IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A Study On Modern Student Grievance Portals And Evidence-Based Approaches To Efficient Complaint Management

[1]Prof. S. P. Gunjal, [2] Sujal Landge, [3]Samruddhi Suryawanshi, [4]Shrusti Layane, [5] Prasad Kusmude

[1] *Head Of Department, Department of Computer Engineering, SKN Sinhgad Institute of Technology & Science, Lonavala, Maharashtra, India*

[2345] *Undergraduate Students, Department of Information Technology, SKN Sinhgad Institute of Technology & Science, Lonavala, Maharashtra, India*

Abstract:

The Student Complaint Portal is a web-based application designed to create an efficient, transparent, and user-friendly system for handling grievances in educational institutions. The main goal of this system is to give students a secure digital space to submit complaints or feedback about academic, administrative, infrastructure, or faculty-related issues. Each complaint is recorded, categorized, and assigned to the right department to ensure timely and fair resolution. The portal includes secure authentication, rolebased access, and an easy-to-use dashboard for both students and administrators. It allows realtime tracking of complaints and sends automated notifications through email alerts, which enhances transparency and accountability throughout the grievance process. The system also keeps a central database of resolved and pending complaints for analysis and policy improvement.

By using modern web technologies and strong database management systems, the Student Complaint Portal removes the problems of traditional paper-based grievance handling. It improves how schools respond, encourages open communication, and builds a culture of trust and fairness on campus. Overall, the system provides a scalable, data-driven, and clear way to manage student grievances effectively in the digital age.

Keywords: Online Complaint Management, Paperless Complaint System, Student Complaint Portal, Web Technology Integration, Online Grievance Handling, Complaint Resolution.

INTRODUCTION

In educational institutions, effectively managing student complaints is vital for maintaining transparency, accountability, and student satisfaction. Traditionally, handling grievances has relied on manual processes, including paper registers and in-person submissions. These methods are time-consuming, inefficient, and often lead to delays. They frequently lack proper documentation, follow-up, and transparency, resulting in unresolved issues and communication gaps between students and the administration.

To overcome these challenges, digital grievance management systems have gained popularity in recent years. The Student Complaint Portal is an online system designed to simplify and improve the process of registering, tracking, and resolving student complaints in educational institutions. The portal offers a secure and user-friendly interface for students to file complaints on various issues such as academics, administration, infrastructure, or faculty conduct.

Each complaint submitted is documented, categorized, and assigned to the appropriate authority for prompt resolution. The system includes role-based access control, ensuring that students, administrators, and grievance officers only access the functions relevant to their roles. User authentication improves data security by preventing unauthorized access or tampering with complaint records. The portal also enhances communication between students and institutional authorities with features like real-time complaint tracking and automatic notifications through email or system alerts. Students can follow the progress of their complaints at every step, building trust and transparency. Once a complaint is resolved, the system offers a feedback mechanism that allows students to rate their satisfaction with the resolution process, promoting ongoing service improvement. By digitizing the grievance management workflow, the Student Complaint Portal

significantly cuts down on paperwork, reduces administrative burden, and improves overall efficiency in institutional operations. It increases transparency by keeping a timestamped digital record of all complaint-related activities, making accountability clear and auditable. Additionally, the system has tools for analysis and reporting that enable administrators to create periodic summaries, assess resolution patterns, and identify common problems. These insights help management make informed decisions and take preventive actions to avoid similar issues in the future. Overall, the Student Complaint Portal helps create a more responsive, efficient, and transparent environment in institutions. By using modern web technologies, it ensures that student concerns are addressed quickly and effectively, fostering a culture of trust, communication, and continuous improvement within educational institutions.

LITERATURE REVIEW

1. Background:

Various research papers, institutional reports, and academic projects focused on the development of web-based grievance or complaint management systems to facilitate feedback mechanisms among stakeholders for increased institutional responsiveness. These applications are meant for college, university, and governmental organizations, with the objective of giving opportunities to students, citizens, or employees to submit complaints in a regulated and traceable manner.

Most of the systems reviewed have built into them functionalities such as online complaint submission, role-based access control for students, administrators, and complaint resolvers, status tracking, attachment options for files, and modules to generate reports. Overall, the aim is to bring the manual and paper-based register system to a more transparent and traceable digital workflow that will cut down on resolution time while improving accountability.

As such, web-based solutions have gained much popularity in educational institutions because they enhance the process of communication while reducing the administrative burden and ensuring that grievances are documented, monitored, and acted upon.

2. **Common Goals and Features:** Most authors agree on a common set of goals and features to be provided by the grievance management system. Inbuilt secure login and authentication mechanisms prevent unauthorized users from filing complaints or viewing complaint details. Complaint classification helps route the complaint issues to different departments, while workflow routing defines the path through which a complaint is tracked right from submission until it is resolved.

Other common features reported include real-time status updates, email or SMS notifications, and complaint history tracking for purposes of transparency and auditing. Administrative dashboards are also recommended in several studies to help administrators visualize complaint statistics and performance metrics. These dashboards can generate monthly or periodic reports highlighting recurring problems, response times, and resolution rates, thus enabling data-driven policy decisions and service improvements.

Such features together form the backbone of an efficient grievance redressal mechanism that ensures both accountability and user satisfaction.

3. **Usability and Service-Quality Findings:** User experience and service quality are the prime determinants of the success of any grievance management portal. Research focusing on e-service quality shows that responsiveness, ease of navigation, and timely communication are among the most influential factors in user satisfaction. Systems that provide clear feedback, acknowledgment messages, and visible progress updates are more likely to build user trust and encourage continued use.

Other studies also talk about the need for Service Level Agreement enforcement, where response and resolution time limits are pre-defined against complaints; this ensures accountability in departments and enhances overall user trust.

Moreover, portals with mobile compatibility, minimum form complexity, and clear interfaces tend to achieve higher adoption rates among students and especially among less technology-savvy citizens. Therefore, usability is more than a design consideration but a longterm system success determinant for active engagement.

4. **Technical Approaches and Architectures:** From a technical standpoint, most academic and realworld grievance systems are based upon a three-tier architecture, which consists of:

Presentation Layer: This includes user interface interactions via HTML, CSS, and JavaScript. Application Layer: The logic is here, usually implemented in PHP, Node.js, or Python using frameworks like Flask or Django.

Database Layer: Comprises the complaint records, which are usually maintained in relational databases, such as MySQL or PostgreSQL, or even non-relational systems like MongoDB.

This architecture provides scalability, modularity, and maintainability. Some recent works thus suggest moving towards SOA or microservices for the possibility of independent development of each module, easier updating, and further integration with other systems like mobile applications or chatbot assistants.

Some of these newer systems also include RESTful APIs for communication, OAuth2 authentication, and notification systems via Twilio or Firebase. All these

transformative changes point to more robust, interoperable, and intelligent platforms that can handle large-scale institutional complaints effectively.

5. Case Studies and Real-World Initiatives: The practical implementations of a grievance system in institutional and governmental organizations show the effectiveness of such platforms. For instance, iGRAM developed by IGNOU is a single-window platform for the lodgment of complaints related to academic, administrative, or logistical issues by learners.

The system enhanced traceability and accountability since all complaints are timestamped, categorized, and followed up on up to closure. Similarly, web-based portals directly connecting with the coordinators of departments were adopted by other universities to reduce the response time to student issues.

In the public domain, e-grievance portals integrated with AI-based chatbots have been introduced by governments and civic bodies. The system guides users through complaint registration and further allows tracking the progress of complaints through the use of Natural Language Processing to understand user queries.

Various hackathons and technology pilots organized by ministries and smart city programs are encouraging these innovations in this domain. All these initiatives indicate increasing interest in the application of AI, automation, and analytics to boost responsiveness and accessibility.

6. Reported Challenges and Gaps: Despite their potential beneficial outcomes, contemporary grievance systems have some challenges:

Delayed Resolution and Accountability: Most systems have delayed resolution and accountability because poor monitoring or a lack of an escalation mechanism prevents the back-end responders from resolving complaints within given stipulated timelines. Technology alone cannot guarantee timely resolution in the absence of human accountability.

Usability and Trust: Systems that are cluttered or have confusing feedback messages usually face low adoptions due to loss of confidence in the reliability among users.

Privacy and Sensitive Complaints: Complaints related to harassment, discrimination, or personal issues demand strict confidentiality. Most of the portals still lag in providing adequate privacy controls, such as anonymous submission and restricted access.

Analytics and Proactive Management: Advanced analytics are used by very few systems in order to find the complaint trends, predict recurring issues, or prioritize urgent cases. Without data-driven insights, institutions miss opportunities for proactive improvement and early problem detection.

It is important to address these challenges to ensure the long-term sustainability and effectiveness of any grievance redressal portal. **7. Design Implications for the Proposed System:** Based on the literature review, several design lessons can be included in the proposed Student Complaint Portal:

User experience: A simple, responsive, and mobilefriendly interface increases usability by showing clear acknowledgment messages after submission. These enhance usability and develop trust among users.

Accountability Mechanisms: Implement role-based workflows and enforce SLAs using timestamped actions that allow complaints handling and monitoring to be transparent.

Privacy and Confidentiality: Provide anonymous submission options and limit access to sensitive complaints, especially those in categories related to personal or disciplinary matters.

Analytics and Reporting: Integrate fundamental data analytics tools to generate monthly reports, identify the most frequently occurring complaint categories, and analyze the average resolution time in order to support the management in its policy decisions .

Scalability and Modularity: Follow a modular architecture that in the future can be integrated with mobile apps or AI-based assistance to make it adaptable for longer.These lessons provide a strong foundation for designing a complaint-handling mechanism that is user-friendly, reliable, and transparent, serving institutional and student needs simultaneously.

METHODOLOGY

Requirement Collection:

The first phase needs identification and analysis for students, faculty, and administrative staff. Information was gathered through discussions and observations of how existing processes related to complaints were handled within the institution. This helped in identifying key pain points, which revolved around lack of transparency, delayed responses, and inefficient manual workflows.

Based on such analysis, crucial Website features were defined: 'User login with security, complaint submission form, administrator panel, and real-time complaint tracking'. The aim of the 'requirement analysis phase' was to clearly determine what exactly the system must do and how.

System Planning and Analysis:

In this phase, the overall workflow of complaint registration and resolution was analyzed in detail. The main user roles that were defined included: Student: Mainly responsible for lodging complaints and monitoring follow-ups.

ADMINISTRATOR/AUTHORITY: To manage, evaluate, and resolve the complaint.Data flow diagrams and process flowcharts were prepared that show how information would flow in the system, from submission by the student, processing by the admin, to final resolution. This analysis made sure that all the interactions within the portal were clearly mapped and logically consistent.

Website Design:

In the design phase, much emphasis was put on creating an intuitive, responsive UI to enhance usability and accessibility. Major pages include UI mockups for the Login Page, Student Dashboard, Complaint Submission Form, and Admin Panel. At the same time, the database structure was planned to include key tables such as Users, Complaints, and Status Updates, ensuring proper normalization and relationships between entities. The design aimed to create a clean, consistent layout that allows users to navigate effortlessly on both desktop and mobile devices.

Front-end development:

During this phase, the user interface was implemented using standard Web technologies such as HTML, CSS, and JavaScript, or equivalent modern frameworks if applicable. The focus was to ensure responsive layouts, smooth navigation, and correct form validation.

Front-end components included complaint submission forms, login screens, and tracking dashboards, all designed to deliver seamless user experiences with a minimum loading time and clear visual feedback.

Back-End Development:

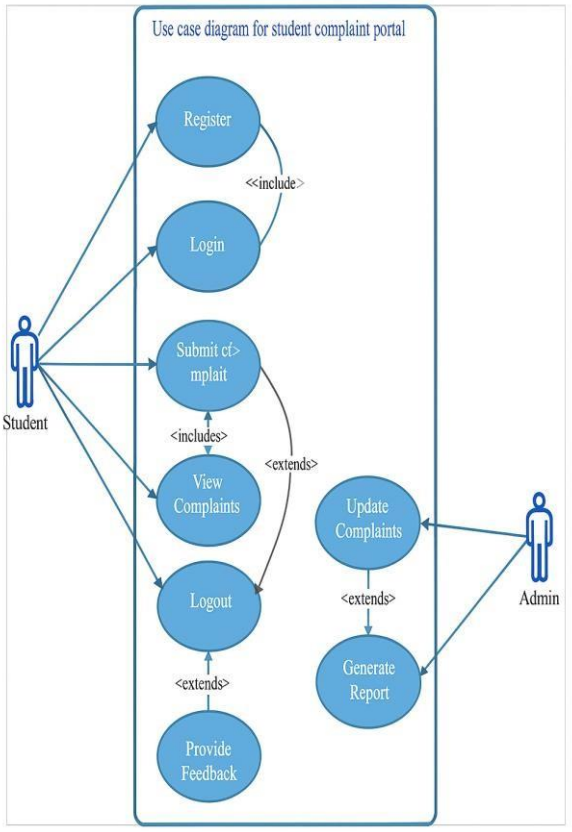
The backend stage included writing the server-side logic that handled the functionality of the application, along with data management, such as user authentication, complaint registration, and updating the status of complaints.

The server-side development was done using PHP, Python-Flask/Django, or Node.js, depending on the chosen implementation stack. The backend also handled session management, validation of inputs, and secure communication with the database to prevent unauthorized access.

Database Implementation:

A MySQL relational database design was implemented for storing user profiles, information about complaints, and administrative actions. Relationships and proper indexing between tables were established to ensure that data remains consistent, and information could be fetched efficiently.

Security measures, including encrypted storage and restricted access levels, were instituted to protect sensitive



student data and ensure compliance with institutional privacy standards.

Integration:

After independent development of the front-end and backend modules, the integration phase hooked up all components to ensure seamless data flow throughout the system. Student form submissions were attached to backend scripts, which stored them in the database; meanwhile, the admin panel dynamically fetched and showed complaints.

This phase verified that all features, such as complaint submission, updating, and status tracking, worked in harmony to deliver a complete and functioning platform.

Testing:

Extensive testing was done to validate that the portal met both the functional and non-functional requirements. These included unit testing, integration testing, and UAT. The test cases were designed for module functionality, including login authentication, complaint submissions, file uploads, and updating complaint statuses. Dummy user data was utilized in simulating real-case scenarios. Further testing was performed on performance, security, and responsiveness to ensure smooth operations on devices and browsers. Any identified bugs were resolved, and the system was optimized for stability and reliability.

Deployment:

On successful testing, the Student Complaint Portal was deployed on an appropriate web server or institutional intranet and thus made available to authorized users. Proper configurations were set to ensure secure access by both students and administrators. Deployment documentation and user manuals were prepared to assist the end users in initial adoption.

Maintenance and Updates:

This last phase involves regular monitoring and maintenance of the system to ensure it stays up and running and is secure. Performance checks are regularly carried out to detect and avoid issues and optimize database performance. It is also planned email/SMS alerts, enhanced reporting dashboards, and AI-based complaint categorization. The continuous feedback from the users is also collected for future improvements to keep the system relevant and effective over a period of time.

PROPOSED WORK

The proposed Student Complaint Portal aims to develop an efficient, transparent, and user-friendly online grievance management system tailored for educational institutions. This should replace the manual complaint-handling process at various levels with a centralized digital solution that ensures accountability, privacy, and timely redressal of issues. The three-tier architecture includes the presentation, application, and database layers of the portal. Students can log in securely and lodge complaints under specific categories related to academics, administration, infrastructure, or faculty. Every complaint will automatically get time and date stamped, with a unique ID assigned, and it will be duly forwarded to the concerned authority for resolution via workflows already defined. Attachments of documentary evidences are allowed and acknowledgement messages are generated on successful submission to enhance user trust and transparency.

It has a special dashboard for administrators where they can manage complaints, mark the status of every complaint, and check pending issues. The system will integrate role-based access control to prevent unauthorized actions and ensure data privacy. Features for monthly reports, categorywise summary, and average resolution time analysis will aid the management in finding recurring issues and evaluating responsiveness at an institutional level.

To increase the level of usability, the interface is mobile-responsive and can easily be accessed through standard web browsers. The system architecture will be such that it can always be scaled up for advanced functionalities, such as automated notifications via email or SMS, integrating AI-based modules for complaint prioritization or even offering support via chatbots. The proposed system provides a systematic, transparent, and accountable method of complaint management that will make the institutional environment more responsive and studentcentered.

CONCLUSION

The Student Grievance Redressal Web Portal helps overcome the challenges evident in traditional paper-based complaint-handling systems for educational institutions with a digital platform that is secure, transparent, and efficient. By facilitating role-based access, real-time complaint tracking, and automated acknowledgments, the system guarantees rapid and orderly redressal of student grievances.

It also allows for greater accountability, due to the fact that all actions are time-stamped and follow traceable workflows. With analytical reporting, institutional authorities can identify recurring problems, monitor response performance, and support a cycle of continuous service quality and campus governance improvements.

This system, therefore, assists in building a transparent and student-friendly surrounding where complaints are not only addressed in time but also well overseen by the management. Future development may involve AI-based categorization of complaints, integration with a mobile application, and multilingual support to further extend accessibility and efficiency across diverse user groups.

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