



Integrated Web-Based Students' Report System for Tertiary Institutions

Chinwe Gilean Onukwugha, Chidi Ukamaka Betrand, Mercy Eberechi Benson-Emenike, & Chinwe Ihechiluru Ugbor

1. Department of Computer Science, School of Information and Communication Technology, Federal University of Technology Owerri, Imo State Nigeria

Abstract:

An effective reporting system is very necessary for project executions. The issue is that the project team and other stakeholders involved in the project won't be able to access all project details until an organization implements a suitable reporting system. There is need to have an appropriate medium through which excesses are being reported for thorough redress in order to see to it that the day to day running of affairs are properly carried out. This work provides a medium through which students can lay complaint of the activities and things they see are abnormal or hurts their wellbeing in and within the school environment. The system was built with web technologies to enable easy and scalable access, with HTML, CSS AND JAVASCRIPT powering the frontend and PHP and MYSQL powering the backend which runs on an APACHE SERVER. Hence, a system that ensures that students' voices are heard by the appropriate authorities and in time creates an environment that boost the students' trust in the system with provisions of attending to problems on time.

Keywords: Integrated, Web Forum, Report, Information, Complain, System, Chatbot, Model

1. Introduction

Attempts have been made over the years to build systems that will help the transfer of information at the different levels, attempts ranging from the short messaging, emails, social media networks, chatbots and others. These systems in their various levels and capabilities have been of tremendous help. Most of the support systems in existence are always built on another mother system that doesn't give room for rapid response due to traffic. In extension, systems built to rely on a parent system will always need to share resources with other units or systems on the mother system, which will have a significant impact on its performance [1]. Having a complaint system in an organization or system is of great importance. It will ensure that complaints are received on time and by the appropriate channels which will aid in solving whatever problems that comes with the complaint. It is important to note that any system that lacks suggestion or complaint channels does not possess the full strength of information. However, only few students know about this avenue and even those who are aware find it difficult to access due to the rigorous protocols that needs to be taken which basically are the manual methods of writing letters to be approved by different levels of authorities before it gets to the appropriate authorities [2].

2. The Concept of Web- Based Forum

Online discussion forums (ODFs) are web-based applications that unite individuals with similar interests and perspectives. They have become a popular tool for engaging students outside of the classroom. It gives students the ability to reply to discussion threads, engage with other students and teachers, and receive feedback—all of which help them gain a better knowledge of the

material being covered.[3]. They have been used in education to supplement conventional teaching methods like lectures and tutorials. It is consistent with the educational theory that views communication as an essential tool and basic process for successful learning. [4]. A forum's message viewing rate can be used as a gauge for peer performance and learning. The learners' engagement with inanimate and living things, together with their involvement in technology-mediated instruction, determined the caliber of their educational experience. This in turn speeds up the process of transferring knowledge and improves student performance. Intellectual interchange; gaining fresh insights and honing existing ones; taking pleasure in community participation; shaping the forum's development; helping others; forming new friendships and contacts; obtaining new business prospects; staying up to date with current affairs; discovering new chances. It is proven that messages and chats by students in online forum are more insightful.[5]. Online discussion forums are a very helpful training tool for writing abilities. That is to say, pupils learn the usefulness of writing in an organized online debate forum [6]. The use of the internet forum seems to give pupils reinforcement assignments so they may work on their writing. Instead of completing the assignments alone, students might collaborate to generate work that was of higher quality by exchanging ideas and viewpoints [7]. The majority of pupils are always more comfortable chatting online than in person. Recent studies show that students absorb pertinent information more quickly when they read and consider replies carefully [8]. Students of today who utilize technology to connect with others have an inspiring social practice that supports the development of their learning behaviors. Twenty-five Chinese and Kiwi learners participated in research [9] that found chances to be customized to certain student groups on internet forums. Compared to in-person talks, these students felt that the text-based, virtual character of the medium made it easier for them to participate in discussions and felt more at ease when responding in writing. Online discussion boards are helpful for improving communication abilities. There is a chance that computer-mediated communication, or CMC, will improve student engagement. Additionally, the results validate the efficacy of an asynchronous virtual environment in fostering an online learning community [10]. He recognized that following ten days of participation in an online forum, there was a surge in communication among study participants and claimed that feedback from teachers or instructors during this time optimized learning prospects.

2.1. Understanding the Concept of Report/ Complaint

A complaint is a statement that something is unsatisfactory or unacceptable about something that is unpleasant, unsatisfactory or unacceptable or a person who does something that they see as unpleasant [11]. In some cases, most of these complaints, especially that does not really affected majority of the people are not attended to on time until they gain wide effects on people. Some many reasons are responsible for this kind of situation with lack of proper dissemination of information being one of them. There are situations where complaints table are ignored or does not get to the appropriate authorities.

The ideas of complaint or report channels in tertiary institutions is and has been a very good channel through wish the necessary authorities understand what security or environmental issues that requires urgent and strict attention. The company should make investments in information-gathering and distribution-supporting peripherals, such as shared storage environments and IT infrastructure. Reporting systems play a crucial role in providing the overall picture required to understand abuse and the breakdown of law and order in any given community or nation. Since few infrequent users will come to the notice of doctors, police, or other authorities likely to offer information to such systems, they largely provide information for heavy users [12].

In the tertiary institution, the role of reporting system should be to make information concerning abuse or attacks of any form on the students widely available to the appropriate school authorities in whose hands it is to make decisions on the situations and how best to tackle them. An important role of reporting systems is to make regular reports on trends in the institution available to the school authorities and in time, new methods of staff extortion and abuse, including new methods of student's malpractice and abuse also, are also expected to be reported to the authorities in due time for them to combat them before more students get affected by it [13]. At minimum, the school or department is expected to make changes on the occurrences in and out of the school environment either per semester or quarterly. This will ensure that reoccurring changes in the school environment are properly handled and effected within the least possible time. Reporting systems have to be a process for obtaining accurate and legitimate information on any misconduct, armed robbery, extortion, or other issues that may be occurring in a particular area of the institutions [14].

2.2. The Resultant Effect of Complaints

Effective complaint management has several real-world advantages as it allows staff and students to directly share information about the possibility of abnormalities [15]. Complaints should be used in evaluating and improving on policies, procedures and practices on ground. New programs are also introduced in accordance with the legislated requirements, to offer better services. Through complaints, a person who has been unfairly disadvantaged gets the appropriate remedy. Public support is vital to all colleges; complaints keep strong connections with the public and personnel and foster student and staff loyalty. Future interactions between the university, its employees, and its students will be enhanced by stronger staff and student assistance. Refusing to view complaints as negative assaults by misinformed or disgruntled individuals or those looking to gain an unfair advantage should be the first thing those receiving them should do. [16]. In a university, complaint analysis needs to be a part of the ongoing cycle of evaluation and development. Even if a university has not had a lot of complaints in the past, complaint handling procedures are still necessary. It is more likely a reflection of the absence of a suitable channel for complainants to voice their complaints. An efficient method for handling complaints is a crucial component of service productivity in any given establishment. [17]. However, any business handling complaints has to be adaptable and mindful of the needs of those who are more vulnerable than others [18]. When a guardian, friend, advocate, or nominee steps in on behalf of a complaint, staff members should be willing to work with them. If personal information is at stake, it could be necessary to confirm the person's authorization to act on behalf of the complaint. The integration of the complaint system in the universities can be of immense benefit as information from complaints are used to identify weaknesses in services, how to resolve them since that is integral to its success [19-21]. Every ability and expertise a university have ought to help solve any issues. Making sure that every employee has the opportunity to handle concerns can help to fix issues more quickly and effectively. Staff members who handle complaints may not be aware of all the problems brought up in complaints.

2.3. Review of Related Works

Using a sizable web-based survey, [22] evaluated cognitive symptoms in cancer survivors and the related variables. 95% confidence intervals and multivariable logistic regression models were utilized to estimate associations and odds ratios, respectively. Of the subjects, 75% (n = 1214) experienced cognitive problems associated with cancer therapy. Resuming employment was impacted by cognitive issues in 76% of the subjects. Three quarters of respondents to this

extensive web-based survey, of which most were breast cancer survivors with cognitive complaints which further supports the idea that cognitive problems are a common problem among cancer survivors. Cancer-related cognitive complaints were significantly correlated with chemotherapy, self-reported sleep issues, and prior knowledge of cognitive issues connected to chemotherapy. The majority of cancer patients wanted assistance, particularly with cognitive training. Employees can acquire information on Forward chaining by using an online application [23] for filing complaints or information submissions. This application makes it easy for workers of pharmaceutical companies to submit information and concerns at any time or location. Students were shown a UI/UX model that used Design Thinking to assess student complaint applications and offer recommendations for streamlining the complaints handling procedure for students.

[25] introduced a Smart Complaint Management System (SCMS) that addresses customer discontent issues using a web application, chatbot, and mobile application. Additionally, the SCMS offers two services: one for classifying complaints, which forwards them automatically to the relevant department; the other for locating related complaints so that duplicate complaints are not sent. Demonstrating quick processing by the test results, they also provide more channels for filing complaints, and provide more channels for tracking the status of complaints and progress reports.[26] provided an online application that allows students to report problems that arise in their day-to-day lives. Students can file complaints using the online application, and the complaints will be sent to the Grievance Redressal Committee. The Committee will transmit legitimate concerns to the Department or Institute that supports the delicate subject. The Department or Institute will update the status so that students can see it after taking action. Students are given transparency through this initiative, which they may use to obtain solutions.

3. Integrated Students' Report System

The major information produced in the Integrated students' report system are reports from students to the various levels of authorities (Departments or Administrator. Reports sent by students are viewed by the recipient and proper actions are taken. The recipient of the report can respond to the students report and can also close a report once it has been properly attended to. The recipient can also send out information in the form of notifications to the students if need be. Figure 1 below shows the information flow of the report system.

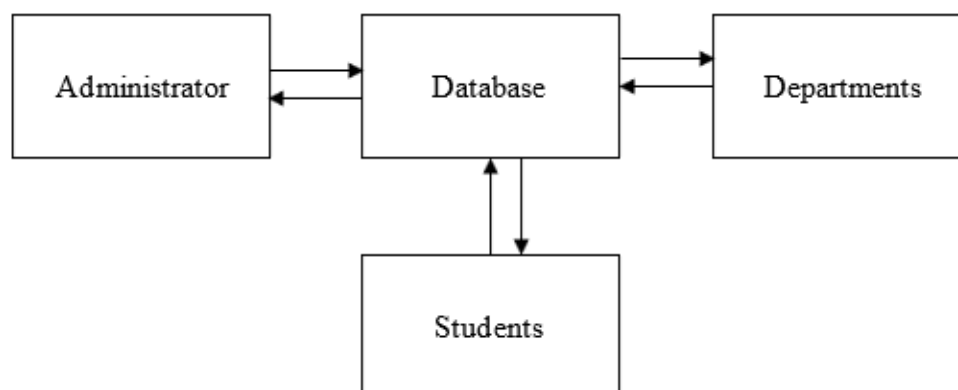


Figure 1: Information Flow of the Online Student's Report System

The output specifications as designed in the students' report is as shown in figure 2-4 below.

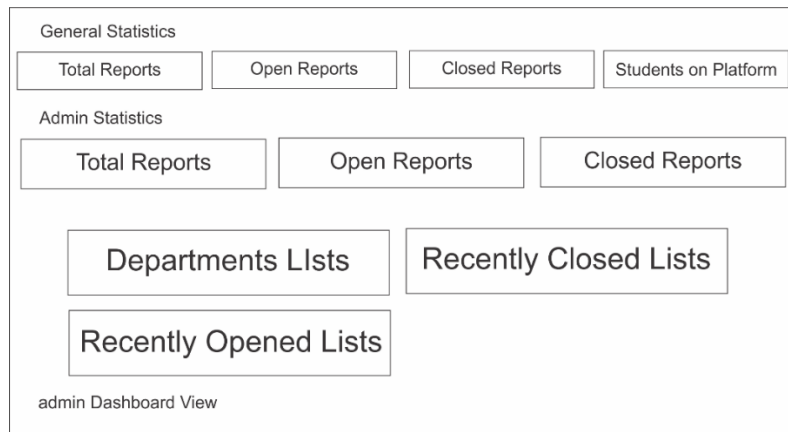


Figure 2: Output Design for All Admin Dashboard View

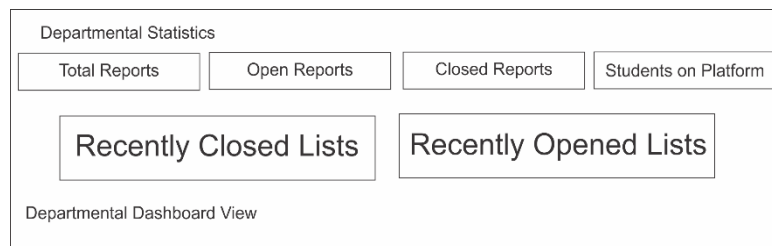


Figure 3: Output Design for Departmental Dashboard

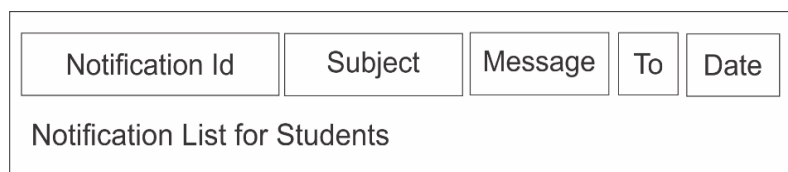


Figure 4: Output Design for Students Notification List

Input Design

These shows the design of the interfaces where input is expected or received into the system. The main input data type in this system are texts and images, e.g., reports title, report body, Images associated with the report, username, password, notifications etc. The keyboard and the mouse will be used as the main input devices. Figures below show the different input designs of the Online Student's Information System;

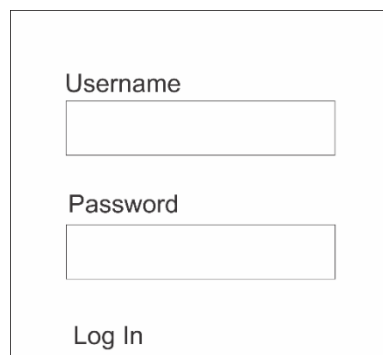
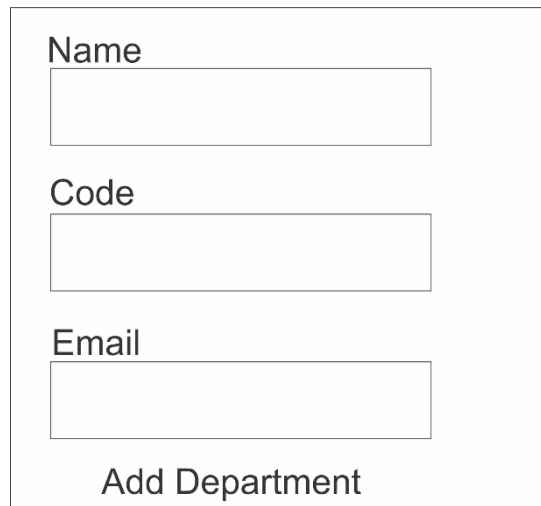
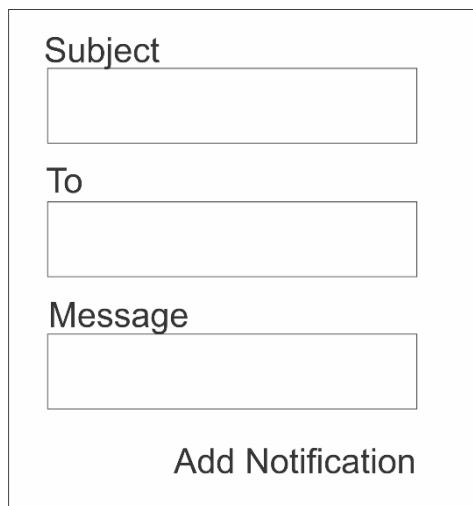


Figure 5: Admin, Department and Student's Login



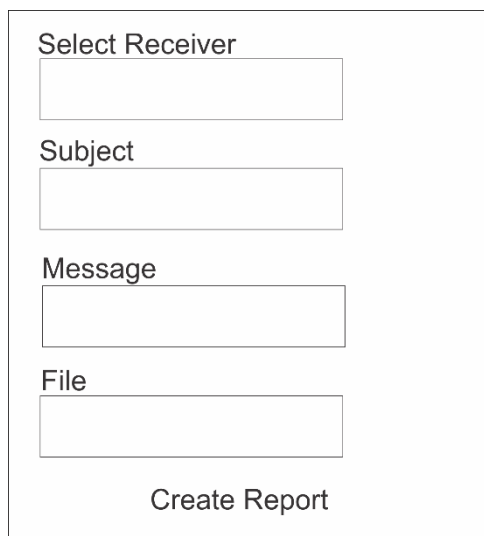
The form contains three input fields: 'Name', 'Code', and 'Email', each with a corresponding text box. Below the fields is a button labeled 'Add Department'.

Figure 6: Input Page for Adding Departments by Admin



The form contains three input fields: 'Subject', 'To', and 'Message', each with a corresponding text box. Below the fields is a button labeled 'Add Notification'.

Figure 7: Input Design for Adding Notifications by Admin and Departments



The form contains four input fields: 'Select Receiver', 'Subject', 'Message', and 'File', each with a corresponding text box. Below the fields is a button labeled 'Create Report'.

Figure 8: Input Design for Creating Report by Students

4. Conclusion

The importance of information system in different educational and business sectors cannot be over emphasized. Nearly everything we do these days are done with the aid of computer system. This means that a number of data are collected and hence there is huge need to store these accumulated data. Accumulating and storing data won't be of economic or social importance if they are not used. Hence every system that collects data has a specific purpose for collecting such data. It could be for analysis or for generating reports.

The Integrated Web-based Students' Report System, is able to collect information from the students in the form of reports which can be accessed by the recipients and also the admin of the system. These reports are analysed and acted upon by the appropriate authorities to ensure that the problems are solve. Also, the administrators and the departments can also send notification to the students concerning any topic or situation of interest. The system also provides statistical data of the number of reports received from the system and the status of such reports. These helps the institution understand how well they have been acting towards students reports.

REFERENCES

- [1] Afify, E., & Nasr, M. (2017). A proposed model for a web-based academic advising system. *International Journal of Advanced Networking and Applications*, 9(2), 3345-3361
- [2] Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. *Computers & Education*, 144, 103701.
- [3] Betrand C.U, Ukadike C. A, Okoye G. O. (2022). Web Based Discussion Forum for TertiaryInstitutions. *American Journal of Networks and Communications*. 11(1).
- [4] Chiu, T. K., & Hew, T. K. (2018). Factors influencing peer learning and performance in MOOC asynchronous online discussion forum. *Australasian Journal of Educational Technology*, 34(4).
- [5] Greenlaw, S. & DeLoach, S. (2003). Teaching critical thinking with electronic discussion. *Journal of Economic Education*, 34(1), 36-52.
- [6] Akmal, D. (2017). Impact of Web Based Learning on EFL: Using On-line Discussion Forum (ODF) to Enhance Students' Writing Skill. *Universal Journal of Educational Research*, 5(8).
- [7] Duran, D., Schütze, H., Möbius, B. et al. (2010) A Computational Model of Unsupervised Speech Segmentation for Correspondence Learning. *Res on Lang and Comput* 8, 133–168.
- [8] O'Neill P., Duplock, A., & Willis, S. 2006. Using clinical experience in discussion with problem-based learning groups. *Advances in Health Education*, 11, 349–363.
- [9] Gerbric P. 2005. Chinese learners and computer mediated communication: Balancing culture, technology, and pedagogy. *Maintaining the Momentum?* (Vol. 1, pp. 241–251
- [10] Hulsman, R. L., & van der Vloodt, J. (2015). Self-evaluation and peer-feedback of medical students' communication skills using a web-based video annotation system. *Exploring content and specificity. Patient Education and Counseling*, 98(3), 356-363.
- [11] Jones, G. H., & Jones, B. H. (2005). A comparison of teacher and student attitudes concerning use and effectiveness of web-based course management software. *Journal of Educational Technology & Society*, 8(2), 125-135.
- [12] Betrand, C. U., Ukadike C. A., & Okoye, G. O. (2022) Web Based Discussion Forum for Tertiary Institutions. *American Journal of Networks and Communications*, 11 (1), 1-8.

- [13] Zacharis, N. Z. (2015). A multivariate approach to predicting student outcomes in web-enabled blended learning courses. *The Internet and Higher Education*, 27, 44-53.
- [14] Kocak, O. (2022). A systematic literature review of web-based student response systems: Advantages and challenges. *Education and Information Technologies*, 27(2), 2771-2805.
- [15] Bharamagoudar, S. R., Geeta, R. B., & Totad, S. G. (2013). Web based student information management system. *International Journal of Advanced Research in Computer and Communication Engineering*, 2(6), 2342-2348.
- [16] Saadé, R. G. (2003). Web-based educational information system for enhanced learning, EISEL: Student assessment. *Journal of Information Technology Education: Research*, 2(1), 267-277.
- [17] Kassim, M., Mazlan, H., Zaini, N., & Salleh, M. K. (2012, July). Web-based student attendance system using RFID technology. In *2012 IEEE Control and System Graduate Research Colloquium* (pp. 213-218). IEEE.
- [18] Antal, M., & Koncz, S. (2011). Student modeling for a web-based self-assessment system. *Expert Systems with Applications*, 38(6), 6492-6497.
- [19] Özdemir, B., & Alpaslan, F. N. (2000, October). An intelligent tutoring system for student guidance in Web-based courses. In *International Conference on Advances in Information Systems* (pp. 437-448). Springer, Berlin, Heidelberg.
- [20] Wong, C. K., Wong, W., & Yeung, C. H. (2001). Student behaviour and performance in using a web-based assessment system. *Innovations in Education and Teaching International*, 38(4), 339-346.
- [21] Weber, G., & Brusilovsky, P. (2001). ELM-ART: An adaptive versatile system for Web-based instruction. *International Journal of Artificial Intelligence in Education (IJAIED)*, 12, 351-384.
- [22] Lange, M., Licaj, I., Clarisse, B., Humbert, X., Grellard, J. M., Tron, L., & Joly, F. (2019). Cognitive complaints in cancer survivors and expectations for support: Results from a web-based survey. *Cancer medicine*, 8(5), 2654-2663.
- [23] Asmoro, E. T., Wardhani, I. P., & Ekasari, M. H. (2022). Online Information Delivery Service System Design Using Web-Based Forward Chaining Method in Pharmaceutical Companies. *Journal of Applied Engineering and Technological Science (JAETS)*, 3(2), 116-125.
- [24] Setiyani, L., & Tjandra, E. (2022). UI/UX Design Model for Student Complaint Handling Application Using Design Thinking Method (Case Study: STMIK Rosma Karawang). *International Journal of Science, Technology & Management*, 3(3), 690-702.
- [25] Kormpho, P., Liawsomboon, P., Phongoen, N., & Pongpaichet, S. (2018, July). Smart complaint management system. In *2018 Seventh ICT International Student Project Conference (ICT-ISPC)* (pp. 1-6). IEEE.
- [26] Aravindhan, K., Periyakaruppan, K., Aswini, K., Vaishnavi, S., & Yamini, L. (2020, March). Web Portal for Effective Student Grievance Support System. In *2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS)* (pp. 1463-1465). IEEE.