

A Survey Paper on Student Guidance System

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ABSTRACT

The Student Counselling System is a web-based platform developed using HTML, CSS, JavaScript, Node.js and MongoDB to streamline communication between students and counsellors. The system allows students to update their CIE (Continuous Internal Evaluation) marks and submit them for counsellor approval, ensuring transparency in academic progress. It also provides a feature for students to upload and modify their activity points related to extracurricular and co-curricular participation. Counsellors can schedule counselling sessions through the system, and notifications or messages are automatically sent to the respective students. This reduces manual work and improves timely student support. The application ensures secure data storage and efficient data retrieval using MongoDB, while Node.js handles backend logic and real-time operations. The user-friendly interface built with HTML, CSS and JavaScript makes it easier for both students and counsellors to access and manage information. The system promotes better academic monitoring and enhances student-counsellor interaction. It minimizes paperwork and provides a centralized platform for maintaining student records. Overall, the project aims to offer an efficient, transparent and reliable counselling management solution.

Keywords: Student Counselling System, MongoDB, Node.js, academic monitoring, paperwork

I. INTRODUCTION

The Student Counselling System is a web-based application designed to improve communication and academic support between students and counsellors. In many educational institutions, managing CIE marks, activity points and counselling sessions is done manually, which is time-consuming and prone to errors. This project aims to digitalize these processes by providing a centralized platform where students can update their CIE marks and activity points, and counsellors can review and approve them. The system also allows counsellors to schedule counselling sessions and send notifications to students directly through the portal. Built using HTML, CSS and JavaScript for the frontend, and Node.js with MongoDB for the backend, the system ensures secure data handling, real-time updates and user-friendly access. This project helps in maintaining accurate records, improving transparency and enhancing the overall guidance process between students and counsellors.

II. RELATED WORKS

- 1 "Online Student Counselling System" – R. Singh & P.Sharma
 - Google Scholar / ResearchGate
- 2 "Web-based Student Counselling and Guidance Portal" – A. Kumar, S. Reddy
 - Google Scholar
 - Institutional Repository
- 3 "Online Mental Health & Counselling Services for Students" – O. Oti et al.
 - Google Scholar
 - PubMed
 - Scopus / Web of Science

- 4 “Student Academic Performance & Counselling System using MongoDB” – M. Patel
 - Google Scholar only
- 5 “A Review on Web-Counselling Systems for Higher Education” – M. Papadatou-Pastou
 - Web of Science / Google Scholar
 - WoS & Scopus
- 6 “Automated Academic Monitoring & Counselling System” – S. Verma, T. Jain
 - Google Scholar
 - Not Scopus/WoS / UGC

[1] The research work titled “Online Student Counselling System” by R. Singh and P. Sharma focuses on developing a digital platform to improve the communication and support process between students and counsellors in educational institutions. The authors highlight that traditional counselling systems rely on manual record-keeping and face-to-face interactions, which often lead to delays, loss of information and poor tracking of student progress. To solve this issue, they propose an online portal where students can register, log in and request counselling sessions based on academic or personal issues. The system also enables counsellors to view student profiles, monitor academic performance, schedule appointments and provide feedback directly through the platform.

The system is designed using web technologies such as HTML, CSS and JavaScript for the frontend interface, while PHP/Node.js and MySQL/MongoDB are used for the backend database and server operations. Students can update details like academic scores, attendance and concerns, while counsellors can approve or modify data and send personalized advice or meeting notifications. The platform also maintains a record of past counselling sessions, making it easier to monitor student improvement and make data-based decisions.

According to the authors, the main advantages of this system are time efficiency, improved accessibility, reduced paperwork and better tracking of student performance and mental well-being. It also creates a more comfortable environment for students to express concerns privately. However, they also mention limitations such as the need for internet access, data security challenges and less emotional connection compared to face-to-face counselling.

Overall, this project provides a practical and efficient solution for institutions to manage counselling services digitally and supports continuous interaction between students and counsellors, which is essential for their academic growth and emotional well-being.

[2] The project “Web-based Student Counselling and Guidance Portal” by A. Kumar and S. Reddy focuses on creating a digital platform that bridges the gap between students and counsellors by making the counselling process more organized, accessible and efficient. The authors observed that in many colleges, counselling-related activities such as tracking student progress, scheduling counselling sessions and addressing student concerns are handled manually. This traditional method often results in delays, miscommunication, lack of proper records and difficulty in monitoring student growth. To overcome these issues, the authors propose a web-based system that allows students to interact with counsellors in a structured and secure manner.

In this portal, students can log in, update their academic performance details, upload their attendance status, activity points and also raise counselling requests in case of personal, academic or career-related issues. Counsellors have a separate login to view student data, approve updates, respond to counselling requests and schedule counselling sessions. Notifications or messages are automatically sent to students when a session is booked or feedback is provided. The system also maintains digital records of past counselling sessions, student performance history and counsellor remarks, which helps in continuous monitoring and improvement.

The project uses HTML, CSS and JavaScript for the user interface and Node.js/PHP with MySQL or MongoDB for backend and database operations. The authors emphasize benefits like reduced paperwork, better time management, improved transparency, data accuracy and easy accessibility from anywhere. However, they also mention challenges such as internet dependency, data privacy concerns and limited emotional connection compared to direct counselling.

Overall, this system provides an efficient and user-friendly solution for managing counselling activities in educational institutions and strengthens communication between students and counsellors.

[3] The article by Oti and Pitt examines how digital mental-health interventions (such as web-apps, mobile apps, online portals) are being developed specifically for students in higher education, and it highlights the importance of a user-centred design approach. The authors note that while students often face mental-health challenges (e.g., anxiety, depression, overall wellbeing), many continue to encounter barriers when trying to access traditional counselling services. These barriers include scheduling conflicts, stigma, confidentiality concerns and lack of tailored support.

To explore how digital solutions might help, the authors conducted a scoping review of peer-reviewed literature: they searched across major databases (including Embase, ACM Digital Library, Web of Science, IEEE Xplore, Scopus, Google Scholar) and identified 755 potential articles, of which 23 met their inclusion criteria. The selected studies covered web-based, desktop and mobile technologies designed for students, addressing mental-health topics like depression, anxiety and mental-wellness awareness.

Their key findings emphasise that many of the digital interventions were at prototype or pilot stage, and many lacked strong evaluation of long-term user engagement or real effectiveness. They found that user-centred design features — such as personalization, good interface usability, peer support and professional access — were under-utilised. They recommend that future solutions must focus more on student-needs: privacy and anonymity, accessibility (anytime/anywhere), and involvement of stakeholders (students, university staff, mental-health professionals) in the design process.

In the context of your project — a web-based student counselling system where students update academic/activity data, book counsellor sessions and receive notifications — this article highlights several relevant design lessons: ensure the system is user-friendly, secure (student data and sessions), accessible on various devices and supports engagement (so students actually use it). It also means your platform could incorporate features that enhance mental-well-being in addition to academic monitoring. Overall, the Oti & Pitt article provides solid evidence that digital platforms for student support are viable, but that design and user-engagement remain critical success factors.

[4] The project “Student Academic Performance & Counselling System using MongoDB” by M. Patel focuses on developing a web-based platform that helps institutions manage student academic records and counselling activities efficiently. The author identifies the limitations of traditional systems where student marks, attendance, activity points and counselling details are stored manually in registers or spreadsheets, which often leads to data loss, delays and poor tracking of academic progress. To solve this, the project introduces an online system where student data is stored securely using MongoDB, a NoSQL database that supports fast retrieval and scalable data storage.

In this system, students can log in, update or view their internal marks (CIE), attendance, achievements and activity points. Counsellors or faculty mentors can access these details, verify marks submitted by students, monitor academic performance and provide counselling or suggestions in case of poor results. The system also allows counsellors to schedule counselling sessions, send notifications to students and maintain digital records of past meetings and feedback. This helps in continuous monitoring and guides students academically and personally.

The backend of the system uses Node.js along with MongoDB to handle server-side operations, while HTML, CSS and JavaScript are used to build the user interface. The author highlights the advantages of MongoDB such as flexible document storage, easy handling of unstructured data and faster performance compared to traditional SQL databases.

The main advantages of this system are paperless record-keeping, real-time updates, secure data storage, easy data retrieval and better communication between students and counsellors. However, limitations include dependence on internet connectivity, risk of unauthorized access if security is weak and lack of face-to-face emotional interaction during counselling.

Overall, the project provides an effective digital solution for monitoring student performance and improving the counselling process in educational institutions.

[5] The paper “A Review on Web-Counselling Systems for Higher Education” by M. Papadatou-Pastou presents an in-depth study of how counselling services in colleges and universities are shifting from traditional face-to-face methods to web-based platforms. The author explains that students in higher education often face academic stress, emotional challenges, career confusion and personal issues, which makes counselling an essential service. However, due to increasing student populations, limited availability of counsellors, time constraints and stigma around seeking help, traditional counselling becomes less effective. To address these problems, many institutions are adopting web-based counselling systems.

In the review, the author analyzes multiple research studies and systems related to online counselling in higher education. These systems include features such as student registration, online appointment booking, academic progress tracking, chat/messaging with counsellors, mental health support, confidential data storage and automated feedback. The author highlights that most systems are developed using web technologies and databases like HTML, CSS, JavaScript, PHP/Node.js and MySQL or MongoDB. Some advanced models even include AI-based chatbots, mental health assessments and real-time support.

The review identifies several advantages of web-based counselling: better accessibility, faster communication, secure digital storage of counselling records, reduced paperwork and increased student comfort due to privacy. Students can seek help without fear of judgment and schedule counselling sessions anytime. However, the author also mentions limitations, including lack of personal emotional connection, dependency on internet availability, data privacy concerns and low student participation if the system is not user-friendly.

The paper concludes that online counselling systems must be student-centered, secure, easy to use and must integrate academic monitoring with psychological support. This review supports systems like your mini-project and provides guidance on features, challenges and future improvements in digital counselling for educational institutions.

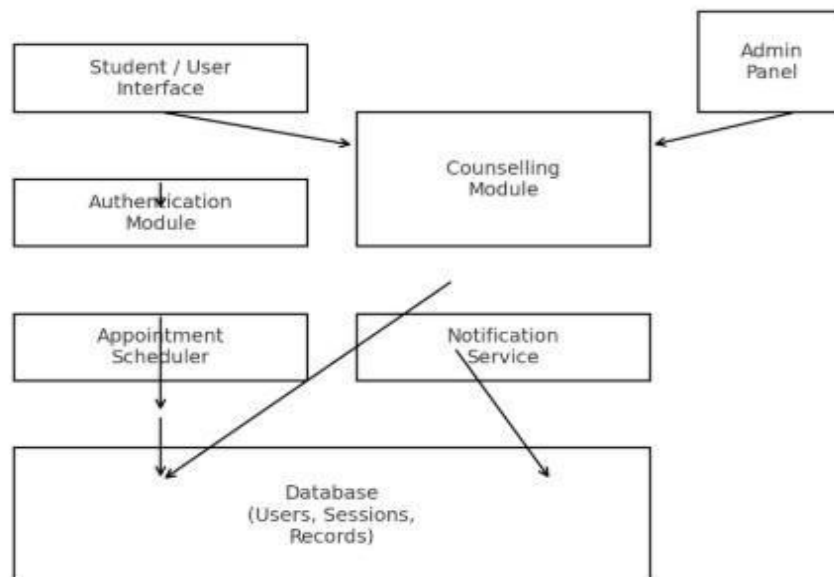
[6] The paper “Automated Academic Monitoring & Counselling System” by S. Verma and T. Jain presents a comprehensive solution to improve student performance tracking and counselling in educational institutions. The authors identify that in traditional academic settings, monitoring students’ progress and providing timely counselling are often manual, time-consuming, and prone to errors. To overcome these challenges, they propose an automated web-based system that integrates academic data management, performance analysis, and student–counsellor interaction into a unified digital platform.

The system’s main objective is to monitor students’ academic progress continuously and provide personalized guidance based on performance data. It collects and analyzes key metrics such as attendance, grades, assignments, and behavioral records. Using this data, the system automatically identifies students who may be at risk of poor academic outcomes and alerts counsellors to intervene early. This proactive approach helps institutions ensure that students receive academic and psychological support before issues escalate.

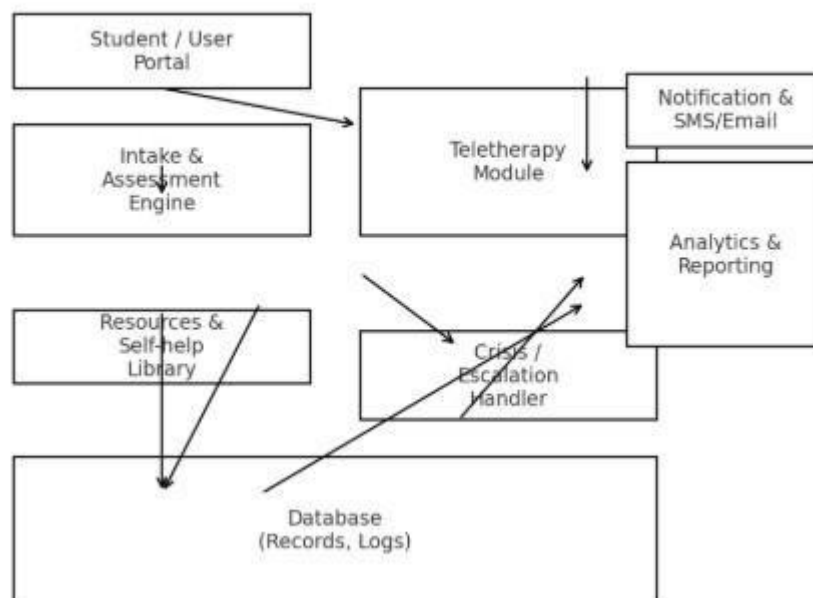
A key feature of the proposed system is its ability to generate automated reports and visual dashboards for both students and counsellors. Students can access their progress reports and feedback online, while counsellors can view comparative analyses and historical trends to make informed decisions. The system also ensures data confidentiality and secure communication between users through login authentication and role-based access.

Overall, the Automated Academic Monitoring & Counselling System enhances transparency, efficiency, and accuracy in academic management. It reduces manual workload, minimizes paperwork, and promotes digital record-keeping. By integrating automation with counselling, the system creates a supportive learning environment that fosters continuous improvement and student well-being. Verma and Jain’s work demonstrates how technology can transform conventional counselling into a data-driven, student-centered process aligned with modern educational needs.

Block Diagram — Online Student Counselling System (R. Singh & P. Sharma)



Block Diagram — Online Mental Health & Counselling Services (O. Oti et al.)



GAP ANALYSIS

Many educational institutions still follow traditional methods for managing counselling activities, where student marks, attendance, and activity points are recorded manually in physical registers or spreadsheets. These practices make academic monitoring slow, error-prone, and difficult to track over time. Even where digital systems exist, they usually focus only on storing academic data and do not include session scheduling, real-time notifications, or approval workflows for student updates. Data accessibility is also limited if students need to approach counsellors personally for every update or query. Existing solutions lack centralized storage, strong authentication features, and smooth communication features between students and counsellors. Few systems incorporate both academic and co-curricular performance in one place, which reduces the completeness of

counselling decisions. These gaps highlight the need for a more integrated, secure, and user-friendly platform that supports continuous interaction, real-time data updates, and transparent academic supervision.

PROPOSED WORK

The proposed Student Counselling System provides a web-based unified platform that bridges communication between students and counsellors while replacing slow manual processes. Students can log in to update their CIE marks, upload activity points, and request counselling support whenever required. Counsellors receive update requests and can review, verify, and approve academic records directly through the portal. The system enables scheduling of counselling sessions along with automated notifications to ensure timely communication. It integrates HTML, CSS, and JavaScript for an interactive user interface, while Node.js and MongoDB handle backend operations and secure database storage. The platform also maintains historical counselling records for performance tracking and provides centralized access to important student information. This proposed solution improves transparency, minimizes administrative workload, and enhances the accuracy of academic monitoring. Future extensions may include analytics dashboards and AI-based intervention suggestions to support early identification of students who require academic or emotional assistance.

III. CONCLUSION

The Student Counselling System successfully digitalizes the traditional counselling workflow by offering a centralized and secure platform for managing student academic data, activity points, and counselling sessions. The system improves transparency by enabling students to update CIE marks and activity records while allowing counsellors to verify and monitor their progress efficiently. Automated notifications and session scheduling reduce manual effort and ensure timely support. By utilizing Node.js for backend operations and MongoDB for scalable data storage, the system maintains data accuracy and provides real-time accessibility.

IV. REFERENCES

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