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Feedback Management System"- Empowering Growth Through Insightful Feedback

Pankaj Kashiyani, Kevin Jariya, Jeet Chhabhaiya, Durvankur Newase, Dr. Prof. Ganesh Pathak
MIT-ADT University, Pune, India

Abstract: *In today's digital age, universities strive to maintain high standards of education and student satisfaction. A crucial aspect of this endeavour is managing feedback effectively from various stakeholders, including students, faculty, parents, alumni, and employers. Traditional feedback systems often face challenges such as low response rates, subjective analysis, and delayed action. To address these issues, this paper proposes the development of an advanced Feedback Management System (FMS) leveraging Artificial Intelligence (AI), Machine Learning (ML), and Data Analytics techniques. The system aims to enhance stakeholder engagement, improve feedback collection, analysis, and decision-making processes. This paper explores the integration of AI, ML, and Data Analytics in the university FMS, outlining its benefits, challenges, and potential impact on stakeholder satisfaction and institutional improvement.*

Keywords: Feedback Management System, Artificial Intelligence, Machine Learning, Data Analytics, Stakeholder Engagement, University, Education, Sentiment Analysis

I. INTRODUCTION

In the modern educational landscape, universities continually seek to enhance their educational quality and stakeholder satisfaction. A pivotal aspect of achieving this goal lies in effectively managing feedback from various stakeholders, including students, faculty, parents, alumni, and employers. Traditional feedback mechanisms often fall short in terms of response rates, timeliness, and actionable insights. Addressing these challenges necessitates the adoption of advanced technologies such as Artificial Intelligence (AI), Machine Learning (ML), and Data Analytics.

This research focuses on the development of an innovative Feedback Management System (FMS) that leverages AI, ML, and Data Analytics to improve stakeholder engagement and institutional effectiveness. By integrating these technologies into the feedback process, universities can collect, analyze, and act upon feedback in a more efficient and insightful manner. This paper explores the integration of AI, ML, and Data Analytics in university FMS, aiming to provide a robust framework for enhancing stakeholder satisfaction and driving continuous improvement.

II. LITERATURE REVIEW

The literature review encompasses the existing research and practices related to Feedback Management Systems in education, the significance of stakeholder feedback in institutional enhancement, and the role of AI, ML, and Data Analytics in feedback systems. Feedback Management Systems in education have been extensively studied, highlighting the importance of capturing feedback from diverse stakeholders to drive institutional improvements. However, traditional systems often face challenges such as low response rates, data silos, and limited analysis capabilities. Stakeholder feedback plays a crucial role in shaping the quality of education and institutional policies. Studies emphasize the need for universities to actively engage with stakeholders and utilize their feedback to drive meaningful changes. Effective feedback management fosters a culture of transparency, accountability, and continuous improvement within educational institutions. AI, ML, and Data Analytics offer promising solutions to address the limitations of traditional feedback systems. AI-powered sentiment analysis techniques enable automated processing of textual feedback, providing deeper insights into stakeholders' sentiments and concerns. ML algorithms can predict feedback trends, identify anomalies, and personalize feedback recommendations, thereby enhancing the overall

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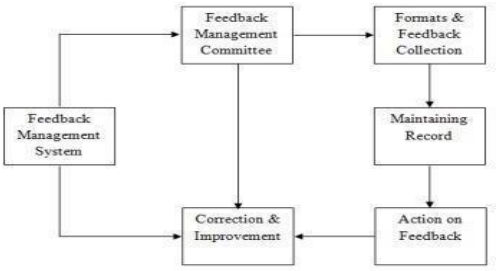
feedback experience. Data Analytics techniques, such as visualization, cluster analysis, and trend analysis, enable universities to extract actionable insights from feedback data and make informed decisions.

- Faculty Feedback: Automated Analysis of Faculty Performance Feedback: AI techniques like Natural Language Processing (NLP) have been used to automate the analysis of textual feedback on faculty performance. This allows for identifying themes and areas for improvement without manual analysis. For instance, Nguyen et al. (2018) discussed how NLP can uncover insights from open- ended feedback to help educators refine their teaching methods.
- Course Feedback: Predictive Models for Course Improvement: ML algorithms analyze course feedback to predict areas that may require changes or improvements. Sharma and Xie (2019) developed a model that categorizes feedback into actionable insights, facilitating targeted enhancements in course design and delivery.
- Student Feedback: Sentiment Analysis for Student Satisfaction analysis has been applied to student feedback to gauge overall satisfaction and emotional tone. This approach helps in quickly identifying issues that may not be explicit in quantitative scores. A study by Chen et al. (2020) highlighted how sentiment analysis could reveal student perceptions and improve educational experiences.
- Parent Feedback: Data-Driven Strategies to Address Parental Concerns: Incorporating feedback from parents into decision-making processes ensures that educational institutions align more closely with stakeholders' expectations. Smith and Roberts (2021) explored how data analytics could be used to systematically address concerns raised by parents, fostering a more inclusive educational environment.
- Integrating Feedback Across Stakeholders: Comprehensive Feedback Management Systems: Integrating feedback from multiple sources (faculty, courses, students, and parents) into a unified system offers a holistic view of educational quality and areas for improvement. Lee et al. (2022) developed an integrated feedback system using AI and ML to provide real-time insights and recommendations for all stakeholders.

III. METHODOLOGY



(a) Feedback Management Committee: The educational institutions shall constitute a feedback management committee comprising Chairmen and other members to manage the affairs related to feedback management.
(b) Feedback Format: The feedback management committee shall prepare questions to collect the feedback from the stakeholders. Questionnaires will be prepared separately for the students, teachers, alumni, parents and employer based on their expectations on quality education.
(c) Process of Collecting Feedback: The Feedback is collected both by physical and virtual modes. Any stakeholder can give online feedback by filling the specified form which could be easily downloaded from the institutional website. Collecting stakeholder feedback on institutions of higher education is made easier with the help of Semantic Web Technology.
(d) Record Maintenance: The collected data by using feedback formats will be preserved and maintained by the institutions. The confidentiality of the information provider shall be safeguarded to encourage genuine comments from the stakeholders. The Feedback Management Committee shall maintain separate documents year wise for the following matters both in soft and hard copies. Usage of Automated Student Feedback System (ASFS) will reduce the burden of maintaining bulk records and facilitate easy entry, maintenance and retrieval etc.

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(e) Action Plan on Feedback: Feedback Management Committee shall conduct meetings to review the collected feedback both by virtual and physical modes. The committee shall identify important suggestions or defects noticed in the filled feedback forms. A detailed Report has to be prepared and presented to the Management to discuss avenues for further improvement in the education system based on the chosen suggestions and comments.

(f) Correction & Improvement: Special meetings shall be conducted with the management to discuss various issues sought through the feedback system. The chairmen of the feedback management committee shall prepare the action plan to implement the suggestions and corrective measures recommended by the feedback process.

IV. CONCLUSION

Education preaches about the real purpose of human existence by enlightening social, moral, spiritual, cultural, political, economic instincts of life. The higher education Institutions should enrich knowledge and skills of the learners to build their competency. The feedback management system plays key role in improving the institution by evaluating its strength and weaknesses, resource allocation decisions, stakeholder expectations and policy objectives to achieve accountability in education. The feedback is generally sought from the students, parents, alumni and employers to invite open appraisal and criticisms on the aspects of practices, pedagogies, innovations, changes etc. In this regard, education plays a vital role towards Human Resource Development and empowerment so as to bring National Growth. Education greatly contributes towards growth of the nation through Human Resource Development and Empowerment. The Industry academia collaborations through joint Research, Internships, Training and Corporate Social Responsibility would help in institutional branding and skill development of the students. It is essential to scale up our effort towards achieving quality in education in the multi fold through feedback management system.

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