



A Usability Review of Undergraduate Student Web Portals at University of Ibadan

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Abstract

Tertiary institutions have deployed web portals for undergraduate students as a crowd management tool and fraud reduction technique. Tertiary institutions offer student web portals for a wide variety of self-service features such as admission, registration, payment, e-mail, transcripts, repository, counselling and so on. University of Ibadan (UI) is a tertiary institution located in the southwestern region of Nigeria. The institution has student web portals used for registration, admission purposes amongst others. The University of Ibadan is a complex organisation with governance aided by the Committee System and technology such as web portals. This paper examined the usability of undergraduate student web portals currently in use at University of Ibadan, Nigeria. A modified University Portal Usability Assessment Index was used on a digital platform. Six web portals for undergraduate students was identified. The results indicate that students require consolidation of the various portals into a single portal and improvement on support for portal users. The study identified the need for a mobile app to be developed since most users access the portal via mobile devices.

Keywords: *web portal, usability, user satisfaction, University of Ibadan*

1. Introduction

Tertiary institutions are early adopters of technology due to the open mindedness and variety of ideologies cohabiting in the educational space. Information technologies such as visual projection, websites, videoconferencing and e-mail have been successfully integrated into tertiary institutions for administration, research and community service. The use of web portals is gradually being adopted across many universities to handle administrative processes involving students.

A web portal is an online gateway to online resources that are owned by one entity requiring authentication or personalisation. The aim of web portals is to display content in a "uniform way" depending on the intended user and the intended purpose. Tertiary institutions have deployed web portals for undergraduate students as a crowd

management tool and fraud reduction technique. Tertiary institutions offer student web portals for a wide variety of self-service features such as admission, registration, payment, e-mail, transcripts, repository, counselling and so on. The features available may be restricted by whether access is by an authorised and authenticated user or an anonymous site visitor.

The quality of information provided by web portals, user satisfaction with web portals and rating of services provided by web portals has been studied by many researchers. There is a limit to the generalisation of such studies on web portals hosted by an independent organisation thus the need for a study focusing on web portals at the University of Ibadan. University of Ibadan (UI) is a tertiary institution located in the southwestern region of Nigeria. The institution has student web portals used for registration and admission purposes.

UI was established in 1948 as the first University in Nigeria. The University took off with academic programmes in Arts, Science and Medicine, and is now a comprehensive citadel of learning with academic programmes

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in sixteen Faculties with several centres of research. The University of Ibadan Postgraduate School is one of the largest in Africa and the flagship of Postgraduate Education in Nigeria as it produces the much required human resources for the entire Nigerian University system, the Nigerian public and private sectors and beyond. The Postgraduate School enrolment takes about 50% of the entire student enrolment. University of Ibadan produces an average of 3,000 Masters and 250 Ph.Ds every year [1].

The main thrust of the University for the 21st century is to be world-class institution for academic excellence geared towards meeting societal needs. The University is consistently ranked among the prestigious Universities in the world. The University of Ibadan is a complex organisation with governance aided by the Committee System and technology such as web portals.

This paper presents a usability review of undergraduate student web portals currently in use at University of Ibadan, Nigeria. It investigates the availability of a web portal policy, features available on the portal and the perception of undergraduate students about the web portals.

2. Related Works

Web portals in universities serve as centralised online platforms that provide students with access to a range of services, including academic resources, administrative functions, and communication tools. They are intended to build a sense of community, easy access to information at pivotal moments in students' development, providing personalised, relevant information at the exact time of need, and giving students proactive information to help make appropriate decisions. Universities most often focus on the technology and organisational objectives of the web portals. Understanding students' perspectives on these web portals is crucial for enhancing their effectiveness and usability. Usability is the extent to which users are able to use a product to achieve the desired goals with effectiveness, efficiency and satisfaction [2].

The usability of web portals is done through assessment that ensures the application is effective, efficient, and satisfying. Testing for usability is done because the quality and user

acceptance of an application depends on the characteristics of ease of use [3]. In addition, according to Jabar *et al.* [4] inspection of usability by an expert is needed. The inspection by an expert is able to identify problems and improve the usability of the web portal by inspecting it using existing standards. The methods that can be used to evaluate the usability of an application are: usability testing, interviews, surveys and heuristic evaluation [5]. Usability testing, interviews and surveys are methods that use users as a respondent, while heuristic evaluation is a method that uses experts as an evaluator [6].

According to Nielsen [7], usability testing is a simple method that could be used to view what happens when an application is used. A number of usability studies have been carried out on web portals in Nigerian tertiary institutions. Oluwatobi *et al.* [2] did a study of web portals in selected private universities in southwest Nigeria and found out that unstable internet connection, low information currency and accuracy affected students' use of the web portals.

In Oliha [8], the clearance service of the web portal of University of Benin was evaluated for usability and participants were satisfied that the system was easy to use. This affirmed that the web portal was easy to use (effective), facilitated task completion (efficient) and was preferred to their existing approach for graduate clearance services.

The web portal usability test of the University of Benin web portal by Oliha [9] using interface and information quality, system usefulness and overall satisfaction showed that students found the portal ineffective and unsatisfactory when completing tasks.

The study by Anyim [10] investigated the accessibility and utilisation of web resources by the students in FCT College of Education Zuba, Abuja. From the result, poor internet connectivity, lack of steady power supply, lack of information retrieval skills, inadequate ICT infrastructure, and insufficient functional computers constitute the challenges associated with the utilisation of web resources by students.

Abdulhamid and Idris [11] did a survey of ten university web portals and found out that the

design of the University of Ibadan web portal did not meet international standards. The web portals were assessed using personalisation, timely and relevant, building relationships using e-mail and telephone, track inquiries, integration, and make the system easy to manage.

Edebatu *et. al.* [12] deployed Moodle as a learning management system in Imo State University, Owerri while Haruna and Lame [13] deployed a self-built learning platform for general courses at A. D. Rufai College of Education, Legal and General Studies, Miser Bauchi State. At the University of Benin, Oliha [14] studied the usability of the web portal for social-academic learning with results stating that the system is perceived with a 70.9% learnability and 83.9% usability scale score with excellent usability in the 90th-95th percentile range.

3. Methodology

This study investigated the usability of web portals provided to undergraduate students at the University of Ibadan (UI). The import of this work was to understand usability of the web portals and evaluate the web portals. The target population of the study comprises the full time undergraduate students of the University of Ibadan (UI), Ibadan, Oyo State, Nigeria.

This study used the mixed-methods approach. The study identified and visited the web portals available to undergraduate students at University of Ibadan. A review of features available to students on each portal was carried out. A survey of undergraduate students to get their views on the various student web portals was conducted using an online survey.

The questionnaire employed was the University Portal Usability Assessment Index (UPUAI) as provided by Abdelhakim *et. al.* [15]. The UPUAI was modified to have five sections and twenty-five items. Section A collected the demographics of participants, section B was the rating of the web portals based on usability, section C collected responses on the features and tasks carried out using the web portals, section D focused on reliability of the web portals and section E collected data on the accessibility features of the web portals. The questionnaire was

administered through Google Forms online. The survey was done over a period of two weeks with the link shared via WhatsApp and QR Code. The data collected was analysed using frequency and percentages. Discussion on the implications from the review and student perspectives was compared with previous studies.

4. Results and Discussion

4.1 Results

The University of Ibadan has multiple web portals for undergraduate student use. The web portals identified are:

- i. Student Portal - <https://student-portal.ui.edu.ng/login>
- ii. Results Portal - <http://parents.ui.edu.ng/login.php>
- iii. E-learning Platform - <https://lms.ui.edu.ng/>
- iv. Check your receipt status - <http://streceipt.ui.edu.ng/>
- v. Institutional Repository - <http://repository.ui.edu.ng/>
- vi. Admissions Portal - <https://admissions.ui.edu.ng/#/>

The state of the various links to the undergraduate web portals as at April 2024 are displayed in Figures 1 to 6. The Result Portal which also serves as the Parents Portal is not available. This may be due to a number of reasons. Three of the web portals require authentication before access is given. The Check your Receipt Portal does not require authentication as only the payment receipt number or student matriculation number is required.

In the study, identification of the features available on each web portal was done by the researchers and are presented in Table 1. The features identified include dashboard, calendar, posting of events, academic calendar, surveys and polls, availability of examination timetable, news, localised messages and payment resources. The five portals available to students are contrasted to provide which features are available or activated for students.

The Student Portal, shown in Figure 1, provides a dashboard, calendar feature, in-box messages, student profile and ability to register and pay for courses. The portal has other features such as library which are not

activated. The portal was managed by a third-party company until recently. The students access the portal using their university provided e-mail addresses. The Result Portal in Figure 2 was not functional when accessed but was expected to provide students with a transcript-like version of their academic progress. Parents are also expected to have access to the Results Portal to check the academic progress (results) of their children or wards.

The e-learning platform used was customised from Moodle as seen in Figure 3. It has a host of courses and facilities for teaching students. An e-mail address is required to access the learning portal. Students and faculty have access to the learning portal with different features available to each based on the roles assigned. The Check your Receipt Status Portal deals only with financial aspect of studentship. It is managed by the Bursary unit of the university as seen in Figure 4. The portal allows students to check if their payment has been received by the university.

The payment and generation of a receipt is done on the Student Portal. Figure 5 shows the home page of the Institutional Repository hosted by the University Library. The repository provides access to more documents with login required. The Undergraduate Admissions Portal, Figure 6, is used for the admission process from the moment results are released by the Joint Admissions Matriculation Board (JAMB), allocation of matriculation numbers to students and acceptance fee payment. There were six hundred and forty-six responses from the online data collection process. The analysis of the data collected is reported using tables and charts.

The demographics of the respondents shown in Table 2 indicated that there were more male students than female students by 19%. The 20-30 age range had the most respondents while the Faculty of Science had the most respondents (231) and Faculty of Clinical Sciences had the least number (1) of respondents. The sixteen faculties on campus were represented in the survey as shown in Figure 7.

The likert scale used to rate the student web portal in Table 3 goes from low to high with the frequency of responses indicated. The ease of login to the web portal had only 34

responses with below average rating. A high number (630) of respondents said the accuracy of the information provided was average, above average and high. The attractiveness of the pages in the portal was rated low or slightly above low by 124 respondents. 593 participants indicated that they could averagely, above average and high access the student portal from their mobile phones. The student web portal was found easy to navigate by 628 respondents. The response to complaints made by users was however not satisfactory to 312 respondents, while 27 students indicated that the instructions on the Student Portal was not clear or helpful.

The information presented in Table 4 was used to confirm the result in Table 1 on the review of features available in web portals at University of Ibadan. The web portals were not used to check course information but used to do course registration as reported. Only 322 students reported using the portal for payment. The use of the portal for Hostel allocation was advertised on the web portal but all the students stated that they have not used the web portal for that purpose.

All the students (100%) stated that the web portals have not been used for processing transcript or any academic work such as submission of assignment, lecturer assessment, access to digital resources in the library, library registration and online discussions. All the students however confirmed that they were able to use the university assigned e-mail addresses and update their profile on the web portal. The Result Portal is not available to about 50% of the students while the other half have never used the result checking portal.

The students shared their opinions about the reliability of the web portals available to them. The responses are presented in Table 5. The students (63%) were able to access the web portals from all types of web browsers thus indicating compatibility. A large percentage (63%) of the students agree that the information available on the web portals is accurate and 391 agree that there are no grammatical errors in the content shared. and 60% agree that using the web portal is secured with all respondents saying there is confidentiality of personal information. The availability of the web portals is confirmed by 289 who strongly agree and 285 who agree out of the students.

The mobile phone is the most used method of accessing the web portal as indicated in Figure 8. This is closely followed by the laptop which is also a mobile device. The Cybercafe is the least used because mobile devices and personal internet devices have reduced the need for cybercafes.

The students rated the aesthetics of the student portal as average by 298 students and good by 294 students. Figure 9 shows that only 54 students were not happy with the color, font size and layout. Figure 10 is a combined chart showing that the 580 of the students found a feedback channel such as e-mail or telephone number on the web portal. A large proportion (96%) however did not see any accessibility feature such as alternate text, text-to-speech and close captioning while using the student web portal.

4.2 Discussion

University of Ibadan (UI) uses information technology for governance purposes. Osunade and Ogundele [16] had earlier evaluated the university website for visibility and webometric ranking purposes. This review has highlighted the presence of five web portals for undergraduates at the University of Ibadan. The adoption of web portals for some administrative tasks indicate that web portals are useful governance tools. The management of the web portals at UI are however split across several units of the university hence the hosting of separate portals. The non-functioning Result Portal is symptomatic of administrative challenges encountered in the processing of students results. The Examinations, Records and Administrative Data Processing Division of the Registry is responsible for official student results after marking by lecturers and approval by the department, faculty and Senate [17]. The automation of result processing is suggested as done by Osunade *et. al.* [18].

The purpose of a web portal is indicated through the name or stated on the home/login page. A survey of the features available indicated that the services provided are limited. This indicates that not all services of the managing units are delivered using technology and that manual or paper-based services are still in use. It also implies that there is a dearth of technical know-how to support the services. The university should

explore opportunities to integrate the portal with third-party services and platforms commonly used by students. This includes integration with social media platforms, productivity tools, or campus-specific apps.

The number of responses from the survey is acceptable and adequate for a two-week period. The digital survey was less costly and encouraging for students to fill. There were more male than female respondents, with most respondents above 20 years old and studying a science-based course. Faculty of Science may have the highest number of responses because the survey link was given to students in the faculty to share.

The rating of the Student Portal provided students perspective on their use of the portal. Ajoye [19] did a study of the postgraduate college web portal at University of Ibadan and the results indicated that the web portal will help in student services management when some impeding factors are addressed. Abdulhamid and Idris [11] did a survey of ten university web portals and found out that the design of the University of Ibadan web portal did not meet international standards. The absence of a feedback channel for complaints was rated low and the design of the pages of the web portal was found unattractive by the students. Tella and Bashorun [20] did a study at University of Ilorin on student satisfaction with the e-learning portal that indicated 89.3% were adequately satisfied, satisfied, and moderately satisfied.

The features found on the five web portals for undergraduates are expected. The web portals were either designed and implemented by local software developers or an open source software was customised for use [9, 11]. The students strongly agreed and agreed on the quality of information available on the UI Student web portal thus confirming the work of Tella and Bashorun [20]. The work of Ajoye [19] inferred the same results for postgraduate students that “the influence of information quality on user satisfaction was also strong, with most respondents positively affirming that most or all their information needs were adequately taken care of.” The following usability enhancements: improved navigation, streamlined workflows, and optimised user interfaces to enhance the overall user experience are suggested.

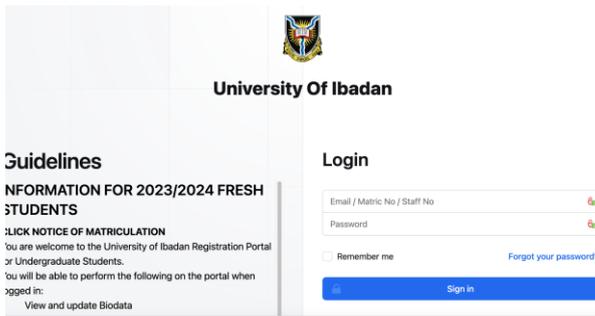


Figure 1: Student Portal

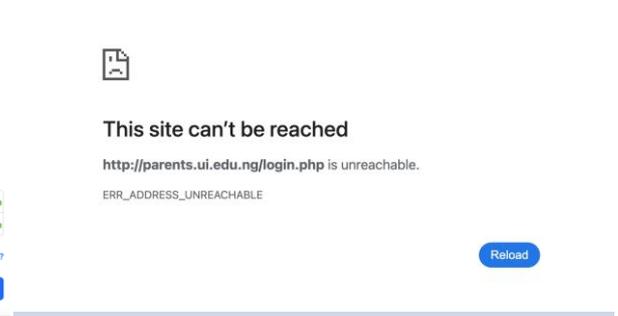


Figure 2: Results Portal

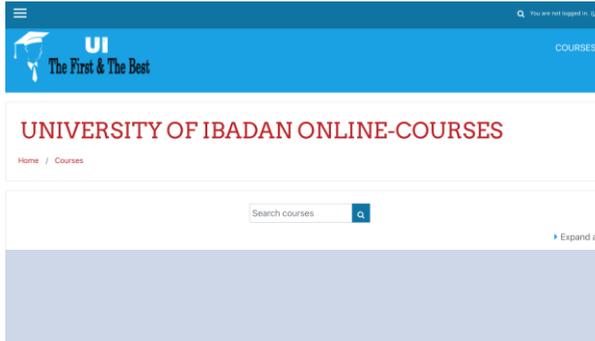


Figure 3: E-learning Platform



Figure 4: Check your receipt status

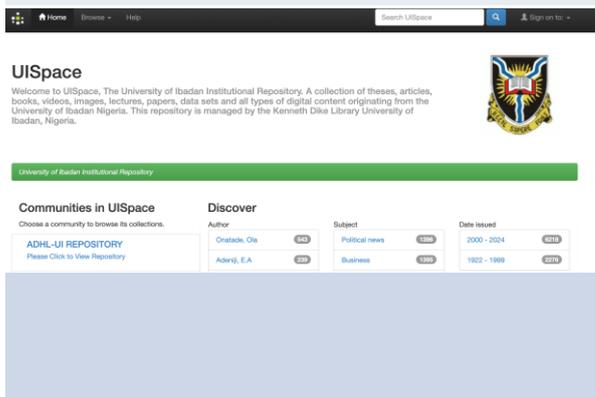


Figure 5: Institutional Repository

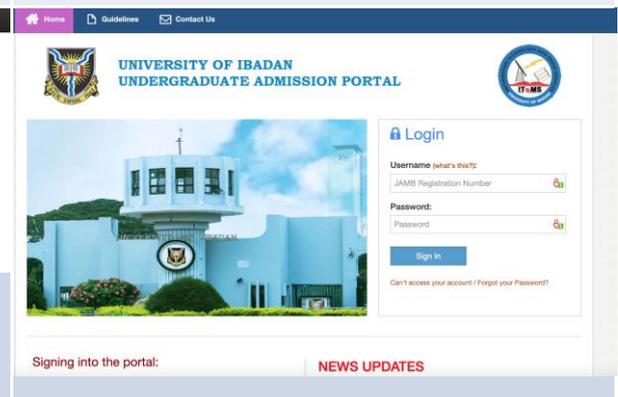


Figure 6: Undergraduate Admission Portal

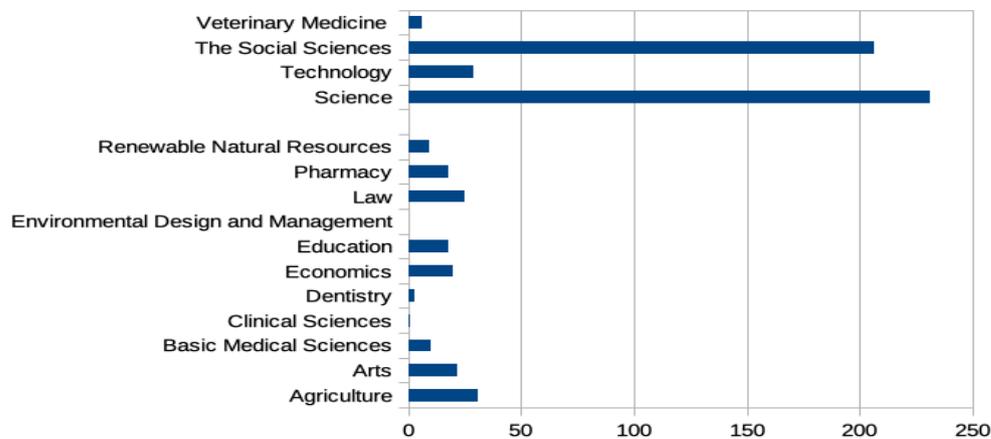


Figure 7: Distribution of Respondents across faculties

Table 1: Review of Features on Portals

Features	Student Portal	Results Portal	E-learning Platform	Check your receipt status	Institutional Repository	Undergraduate Admission Portal
Admission	No	No	No	No	No	Yes
Calendar	Yes	No	Yes	No	No	No
Course Registration	Yes	No	Yes	No	No	No
Academic Dates	No	No	No	No	No	Yes
Featured Events	No	No	No	No	No	No
Customization	No	No	No	No	No	No
Polls	No	No	No	No	No	No
Exam schedule	No	No	Yes	No	No	No
Grade calculator	No	Yes	Yes	No	No	No
News	No	No	No	No	Yes	No
In-box messages/E-mail	Yes	No	No	No	No	No
Dashboard	Yes	No	Yes	Yes	Yes	Yes
Payment	Yes	No	No	No	No	Yes

Table 2: Demographic data of students

		Frequency	Percentage
Gender	Male	382	59.1
	Female	264	40.9
Age	Below 19	28	4.3
	20 -30	557	86.2
	31- 40	50	7.7
	Above 40	11	1.7
Computer Skills	Beginner	39	6.0
	Intermediate	555	85.9
	Advanced	52	8.0

Table 3: Rating of UI Student Portal

	1 (Low)	2	3 (Average)	4	5 (High)
Ease of login		34	298	33	281
Accuracy of the information		16	242	101	287
Attractiveness of the Pages/Interface		124	342	180	
Ease of access on smartphone		53	271	42	280
Ease of navigation	18		310		318
Response to complaints	244	68	303		31
Instructions are clear and helpful	27		292	287	40

Table 4: What functions/tasks have you done on the UI student portal?

	Not Available	Never	Sometimes	Always
Check Course information	322	324		
Course Registration			324	322
Payment		324	322	
Hall Accommodation		646		
Transcript Request	646			
Assignment submission	646			
Digital Library	646			
Result checking	324	322		
Lecturer Evaluation	646			
Library Registration	646			
E-learning		646		
Online Discussion		646		
E-mail			646	
Profile update			646	

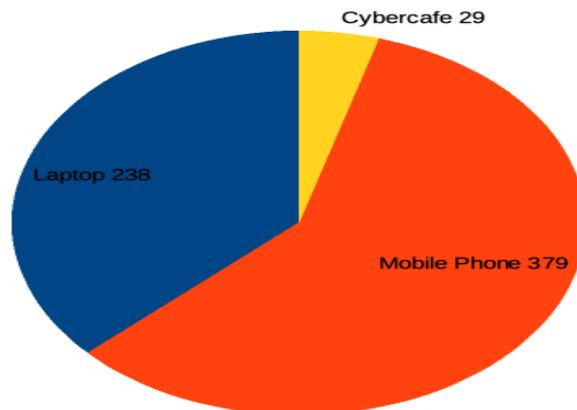


Figure 8: How do you access the web portal

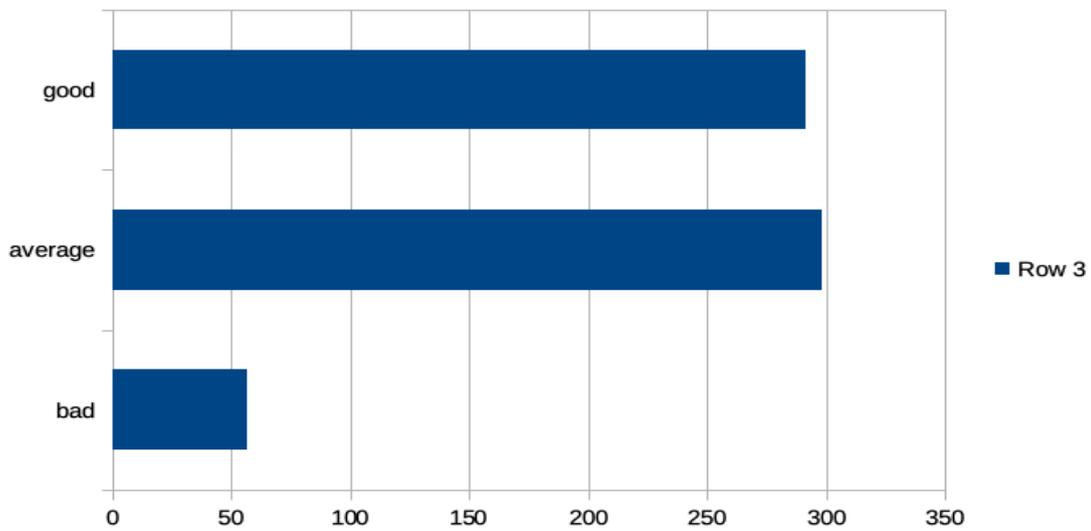


Figure 9: How would you rate the use of color, font size and layout of the UI student web portal?

Table 5: Reliability of the web portal

	Strongly Agree	Agree	Disagree	Strongly Disagree
Content is free from grammatical errors	242	391	13	
Information source is provided		185	461	
Confidentiality is maintained		646		
Portal is available always (24 hours/7days)	289	285	57	15
I feel secured doing tasks on the portal	39	389	26	192
Information provided is accurate	15	409	189	33
Works with all web browsers – IE, Firefox, Opera	405	100	141	

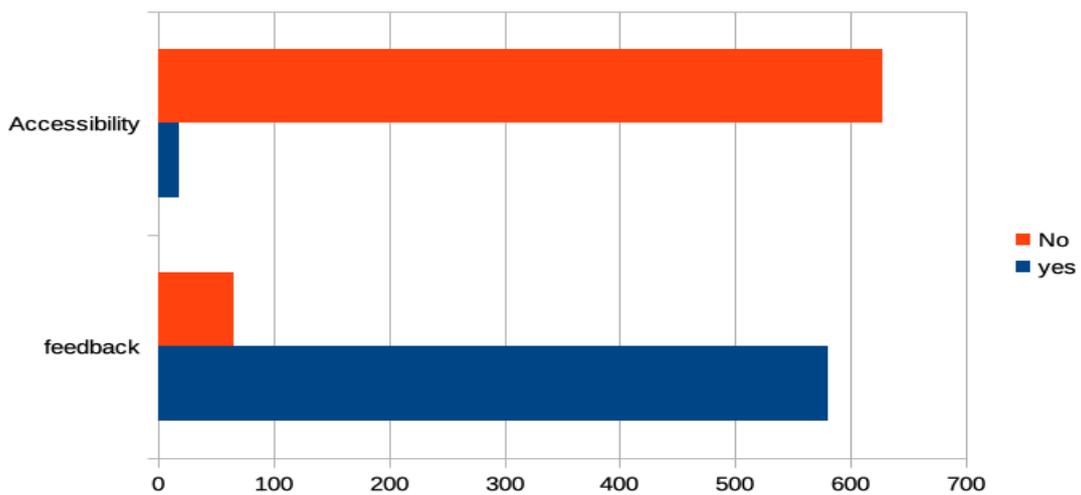


Figure 10: Availability of feedback channels and provision of accessibility features for disabled students

The introduction of new features or activation of existing ones such as personalised recommendations, integration with learning management systems, and enhanced communication tools will improve student satisfaction. The implementation of personalised features and recommendations based on students' preferences, academic history, and interests so as to provide content and resources relevant to individual students engagement of the web portal. Student satisfaction with the UI web portals is affected by functionality, method of access, aesthetics and quality of information.

The web portals are not accessible through a mobile app with all the students stating that a mobile app was not available. Mobile devices were the most used access method to the web portals so a responsive design and mobile-friendly features are expected. The university should optimise the portal for mobile devices to ensure a seamless experience for students accessing the platform on smartphones or tablets. The students are unaware of accessibility features for disabled students in the form of alternate texts, text to speech icons and so on. The inclusion of accessibility features is expected with compliance to the global accessibility standards. The absence of a feedback mechanism for support and complaints is supported by the work of Abdulhamid and Idris [11].

5. Conclusion

Web portals are a significant governance tool for universities if properly deployed. This paper presented an overview and comparison of features available on student web portals at University of Ibadan. The deployment of multiple web portals for undergraduate students at University of Ibadan indicates that many administrative tasks can be automated to provide unlimited access to students and relieve support staff of repetitive customer service tasks. From the students perspectives it is advocated that the multiple web portals be consolidated into a single portal with better aesthetics deployed. Recommendations such as integration of mobile apps, videoconferencing tools and assessment tools were suggested to impact undergraduate use of web portals.

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