

Towards Accountability and Improvement: Assessing the Efficacy of Faculty Evaluation Systems

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Abstract

This research suggests an online application system for examining teacher feedback in educational settings. To evaluate faculty performance based on a set of criteria and offer the required academic intervention programmes rooted in the creation of an all-encompassing faculty development programme, the suggested system gathers all the pertinent information from the feedback, which is now an essential component of the educational system. Compared to the current feedback evaluation method, which asks students to rate teachers according to predetermined criteria, the suggested Faculty Evaluation method (FES) is more adaptable and flexible. FES evaluates instructors' strengths and shortcomings in all areas that matter to pupils. Students, instructors, and the staff in charge of administering and processing the evaluation system will all gain from the study's outcome. Through the anonymous use of an online platform called FES, students can evaluate their professors' performance using a predetermined set of evaluation criteria and questions. Higher-ups at the institute may also utilise this information to assemble faculty groups that are suitable for certain teaching and administrative responsibilities. With the help of a mobile device, the assessor conducts a paperless evaluation of the teacher under the proposed Online Faculty Monitoring and Evaluation System. Because the software evaluation results satisfied the researcher's goals, they should be developed further. The generated study was very helpful and may be a great help to the institution, according to the general means of the system evaluation. The faculty members' improved usage was a result of their evaluations.

Keywords: Web-based application, administrative activities, software evaluation, performance.

INTRODUCTION

One of the most important functions of any college is to get student input about the professors. Faculty assessment programmes have typically taken the shape of multiple-choice questionnaires that students must complete for each teacher according to a predetermined grading scheme. Using a computer and the Online Faculty Monitoring and Evaluation System, the assessor assesses teachers in

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a paperless manner. The manual evaluation process is the main flaw in this technique, since it could cause findings to be delayed. An online interface between students and management has been developed to collect input in order to deliver it to college faculty members in a timely and effective manner. With this interface, students may easily and rapidly submit feedback, doing away with the need for laborious manual evaluation processes. Management faces significant challenges when it comes to evaluating the performance of faculty members in higher education. In order to evaluate an organization's success, a number of qualitative

and quantitative elements are taken into account that contribute to planned professional progress. These factors include publications, academic duties, research funding, research profiles, student evaluations, and publications. It is challenging to quantify this kind of information, though. Standard "Key Performance Indicators" (KPIs) are typically used to assess faculty members' basic workloads, but determining quality is never easy.

EXISTING SYSTEM

In the existing system, the evaluation is done through a manual process where students can provide feedback about the faculties in the labs. However, the main drawback of this system is that only one class can provide feedback at a time, making it a time-consuming process. The server-based system for faculty evaluation is also limited in terms of its user interface and only allows one class to provide feedback at a time. Therefore, the importance of user experience and interface design is emphasized, along with the benefits of upgrading to a cloud-based system. The presentation will provide best practices for comprehensive feedback collection and offer a case study on upgrading an existing system [9–10]. Due to the existing system's time-consuming nature, an online faculty evaluation has been implemented to streamline the process.

ANALYSIS

Under the current approach, students can offer input regarding the lab faculty members through a manual evaluation process. The primary disadvantage of this technique, though, is that it requires a lot of time because only one class can offer comments at a time. The UI of the server-based teacher assessment system is likewise constrained, and it only permits one class to submit input at a time. Thus, the advantages of switching to a cloud-based system are highlighted, as well as the significance of user experience and interface design. Best practices for thorough feedback gathering will be covered in the presentation, along with a case study on modernising an old system. Owing to the laborious nature of the current approach, an online faculty evaluation has been introduced to expedite the procedure.

LITERATURE SURVEY

Alok Kumar and Renu Jain have proposed an automatic method that analyses the textual feedback provided by faculty members lecturing in any institute. The suggested approach gathers all the pertinent comments and uses machine learning algorithms to compute the sentiment score for each faculty member based on the factors that are deemed important. The suggested system was more adaptable and flexible than the current teacher feedback assessment system, which has students rate professors based on predetermined criteria selected by senior faculty and administrators with expertise. The Faculty Evaluation System (FES) is their system for evaluating teachers based on all the factors that matter to the students [1]. In order to identify the optimal model, Sultana et al. concentrated on the performance and accuracy of the training data set. It is acknowledged that MLP and SVM are the superior models [2].

An ontology-based method for evaluating faculty performance was presented by Samita Bai et al. The ontology was used to conceptualise both the rules that comprise the system and the qualitative aspects of the faculty. It should be noted that the usage of ontology offers fully automatic systems and makes the system easy customisable because advanced ontology editors and APIs are available [3]. In order to evaluate the six competences as well as faculty performance in their core departmental duties and teaching, Rosenbaum et al. reviewed a comprehensive faculty peer evaluation system [4]. The creation of a novel mechanism for faculty members' yearly evaluation, as detailed by Chambers et al. and appling et al. [5, 6]. From the viewpoints of administrators and faculty, to identify issues with the way Jones et al. rated medical school faculty and to comprehend how different people with different roles within the medical school perceive the same issues [7]. The design and implementation of a performance evaluation system using data analytics was the focus of the study by Rodelio et al. that

was presented; these techniques were the most suitable [8]. A faculty evaluation system with integrated decision support mechanisms that may generate evaluation reports automatically was developed by Alix et al. [10]. Naeem et al. used the Unified Modelling Language (UML) to develop a general feedback model [11]. Anido et al. detailed Far Eastern University's (FEU) information technology activities for implementing an online teaching performance evaluation [12].

SYSTEM REQUIREMENT

Software Specifications

1. XAMPP Server
2. FileZilla
3. Google Chrome
4. Sublime Text Editor

Hardware Specifications

1. Processor: intel i3 or higher
2. Ram: min. 8gb
3. Hard Disk: min.128gb
4. OS: Windows 10
5. Stable Internet Connection
6. Stable Power Supply

PROPOSED SYSTEM

The goal of the new approach is to give students a more effective and accessible way to evaluate the performance of their faculty. Every student using the system has access to an anonymous feedback website, guaranteeing the privacy of their identities. This function guards against any potential biases or favouritism against particular pupils while encouraging candid criticism.

There are two modules in the proposed system: one for the Head of the Department and one for the students. Through the student module, each student can submit feedback on the performance of their faculty members by logging in with their individual credentials. Based on the faculty's instruction, communication abilities, timeliness, and other pertinent factors, students can assign ratings.

Furthermore, the system offers students the ability to provide recommendations for enhancements. They can access and evaluate student feedback using the Head of the Department module, which enables them to make well-informed judgements regarding faculty performance. The feedback can be utilised to pinpoint areas in which the faculty members might need further guidance or assistance to enhance their instruction. Statistics like the department's overall performance and the average rating of each faculty member are also visible to the head of the department. All things considered, the suggested technique offers a dependable and effective means of gathering input on faculty performance, empowering the department head to make data-driven choices to raise the standard of instruction offered by the organisation.

REPORTS

Two types of reports are generated in this system.

- Individual Report
- Consolidation Report

Individual Report

This report includes a faculty member's specific details along with their grade, opinions, and recommendations from the students. The overall faculty evaluation system can be analysed through Figure 1.

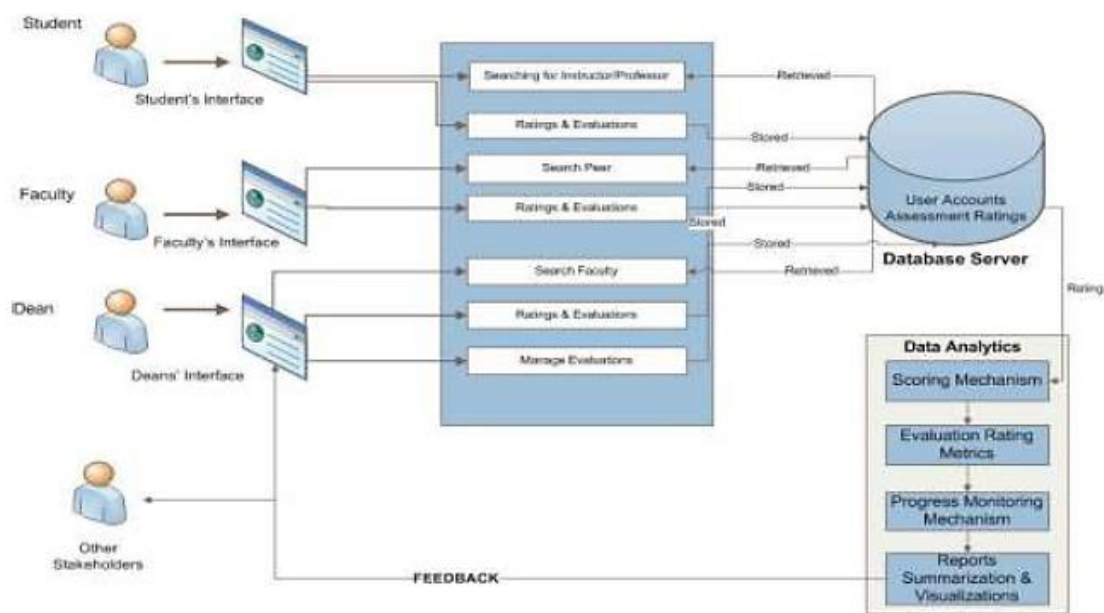


Figure 1. Faculty evaluation system.

Table 1. Testing & Deployment.

Date	Type	Number of Users
12 th Dec 2022	Alpha Testing	4
20 th Dec 2022	Pre-Beta Testing	20
03 rd Mar 2023	Beta Testing	613
20 th Mar 2023	Deployment	1714

Consolidation Report

This report includes the aggregate data from all of the faculty members in a particular area, together with the students' comments, grades, and suggestions.

TESTING & DEPLOYMENT

The Faculty Performance Evaluation System's ratings for functionality, dependability, usability, efficiency, maintainability, and portability are displayed in Table 1 above.

One tool for evaluating employees while they are at work is performance evaluation. The purpose of faculty performance evaluations in educational institutions is typically to gauge how effective faculty members or teachers are. Large volumes of data are being collected and stored by higher education institutions these days. By analysing these data, the institution can make data-driven decisions. Additionally, the use of analytics in higher education has emerged as a new area of study and research for institutions. Among these is Academic Analytics, an institution-focused analytics methodology that provides higher education institutions with the information they need to support their financial and operational decision-making. Additionally, a variety of establishments, from business to higher education, share common business or organisational goals when it comes to implementing analytics. These goals include boosting operational and financial efficiency, increasing impact both locally and globally, developing new funding models in the face of shifting economic conditions, and meeting the demands for increased accountability. Any academic institution should make sure that students in schools or colleges provide feedback to the professors. Faculty assessment systems have often been questionnaire-based, with pre-made questionnaire forms sent to each student. The form may have several questions, and students are in charge of rating each one for each teacher according to a set grading scheme. The main problem is the manual evaluation process, which could cause findings to be delayed.

Scope of Improvement

1. The system can be integrated with the institution's present information system, enrollment system, and human resource department. This will make data entry for students and staff more flexible and easier to maintain consistency throughout the system.
2. The system should be put into place at the organisation so that the administration can quickly determine which departments and instructors are functioning at the highest levels. Visual or graphical monitoring of the evaluation's progress is possible. The creation of historical and individual performance reports makes it possible to observe, record, and keep track of faculty members' past and present performances to pinpoint their advantages, disadvantages, and potential.
3. Constant system enhancement that takes stakeholders' and the institution's demands into consideration. Users will like using the system more in this manner since it prioritises areas for improvement.
4. The findings of this study may serve as the foundation for additional research on system enhancement or other studies that are related to this one in the future. To enable people to access and enjoy using mobile devices, mobile developers could construct an application that is comparable to the system. Considering how frequently mobile technology is used these days

CONCLUSIONS

The purpose of the web application is to give students the ability to comment on specific faculty members and the courses they teach. The performance of academic staff members in terms of teaching and lecturing can be enhanced by using this feedback. The system also has a function that lets managers see reports of student evaluations of faculty members for the courses they teach. This study promotes the use of web-based feedback systems in higher education to improve staff academic performance because of their many advantages. The administration would be able to plan strategically for the entire organisation with the usage of such a technology. To sum up, the web-based feedback system is a useful instrument for raising the standard of instruction in postsecondary educational institutions. The method can assist highlight areas that demand improvement and empower the administration to make data-driven decisions by giving students a platform to rate academic staff members. It is therefore urged that the system be deployed as proposed to support institutional planning and improve staff academic performance.

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