

Enhancing quality by identifying problems of government universities websites of district Shaheed Benazirabad

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Abstract

Day by day so many new websites are dispatching with identical content but quality is not of same level. Mostly users quit websites in first time and never come back, if quality does not meet users' expectations. Website becomes beneficial, easy to understand and reliable by maintaining quality. Many studies have done on quality evaluation but their focus groups were programmers, according to majority of internet users that quality of product or service is whatever they receive from it so it is necessary to evaluate websites from users' point of view. It is necessary to evaluate websites quality to assure repetitive visits of users. This research is based on survey to identify common problems encounter by users of government universities websites of district Shaheed Benazirabad and provides recommendations of identified problems for developers to develop better universities websites. Students of four universities of Shaheed Benazirabad are focus group of this research. Selected four universities are of engineering, medical, general and veterinary domain. Survey results are analyzed by statistical method to identify common problems and recommendations are made on the basis of these identified problems.

Key words:

District Shaheed Benazirabad, identifying problems, Enhancing quality

1. Introduction

A huge number of new websites have been dispatched each day. Websites with identical content won't have a same quality level. If quality of website is low, end user would definitely go away the website and move to another website. Usually, there is no any other possibility to get back an end user to the site [1]. The quality of website cause a site beneficial, easy to understand and openly accessible and it presents valuable and solid data too, giving great structure and visual look to accommodate the end users' concerns and needs. Quality assurance procedure has become the challenging for the new domain websites. There were various specialists, associations who researched on many proposals to enhance websites' quality, including quality frameworks, criteria, assessment procedures, methodologies and measurements [2]. According to majority of internet users that quality of product or service is whatever they receive from it, not what organization or company put into it. So a website should try to assure its users desires to make repetitive visits possible [3].

That's why website quality and evaluating website quality is today's priority. So as to assess the quality of website, a lot of attempt at assessment of consumer-adapt websites have been expanded. Some of them were pure subjective and some were objective form of statistical measurement [4]. The quality of a website can be measured by two viewpoints: Programmers, and End-users. Programmers often focus the level of Maintainability, Security, and Functionality etc for website quality and end-users are giving more consideration to Usability, Efficiency, Creditability, etc. A lot of measurements have been recommended for evaluating website quality characteristics since 1990s [5, 6]. Although nature of website has important base and been very much created as of late, an unavoidable issue is "for what reason is the nature of websites still poor and absence of value attributes cause client disappointment in many sites" [7,8].

There are few reasons appeared as follows: Website development tools are advancing day by day and new instruments are being introduced in the market. Websites indiscriminately connected these product tools. Some of them bolster websites that have turned out to be exceptionally fruitful (e.g. Google, YouTube etc), yet some of them are not [9]. So these new websites advances should be confirmed and could conceivably be utilized and even some of them may be disposed of (e.g. Auto-invigorate, picture ALT). The domains of websites are growing generally. Websites are turning into the favored media instrument for data seek organization introduction, shopping, amusement, instruction, and social contacts. Conventional nature of websites issues do not in shape the new numerous innovation sites application. In light of the above components, the new website quality highlights decide to build up other website quality measurements which will have increasingly commonsense estimation criteria and fitting methodologies for website quality assessment needs [10].

The aim of this research work is to develop the framework for the university websites, a website frame work will be developed to help people to build websites easier, attractive and effective to use.

Section 2 Describes the literature review for concerning the usability of educational websites. **Section 3** discusses the proposed work. **Section 4** gives the results of this research and also suggested the guidelines for designers to improve usability of websites. Finally **Section 5** Presents conclusion and the future work of this research.

2. Related Work

Vassilis S. et al. proposed a hierarchical frame for website value evaluation. To authenticate the frame they performed an experiment, which concerned the evaluation of the websites of the 3 cellular phone service suppliers in Greece by 122 consumers. Results affirmed frame validity and statistical factor analysis hold up contraction of the genuine model to a website value achieving framework [2].

R.Anusha offered some value mock-up to evaluate the usability of website, in that she focused on value characteristics, value evaluation and measurement practices for a website and she similarly gave knowledge regarding value evaluation system having value estimation, characteristics, sub characteristics and quantifiable indicators. As per standard, ISO value mock-up, a far reaching website assessment plan is mandatory to address ordinary value fundamentals of the web application, since the fundamentals changes for different kinds of websites [3].

Kuo-Chien. N. et al. examined the relations between website value, website variety, seeming trust, seeming quality, and purchase objective in hotel industry. A statistical study of composed questionnaires was calculated from a web-based study. Using the structural equation modeling (SEM) practice, the outcomes disclosed that seeming trust is certainly influenced by website value, and purchase objective is certainly influenced by seeming trust [5].

Layla Hasan. E. et al. offered universal standard for assessing the value of any website despite of the kind of service that it offers. The dimensions of the standard are material value, design value, institution value, and user-friendly value. These dimensions jointly with their complete pointers and check list can be used by web designers and developers to make worth websites to get better the e-service and then the reputation of any association on the Internet [7].

Luis Olsina. S. et al. offered a method for the quantitative valuation and assessment of Website excellence called Web-site Quality Evaluation Method (QEM). The procedure outcome may be helpful to

recognize, manage, and get better the Web artifacts worth in undersized, average and large-scale schemes [10].

Luis Olsina. G. et al. offered stepwise, expert driven, display based methods in different fields (i.e. International e-book shops, Museums, Academic Sites). Their evaluation practice formed necessary, partial, and universal indicators that could be smoothly examined, in reverse and onward followed, supported, and expertly applied in fundamental management workout [11].

Vera Silva C. et al. suggested HEIs to make use of their website as a showcasing means. To calculate website value, they used Aladwani's and Palvia's tool, which evaluates value from the end-user's point of view. The standard conclude of their assessment recognizes with the method that HEI are not paying attention on using the website as unbeaten encouraging tool and in this method [12].

Kavindra Kumar S. et al. offered the website value into stages. The primary stage is made out of five value properties: Aesthetics, Ease of Use, Reputation, Rich Content, Multimedia and Consistency. The second stage splits the major stage value characteristics into sub-characteristics and the third stage supplementary splits the second stage sub-characteristics into quantifiable standard. They specially focused two main values characteristic Reputation and Aesthetics [13].

Chen Tan paid attention on the association between the website look and client doubts in Las Vegas specially, how significant the website value is to hotels and how the functionality affect the Internet bookings. Clients hope for websites that are full of information, eye-catching and engaging. Therefore, hoteliers should be taught to get better the website value to carry on company developments, get better clients' online booking practices and provide outcomes [14].

Damayanti O. et al. declared that high expansion of Internet customers in Indonesia makes e-commerce to be a hopeful business chance. The self-assurance to purchase online (E-Trust) can lift or lower the seeming risk and safety problem so E-Trust is vital for the victory of e-commerce Corporation such as Agoda.com. The techniques used in this research were quantitative and fundamental. Furthermore, data analysis methods used was SEM (Structural Equation Modeling).The research demonstrates the subsistence of the important control of the website's value towards E-Trust [15].

Praveen Kumar. J. et al. proposed quantitative assessment plan to access the value of websites and applications (WebApps). The method is helpful to

steadily evaluate properties, sub properties and attributes that control product value. This paper examines stages and actions, express the produced deliverables, and current mock-up way procedures, ideology and instruments to apply in these actions [13].

3. Proposed Work

3.1 METHODOLOGY

In this paper we choose 4 educational websites to find problems encountered by students. Questionnaire is designed to find out common problems encountered by students of these four universities on different parameters as shown below.

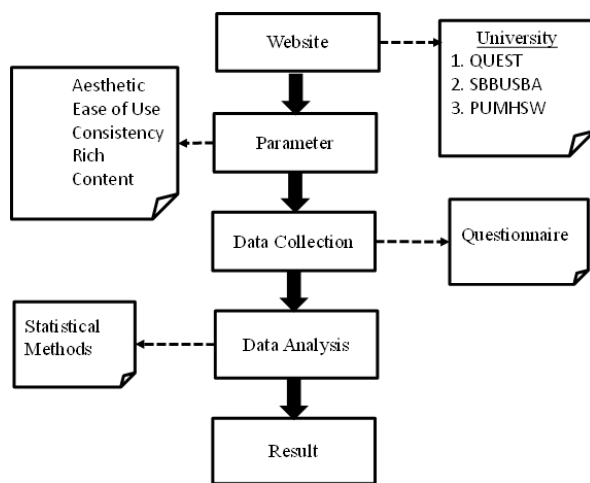


Figure 3.1 Research Methodology

3.2 SELECTION OF GOVERNMENT UNIVERSITIES WEBSITES OF SBA

Total four 4 government universities websites of SBA selected for this research which are described in Table 3.1.

Table 3.1 Government Universities Websites of SBA

NO	University	Category	Location
1	Quaid-e-Awam University of Engineering, Science and Technology (QUEST)	Engineering	SBA
2	Peoples University of Medical and Health Sciences for Women (PUHMSW)	Medical	SBA

3	Shaheed Benazir Bhutto University, Shaheed Benazirabad (SBBUSBA)	General	SBA
4	Shaheed Benazir Bhutto University of Veterinary and Animal Sciences (SBBUVAS)	Veterinary	SBA

3.3 PARAMETERS

Five parameters are taken to find out common problems of the websites are discussed below:

3.3.1 Aesthetic

It is a Greek word “aisthetikos,” meaning “of sense perception”. In website aesthetic means design or outer look of website or we can say beauty of website. Visual attractiveness of websites is called Aesthetic in web designing point of view.

3.3.2 Ease of use

Ease of use is a measurement of how easily end users use finished product. Design is frequently a fight between trying to convey usefulness and trying to convey ease of use. It’s essential to consider easiness during stage of design and where feasible put up the requirement for ease of use.

3.3.3 Consistency

Consistency is a most important rule in design. To present a valuable experience to your end users it is necessary that you are consistent in both content (material) and design (layout) of your websites. Consistency is the major factor that split a bad experience from a good one.

3.3.4 Rich content

Rich content consists of variety of different media formats (sound, video and images) placed at the same time and place.

The construction of a website is depends on both content (material) and container. When using the Web, we observe that industries, companies, institutions etc have worked hard on layout. The websites are eye-catching, full of images with inspiring font styles, attractive action buttons.

On the other side, the content (material), which emphasize its significance now a days as a primary center for the website, is mostly ignored. Aside from design, users look for information that should be very

easy to uncover and offered in an ordered, short and snappy, thorough and attractive way.

3.3.5 Reputation

Millions and millions of websites are over internet near about more than thousands of websites are launched every day. It has become an existent challenging task to verify whether a website is reputed or not? In this era of technology, Reputation and Ranking is the major aspect on which the website depends.

3.4 PARAMETERS

Data is collected by the students of four universities through online questionnaire. The Questionnaire is consists of two parts:

3.4.1 Personal information

This portion consists of 4 questions including name, age, university name and the current year of the study.

3.4.2 Survey questions

This portion consist 27 questions based on five parameters: Aesthetic, Ease of Use, Rich Content, Consistency and Reputation.

3.5 DATA ANALYSIS

Collected data from questionnaire is calculated using statistical method standard deviation to analyze the problems which are encountered by students of university.

3.6 RESULTS

Guidelines are recommended on the bases of Results generated through survey to improve the limitations of the websites on the criteria of utilization of university website; the objective was to find out the problems faced by users during surfing website and study those identified problems.

4. Results and Discussion

This section contains the collected data from questionnaire in the form of charts and then analyzed problems faced by users by using statistical methods and in the end recommendations are provided to improve the quality of websites of the government universities.

4.1 DEMOGRAPHIC INFORMATION OF SURVEY PARTICIPANT

Figure shows the information of survey participants, vertical axis shows number of percentages and horizontal axis shows classification of participants.

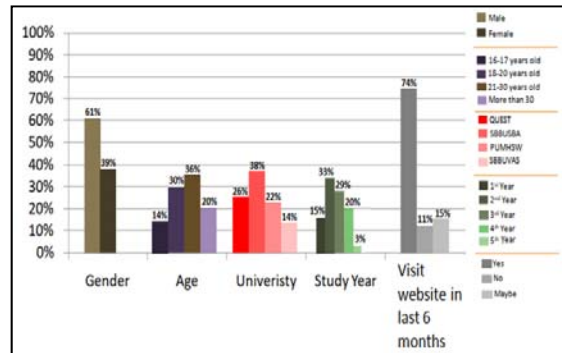


Figure 4.1: Demographic Information of Survey Participant

Gender: Above figure shows percentages of gender of survey participants.

Age: Above figure shows percentages of age of survey participants.

University: Above figure shows percentages of university of survey participants.

Study year: Above figure shows percentages of study year of survey participants.

Visit website in last 6 months: Above figure shows percentages of visit of their university’s website in last 6 months of survey participants.

4.2 SAMPLE SIZE

Table 4.1 shows total number of Participants University wise as well as gender wise. 109 from QUEST, 133 from SBBUSBA, only 81 females from PUMHSW because PUMHSW is for Woman University and 78 from SBBUVAS participated in an online survey. 192 males and 209 females are from all 4 universities. Percentage wise there are 27% participants from QUEST, 33% participants from SBBUSBA, 20% participants from PUMHSW and 19.5% participants from SBBUVAS participated in this survey by online questionnaire.

Table 4.1: Sample size

University	Male	Female	Total
QUEST	67	42	109
SBBUSBA	78	55	133
PUMHSW	0	81	81
SBBUVAS	47	31	78
Total	192	209	401

4.3 SUMMARY OF OBJECTIVES

There are 3 objectives of this research, which are listed below:

1. To explore the utilization of government universities websites
2. To find the problems faced by users of government universities websites
3. To provide recommendations for solutions

4.3.1 TO EXPLORE THE UTILIZATION OF UNIVERSITY WEBSITE

A. UWU of government universities websites in last 6 months

Figure 4.2 shows number of percentages of university wise utilization of government universities websites, vertical axis shows percentage scale and horizontal axis shows universities. This figure clearly shows that in all government universities all students use website of their concerned university.

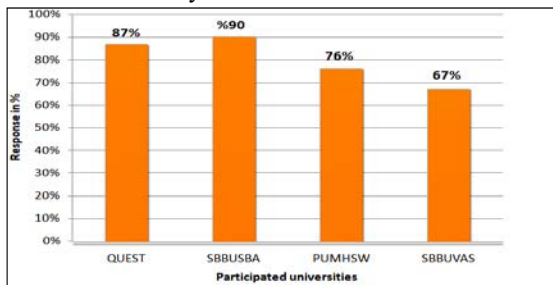


Figure 4.2: University wise utilization of government universities websites

B. Age wise utilization of government universities websites

Figure 4.3 shows number of percentages of age wise utilization of government universities websites, vertical axis shows percentage scale and horizontal axis shows universities. This figure shows age groups of universities websites users (students) and majority of students are between 21 to 30 years.

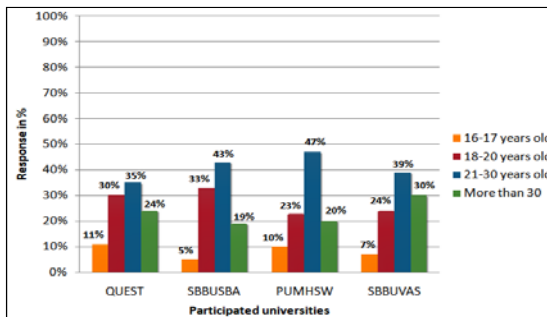


Figure 4.3: Age wise utilization of government universities websites

C. Study year wise utilization of government universities websites

Figure 4.4 shows number of percentages of study wise utilization of government universities websites, vertical axis shows percentage scale and horizontal axis shows universities. This figure shows majority of users are final year students.

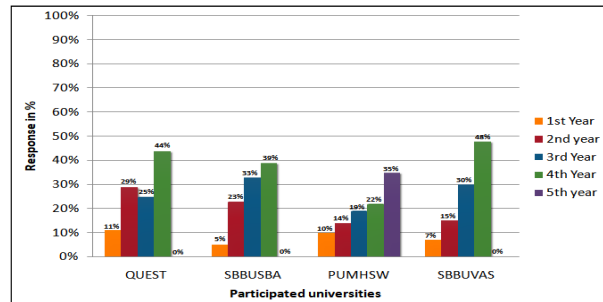


Figure 4.4: Study year wise utilization of government universities websites

4.3.2 TO FIND THE PROBLEMS FACED BY USERS OF GOVERNMENT UNIVERSITIES WEBSITES

On the basis of data get from survey and by using statistical methods on it, there are 8 concerns which are identified as problems out of 27. These are listed below with survey responses and their items in questionnaire.

A. Government universities websites do not contain enough images to provide information of university

Figure 4.5 shows percentages of responses that in QUEST, SBBUSBA, SBBUVAS majority of students think that websites do not contain adequate images to provide information about buildings of departments, environment of university, faculty and facilities provided to students and activities. Students of PUMHSW do not think so but are very close, as shown in figure. Some of students from all universities are not sure either their universities websites contain enough images or not.

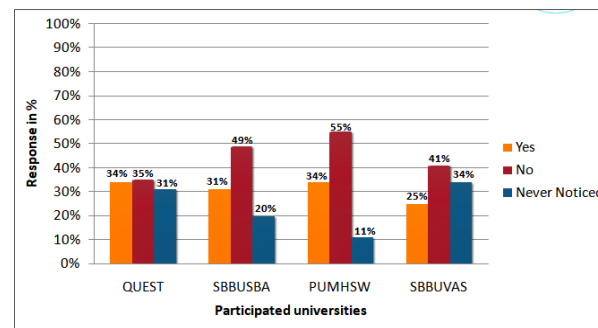


Figure 4.5: University do not contain enough image to provide information of university

B. In government universities websites, image title is not applied on each image

Figure 4.6 shows percentages of responses that in QUEST, SBBUSBA, SBBUVAS and SBBUVAS majority of students think that proper titles are not applied on images. Students of PUMHSW do not think so but are very close, as shown in figure. Many students from all universities are not sure either in their universities websites titles on images are given or not, they have never noticed image titles in their concerned universities websites.

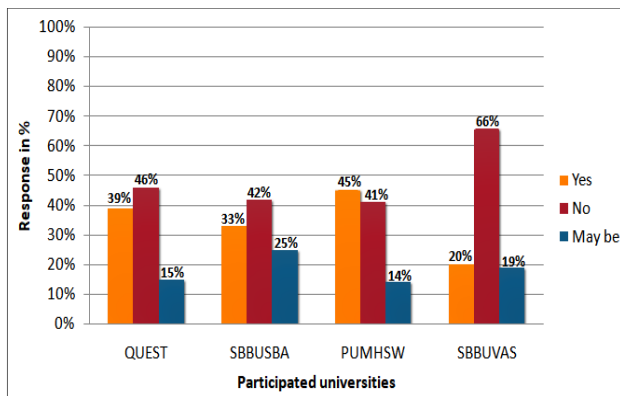


Figure 4.6: Image title is not applied on each image

C. In government universities websites, text style is not changed to get user's attention

Figure 4.7 shows percentages of responses that in SBBUSBA, PUMHSW and SBBUVAS majority of students think that in their concerned universities websites text styles are almost same in throughout websites. To grab user attention, text styles like bold text, italic text, underline text, color of text, size of text, writing style of text etc should be changed of textual content. Students of QUEST are satisfied with text style in their university website but there are also many students who are not satisfied with text style. Many students from all universities are not sure either in their universities websites contain text style is changed to grab attention or not, they have never noticed text style in their concerned universities websites.

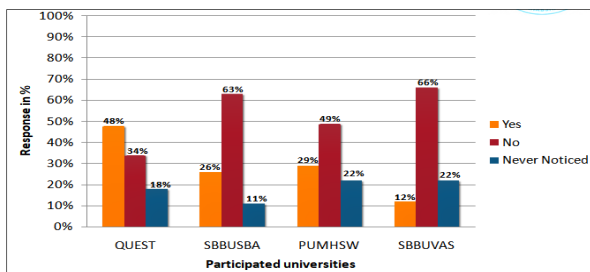


Figure 4.7: text style is not changed to get user's attention

D. Government universities websites do not have bulletin board / chat box

Figure shows percentages of responses that in QUEST, SBBUSBA, PUMHSW and SBBUVAS majority of students think that in their concerned universities websites there should be online chat box or bulletin board for students, alumni and other users to ask something.

Many students from all universities are not sure either their universities websites contain bulletin board/chat box or not, they have never noticed bulletin board / chat box in their concerned universities websites.

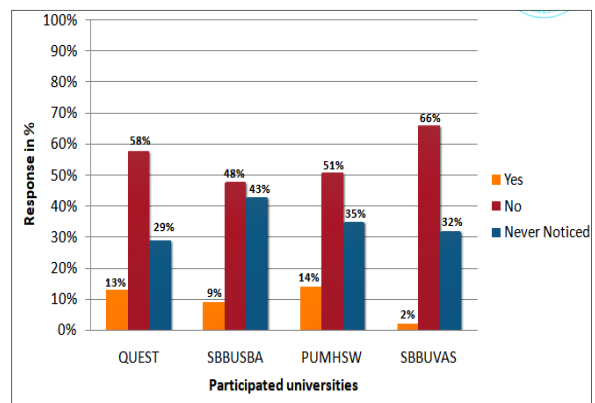


Figure 4.8: Government universities websites do not have bulletin board / chat box

E. In government universities websites thumbnails are not used instead of text labels or links

Figure 4.9 shows percentages of responses that in QUEST and SBBUVAS majority of students think that in their concerned universities websites thumbnails are not used instead of links or labels. It is easy to remember or notice thumbnails related to link names. In QUEST and PUMHSW students are not agree with this concern but size of agreed students is not negligible. Many students from all universities are not sure either their universities websites use thumbnails instead of label or not, they have never noticed thumbnails in their concerned universities websites.

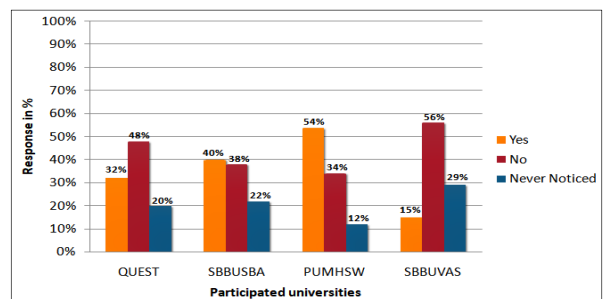


Figure 4.9: thumbnails are not used instead of text labels or links

F. Government universities websites do not contain both search option and menu together

Figure 4.10 shows percentages of responses that in all 4 universities QUEST, SBBUSBA, PUMHSW and SBBUVAS majority of students think that in their concerned universities websites only menu is used to navigate but search option is easier and prefer by users to find some information. In all universities number of agreed students is lesser than are those who are not sure. Many students from all universities have never noticed that either in their concerned universities websites menu is used or search option or both.

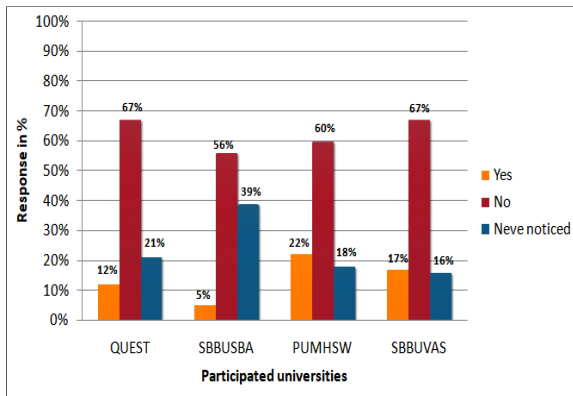


Figure 4.10: Government universities websites do not contain both search option and menu together

G. Government universities websites do not contain date of last update on homepage/each page

Figure 4.11 shows percentages of responses that in QUEST, SBBUSBA, PUMHSW and SBBUVAS majority of students think that in their concerned universities websites date of last update is not mentioned on home page, concerned page or all pages throughout website. It is difficult to trust on reliability of content if we do not know last date of update.

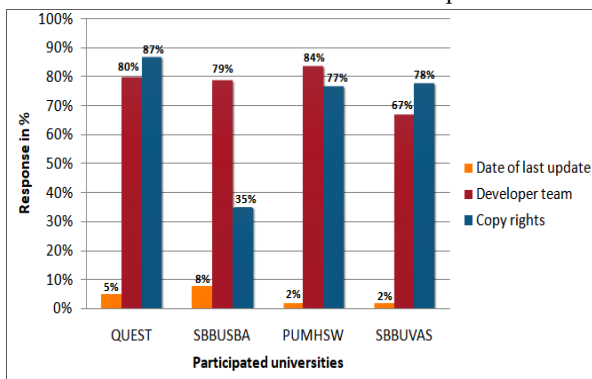


Figure 4.11: do not contain date of last update on homepage/each page

H. In government universities websites, information / content is not completed

Figure 4.12 shows percentages of responses that in QUEST, SBBUSBA, PUMHSW and SBBUVAS majority of students think that in their concerned universities websites content in websites are relevant and right but incomplete. Users do not get complete information at their home or without contacting to personnel.

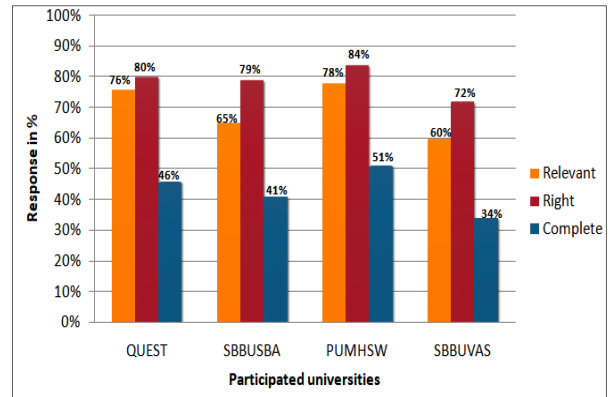


Figure 4.12: information / content is not completed

4.3.3 TO PROVIDE RECOMMENDATIONS FOR SOLUTIONS

On the basis of identified as problems, recommendations / guidelines are listed below:

Table 4.2: Recommendation

No.	Problem	Recommendation	Parameter
1	Government universities websites do not contain enough images to provide information of university.	There should be enough images in government universities websites to provide complete and clear information.	Images – Aesthetic
2	In government universities websites, image title is not applied on each image.	There must be a suitable title provided with every image in order to make the purpose of images clear in government universities websites.	Images – Aesthetic
3	In government universities websites, text style is not changed to get user's	Text style should vary according to the condition in order to grab user's attention in	Emphasis – Aesthetic

	attention.	government universities websites.	
4	Government universities websites do not have bulletin board / chat box.	Government universities websites should contain bulletin board / chat box to allow users to ask or answer.	Rich Content
5	In government universities websites, thumbnails are not used instead of text labels or links	In government universities websites thumbnails should be used instead of labels or links in order to attract the user.	Multimedia
6	Government universities websites do not contain both search option and menu together.	Government universities websites should have both, search option and menu as both of them are very useful in accessing the information easily.	Navigation - Ease of Use
7	Government universities websites do not contain date of last update on homepage/each page.	The last update date should be available on the main page so that users can check the reliability of the source in government universities websites.	Reputation
8	In government universities websites, information / content are not complete.	The government universities websites should have all the information and functionalities that are useful for the users.	Rich Content

5. Conclusion and Future Work

5.1 CONCLUSION

In this research we found the problems encountered by students during surfing of government universities websites of Shaheed Benazirabad. This research includes survey on 4 government universities QUEST, SBBUSBA, PUMHSW, SBBUVAS these are

Engineering, General, Medical, Veterinary universities respectively of Shaheed Benazirabad. This research identified 8 common problems related to design, usability, multimedia, content, navigation etc are encountered by majority of students, by using statistical method standard deviation on results got by online survey questionnaire.

This Research provides recommendations on the basis of identified problems for developers to develop better website for university. The advantage of this research is that it can also use for private sector universities as well as websites of other domains.

Results & Discussion showed the identified common problems. Moreover, recommendations for problems are given to develop better websites for government universities.

5.2 UTILIZATION OF THE RESULTS

Results will be utilized by developers to develop better websites for government universities and to update existing websites. Developers can modify other domains websites, furthermore the results help developers to enhance the quality in websites specially government universities websites but non-government universities too.

These results can be used to analyze needs and demands of students of universities for websites, not only government sector universities as well as private sector universities too. These results can be helpful to improve education quality, university reputation and student's confidence and moral.

5.3 FUTURE WORK

This research is limited to websites of government universities of Shaheed Benazirabad and in this research problems identifying parameters are limited to design, navigation, usability, aesthetic etc areas. We can use more parameters to identify further problems of different areas and not only for universities websites but also for other domains websites like e-commerce, social media, search engine, entertainment etc.

This research provides recommendations for identified common problems of only one university domain and other domains studies have individually done already but we can develop single set of suggestions and recommendations for all areas of all domains.

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