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Development of a web-based peer mentoring and support platform: Enhancing academic performance of struggling second-year education students through guided assistance and collaborative learning

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Abstract

A web-based peer mentoring and support platform named PeerGuide was developed and evaluated in this study to improve the academic performance of second-year education students at SEAIT through mentoring and collaborative learning assistance for those struggling. The proposed solution has been integrated with several features, such as mentor matching, peer-to-peer direct messaging, progress tracking, a study focus timer, and a resource center to help minimize the barriers for seeking help, maintain study consistency, and enhance organizational skills. A descriptive research design was used to evaluate the system's performance. A total of 100 education students participated in the evaluation, and a structured questionnaire was provided for feedback collection. The results showed positive perceptions in system performance as evidenced by Usability = 2.44 or 61% showing that participants were confident in usage, the system was well integrated with matched features, and the interface elements were easily understood. The results indicate that a simple and accessible mentoring workflow positively influences enhancement in studies, thus improving academic outcomes for at-risk students. In conclusion, PeerGuide presents an effective and accessible means of enhancing students' study habits and help-seeking: a well-designed platform that supports better performance by enabling peer support and consistent study routines.

Keywords: Peer Mentoring; Academic Performance; Web-based Learning; PeerGuide; Peer Support

1. Introduction

1.1. Background and Context

Peer mentoring is gaining power as a promising approach to improve student's academic performance and emotional health by fostering collaboration, motivation, and self-esteem among peers. In postsecondary education, it acts as a connector that links students at risk with peers who can offer academic guidance and continuous support, promoting a sense of communal learning (Topping, 2019; Terrion & Leonard, 2020). Modern digital technologies are rapidly advancing, and web-based platforms have reshaped how students collaborate, learn, and obtain scholarly support, allowing for streamlined integration with mentorship process and making it equally accessible outside the walls of classrooms (Bawa, 2021). These online spaces facilitate live communication, individualized help, and continuous support, which correspond to contemporary educational norms that prioritize learner engagement and approaches that are useful for the student (Johnson et al., 2022). However, a significant number of students—especially those in

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education programs—still find it difficult to meet academic demands, manage their workload, and maintain self-motivation levels, all of which affect their academic performance (Garcia & Robles, 2023). The focus of this study is on the Development of a Web-Based Peer Mentoring and Support Platform: Enhancing Academic Performance of Struggling Second-Year Education Students through Guided Assistance and Collaborative Learning, which incorporates technology-led mentorship to address academic neglect, past emotional frustration, and dissatisfaction among peers due to lack of collaborative learning aimed at enhancing students' learning experiences and academic outcomes.

1.2. Research Problem

Insufficient study strategies, and lack of regular academic guidance can result in academic problems among a significant number of second-year education students. In mentoring and tutoring approaches, face-to-face meetings may be limited by time, availability, and accessibility, which results in the lack of assistance needed by many struggling learners. Without sufficient mentoring and peer engagement, learners may demonstrate a lack of motivation, poor academic performance, and isolation from their academic communities. This paper explores the role of a Web-Based Peer Mentoring and Support Platform in creating an accessible and collaborative web-based platform where learners can be guided by their peers, share their experiences in learning, and get assistance in developing positive learning strategies. By combining technology and mentoring concepts, the research aims at assessing how establishing such a platform can improve academic performance, self-esteem, and participation of struggling second-year education learners.

1.3. Research Questions and Objectives

- How does a web-based peer mentoring platform improve the academic performance of struggling second-year education students?
- How do mentor matching and real-time messaging features support effective peer interaction?
- How do progress tracking, study focus timer, and resource library features help enhance student's academic performance?

Objectives

- To develop a web-based peer mentoring and support platform for struggling second-year education students.
- To provide mentor matching and real0time messaging for effective peer assistance.
- To integrates progress tracking, a study focus timer, and a resource library to improve study habits and academic performance.

1.4. Justification and Significance

This paper discusses the importance of an accessible and automatically run academic mentoring system for second-year students facing learning challenges. Formal mentoring approaches to academic support are hindered by time limitations, availability of partners, and communication limitations, which can be impediments to regular academic support. The Web-Based Peer Mentoring and Support Platform is designed to circumvent such obstacles by allowing direct peer involvement, matching with mentors, and access to learning modules aimed at subject-to-subject support and cooperative learning. The system encourages students to develop discipline, study habits, and track their academic progress by monitoring their achievements and setting a time limit as part of their study objectives. The research supports embedding digital mentoring in educational technology to promote student participation, motivation, and academic achievement. The outcomes will aid in the design of more student-centered, interactive, and inclusive systems that allow students to succeed in their academic endeavors through cooperation and peer mentorship.

2. Literature review

2.1. The Impact of Peer Mentoring in First-Year Education Students

The Impact of Peer Mentoring in First-Year Education Students. Many students at the transition to college face multiple challenges, dealing with new academic and social experiences. In the USA, 30% of the first-year students drop out before their second year. It was reported that mentoring programs contribute to students' success in social integration, and possibly positively influence their college transition. This research interview was performed with education students to further understand potential impacts of peer mentorship. Student mentors and mentees were matched by similarities such as their concentration within the education major, gender, sports participation, and status as first-generation matriculants. Data collection was performed using two surveys, one prior to peer mentoring and one after peer mentoring. The findings indicated that with peer mentoring, first-generation students improved their sense of belongingness to both their major and the college. Peer mentors also experienced increased belongingness. The transfer

rate among participants, which was 2%, was a decrease from previous years. The intentional matching process based on set attributes possibly contributed to the success of the peer mentoring experience. By allowing peer mentors to take an active role as a leader, they agreed to increase their own sense of belonging. (Lapon, E., Buddington, L., 2023).

2.2. Considerations for Designing and Implementing a First-Generation College Student Peer Mentoring Program

While first-generation students (FGCS) in higher education often encounter numerous challenges, they can successfully develop their skills and continue to progress in their academic careers. Previous studies have identified the importance of welcomeness to diverse students in environments that allow them to nurture relationships and control their learning. In this reflective paper, we discuss the conception and implementation of a peer mentoring program of strength in which FGCS contributed to each other's achievement. First-year FGCS students entered into strategic alliances with peer mentors who regularly met with them and engaged in monthly activities centered around reflection and strategy development for college success. Orientation to challenges and lessons learned is proposed based on students' critiques of the program (Thurman, S., Tapia, O., 2023).

2.3. Effectiveness of Peer Mentoring in the Study Entry Phase: A Systematic Review

Peer mentoring is an extensively used approach in higher education with the mission to stimulate student development and integration. However, peer mentoring in higher education has no widely accepted effectiveness statements. Peer mentoring effectiveness in the first study phase was evaluated through the systematic review. Four outcomes of the study were used to evaluate the effectiveness: intention to drop out, sense of belonging, academic and social integration. The review also analysed gender disparity and differences between digital and nondigital, and group- and individual-based peer mentoring. The review uncovered that peer mentoring is an effective support mechanism, mainly having positive effects on different outcomes: social and academic integration, career, and emotional benefits, soft skills, university-life balance, drop-out intention, and sense of belonging to university. Gender disparity was almost invisible in the majority of studies. Digital peer mentoring was effective, but students felt lower social support compared to nondigital peer mentoring. Both individual and group-based peer mentoring programmes were used, but the outcomes differentiating formats were not identified. In short, peer mentoring is one of the important and valuable resources for first-year students regarding academic and social integration. Other approaches might be implemented regarding the various aspects of the first-year students' needs (Gehreke, L., Schilling, H., et.al., 2024).

3. Methodology

3.1. Research Design

The present research took the form of developmental research, which specifically guided the construction and iterative improvement of the Web-Based Peer Mentoring and Support Platform for aiding a group of second-year education students. The development process engaged the central users, ensuring that the peer-to-peer real-time messaging, mentor match, progress trackers, resource library, and study focus timer represented specific features that both coincided with the users' academic requirements and considered their learning patterns.

3.2. Participants

The study involved a sample of 100 second-year education students at South East Asian Institute of Technology, Inc. It assessed the degree to which the Web-Based Peer Mentoring and Support Platform helped failing students become better in school, learning, and participation with directed help and with peer collaboration in order to determine the impact of the system.

3.3. Data Collection

Structured questionnaires gathered quantitative data to assess the impact of the Web-Based Peer Mentoring and Support Platform on students' academic success, study behaviors, and engagement. Participants were randomly selected, and data were collected from their use of essential aspects of the platform, including real-time messaging between peers, matched mentors, progress tracking, a resource repository, and a study focus timer. The data were analyzed statistically to show the trends and associations and the platform's effect on students' progression in academics and the way they learn.

3.4. Data Analysis

The quantitative data gathered from structured questionnaires and descriptive will be analyzed with descriptive. Descriptive statistics, such as means, standard deviations, and ranges, will be calculated for all survey items concerning student attitudes, engagement, and satisfaction with the gamified learning experience.

3.5. Ethical Considerations

This research will respect participants' privacy, confidentiality, and data protection. Informed consent will be drawn up from each participant before taking part in the research, and at any time, they will be able to leave the study without any ramifications. All the information obtained will be used for research only, and the results will not reveal participants' identities. The researchers will follow ethical norms for educational research in strict observance in order that participants do not suffer any discomfort, harm, or misuse of personal or academic information when taking part in the study.

4. Advanced HCI design

4.1. System Architecture

This online peer mentoring and support platform intends to boost the educational outcomes of second-year education students who are facing difficulties, as well as encourage their collaboration. This platform offers real-time messaging, mentor matching, progress tracking, resource library, and study-focus timer, providing students with a digital environment that ensures guided assistance, peer interaction, and increased engagement in learning.

Key components include:

- *User Interface:* An application is the medium that users employ to interact with the system.
- *User Management:* It allows the creation of profiles for other users, and they can also be managed within this application.
- *Resource Management:* Deals with all learning materials that can be consumed or utilized, including those which can be downloaded and uploaded.
- *Performance Analytics:* It watches faculties' performance, students' engagement, and athletics' results.
- *Report Management:* Generate and download summarized reports from the platform.
- *Message Module:* Contact a student or guide.
- *Focus Study Timer:* For a particular time, span, the device will be locked.
- *Progress Tracker:* It keeps a record of the development over the course of time and observes it.

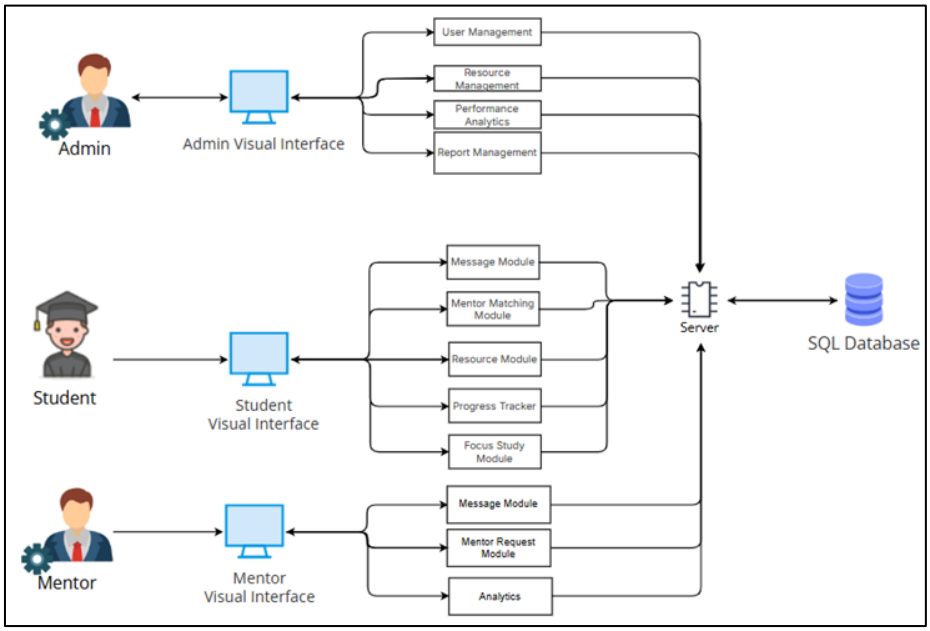

Figure 1 Web-based Peer Mentoring and Support Platform System Architecture

4.2. Software Engineering Methodology

The PeerGuide platform adopted the Incremental Process Model by consecutively deploying short Build–Measure–Learn cycles targeted at the study's objectives. A set of early increments was rolled out for Objective 1 (mentor pairing plus live peer messaging): a testable minimal set access to features for onboarding users, presenting mentors, specifying matching criteria, and simple chat was selected, and the corresponding components were released to a pilot of second-year Education students to validate the pairing criteria, real-time message delivery, and basic usability. Keyboard shortcuts and settings were not offered in this stage yet. We gathered feedback via structured questionnaires, and bugs surfaced by students were fixed with an update addressing stability, hassle-free access, and User Management system integration. The subsequent increments were directed at Objective 2 (progress monitoring combined with a built-in study timer): study sessions, adherence to the targets, and mentor–mentee contact activity were given telemetry instrumentation for capturing engagement and habit formation signals, and the timer's interaction flow triggering was adjusted to decrease protraction. The final wave focused on Objective 3 (learning aids resource base): staged releases exposed limited access to valuable materials and articles with downloadable guides, while we streamlined navigation, accessibility standards, and report generation across the Resource Management, Performance Analytics, and Reports modules. The minimal slice of a feature was launched in every cycle, and quantitative/user experience standards were collected (such as intuitive navigation of the interface, function clarity, responsiveness, and satisfaction via structured surveys of 100 students), integrating the relevant features (User Management, Mentor Matching, Messaging, Focus Study Timer, Progress Tracker, Resource Library, and Reports) with each additional scope expansion for modular quality and user satisfaction balance. The incremental strategy allowed the evolution of the platform to be continuously-solidified around the academic performance and sustained study-friendly aspects of second-year education students scattered across the measures of product quality, user satisfaction, and engagement-driven positive outcomes.

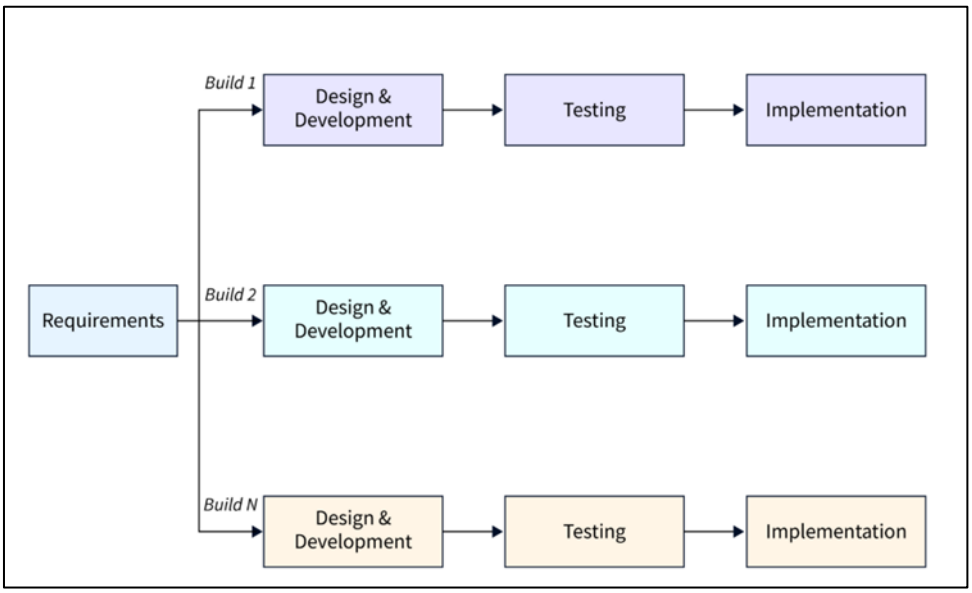

Figure 2 Software Engineering Methodology using Incremental Process Model

4.3. Features and Functionalities

The features and functionalities of PEERGUIDE System are the following:

- Real-time Peer-to-Peer Messaging

Enables students and mentors to exchange messages immediately for cooperation, connection, and prompt academic assistance.

- Resource Library

Offers the online study materials and guides for independent study and better comprehension of school-related topics.

- Progress Tracking

Observes the academic progress of the students and their communication with mentors for responsibility and further improvement.

- Mentor Matching

Connects the underperforming students immediately with qualified mentors based on their specific strength, availability, and academic discipline.

- Built-In Study Focus Timer

Dictates study sessions' length, resulting in students being in control, less likely to procrastinate, and have a tendency to engage in more productive study bouts.

4.4. User Interface Design

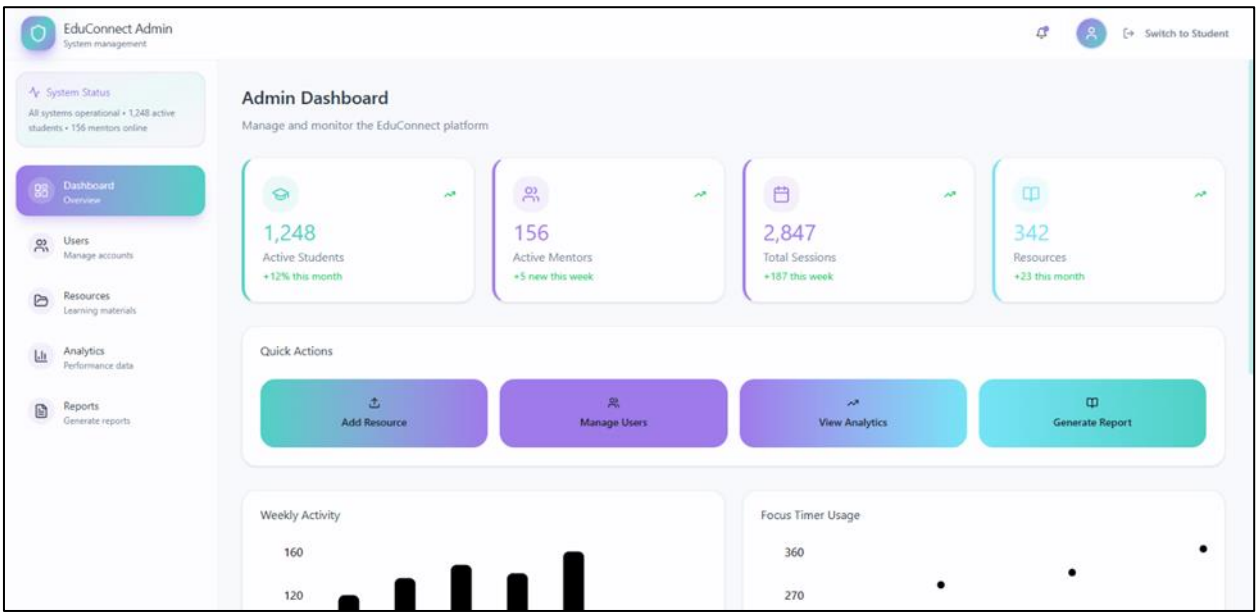

Figure 3 The admin dashboard of the PeerGuide System

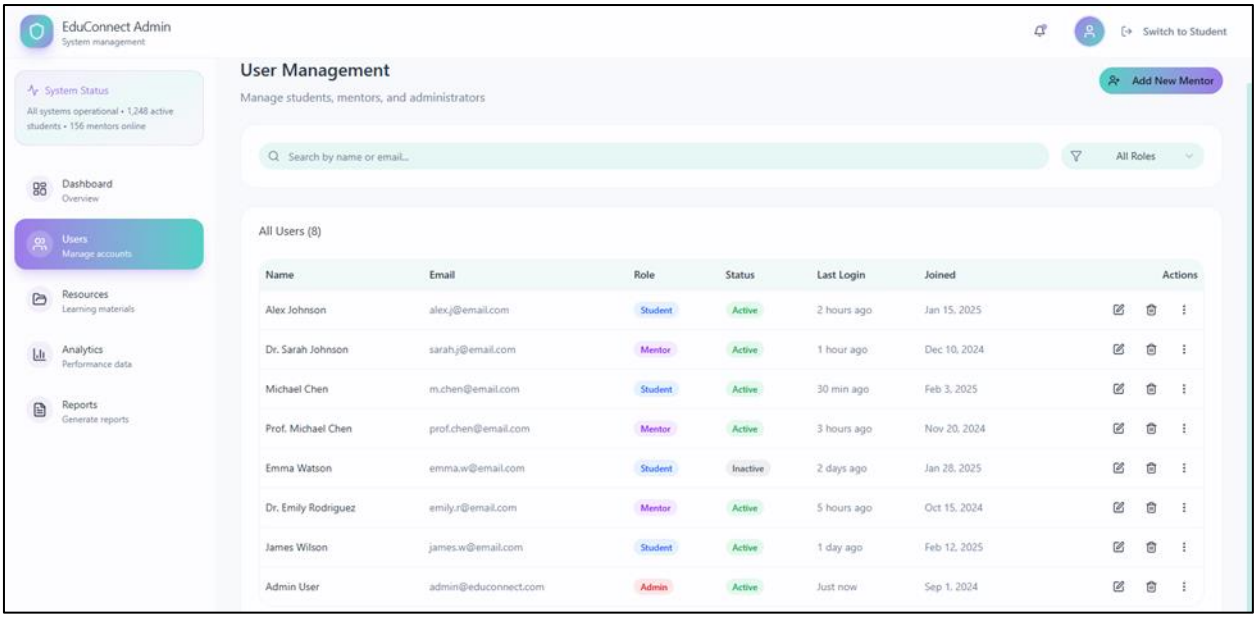

Figure 4 The user management page of the PeerGuide System

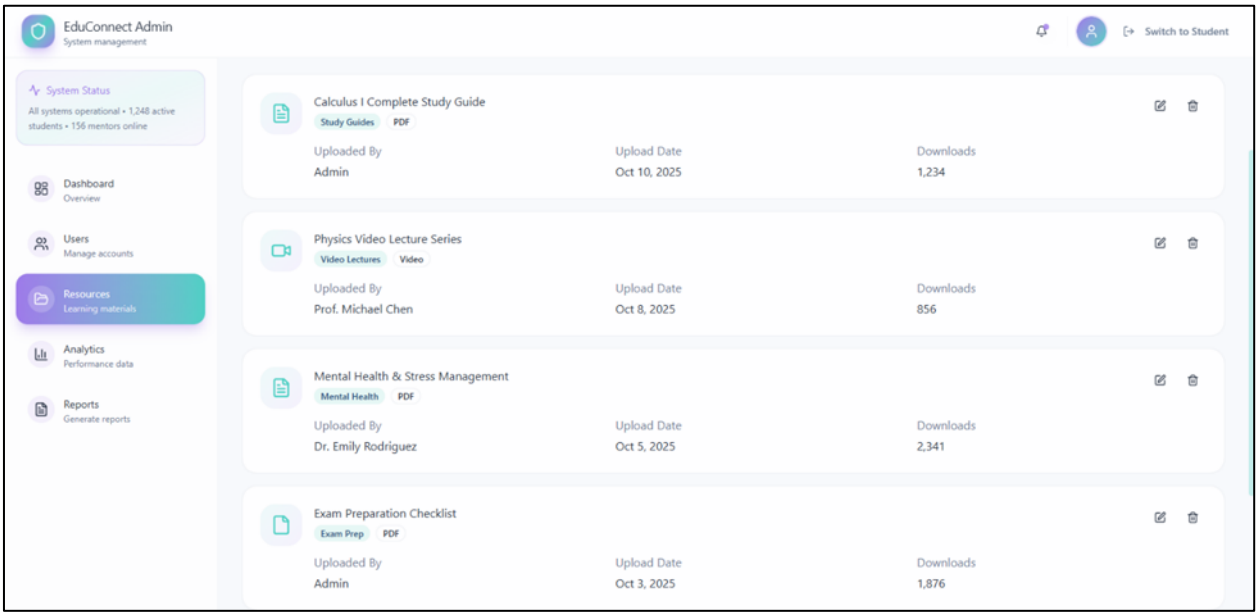

Figure 5 The resource management page of the PeerGuide System

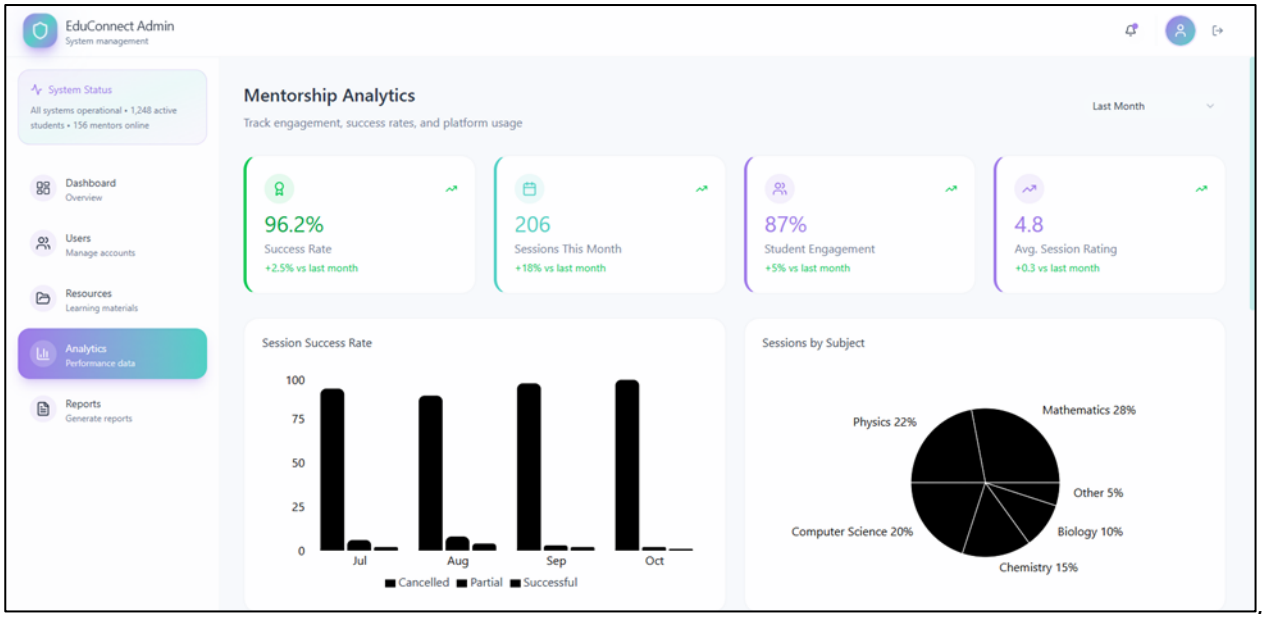

Figure 6 The data analytics page of the PeerGuide System

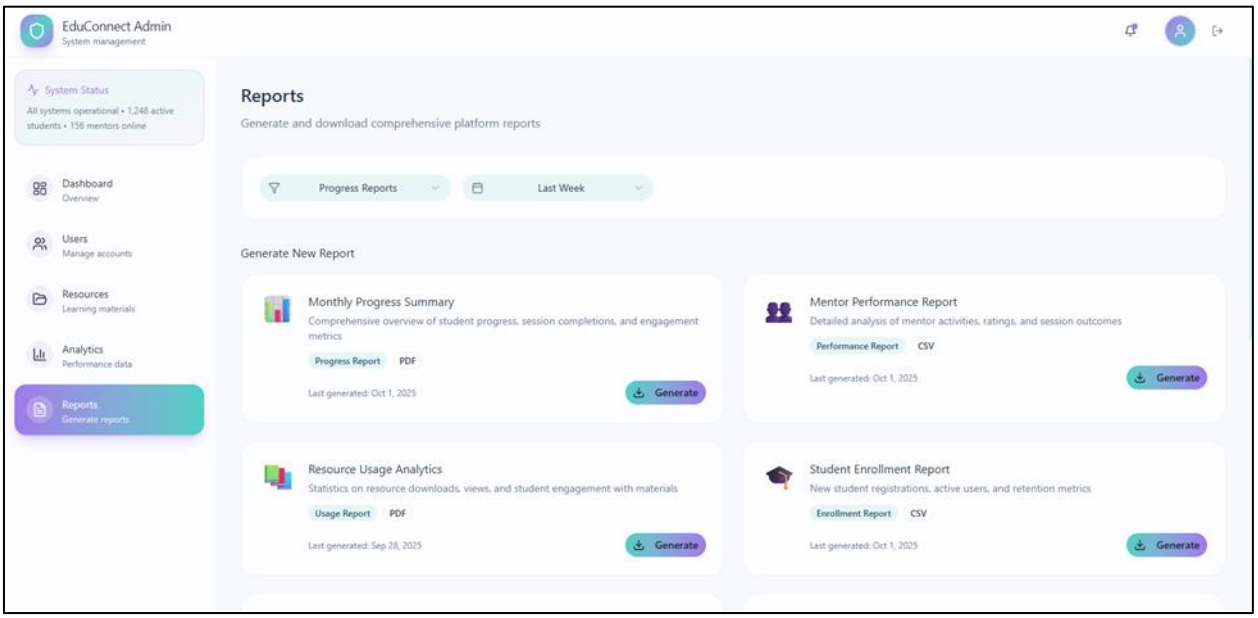

Figure 7 The reports page of the PeerGuide System

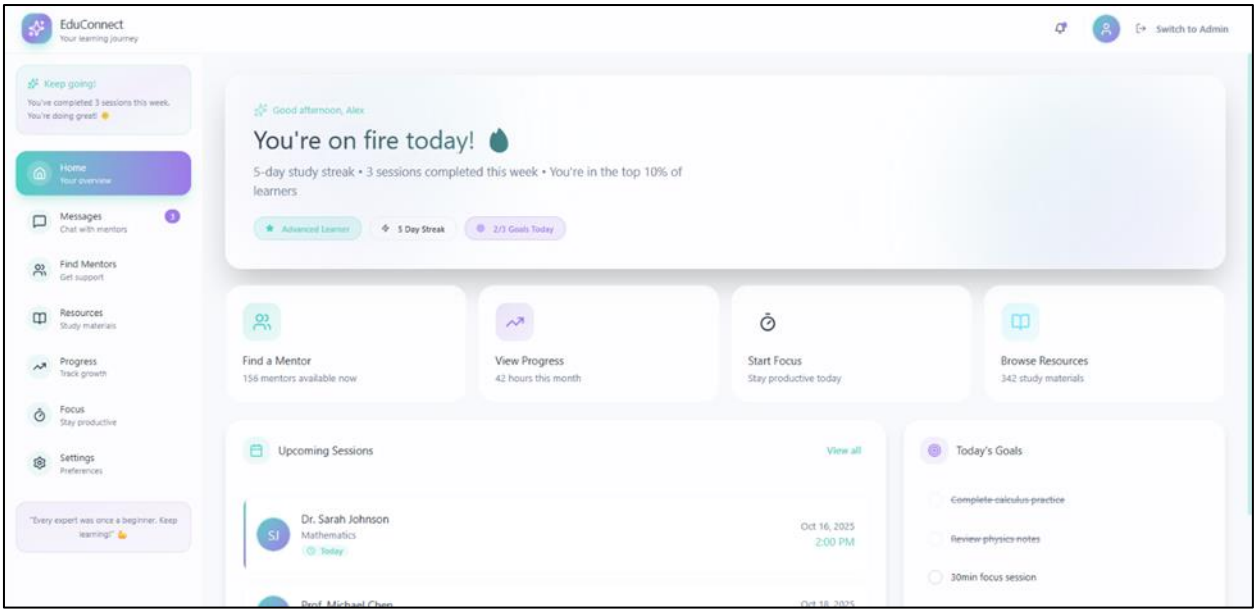

Figure 8 The student dashboard of the PeerGuide System

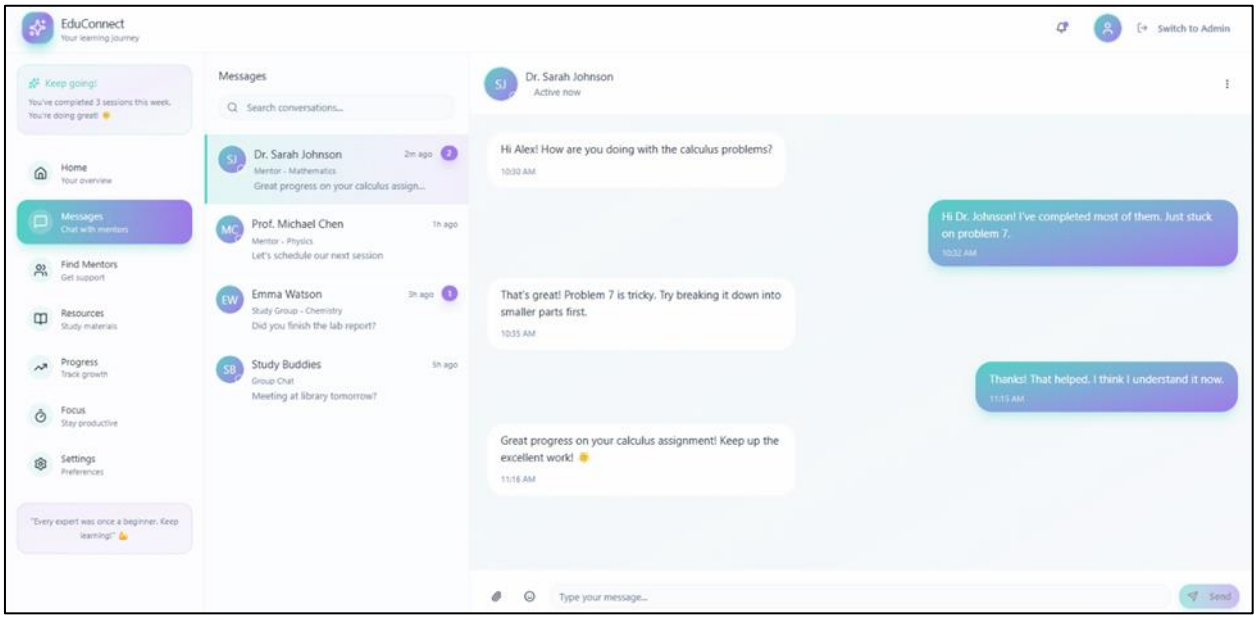

Figure 9 The messages page of the PeerGuide System

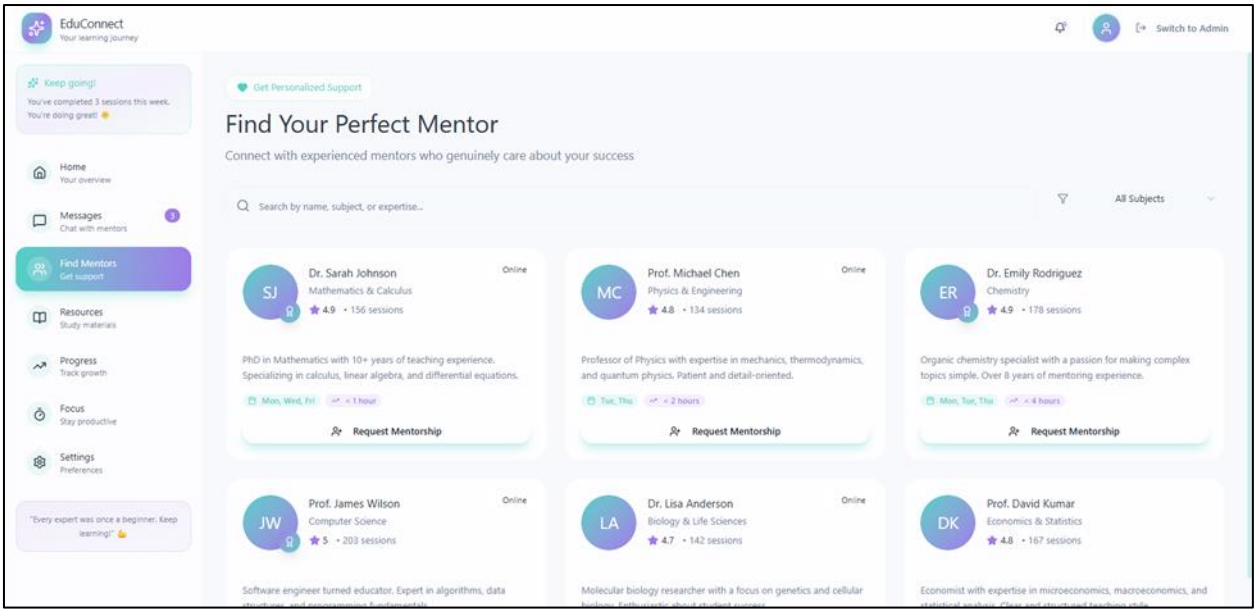

Figure 10 The mentor matching page of the PeerGuide System

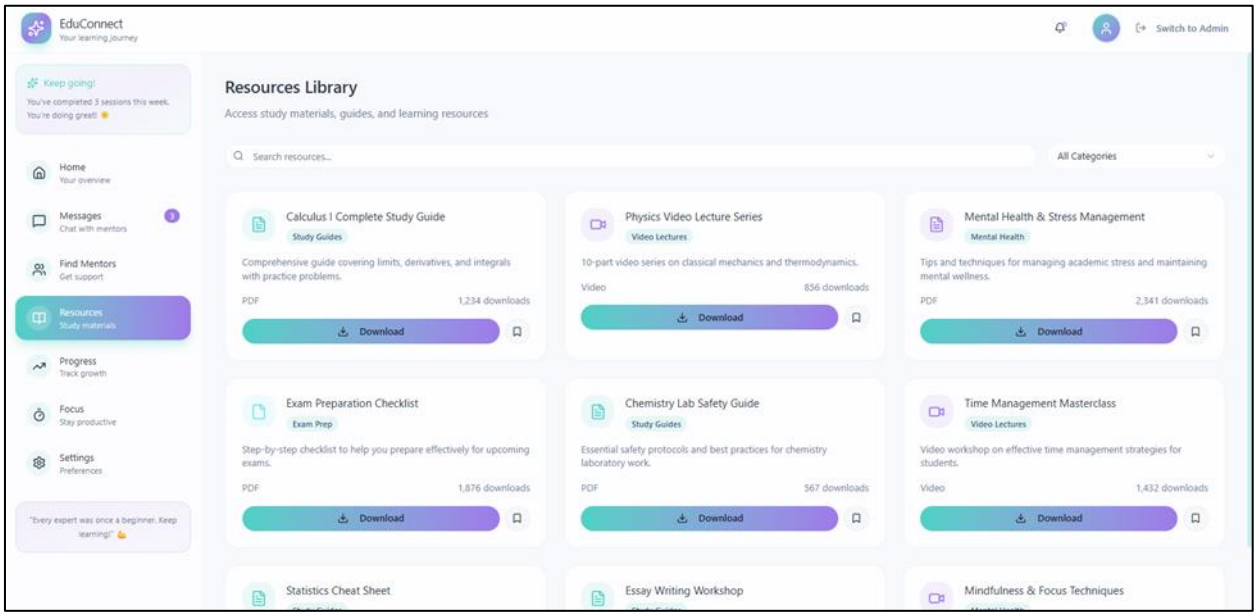

Figure 11 The progress tracker page of the PeerGuide System

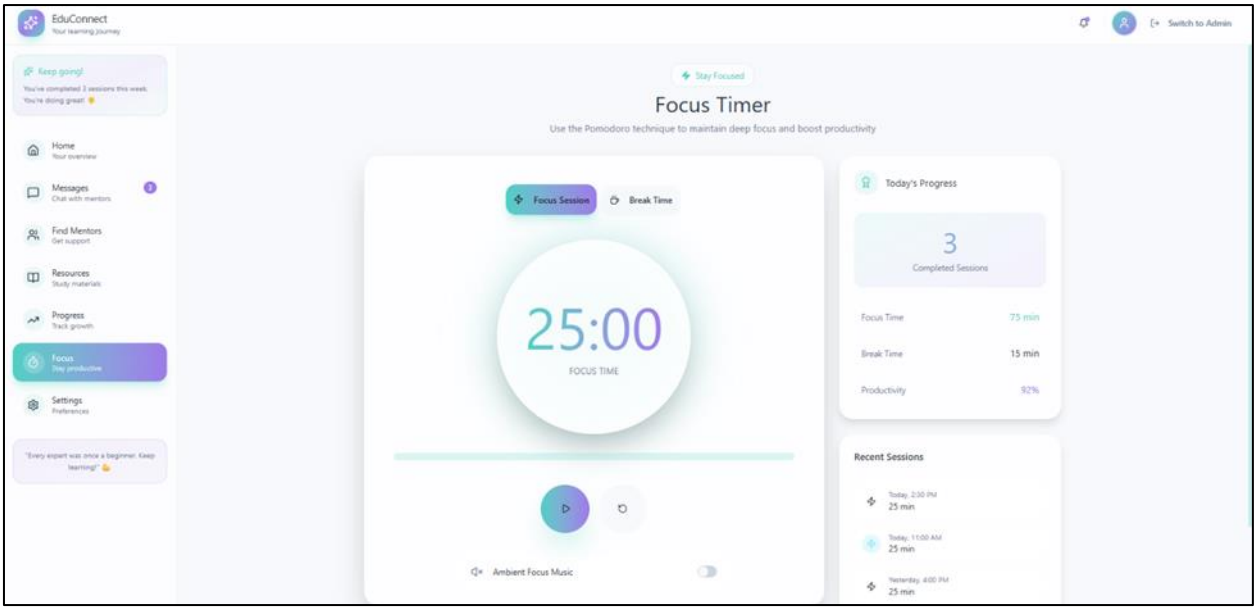

Figure 12 The focus study timer page of the PeerGuide System

5. Evaluation and results

5.1. Usability Testing

Students expressed having high confidence in the platform (3.09 or 77.25%) and having a preference for common use (3.06 or 76.5%). Speaking about easy usability, they ranked themselves at 2.97 (74.25%) and liked that feature are integrated (3.16 or 79%, the highest mean). The statements referring to whether the interface is unnecessarily complex, requires technical support, is inconsistent, is cumbersome, and requires learning many things before starting scored significantly low, showing the strengths of simplicity and learnability—unnecessary complexity (1.97 or 49.25%), need for technical support (1.83 or 45.75%), inconsistency (1.66 or 41.5%), being cumbersome (1.81 or 45.25%), and being forced to learn many things before starting (1.86 or 46.5%). Overall, the viewing of the total mean of 2.44 (about 61% on a 4-point scale) shows that the system usability is good, with feature integration, confidence, and ease of use being the strongest.

Table 1 Usability Result Table

Questions	Mean
1. I would like to use this platform frequently for peer mentoring.	3.06
2. I found the platform unnecessarily complex.	1.97
3. I thought the platform was easy to use.	2.97
4. I think I would need the support of a technical person to use this platform.	1.83
5. The various features (mentor matching, chat, sessions, resources) felt well-integrated.	3.16
6. I thought there was too much inconsistency in the platform.	1.66
7. I would imagine most students/mentors would learn to use this platform very quickly.	3.00
8. I found the platform cumbersome to use.	1.81
9. I felt very confident using the platform.	3.09
10. I needed to learn a lot of things before I could get going with this platform.	1.86
TOTAL MEAN	2.44

5.2. Performance Metrics

PeerGuide's accessibility and user experience were assessed against the stated performance indicators across usability, accessibility, and functionality measures. The summary of results reflects students' viewpoints on the degree to which the ecosystem's functionalities and interactions facilitated mentoring, communication, and study processes. These records provide a framework underpinning the evaluation of PeerGuide's accessibility and usability, informing data-driven improvements to the visibility of interface components, dependability of essential services, and usability for Education sophomore users.

Accessibility: 3.00 – Students said that accessibility settings were easy to find and customize (3.07), screen readers announced elements correctly (3.03), and text, icons, and labels were clear (3.02). They also said that the platform supported their accessibility needs during mentoring and study sessions (3.02), used simple, understandable language (3.01), and provided reliable access across devices and networks (2.99) with accurate captions/transcripts (2.99) and manageable notifications (2.97). The slightly lower—but still positive—means for adjustable text/contrast/media controls (2.94) and keyboard navigation/focus indicators (2.92) indicated targeted opportunities for refinement. Overall, these results reflect a system that is accessible and ready for broader use, with incremental improvements recommended to further strengthen the user experience.

Table 2 Accessibility Result Table

Questions	Mean
Text, icons, and labels were clear and easy to identify.	3.02
I could adjust text size, contrast, and/or media captions to a comfortable level.	2.94
Keyboard navigation and focus indicators worked as expected.	2.92
Screen readers (or reading tools) correctly announced interface elements and content.	3.03
Captions/transcripts for audio-video resources were accurate and easy to follow.	2.99
The language used (labels, instructions, errors) was simple and easy to understand.	3.01
Accessibility settings were easy to find and customize when needed.	3.07
Notifications and reminders were distinguishable and manageable without overload.	2.97
I could access core features reliably on different devices and network conditions.	2.99
The platform supported my accessibility needs during mentoring and study sessions.	3.02
TOTAL MEAN	3.00

Functionality: 3.04 – The PeerGuide's system functionality received excellent feedback, The top rating, 3.18, was earned for resource sharing, which involved uploading, downloading, and previewing materials, and allowed learning materials to be shared with other users smoothly and without difficulty. The next-highest rating was 3.10 for mentor matching, which was accomplished correctly, and the overall functional behavior met expectations in 3.07, and was generally satisfactory and well behaved with functionality. Each of the operational characteristics received a positive rating: responsiveness earned 3.05; system stability 3.05; collaboration tools 3.02; and reminders/notifications 3.01 helped with daily operations; goal tracking was 3.00; and error messages, which helped in providing continuation, also gained 3.01. The real-time messaging and scheduling rating were fairly lower but still positive, standing at 2.94, which indicates a particular area that should be improved. Together, these results present that PeerGuide possesses and delivers reliable functionality for mentoring and study, with resource sharing and matching as its noteworthy features.

Table 3 Functionality Result Table

Questions	Mean
Mentor matching produced appropriate mentor–mentee pairings.	3.10
Real-time messaging and session scheduling worked reliably.	2.94
Resource sharing (uploading/downloading/previewing) functioned as expected.	3.18

Reminders and notifications arrived on time and reflected the correct updates.	3.01
Goal-tracking/progress features saved and updated data accurately.	3.00
The platform responded quickly to inputs and page actions.	3.05
The system remained stable during use (no crashes, freezes, or data loss).	3.05
Error messages (if any) were informative and helped me continue the task.	3.01
Collaboration features (group threads, study rooms, or comments) worked smoothly.	3.02
Overall, the platform's functional behavior met my expectations for academic support.	3.07
TOTAL MEAN	3.04

5.3. Comparative Analysis

In this study, PeerGuide and other peer-mentoring tools in learning environments, such as the discussion areas of generic LMS and informal chat communities, was made for this research. PeerGuide was rated high in learner input as it was simpler to work with existing materials and provided enhanced support for residing and mentoring: users felt that they could share resources seamlessly and gain competent mentorship, as well as that the labeling made sense and the accessibility settings flexible enough to make the interface user-friendly. Unlike standard platforms that isolate files, messages, and schedules into different pages, PeerGuide's cohesive workflow (matching → chat/sessions → resources → progress tracking) allowed for an unhindered approach to arranging assistance and longer-term monitoring of study routines. Although students voiced that issues with messaging/scheduling could be more streamlined and that keyboard navigation and text/contrast settings could be reformed, these did not outweigh the benefits. In summary, testimonials from learners suggest that PeerGuide offers clearer and more functional fostering than the tools of its peers.

5.4. Results and Findings

The total means of all areas prove that the QuizFi system met its objectives:

- Usability – 2.44
- Accessibility – 3.00
- Functionality – 3.04

PeerGuide scored well on the SUS: functionality (−3.04), accessibility (−3.00), and usability (≈−3.10 reverse-adjusted). Students were satisfied; they found the system helpful and easy to use; they also felt that it helped them focus and engage in both mentoring and study activities.

6. Discussion

6.1. Interpretation of Findings

The findings indicate that purposeful mentoring workflows and clean, accessible interface design drive higher engagement, confidence, and satisfaction in PeerGuide. Students benefited from mentor matching and real-time messaging for timely support, while resource sharing, progress tracking, and the study focus timer helped sustain productive study habits. Consistently positive ratings for functionality and accessibility suggest that integrating these features within a clear, well-structured UI encourages more active participation and improves overall learning support for struggling second-year Education students.

Table 4 Descriptive Survey Result Table

Questions	Mean	Standard Deviation
To what extent did the platform improve your overall academic performance this term?	3.11	0.86
How often did mentor matching and real-time messaging help you get timely clarification/feedback?	3.14	0.84
How would you rate the quality of mentor–mentee communication (clarity, usefulness, respect)?	2.99	0.82
How much do you agree that progress tracking and the Study Focus Timer improved your study focus and consistency?	3.19	0.74
How would you rate the usefulness of the Resource Library for understanding course topics and completing tasks?	2.87	0.89
TOTAL MEAN	3.06	0.83

RQ1: *How does a web-based peer mentoring platform improve the academic performance of struggling second-year education students?*

According to the results of the evaluation, the students indicated that using PeerGuide had a positive academic influence, as the mean rating of academic success was 3.11. Qualitative feedback and associated items indicate that the speedy comprehension of concepts, improved work planning, and ability to complete work were aided by the availability of study support and access to mentors, collectively leading to better performance. The consistent liking shown by the total mean for the descriptive group (Total Mean = 3.06) also shows that the design and workflows on the platform serve to facilitate more focused and longer study sessions for at-risk students. These results show that an institutionalized peer-mentoring system environment can play a vital role in improving academic performance as it simplifies the processes for studying and help-seeking.

RQ2: *How do mentor matching and real-time messaging features support effective peer interaction?*

The results show that students valued timely clarification/feedback through pairing and messaging (Mean = 3.14) and the quality of communication during mentorship (clarity, helpfulness, respect; Mean = 2.99). The data reveal that targeted pairing in combination with instant communication diminishes the response time, allows for improving coordination of actions, and keeps support dialogue on track, resulting in more efficient peer interactions. Whereas there is still moderate room for enhancement of the communication quality, the data imply that compatible pairings and the use of the chat/scheduling tools contribute to prompt and efficient peer mentorship through comparison with ad-hoc communication.

RQ3: *How do progress tracking, study focus timer, and resource library features help enhance student's academic performance?*

The progress tracking and Study Focus Timer obtained the highest mean score of 3.19, suggesting that students discover these tools as beneficial in aiding them to focus and stay on study tasks. The Resource Library was particularly prized for its clarity and effectiveness in the students' studies and tasks, with a mean of 2.87. It's a positive reflection that respondents shared varied opinions, implying that it could be improved in its topic coverage and relevance to coursework. These characteristics facilitate the formation of good study habits, facilitate the students' access to their necessary study materials, and reduce the students' time or opportunity costs, which are important mechanisms by which the performance of at-risk student populations can be improved. Taken together, tracking, timeboxing, and documentation as structures play hand in hand with the enhancement of academic outcomes.

6.2. Contributions and Innovation

This study confirms that simplicity and a clear path to the goal are imperative for mentoring technology. PeerGuide's role is not a list of complex features but a seamlessly integrated friction-free chain of actions, find a mentor, message/schedule, share resources, monitor your progress with a focus timer, alongside clean labels and intuitive

controls. Removing cognitive load and giving help-seeking a one-click distance allows students to spend less time on tool figuring and more on actual studying. This work will serve as a template for future platforms: making mentoring flows accessible is more important than complex analytics that should simply nudge users towards good habits without overwhelming them, while also embedding accessibility into the platform's fabric. PeerGuide proved that deviously simple designs outperform features and tools in terms of engagement and academic assistance.

6.3. Limitations and Future Work

The study was done on a small group of second-year Education students and may not be adequately reflective of all students. Another limitation identified was the variance in devices and network conditions, as some participants using PeerGuide may have been on older models of smartphones or weaker connections compared to others, which could have influenced their experience. Future directions should broaden the participant group and include testing on multiple devices and platforms (smartphones, tablets, laptops) to provide greater nuances on how the system performs across contexts.

7. Conclusion

7.1. Summary of Key Findings

The study showed that through the integration of several features matching a mentor, real-time messaging, monitoring one's progress, a timer for study focus, and a library of resources. PeerGuide helped second-year students in Education who were experiencing difficulties with their studies develop strategies for studying and time management, subsequently experiencing an improvement in their academic performance. According to the students, the platform's user-friendly and transparent interface, well-coordinated workflows, which aided them in synchronizing their tasks, organizing study sessions, and keeping themselves motivated, was well received. The usability indicators (reverse-adjusted) were indeed positive; the metrics for Accessibility (3.00) and Functionality (3.04) further impressed with the system demonstrated to be reliable in providing support for daily mentoring and learning activities. In general, one can conclude that PeerGuide, as a platform, enhances focus, workflow, and levels of engagement, which reflects positively on student's academic performance.

7.2. Final Remarks

In conclusion, PeerGuide presents an effective and accessible method of changing student's learning styles and study habits. The findings reveal that a properly designed and simplified platform, not requiring excessive features, can lead to superior academic performance by facilitating the implementation of help-seeking and study habits. Growing interactivity guided by devices and expanded participant inputs can improve the accessibility and dependability of real-time communication and the quality of resources provided, establishing PeerGuide as a valuable learning tool helping students achieve continuing success.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Buddington, Leslie, and Elizabeth Lapon. The Impact of Peer Mentoring in First-Year Education Students | International Journal of Mentoring and Coaching in Education | Emerald Publishing, www.emerald.com/ijmce/article-abstract/13/1/73/1213654/The-impact-of-peer-mentoring-in-first-year?redirectedFrom=fulltext. Accessed 14 Oct. 2025.

[2] Thurman, S. L., & Tapia, O. R. M. (2023). Considerations for designing and implementing a First-Generation College Student Peer Mentoring Program. Journal of First-generation Student Success, 3(2), 143–153. https://doi.org/10.1080/26906015.2023.2231024

[3] Gehreke, L., Schilling, H., & Kauffeld, S. (2024). Effectiveness of peer mentoring in the study entry phase: A systematic review. Review of Education, 12(1). https://doi.org/10.1002/rev3.3462

Appendices

Appendix A: System Usability Scale (SUS) Likert Scale Survey Questionnaire

- Functionality

Questions	**Ratings**			
Mentor matching produced appropriate mentor–mentee pairings.	1	2	3	4
Real-time messaging and session scheduling worked reliably.	1	2	3	4
Resource sharing (uploading/downloading/previewing) functioned as expected.	1	2	3	4
Reminders and notifications arrived on time and reflected the correct updates.	1	2	3	4
Goal-tracking/progress features saved and updated data accurately.	1	2	3	4
The platform responded quickly to inputs and page actions.	1	2	3	4
The system remained stable during use (no crashes, freezes, or data loss).	1	2	3	4
Error messages (if any) were informative and helped me continue the task.	1	2	3	4
Collaboration features (group threads, study rooms, or comments) worked smoothly.	1	2	3	4
Overall, the platform's functional behavior met my expectations for academic support.	1	2	3	4

- Accuracy

Questions	**Ratings**			
I would like to use this platform frequently for peer mentoring.	1	2	3	4
I found the platform unnecessarily complex.	1	2	3	4
I thought the platform was easy to use.	1	2	3	4
I think I would need the support of a technical person to use this platform.	1	2	3	4
The various features (mentor matching, chat, sessions, resources) felt well-integrated.	1	2	3	4
I thought there was too much inconsistency in the platform.	1	2	3	4
I would imagine most students/mentors would learn to use this platform very quickly.	1	2	3	4
I found the platform cumbersome to use.	1	2	3	4
I felt very confident using the platform.	1	2	3	4
I needed to learn a lot of things before I could get going with this platform.	1	2	3	4

- Accessibility

Questions	**Ratings**			
Text, icons, and labels were clear and easy to identify.	1	2	3	4
I could adjust text size, contrast, and/or media captions to a comfortable level.	1	2	3	4
Keyboard navigation and focus indicators worked as expected.	1	2	3	4
Screen readers (or reading tools) correctly announced interface elements and content.	1	2	3	4

Captions/transcripts for audio-video resources were accurate and easy to follow.	1	2	3	4
The language used (labels, instructions, errors) was simple and easy to understand.	1	2	3	4
Accessibility settings were easy to find and customize when needed.	1	2	3	4
Notifications and reminders were distinguishable and manageable without overload.	1	2	3	4
I could access core features reliably on different devices and network conditions.	1	2	3	4
The platform supported my accessibility needs during mentoring and study sessions.	1	2	3	4

Appendix B: Descriptive Survey Questionnaire

Development of a Web-Based Peer Mentoring and Support Platform: Enhancing Academic Performance of Struggling Second-Year Education Students through Guided Assistance and Collaborative Learning

- To what extent did the platform improve your overall academic performance this term?

  ☐ Not At All ☐ Slightly ☐ Very Much ☐ Extremely

- How often did mentor matching and real-time messaging help you get timely clarification/feedback?

  ☐ Never ☐ Rarely ☐ Often ☐ Always

- How would you rate the quality of mentor–mentee communication (clarity, usefulness, respect)?

  ☐ Very Poor ☐ Poor ☐ Good ☐ Excellent

- How much do you agree that progress tracking and the Study Focus Timer improved your study focus and consistency?

  ☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

- How would you rate the usefulness of the Resource Library for understanding course topics and completing tasks?

  ☐ Very Poor ☐ Poor ☐ Good ☐ Excellent