not directed to the desired article to be read, instead, the reader is directed to a copy of the newsletter. Hassle."

"Some links are empty."

f. **Inclusion of Additional Information.** The following were the statements of the stakeholders:

"May include information regarding the enrollment procedure, courses offered.. school calendar ,...may also contain a student's suggestion's corner, where students or other clients can interact, inquire digitally with jrmsu during school hours, chat section maybe where they can reach out to jrmsu... must also contain contact numbers..."

"faculty and students academic achievements link or tab"

"As a guardian, I would like to suggest that aside from being updated in your website please feed updated information especially for those students who are in module based learning."

"Put more information such as faculty and staff names with their corresponding designations, courses offered."

"Posting of Job Vacancies"

g. **Compatibility to all platforms.** The following were the statements of the stakeholders:

"There are fonts, colors, or patterns that may not work well together on the web despite being elements of your website. And not everything can fit."

"There is a need for the viewer to zoom in before clicking the article or topic of interest since it is too small."

h. **Campus Branding.** The following were the statements of the stakeholders:

"Color used in the website should be pleasing to the eyes of the viewer. Follow your campus branding."

"I believe that the website is so simple. There are no drop down options available, all are associated with links. The background color is not good to look at. There are a lot of colors. I do not know what color JRMSU represents. The website needs a lot of improvement."

i. **Linking the campus website to other campus departments.** The following were the statements of the stakeholders:

"Website must connect to the registrar so that the students are fully aware of the grades and their status."

"It should have a link to access the student portal."

Determine the effectiveness and usability level of the campus website

The effectiveness level of the campus website as perceived by the stakeholders obtained a mean of 4.31 or "very much efficient" which meant that the campus website allows unlimited service to clients at any given time.

The usability level of the campus website is also very much usable as perceived by the different stakeholders which obtained an average mean of 4.33 as shown in Table. This indicated that the campus website is still very useful at present. This implies further that the campus website is functional and fundamental especially in the JRMSU Dipolog Campus' present context.

Table 2. Usability of the of the Campus Website

Criteria	Mean	Description
Website content, organization, and readability	4.36	Very Much Usable
Website navigation and links	4.31	Very Much Usable
User interface design	4.32	Very Much Usable
Performance and effectiveness of the website	4.31	Very Much Usable
Average Mean	**4.33**	**Very Much Usable**

IV. Conclusion

Based on the results, this study concludes that JRMSU-Dipolog Campus' website is efficient in allowing unlimited service to clients at any given time. It has been capable of producing desired effects to the stakeholders. Moreover, the usability level of the campus' website is still very useful at present. Thus, the website has been convenient and practicable for use as perceived among its stakeholders.

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