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Usability Study of University Web Portals for Communication E-Bridge

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ABSTRACT

Nowadays, web is gaining significance as a platform which provides different services and applications for facilitating the users. Further what are the significant aspects in developing these applications for CoStU's (Co = College, St = Students, U = University) perspective? How these services helps to gain maximum resources with less effort as CoStU E-bridge offering to the users (University, Colleges and Students) website as an E-Bridge. The report is about the needs and requirements regarding academic communication between university, colleges and students through university web portal (website). In reference of government universities of Chhattisgarh State's web portals.

KEYWORDS: E-Bridge, Communication, CoStU.

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INTRODUCTION

“People are required to conform to technology. It is time to reverse this trend, time to make technology conform to people” Software has become more complex in terms of features and functionality due to integration of various technologies for fulfilling user’s requirements. Consequently companies carry out innovations to fulfill these requirements by designing a system that is closer and explicable for the users. The users are increasingly unwilling to face difficulties in those applications that acquire user efforts. Role of usability is to make these products user responsive and design these products in a way to satisfy users during their use in an effective and efficient manner. The usability issues have augmented in the recent years due to enormous innovation of technological products for discussing the human factor. It is not only important in the end user products but also for those used in commercial and professional contexts. Main requirements for information technology society are to design systems that can universally be accessed by the user and also fulfills his/her requirements. Easy and understandable interface creates a close relation between the users and web based applications because it is a key point for accomplishment of an application. The user interface of an interactive system consists of all those parts with which users come in contact physically, perceptually and conceptually. Web based application plays an imperative role in the web industry to make it more valuable and also refers as to how a system is usable by fulfilling the user’s requirements as. “Usability is being able to do the things you want to, not the things you have to” E-bridge not only diminishes the need for quick communication but also lessens the need for time-line. Now e-communication is a great innovation of web technology for both academic and commercial levels^{1,2}.

PROBLEM DEFINITION/GOALS

We discussed the colleges officials and student’s problems during the study and their requirements for academic communication through university web portal.

i. *Colleges Officials and Students Requirements*

The uses of e-communication are very common among internet users (colleges officials and students) for interacting with others for sharing the valuable information in their duties, requirement, studies and/or common routine etc. because it is a very cheap way for interaction and sharing e-contents. They need a consistent resource through which they can easily communicate and share their data securely and safely and can access it any time/anywhere. Mostly colleges officials and students face the

problems to communicate and submit documents to university due to long distance. There is a need for those services through which they can manage their files and secure them from risks and threats, connectivity, Lab/server maintenance inside the university, viruses, power failure and other damages. Group work is very common among the colleges officials and students according to their requirement/need to collaborate and share their documents/reports (in electronic form which is called e-content). Web services that can assist them during their educational activities. Due to the lack of their official for colleges and personal for students³.

ii. *Research Question*

What are the colleges official's and student's needs and requirements regarding the Communication e-Bridge (e-communication through university web portals) to use it for academic purpose?

iii. *Goal*

The goal of this research work is to identify the colleges and student's needs and requirements regarding their academic-communication through web-approach and Current usability status of universities web portals as a e-Bridge (for academic communication). and get their suggestions for improvements by conducting the usability test, interviews and Questionnaires.

METHODOLOGY

Methodology means the systematic study of methods, principles or procedures for investigations in the concerning discipline we have selected. This chapter defines the method and techniques for an analytical study of uwps (university web portals) for e-Bridge for accademic communication^{3,4,5,6}.

i. *Overview*

The approach is to develop a case study on uwps (university web portals) are based on mixed methodology. This study is carried out in multiple phases. First phase is for literature review in order to understand the interface, interaction design concepts & principles and the function of usability. Further what is e-Bridge, e-communication and how to select the effective procedure for usability test and criteria for evaluation. In this mixed approach we used qualitative and quantitative methodology. Let's

see the meaning of qualitative and quantitative data “The qualitative research is concerned with studying object in their natural setting. A qualitative research is attempted to interpret a phenomenon based on explanation that peoples brings to them” and for quantitative “The quantitative researched is mainly concerned with quantifying relationship or to compare two or more groups.” There are number of methods and techniques for usability evaluation but according to the research work we utilised the Think Aloud Technique and conduct the Questionnaire and interviews. In the context of evaluating the uwps (university web portals) and its interface assessment, it involves requesting the information about uwps (university web portals) from the colleges official’s and students. The questionnaire is mainly used to gather such information that helps the observer in the evaluation. Interviews are structured methods of inquiry which are used to gather information about colleges official’s and student’s experiences and preferences about the uwps (university web portals). The interviews create a close interaction with the users and observer and are helpful for eliciting immediate answers to questions that the observer asks during the interview. While the usability testing brings the user in close contact with the system and is helpful to find their thoughts regarding it.

ii. *Literature Review*

With regard to the concerned information need a literature review was done at the initial phase. Scholars deeply studied the e-communication and about uwps (university web portals) for academic communication, it is a web base application. Further to evaluate these services a study is needed regarding usability, its roles, available methods and techniques for evaluation. To find this literature scholars have adopted a systematic approach. Scholars borrowed the books/Journals from veriace Universities colleges library and mostly used the google search engine as net surfing tool to search theavailable literature on these topics and found important information from journals, eBooks, research report and different databases.

iii. *Experiments*

We have used the Think Aloud techniques on uwps (university web portals). In this technique participants have to perform number of tasks during the experiments and to verbalize their thoughts and experiences while interacting with the system. The observer has to observe and records their comments during the experiments. We have selected official and students from the colleges, who has participated in the test. And found that the Think aloud identifying more issues on usability.

EMPIRICAL WORK

This section is going to discuss the planning for usability testing and evaluation. Scholars uses the Think Aloud Technique for usability testing but before conducting the test. Scholars discussed the pre-test questions that are significant in designing and selecting the task list for experiments^{6,7,8}.

i. *Usability Testing of UWPs (University Web Portals)*

Here the discussion is about the usability evaluation on the university web portals; it contains the information about the assessment methods for usability. Colleges officials and Students like and dislikes in universities web portals (Chhattisgarh Government's University) or their eagerness to work and their requirements. Does the university web portals play its role en-route for helping the colleges officials and students for achieving their desired goals for academic communication purpose as they look ahead? Scholars conducted a usability test in the colleges and selected a number of colleges officials and students who have an IT related background. Before the test scholars ask them some pre-test questions for general information about the university web portals. After the test conduction there were some Post-test questions.

The post-test questions are exclusively designed for university web portals functionality, usage and interaction with user for academic communication. The whole test is perform in the colleges computer lab where scholars act as observer to observe the participants activation and record all the activities, participants observations, submission and expressions while they are interacting with the system in a digital camera. There were two groups of college officials and students, advanced and new users.

ii. *Test environment*

Scholars selected the college computer lab for usability testing in controlled environments for better results, web browser and connection speed. The participants had to perform the experiments on Saturday due to Weekend. The reason of selecting college computer lab is that mostly the college labs are free so the participants can give more concentration on the tasks due to calm environment. The participants performed the test in quiet environment. All the instruments were checked before the experiment to avoid from validity threats in data analyzing.

iii. *Pre-Test*

Scholars conducted the pre-test experiment before conducting the actual experiment on the University web portals. The purpose of this test was to gather maximum data and information, so in this regard college officials and students selected from the different colleges. They used the university web portals during any circumstances of academic activities. The pre-test was designed to find the important tools mostly officials and students used in the university web portals to determine the selection of productive criteria for execution of a usability testing and the chosen tasks design is optimal. Scholars wrote down all the necessary information and observation while the students were working on the system with university web portals and took a short interview about the university web portals. This information helped scholars in the selection of tasks for Think aloud technique and to design a Questionnaire⁹.

iv. *Test Conduction*

During the conduction of usability test, scholars got an understanding of how officials and students interacted with university web portals. Scholars used the Think Aloud technique to get information which was not possible to get with other method as the Preece in her book defined it as. The Think aloud is signification like in the visibility of operation and tasks and its recording, commands. The participants came at their convenience and from scholars a very quick welcome took place before starting the experiments, telling the users they needed to think aloud. To test the usability of universities web portals¹⁰.

RESULTS/ANALYSIS

It presents the results that are derived after analyzing the collected data from Users (officials and students) with usability evaluation methods. There are two types of results that are given in this part first the result extracted from the Think Aloud (TA) in which number of users participated while the second results are derived from the questionnaire.

i. *Tasks related questionnaire Results*

After the experiment scholars distributed the questionnaires among users (officials and students) who participated in the experiments for finding their satisfaction level against the information, instruction, materials and instruments that were provided to them during the experiment.

ii. *Experiment Results*

Users (officials and students) participated in the experiments had to perform the tasks according to the given time and schedule. We recorded the participants' comments while they were talking during the interaction with the different university web portals in experiments and suggestions. In Think Aloud technique (TA) each participant individually executed the test in the colleges Computer Lab. Scholars selected two types of participants in the experiment the group 1 were the advanced users and group 2 were the new users. The new users did not complete all the tasks in given time while the advanced users also had the time variation. Scholars noted the time against each task and the number of errors, successfully completed and uncompleted tasks in the experiment.

iii. *Experiments Observation*

In this part we discussed the results that he got after analyzing the data from the users (Total 150 users involve in experiments college officials = 50 and students = 100). In the task 1: the 118 users completed the task timely and 32 users failed to complete the task on time. Task 2: 60 users completed the task and 90 user failed to complete it. Task 3: The 105 complete the task and 45 users could not complete within the given time or due to any error occurred as they were performing the task. Task 4: Only 20 users left the task uncompleted.

iv. *Experiments Analysis*

The results that scholars attained tasks related questionnaire helped scholars to validate the usability experiment from the user's perspective. The findings of scholars are going to demonstrate that university web portals are not have satisfactory facilities for academic communication.

v. *Questionnaire Results*

Scholars follow the procedure to design the Questionnaire according to the research work. Scholars sends Questionnaires to users for the evaluation of the UWPs by e-mail. Scholars received responses from users. The users (officials and students) have different thoughts and thinking regarding the UWPs, but mostly they have the relative comments very significant for the evaluation. Scholars design the criteria for questionnaire according to the guide line taken form literature.

CONCLUSION AND RECOMMENDATIONS

In gathering the users (officials and students requirements and after analyzing the results taken from the investigation the various issues and difficulties came to light. To sum up, this case study showed the careful usability, evaluation of UWPs to find the usability problems and required facilities for academic communication. Scholars used the Think Aloud technique and questionnaires for Usability evaluation. Scholars derived results and statistics through the usability testing, requirement analysis and questionnaires. The interviews helped scholars to meet their requirements. In this chapter the author will discuss the results, finding from evaluation methods.

i. *Satisfaction*

Scholars in the questionnaire calculated the unsatisfactory about the system from users. The unsatisfactory means, The system is not fit for the users to use it for academic communication.

ii. *Conclusion*

No any university web sites/portals have the facilities to their affiliated colleges for submitting reports to university though their web site/portal. So, affiliated colleges are sent/submitted e-reports (soft copies) manually (through postal or hand to hand) which are expensive and lengthy. It is not suited in the current boom of web technology.

Universities should avail the account creation (user name/id and password) facility for their affiliated colleges in their web sites/portals. And should provide the e-formats () with validation for required reports. Where colleges fulfill that e-formats and submit it through their account (user name/id and password). When report submitted through colleges account it should generate e-dispatch number and also should avail facility to send message/mail for receipt confirmation. Therefore colleges and universities will be free from lengthy expensive work. It will be best for both colleges and universities.

iii. *Recommendations*

The question in this research report to be explored is regarding colleges officials and students need and requirements for achieving their goals (facilities for academic communication and related other facilities). To find these requirements from colleges officials and students, scholars selected some university web portals and its importance for colleges officials and students in their academic/educational communication related activities. In this regard the usability testing is conducted with some colleges officials and students from some colleges, in addition to the use of questionnaires and interviews for

possible support during investigation. The analysis of the results showed that all the (selected university) universities web portals are a great innovation of e-Bridge concept that contributes for attaining the colleges officials and students' requirements. It aids colleges officials and students for their long term benefits in the form of e-communication. There are still some issues for creating improvements in the web portals concerning the colleges official and students for academic communication like:

- Universities should avail account creation facility to their web site/portals.
- Universities should avail e-format for required reports.
- Universities should avail e-format (reports) submission facility in college (user) account.
- It should maintain e-dispatch and e-receipt number/acknowledgement.

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