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Assessing usability of University Websites in meeting the expectations of students: a survey of literature

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ABSTRACT

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University websites are gateways to display resources offered by an institution. As such first impression, attractiveness, controllability, helpfulness, efficiency and learnability as defined by Website analysis and measurement inventory (WAMMI) is critical in the design of websites. Usability is an extremely important aspect of the individual website to survive in the digital environment for each University. Universities can communicate with students through their website its mission, vision, values and other general information. Additionally, the university websites also provide a platform to communicate with students, faculty and visitors. It is for this reason therefore that the University should maintain up-to-date content which is well organized and it should be readable for the students, lecturers, administrators, and the general public. Website design is often driven by technology, organizational structure or institution's objectives rather than usability from the perspective of students. This survey sort to assess Usability of University Websites in meeting the expectations of students. All universities now have websites that give access to large viewers' information on their existence. They enable the institutions to spread beyond physical boundaries and seek opportunities in the global market. Therefore, website becomes an essential tool to reach out to the student and should be designed in an appealing easy way to navigate. To ensure websites are of optimal use key metrics like key factors that affect the usability of websites like design, navigation, accessibility and content are key. To assess usability, this survey works explores on methods and tools used to assess student satisfaction when navigating the website. Baseline being that there is student expectations in shaping perception of usability and best practices for improving the website to needs of the students.

Introduction

Usability refers to the capability of the software product to be understood, learned, used, and attractive to the student, when used under specified conditions. Student work faster and more effectively with the software they understand. Mc Call model established software product quality through several features namely grouped into

three perspectives ie: Product Review (maintenance, flexibility, and testing), Product Operation (correct, reliable, efficient, integrity and usability) and Product Transition (portability, reusability and interoperability) Product Operation (correct, reliable, efficient, integrity and usability). Therefore, Usability is key in software development and more so in the field of concern. The au-

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thor enlists the following sub-characteristics of usability: -

- a) **Understandability:** referring to the capability of the software product to enable the student to understand whether the software is suitable, and how it can be used for particular tasks and conditions of use.
- b) **Learnability:** refers to the capability of the software product to enable the student to learn its application.
- c) **Operability:** refers to the capability of the software product to enable the student to operate and control it.
- d) **Attractiveness:** refers to the capability of the software product to be attractive to the student.
- e) **Usability Compliance:** referring to the capability of the software product to adhere to standards and influences.

In this regard, it is clear that the development of the University website should encompass the above percepts to address the concerns of its students. ISO 9241-11 defines usability and explains how to identify the information, which is necessary to take into account when specifying or evaluating usability of an interface in terms of measures of student performance and satisfaction. In particular, ISO 9241- part 11 defines usability as the “extent to which a product can be used by specified student to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use”. Usability being a nonfunctional requirement has assumed a great deal of importance in terms of satisfying students’ needs and expectations. Therefore, when designing a website, a great focus is on website’s student to enhance its usability. According to Nielsen, usability can be defined in terms of five factors, i.e. efficiency of use, learn-ability, memory-ability, errors/safety, and satisfaction. According to him, the usability of a product will be good and the system is usable if it possesses the above factors. Nigel Bevan and Macleod considered that usability is the quality requirement that can be measured as the outcome of interactions with a

computer system. This requirement can be fulfilled and the end-student will be satisfied if the intended goals are achieved effectively with the use of proper resources. A student-friendly system should fulfill the following five goals, i.e., easy to Learn, easy to remember, efficient to use, satisfactory to use, and easy to understand.

Methodology

The research methodology used in the study was to review existing literature so as to draw conclusions and strategies that can help website designers improve on Usability of University Websites in Meeting the Expectations of Students.

Specific objectives

To find out key factors that affect the usability of university websites; to explore the methods and tools used to assess website usability and customer/ student satisfaction; to analyze the role of student expectations in shaping perception of website usability and factor that can influence these expectations; to assess practices for improving usability the of university websites and meeting the needs of the students.

Research Questions

What are key factors that affect the usability of university websites? Which methods and tools used to assess website usability and customer/ student satisfaction? what is the role of student expectations in shaping perception of website usability? which are best practices for improving usability the of university websites and meeting the needs of the students.?

Discussion

Websites have drastically modified the traditional way that University institutions communicate with the public. All universities with utmost certainty now have websites that give access to large viewers’ information on their existence. They enable the institutions to spread beyond physical boundaries and seek opportunities in the global

market. The dynamics of the current world, with the entry of challenges like the Covid-19 virus, has opened new lines of service provision like Online learning where it may be blended or entirely remotely. Several services get anchored on the websites to the likes of several portals and links. For instance, student needs check fees status, subject registration, holidays announcements, results update and exam timetables. All this is to mean website serves as a means of communication whereby a University institution can communicate with its students. However, (Islam & Tsuji, 2015) in his study showed that users are not satisfied by overall usability level of these websites and few of them are satisfied with the available features.

Usable website benefits universities by attracting, retaining, and satisfying their users. As knowledge-producing organizations, universities be obliged to uphold the usability of their websites (Jayakody & Atukorale, 2022). Usability of a web site has assumed a great deal of importance in terms of satisfying web site users' needs and expectations (Nam & Nam, 2012).

When potential student check out the website, the anticipation is that any issues regarding a particular program being offered will be responded to and addressed to satisfaction. In his study work (Jayathunga et al., 2017) affirms since web-based information sharing has become more popular and effective, it is required to focus on the usability of a website from the user's viewpoint.

As websites are designed and developed in a different way, it is possible that students will find it very difficult in getting the solutions they need due to issues of website usability. For instance, a particular website fails to prioritize current postings and it becomes difficult for the students. Administrators of Educational websites have to know the usability issues that might be found on their websites. They should be aware of the potential weaknesses and what has to be improved, in order to enhance the user friendliness of these websites and enable users to get full benefits of usable educational websites (Alfayez & Al-tawriy, 2021).

Websites have become a popular means of deriving information. However, students still find it difficult to access the relevant data or use the websites. Hence, they require websites that offer accessible information and

easy navigation (Baroudi, 2020). Like, if past postings and recent postings are mixed in a manner that they are not readily available in the website home page. Take an example where new notice is posted, and when students visit the website they cannot trace them, they end up missing out.

Looking at the cost implication of websites, it is reliably affordable and appropriate technique to connect with students, and considering the bulkiness of universities in regard to the need for communication with their main customer, that is the students, it's the better option in regard to cost implication.

Corporate image for university institutions is a remarkable aspect that enables the institutions to indulge within their strength to keep positive images with their various constituents, and the way to do this is to take full advantage of the opportunities the website provides. University institutions take full advantage of their websites as a key public relations and marketing tool to reach potential students. Some of them may even be international students depending on clear information provided on the website. Web designers must conform to specific student needs, and must make sure that student are satisfied to successfully complete tasks with the web without facing any difficulties.

In a study carried out in Nigeria on usability evaluation of some selected Nigerian universities' websites it was observed no single university adhered to the threshold stipulated by McCall. Multivariate regression models indicated that Web layout and performance were the main predictors of website usability, while personal characteristics including gender, age and Web usage experience of users had no effect. User satisfaction was also influenced only by the Web design attributes (particularly Web structure) and not by the per-

sonal characteristics of the users (Dianat et al., 2019).

Considering similarities between the Union website and University website, as both handle crowds of individuals, notes unions have suffered steep declines in membership, and some see the internet as a potential ally in the attempt to reverse these declines. Similarly, universities are faced with a reduction of students numbers and opting for other engagements outside specialized academics and this can be attributed to a lack of information.

With the emergence of new trends in learning, that is blended and full online courses, proper research-based guidelines concerning how to enhance the usability of

a course site and how to effectively use the online tools need be done. It is surprisingly noted, only few studies on how webmasters perceive, experience and explain website quality or design issues (Andersen, 2013). This ensures individual, group or class discussion areas, self-tests, surveys, and quizzes are all available for web-based courses. Needful to emphasize, that even exams are being done online and the usability of the platforms used need to embrace usability percepts for the effective performance of the learner.

although the criteria by which people judge visual

appeal, user satisfaction and trustworthiness are still unclear, perceived usability appears to be related to the detection of stumbling blocks that hinder smooth interaction with a web site and probably to the orderliness of screens. User satisfaction is a complex construct that incorporates several measurable concepts and is the culmination of the interactive user experience (Lindgaard, n.d.).

Educational institutions play a vital role in reshaping any nation by absorbing quality attributes in civilization, culture, and transformation. The information available on the websites of educational institutions has become very important for prospective students and at present most of the universities are completing the process of admis-

sions online with websites as mediators. Therefore, the most important thing is to have updated and informative websites with ease of access. Modern web technologies provide a highly customizable and dynamic interaction medium, yet their potential to accommodate individual user preferences and needs is largely untapped (Alexander et al., 2021).

A key feature of the ongoing growth of the Worldwide Web over the past decade has seen an explosion of web portals and mobile applications that focus on supporting education. Assoc. Prof. Dr. Aykut H. Turan Namik Kemal University in his research hypotheses on websites posed six different theoretical factors to be positively associated with website usability. The results revealed that five of the six factors can positively and significantly affect the website usability perceptions of the students. Moreover, results achieved also revealed that some of the demographic factors tested, such as gender and web experience got significant impacts on usability perceptions of individual students.

Today's students are increasingly living their lives online. For instance in a survey done in Nigeria, the author (Journal & Library, 2020) noted that the university had websites with Universal Resource Locators (URLs) specifically for the libraries; while the librarians got links on the university's main website; the students found out about library websites through their friends followed by the library workstation, then library staff members. Through observations made, it was noted student visited the website regularly and therefore need for more attention to be given to the website development was paramount.

Information about the institution, programs, and courses can be found at the Website. Website target students who usually have a very specific set of goals in finding the information that they require from the website. Their experience in using the university website will verify whether they are impressed by the information from the website or not and this surely will give an impact on the university's admissions. To comply with

their requirements, the university website must meet certain usability measures. The interface should be navigated smoothly without making the student lost.

Conclusion

The study found out that resulting from the importance of website in universities, usability is paramount in meeting expectations of the students. The study was informed of key factors that affect the usability of University websites like Navigation, search functionality, mobile responsiveness, Accessibility, Content Quality and readability, Page Load Speed, Consistent Design, Student feedback and support, Interactive Features, Security, Multimedia Integration, Social Media Integration, Student Authentication and Personalization. The study found out that there exist tools used to assess website usability like Student Testing, Survey and Questionnaires, Heuristic Evaluation, Cognitive Walkthroughs, Eye Tracking, Heat-maps and feedback forms. Student expectations was noted to play a crucial role in shaping the perception of website usability. When student visit a website, they come with certain expectations based on their past experiences, industry standards, and cultural norms. These expectations influence how student interact with and evaluate a website. The study found out there are best practices for improving the usability of university website which included but not limited to clear Navigation, Mobile Responsiveness, Consistent Design, Accessible Design, Page Load Speed, User-Friendly Forms, Up-to-Date Content, Interactive Features, Feedback Mechanisms and Social Media Integration.

Recommendations

In light of the study, it recommends that websites should be updated from time to time so as to ensure efficiency and effectiveness in functionality. This will also help to curb the errors that come up from bad or broken links.

The external script files number and their sizes should be written with care following the stated basics so as not to exceed the number and the

size stated. Further, the study recommends the images and other graphics to be created with some care as pertaining to their heights and sizes so as to reduce the loading time and partial displays. Lastly, it was also discovered that HTML spell-checking revealed some problems. Because of the diverse nature of browsers, it is, therefore, necessary to always spell check our pages so as to ensure browser compatibility.

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