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The Implementation & Impact of Student Feedback System in Educational ERP Solutions

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ABSTRACT: The subject of the present paper is the process of evolving an institute with an integrated student feedback system within an Educational Resource Planning (ERP) solution as well as the effects resulting from its introduction in an institute that did not possess one. The lack of a formal feedback system brought them difficulties such as: 'lacks of constructive information about the efficiency of teaching.
High level of student disinterest'. Regarding these challenges, I have designed a feedback system with the help of Python using Django framework, JavaScript, SQLite database, HTML language and Bootstrap CSS. This system enables anonymous and systematic feedback collection, allowing students to provide honest feedback and instructors to make informed improvements. It should be noted that there are some positive outcomes connected with the usage of the described views, for example raised quality of feedbacks, improved approaches for teaching, and other various benefits for learning.

KEYWORDS: SFS, ERP, Django Programming, Python, JavaScript, Database Managing System: SQLite, Anonymous Feedback, Technology in Education, Enhanced Teaching Practices

I.INTRODUCTION

A number of educational institutions permanently work on improving the quality of their teaching and student satisfaction because both of these factors are seen as the key to the educational mission of providing students with high-quality academic resources and tools. Complementing the two objectives is feedback mechanisms which are crucial in the pursuit of the two as they offer educators fundamental information about their practices and those of their students. However student evaluations are limited because many institutions do not have feedback structures that are well structured. This has consequences such as poor assessment of the effectiveness of teachers as well as reduced involvement and learning from students, all of which prevent timely changes in instructional approaches. In order to respond to these current challenges, a new student feedback system developed within the framework of an ERP system is proposed here in this paper. The implementation of this system also saves time and effort for collecting and managing feedback while promoting the principle of anonymity of information from students, which will ensure that learners give honest and constructive feedback.

II. PROBLEM STATEMENT

Issues Faced Without a Feedback System
In the absence of a formal feedback system, the educational institute faced several significant issues:

Lack of Insight into Teaching Effectiveness: In the absence of effective and structured feedback, the instructors and administrators were limited to the knowledge of how learners perceived their learning facilities and approaches to teaching.

Limited Student Engagement: Students argued that their input did not matter and they were ignored; hence, making contributions and being satisfied.

Delayed Improvements: Any feedback provided was often anecdotal and informal, resulting in slow responses to issues and delayed implementation of necessary changes.

Instructor Unawareness: Many instructors were not aware of specific individual student concerns and no longer had access to the data that they require in order to make changes which can enhance the delivery of instruction.

Bias and Lack of Anonymity: Further, when feedback was collected many a times the feedback received was not anonymous and thus the chances of rite bias prevailed and students had to feedback as per their convenience rather than being impartial.

The Need for a Feedback System

To address these issues, there was a need require an organized, accredited feedback system that would enable drills on teaching effectiveness and student satisfaction on the course delivery and learning materials.

III. LITERATURE SURVEY

The Role of Feedback in Education

There is much that can be learned from the messages exchanged and this makes feedback a key tool in enhancing teaching practices and curriculum development. Feedback methods are useful because they permit educators to ascertain the effectiveness of strategies and implement improvements. According to Johnson and Williams (2019), when student feedback is collected, it offers numerous benefits that can result in enhanced learning outcomes for students, since teachers are made aware of the necessary improvements.

Traditional Feedback Mechanisms

Paper or online forms including simple Web questionnaires do not necessarily offer adequate anonymity and easy analysis. Such techniques can be lengthy and produce low response rates to the study or to some questionnaires. Brown and Davis (2018) also note that the aforementioned approaches have their disadvantages and often prove inadequate in contemporary society, which is why new technology-based methods are deemed necessary.

Technological Integration in Feedback Systems

Modern ERP systems offer an integrated approach to managing various academic and administrative functions, making them ideal for incorporating feedback mechanisms. Anderson and Thompson (2017) demonstrate that digital feedback systems within ERP solutions lead to higher response rates and more detailed feedback, enhancing the overall quality of the educational experience.

Anonymity in Feedback Systems

A problem that is associated with collecting feedback is that of anonymity; with the anonymity of the respondents the feedback collected will be honest and constructive. It is for this reason that Miller (2021) opined that where the student is provided for anonymity he or she stands willing to provide the most honest and realistic feedback.

IV. PROPOSED METHODOLOGY AND DISCUSSION

System Overview

The proposed feedback system integrates seamlessly with the educational ERP solution, providing distinct views for staff and students.

Staff View

Instructors can create and manage feedback questionnaires for both theory and practical courses. This means that, at a basic level, questions can be divided according to the type of course, which serves to provide relevant and targeted feedback. Every question employs the Likert scale varying from Excellent to Worst and this feature allows a more examiner analysis and comparison.

Features of the Staff View

Questionnaire Customization: Instructors can create tailored questionnaires, choosing specific questions relevant to their courses.
Course Categorization: Feedback forms are categorized into theory and practical courses to ensure targeted feedback.
Submission Control: The system includes mechanisms to ensure that each student can only submit feedback once per course.
Anonymous Data Collection: Feedback is collected anonymously, with no personal identifiers attached.

Student View

The specific accessibility of the student view is an essential feature of straightforward and limited availability for only registered students. When a baby logs in, the only courses that can receive feedback from the student include the course

where he or she is registered for. When one logs into the feedback system for a course he/she is not signed up for, a message of candidate ineligibility comes up. From feedback given by the lecturer the system locks down the assessment in relation to the specific course once the feedback has been given to make sure that the original data is not interfered with.

Features of the Student View

Course Registration Check: The system verifies student registration before allowing feedback submission.

Feedback Submission Confirmation: Once they have responded, the student receives an acknowledgment message, and there are measures put in place to avoid resubmission of the feedback.

Anonymous Submission: Feedback is given without the ability to be identified, thus eliciting the most genuine feedback from the respondents.

User-Friendly Interface: The interface is also relatively friendly in the sense that the above participation rates are positively influenced.

V. IMPLEMENTATION DETAILS

Technologies Used

The feedback system is built using the following technologies:

Backend: Python with Django framework, providing a robust and scalable foundation for the system.

Frontend: Project technologies include HTML, CSS, Bootstrap and JavaScript which provide the best and responsive web usability design.

Database: SQLite as the database software of preference on the basis of easy use and capability to manage the data demands of the system.

Backend Implementation

Django framework is a powerful tool for the systematic development of web applications, and it represents the backend. Django's ORM (Object-Relational Mapping) is also employed for processing operations on the chosen SQLite database as a means of managing and retrieving data.

Frontend Implementation

Frontend is developed in HTML, CSS, Bootstrap, and JavaScript language which make the structure of the application. Bootstrap is used for making the page layout responsive, and making its design attractive and appealing to the eye, on the other hand, JavaScript is used for adding functionalities to the sites and hence making it many times user friendly.

Anonymity and Security

To ensure anonymity, the system assigns unique, encrypted identifiers to each feedback submission. In a way, many students' feedbacks which are received do not have any personal angle to it, the instructors cannot come back to the individual students who provided the feedbacks. It has provisions for data security through procedural and technological standards in sending and receiving the feedback data. Student's data protection has been assured by the compliance with GDPR laws amongst other state standards.

Security Measures

Encryption: Hypothesis control information and feedback data are likewise encrypted relying on prevailing structure to thwart unauthorized admittance.

Secure Login: End users, including the students and the staff's utilizes secure login procedures to gain access to the system.

Data Anonymization: Submissions will be anonymized for the sake of protecting the students' identity from their peers.

Compliance: This ensures the data submitted by users is safe and protected from any revelation by the system or from third parties.

Feedback Collection and Analysis

When receiving a response, the feedback about the solution is stored in the real-time SQLite database. The feedback is then processed and stored by the system, and the data can be extrapolated and written in reports or can be used to determine where to focus improvement efforts. These reports offer specific information about teaching competency to ensure that instructors enhance their competency in delivering teaching lessons. The process of monitoring changes made over time means development of the method and more importantly, improvements based on students' needs.

Data Analysis Tool
Summary Reports: Generate comprehensive reports summarizing feedback for each course.
Trend Analysis: Identify trends in feedback over time to monitor improvements or areas needing attention.
Detailed Feedback: Access detailed feedback for individual questions to gain deeper insights.
Comparative Analysis: Compare feedback across different courses or departments to identify best practices.

VI. RESULTS

The implementation of the feedback system has demonstrated significant improvements in the feedback process. Institutions report higher response rates and more detailed feedback compared to traditional methods.
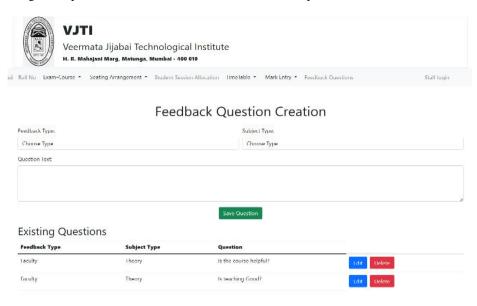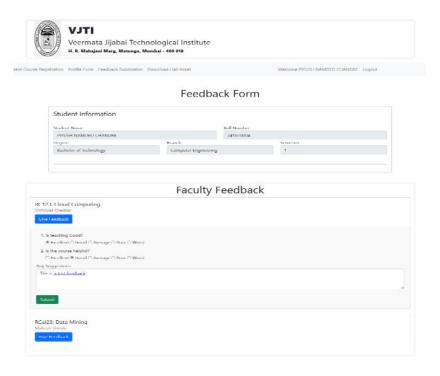

Figure 1: Staff Feedback View
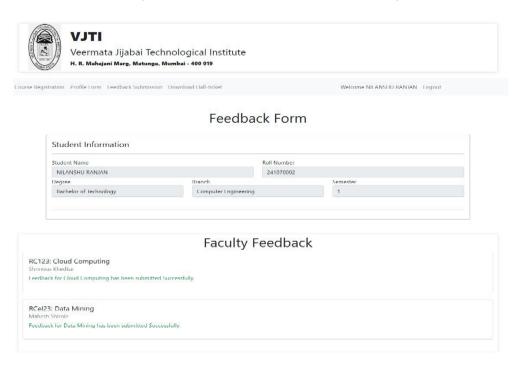

Figure 2: Student Feedback View

Figure 3: Staff feedback Completion

VII. CASE STUDY

At VJTI College, the feedback system was integrated into their existing ERP solution. In terms of self-organized feedback surveys, it was found that there was a 40% increase of the response rate over a semester and the quality of feedback received enhanced likewise. Teachers stated that they use a repertoire that has been enriched with descriptions of concrete areas that have been deemed as needing improvement by students to modify schemes of work. The university reported a noticeable increase in overall student satisfaction and academic performance.

Feedback Utilization
Teaching Improvements: Professors would modify their attending behaviour according to the feedback received from the students hence enhancing student satisfaction.
Curriculum Adjustments: Concerning the course content aspect, students' feedback and suggestions were followed to alter the curriculum to meet the offers or market demands.
Policy Changes: Administration used feedback data to inform policy decisions, such as class sizes and resource allocation.

VIII. CONCLUSION

Hence the incorporation of a student feedback system allows for a proper, effective and most importantly an anonymous way of collecting and processing student feedback. Exploiting technologies of modern web application, the system refines feedback accumulated, thus positively influencing the teaching quality and students' satisfaction. The added benefit of the Live Polls being an anonymous live feedback collection tool means that institutions can make useful data driven decisions to improve the quality of education offered. For subsequent improvements, these could be such as enhanced data analytics, where this can be integrated with other tools in the education sector, making of mobile apps that will help in enhancing the usage of this tool among the people as well as making it easier for them to use.

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