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User Evaluation of a Machine Learning-Based Student Performance Prediction Platform

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Background/Purpose: The integration of machine learning in education has opened new possibilities for predicting student performance and enabling early interventions. While most of the work has been focused on prediction algorithms design and evaluations, little work has been done on user-centric evaluations.
Methodology: This study evaluates a web-based platform designed for student performance prediction using various machine learning algorithms. Users, including students, professors, and career counselors, tested the platform and provided feedback on usability, accuracy, and recommendation likelihood.
Results: Results indicate that the platform is user-friendly, requires minimal technical support, and delivers reliable predictions.
Conclusion: Users strongly endorsed its adoption, highlighting its potential to assist educators in identifying at-risk students and improving academic outcomes.

Keywords: *Student performance, Machine learning, System evaluation*

1 Introduction

The application of Machine Learning in various contexts, especially across educational levels from pre-primary to university, represents a transformative and promising approach to enhancing teaching and learning outcomes. As we know, data is the key enabler that allows us to apply various ML and AI algorithms to improve existing results. Among other things, if the data quality is high, the recommendations generated by ML and AI algorithms can be more effectively integrated into efforts to enhance student performance, particularly in critical areas where the education system needs improvement. This also facilitates the early identification of students who may be at risk of failure. Prior research has demonstrated the effectiveness of ML algorithms in forecasting student performance based on various academic and demographic factors (Pallathadka et al., 2023), (Hussain et al., 2024a). Predictive models have been employed to identify at-risk students (Malik et al., 2022), optimize curriculum structures (Ab Rahman et al., 2024), and improve early intervention strategies (Dr Joel Osei-Asiamah et al., 2024). However, while these studies highlight the importance of student performance prediction, they often lack user-centered evaluations of the platforms implementing these models. This research addresses this critical gap by developing and evaluating a user-friendly, web-based student performance prediction platform, integrating supervised ML algorithms including Support Vector Machine, Decision Tree, Random Forest,

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and Neural Networks. Unlike previous works that primarily focus on model accuracy (Binti Baharuddin et al., 2024), (Hoti & Zenuni, 2024), (A. Hoti et al., 2025), this study attempts to assess real-world usability, accessibility, and perceived effectiveness of the platform through comprehensive user feedback and system evaluation. The evaluation framework includes a multi-dimensional analysis encompassing system usability, prediction reliability, and user recommendations.

The key novelty of this study lies in its comprehensive user assessment of an ML-driven prediction platform, offering insights into its practicality for educational institutions. While prior studies (Sopegno et al., 2016), (Jáuregui-Velarde et al., 2023), have explored ML-based prediction models, our research uniquely investigates how end-users interact with and perceive the effectiveness of such a system. The findings are expected to inform the design of more effective, user-friendly educational technologies and guide policymakers and institutions in adopting AI-based solutions for academic support.

The remainder of this paper is organized as follows: Section 2 presents a literature review of related works, Section 3 describes the methodology, Section 4 discusses results and user evaluations, and Section 5 concludes with insights and future improvements.

2 Related Work

The application of machine learning (ML) and artificial intelligence (AI) in education has been widely explored to enhance student performance prediction and support decision-making in academic institutions. Previous studies have demonstrated the effectiveness of ML algorithms in forecasting student success and identifying at-risk students, thereby enabling timely interventions (Pallathadka et al., 2023b), (Hussain et al., 2024b). Several research efforts have focused on the development of ML-based predictive models. For instance, (Hasan et al., 2018), proposed a student performance prediction model utilizing decision trees and support vector machines, achieving high accuracy in predicting academic outcomes. Similarly, (Asselman et al., 2021) applied the XGBoost algorithm to improve prediction accuracy, highlighting the importance of feature selection in enhancing model performance. Other studies have explored deep learning approaches, such as neural networks, for predicting student success based on behavioral and demographic data (Sokkhey & Okazaki, 2020), (Wang & Yu, 2025). While these models exhibit strong predictive capabilities, their practical implementation in real-world educational settings remains underexplored.

Another critical area of research involves the integration and use of various educational platforms that have AI built in. Studies have shown that user engagement and ease of use significantly impact the effectiveness of educational technology (Briz-Ponce et al., 2016), (Chan et al., 2024). Akçapınar and others developed an early warning system for at-risk students, demonstrating that real-time data analysis can enhance retention rates. However, limited research has been conducted on user-centered evaluations of prediction platforms, particularly from the perspective of students, educators, and career counselors (Akçapınar et al., 2019).

Predicting student performance is essential for improving academic outcomes and supporting learners. Many researchers use different data from LMSs' such as Moodle

(Abuzinadah et al., 2023), (Rogers et al., 2025), Canvas (Desai et al., 2021), (Bai, 2024), and Blackboard (Rubio-Arraez, 2022), (Darko, 2021), (Othman, et al., 2024) to analyze data from their input and visualize them for institution needs. Compared to this, the proposed model of our platform is more productive because it offers prediction automatically for each student, using different algorithms and doesn't limit the terms for courses or institutions. Moreover, from the proposed platform each person can upload their data to our platform and predict student performance or with our data experiment with them.

In contrast to prior work, this study introduces a web-based, interactive ML platform designed for student performance prediction and conducts a comprehensive user evaluation to assess usability, adoption potential, and accuracy. This paper investigates how users interact with the system, their perceptions of its predictive capabilities, and its practical applications in academic institutions. The findings contribute to the growing body of research on AI in education by bridging the gap between technical accuracy and real-world usability, ensuring that predictive analytics tools are both effective and accessible.

3 Methodology

The study evaluates a machine learning-based student performance prediction platform by assessing its usability, accuracy, and user perception. The evaluation focuses on how users interact with the platform, their assessment of its predictive capabilities, and their willingness to adopt and recommend it. Key stakeholders in higher education, including students, professors, and career counselors have been involved, to ensure a well-rounded assessment from both end-users and expert evaluators.

The platform was designed as a web-based tool, developed using Streamlit (Inc., 2019) and hosted on GitHub, providing users with an interactive environment for student performance prediction. Participants could upload their datasets or use a built-in dataset, select a machine learning model—such as Decision Tree, Support Vector Machine (SVM), Random Forest, or Neural Networks—and receive a prediction regarding student success or dropout risk.

These interactions allowed users to test the platform's usability, functionality, and effectiveness in an educational setting.

To systematically assess the platform, the study was guided by three research questions:

(RQ1) How do users perceive and evaluate the platform's usability and effectiveness?

(RQ2) Would users recommend the platform, and what factors influence their recommendation?

(RQ3) How accurate do users find the platform's predictions, and what improvements do they suggest? These questions provided a structured approach to understanding user experiences and areas for enhancement.

Data collection for the user evaluation was conducted through a structured three-part survey. The first section measured usability using the System Usability Scale (SUS), where participants rated aspects such as ease of use, navigation, and clarity on a Likert scale (1–5). The second section focused on adoption and recommendation, using the Net Promoter Score (NPS) to assess how likely users were to recommend the platform on a scale from 1–10. Open-ended responses were also collected to understand the reasons behind their ratings. The final section examined perceived accuracy and potential improvements, where users evaluated whether the platform's predictions aligned with real-world student performance and provided suggestions for refinement.

To analyze the collected data, both quantitative and qualitative methods were applied. Likert scale and NPS ratings were processed using descriptive statistics, with results presented in tables and graphs to highlight trends in user perception. Open-ended responses were analyzed through thematic coding, categorizing insights into usability strengths, challenges, and suggestions for improvement. This dual approach allowed for a comprehensive evaluation of the platform, ensuring that both numerical trends and user feedback were incorporated into the study's findings.

4 Results and Discussion

To ensure a comprehensive evaluation of the developed platform before final publication, a structured user assessment was conducted. The evaluation process involved distributing the platform for testing, followed by a survey designed using Google Forms to systematically capture user feedback. The primary objective of this assessment was to analyze user perception from multiple perspectives, including usability, effectiveness, and adoption potential.

The survey was disseminated among students, professors, and career counselors, who represent key stakeholders in higher education as presented in Figure 1. Their insights were crucial in understanding how the platform supports academic decision-making and intervention strategies. Students and faculty members were the primary focus of this study, as the platform aims to assist educators in identifying at-risk students and facilitating timely interventions. Given that career counselors play a significant role in academic and professional guidance, their perspectives were also integrated to evaluate the system's broader applicability.

Additionally, feedback was gathered from individuals outside the educational system, including former students and professionals who have completed or discontinued their studies. These participants provided an external viewpoint on the platform's relevance, drawing from their own experiences in higher education. Their input helped assess whether the tool effectively addresses the challenges associated with student retention and performance prediction.

By incorporating diverse perspectives, this evaluation ensures a holistic understanding of the platform's usability, strengths, and areas for improvement. The following sections present a detailed analysis of user responses, highlighting key trends and implications for future enhancements.

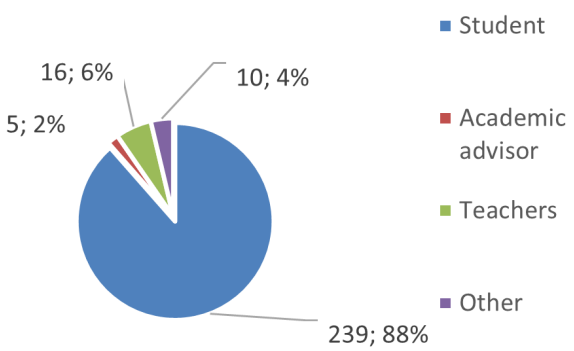

Figure 1: Distribution of the participants

The evaluation of the student performance prediction platform was structured into three key components to ensure a comprehensive assessment of its usability, adoption potential, and predictive accuracy. The first component focused on user perception and evaluation, specifically analyzing the platform's usability, user experience (UX), and interface design. Participants assessed the ease of navigation, intuitiveness, and overall accessibility of the system. These insights were critical in identifying potential usability challenges and determining whether the platform requires additional support mechanisms for users with varying levels of technical expertise.

The second component examined user recommendations and adoption likelihood. Participants were asked whether they would endorse the platform to their peers and what factors influenced their decision. This analysis provided valuable insights into the platform's perceived value, effectiveness, and potential areas for increasing adoption rates within academic institutions.

The third component evaluated the accuracy of the model in predicting student success or attrition. Users tested the system with real or sample datasets to assess its predictive performance. Additionally, this section of the evaluation allowed participants to provide qualitative feedback on what aspects of the platform should be improved or expanded, such as refining algorithm accuracy, incorporating additional predictive factors, or enhancing data visualization.

Following a detailed analysis of user feedback, modifications were implemented to improve the platform's functionality and effectiveness. User-driven enhancements played a crucial role in optimizing system performance, refining the user interface, and increasing the clarity of predictive outputs. These iterative improvements not only strengthened the platform's usability but also ensured that it better aligns with the needs of students, educators, and career counselors.

4.1 Platform Design and Deployment

To develop a robust student performance prediction system, multiple supervised machine learning algorithms were implemented and evaluated. The selected models included Support Vector Machine (SVM), Decision Tree (DT), Random Forest (RF), Logistic Regression (LR), Linear Regression (LinR), and Naïve Bayes variants (GaussianNB, MultinomialNB, ComplementNB, BernoulliNB). Additionally, advanced neural network architectures such as the Multilayer Perceptron (MLP) and Kolmogorov-Arnold Networks were integrated to enhance predictive capabilities. The performance of these models was assessed based on accuracy and F1-score, ensuring an optimal balance between precision and recall.

The selection of algorithms was made based on the list of standard algorithms and boosting algorithms, from which the algorithms that were most suitable for our data were selected. To achieve higher accuracy, avoid overfitting, and bias management, all algorithm parameters were carefully tuned rather than using the default settings. The optimal parameter combinations were identified using the RandomizedSearchCV method. For example, the most suitable parameters for the Decision Tree model were: ccp_alpha = 0.0, max_depth = 10, min_samples_leaf = 5, and min_samples_split = 10, and this model was evaluated using 5-fold cross-validation, achieving a mean accuracy of 0.88 [5].

Following model development and validation, the platform was deployed using GitHub for code management and Streamlit for web-based accessibility. Streamlit was selected for its ability to create an interactive and user-friendly interface, enabling seamless experimentation with different machine learning models.

Users could access the platform in real time via std-performance.streamlit.app, where they were provided with multiple functionalities for testing and evaluating student performance predictions as shown in Figure 2. The interface allows users to upload a dataset or utilize the preprocessed dataset provided within the system. To enhance usability, the main menu featured intuitive navigation options, including "Data Exploration" for analyzing input variables and patterns, and an "About" section providing insights into the predictive model's functionality.

This structured approach ensures that users, including students, educators, and career counselors, could efficiently interact with the system, test different predictive models, and assess their applicability in real-world academic settings. The next section presents the findings from the user evaluation, highlighting key insights into platform usability, adoption potential, and predictive accuracy.

Figure 3 presents the prediction menu, which is structured into three distinct sections. The first section, referred to as the "Prediction Section," enables users to generate predictions based on selected input data. Within this section, users have the option to either utilize the default dataset or upload a custom dataset, provided that the uploaded data adheres to the predefined attribute structure. Additionally, users can select the desired machine learning classifier to perform the prediction task.

Upon executing a prediction, the platform automatically evaluates the selected model, generating key performance metrics, including accuracy, F1-score, and confusion matrix values. These outputs facilitate an objective assessment of the model's effectiveness in classifying student performance outcomes, providing users with quantifiable insights into predictive reliability and decision-making accuracy.

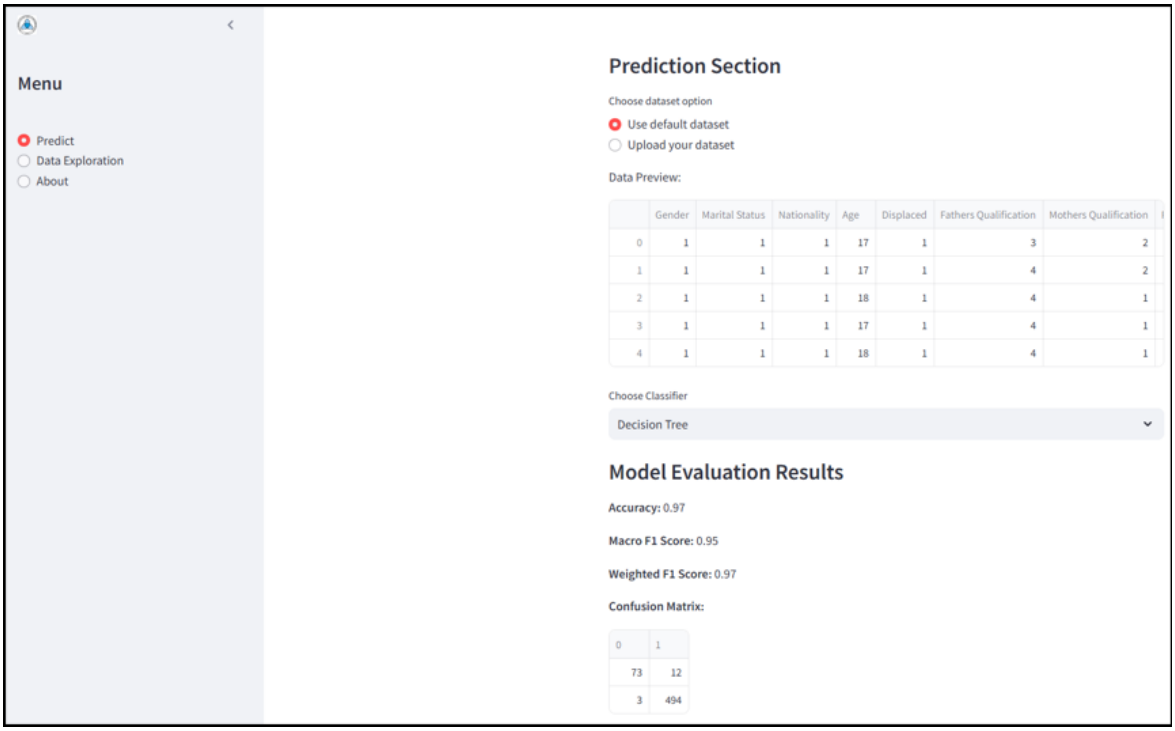

Figure 2: Web app prototype

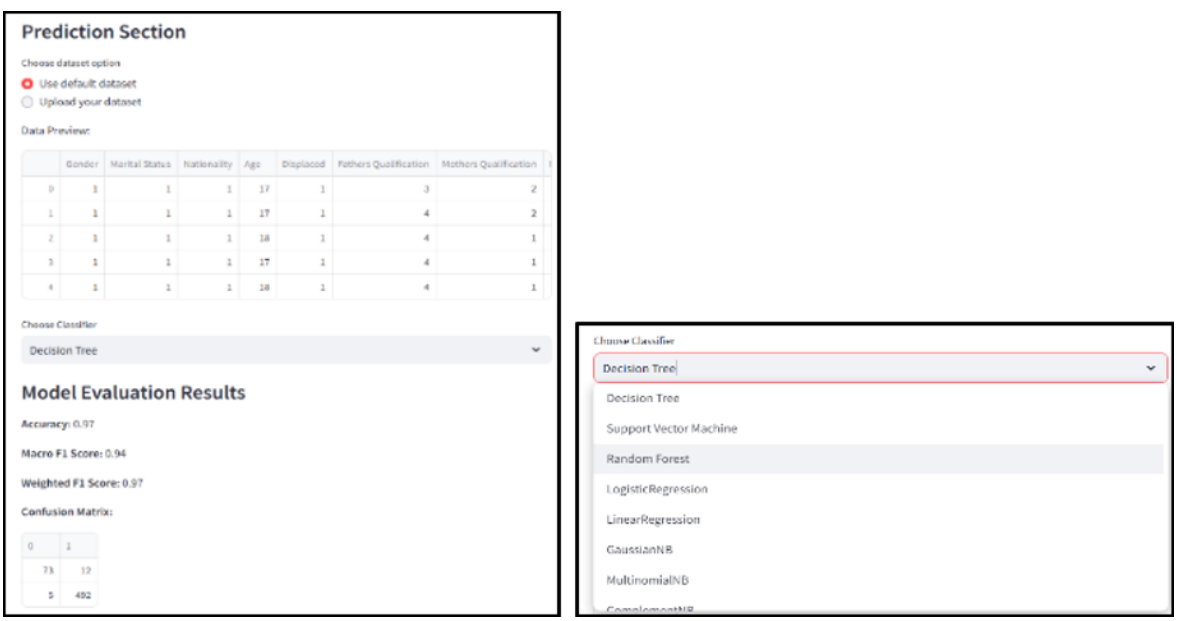

Figure 3: Prediction section

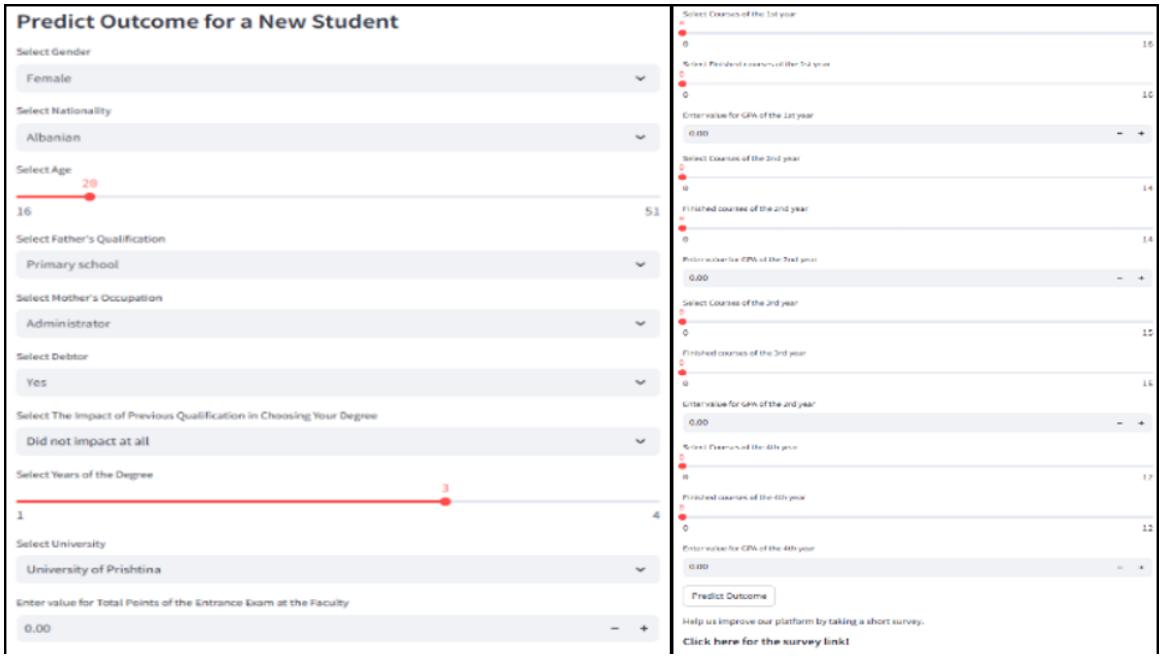

Figure 4: Predict outcome section

Table 1: Results for perception and evaluation of the platform

Description	5-point Likert Scale									
	1		2		3		4		5	
The platform is easy to use?	4	(1.48%)	3	(1.11%)	21	(7.78%)	72	(26.67%)	117	(62.96%)
Were the functions on this platform well integrated?	2	(0.74%)	4	(1.48%)	32	(11.85%)	88	(32.59%)	144	(53.33%)
I need the support of a technical person to be able to use this platform?	223	(82.59%)	23	(8.52%)	13	(4.81%)	7	(2.59%)	4	(1.48%)
I need to learn a lot of things before using this platform?	71	(26.30%)	67	(24.81%)	56	(20.74%)	40	(14.81%)	36	(13.33%)
Was the platform difficult to use?	218	(80.74%)	23	(8.52%)	20	(7.41%)	6	(2.22%)	3	(1.11%)
Will I use this platform in the future?	2	(0.74%)	8	(2.96%)	47	(17.41%)	117	(43.33%)	96	(35.56%)

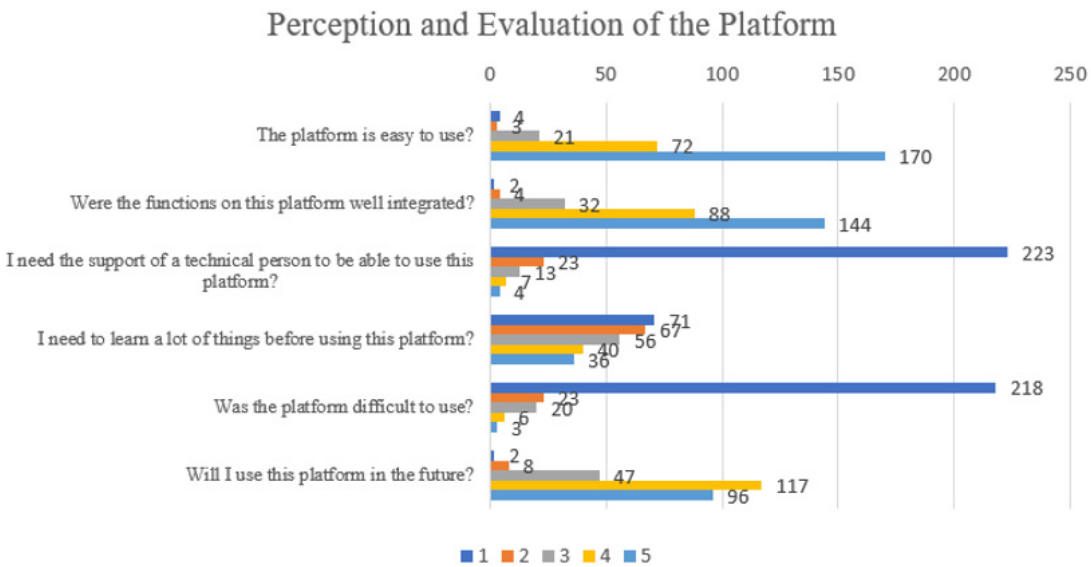

Figure 5: Perception and evaluation of the platform graph

As shown in Figure 4, the second section, "Predict Outcome for a New Student," allows users to input key academic and demographic attributes to generate performance predictions. After submitting the required data, users receive results via the "Predict Outcome" button. The platform ensures unrestricted access to testing while maintaining user privacy and data confidentiality. Following the predictions, users were invited to complete a survey to provide feedback on the platform's usability and effectiveness.

4.2 User Perception and Evaluation of the Platform

To assess user perception of the platform's usability and effectiveness, a structured questionnaire was conducted, evaluating key aspects such as ease of use, integration, and technical support requirements. Responses were recorded on a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (5).

The results as presented in

Table 1 and Figure 5 indicate a high level of usability, with 62.96% of participants strongly agreeing that the platform is easy to use, while an additional 26.67% agreed, confirming its intuitive design. Similarly, 53.33% of respondents strongly agreed that the platform is well integrated, with 32.59% agreeing, suggesting a well-structured system.

Regarding the need for technical assistance, the majority of users (82.59% strongly disagreed) that external support was necessary, indicating that the platform is accessible to users of varying technical backgrounds. Additionally, 80.74% strongly disagreed that the platform was difficult to use, reinforcing its user-friendly design.

Future adoption trends were also analyzed, with 78.89% of users indicating they would continue using the platform. Only a small fraction expressed uncertainty or reluctance. These findings, visualized in Figure 5, highlight strong user confidence and satisfaction, suggesting that the platform is well-suited for broader academic adoption done.

4.3 Platform Recommendations and User Ratings

To assess the likelihood of user adoption and platform endorsement, participants were asked whether they would recommend the platform to others on a scale from 1 to 10. This evaluation addressed Research Question 2 (RQ2): Would users recommend the platform, and what factors influence their recommendation?

The results, summarized in Table 2 and Figure 6, indicate a high recommendation rate, with an average score of 8.14, suggesting strong user confidence in the platform's utility. Open-ended responses, detailed in Table 3, provide further insight into the rationale behind these ratings, highlighting key factors such as ease of use, predictive accuracy, and potential benefits for students and educators. These findings suggest that user satisfaction plays a crucial role in driving platform adoption, reinforcing its applicability in educational settings.

Table 2: Results from the recommendation platform

Would you recommend this platform to someone else, on a scale of 1 to 10?		
1 - 10 - Rating scale	1	0 (0.00%)
	2	0 (0.00%)
	3	1 (0.37%)
	4	3 (1.11%)
	5	18 (6.67%)
	6	35 (12.96%)
	7	33 (12.22%)
	8	47 (17.41%)
	9	53 (19.63%)
	10	80 (29.63%)
Average Score	8.14	

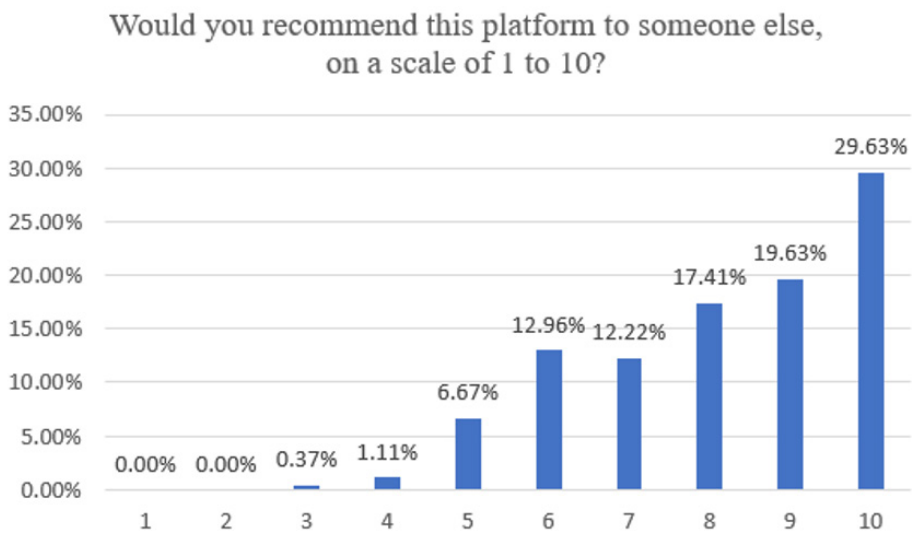

Figure 6: Percentage of the results from the recommendation platform

Table 2 presents the results of the preliminary selection, indicating the respondents' recommendations on a scale of 1 to 10. Among the participants, 29.63% (80) selected a rating of 10, while 19.63% (53) chose a rating of 9. For both ratings of 10 and 9, respondents expressed similar opinions, as detailed in Table 3. Specifically, they recommended the platform due to its ease of use, clarity, engagement, efficiency in predicting student performance, consideration of factors influencing performance, and minimal time required for operation.

A rating of 8 was given by 17.41% (47) of respondents, who also recommended the platform. However, some users noted that the prediction algorithms and the presentation of data in tables were unclear, though they acknowledged that these aspects could enhance the prediction process. For ratings ranging from 1 to 7, the distribution of responses is reflected in Table 2. The open-ended responses from users regarding their evaluations are summarized in Table 3.

Table 3: User's opinions about recommendation platforms

Rating scale	What made you choose this rating? Please share the reasons behind your choice?
10	– *I like it;* – *The platform is easy to use, and has accurate prediction;* – *Forecast performance;* – *The platform was interesting;* – *Because the platform was quite easy to use, and it was efficient;* – *It is very easy and effective;* – *It has easy access, is simple to understand, and does not take much time;* – *Very good and easy to use;* – *Everything directly related to our work is of great help to us, that's why I rated it like this;* – *I have heard about these types of platforms but not for our country, where I would recommend the same to others for use;* – *It is easy to use;* – *Easy, understandable, and simple access for each person;* – *Since it was very easy, and could have a good result;* – *Since the idea is very good, and may have an impact on predicting our success.*
9	– *I chose this assessment because this platform provides valuable insights into student performance factors that are essential for predicting graduation outcomes;* – *Simple to use and easy-to-understand interface;* – *A good data analysis and innovation platform;* – *I chose this assessment because I think these platforms are essential in our country because it is good to see the performance of students;* – *Since it is a new platform and has not been seen so far it is worth recommending to others and the way it works;*
8	– *Easily accessible and very understandable;* – *I found the first part of the platform a little elusive, somehow I didn't understand how the tabular part worked, the question part was fine;* – *Ease during work;* – *Easy access to respond;* – *New method;* – *Since the platform can have a positive impact on its use.*
7	– *To further improve the forecast by taking more cases;* – *Curiosity to try something new.*
6	– *To clarify some of the keywords (such as: Debtor)* – *To integrate hours of study, lab activities;* – *It would be helpful to provide some additional clarification.*
5	– *Print the report after completion and send it to the competent bodies;* – *I was not clear how it works and would need a user manual.*
4	– *The knowledge of the English language affects the academic performance of students and the absence of lectures or exercises.* – *I would recommend it to others, but first, let's clarify how it works.*
3	– *I choose this rating, as I think the platform still needs to be advanced.*
2	– *NA*
1	– *NA*

4.4 Model Predictions and User Feedback on Platform Usage

The primary objective of these surveys was to evaluate the accuracy of the platform's predictions and to gather additional insights from users regarding its functionality across different contexts. To address this, the research question RQ3 was formulated: "How accurate are the predictions of student success, and what additional features should be integrated according to user feedback?" This question aims to assess the accuracy of the results generated by the platform based on tests conducted by various users.

Table 4 presents the survey results on a Likert scale from 1 to 5 (1 = strongly disagree, 5 = strongly agree), indicating participants' perceptions of the model's accuracy. Figure 7 provides a graphical representation of participants' opinions concerning the accuracy and quality of the

platform's predictions. According to Table 4, among the 270 respondents, the majority expressed satisfaction with the model's performance: 50.37% (136) strongly agreed that the model was accurate, 31.11% (84) agreed, 11.11% (30) were neutral, 6.30% (17) disagreed, and only 1.11% (3) strongly disagreed with the accuracy of the platform's predictions for their individual cases. These percentages reflect the user feedback, indicating that the platform generally produces reliable results.

Table 5 presents user comments regarding the aspects they liked or felt should be removed from the platform. Several comments also suggest potential improvements and alternatives that could further enhance the platform's precision. For instance, some users proposed adding attributes such as tracking whether students have participated in training during their studies, defining subjects for each academic year, and addressing the inclusion of parental qualifications. While some participants believe the parental qualification attribute should be omitted, others consider it an important factor to incorporate.

Additionally, feedback related to the platform's usability suggests that providing a manual on its operation would facilitate user experience. Users also emphasized the need for more detailed information on their activity levels, such as the amount of time spent on each subject and overall engagement.

Based on the feedback presented in Table 5, the platform appears to have a positive impact. It effectively identifies student performance, highlighting both the best and weakest results, as well as their engagement in systematic evaluations. Moreover, the platform's predictive capabilities could help guide students towards success by enabling comparisons among peers.

Table 4: Results from the accuracy prediction

How satisfied are you with the platform's accuracy and forecast quality?		
5-point Likert Scale	**1**	3 (1.11%)
	2	17 (6.30%)
	3	30 (11.11%)
	4	84 (31.11%)
	5	136 (50.37%)

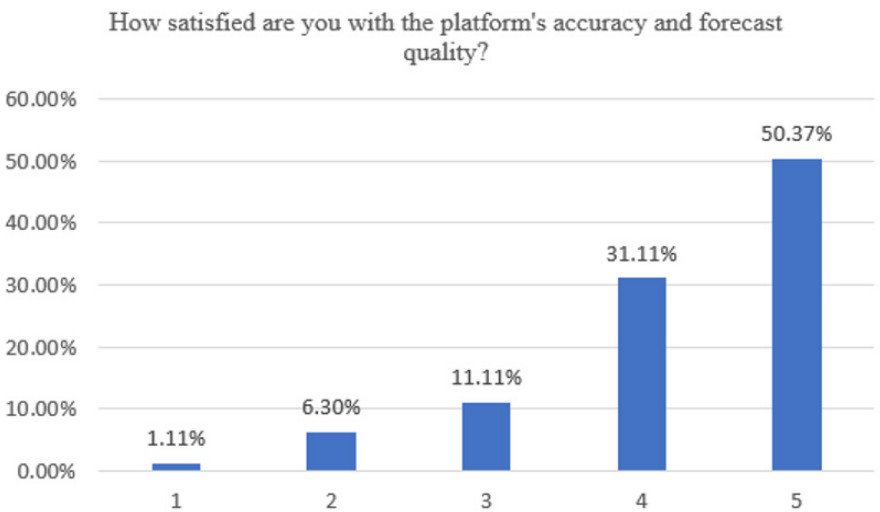

Figure 7: Accuracy of the platform

Table 5: Opinions from the users

Question	What do students think about this question?
What features would you like us to add, improve, or remove from the platform?	– *Improve the platform;* – *To add if we attended or are attending any training;* – *I don't think there is any need for changes;* – *Most of us hardly remember the questions for the entrance exam;* – *I have no idea about removing or adding anything to the platform;* – *I think that's okay;* – *Part of determining the subjects in an academic year;* – *The platform is very light with these features. I don't think features should be added or removed;* – *No features;* – *I would have removed the qualification of the parents;* – *New evaluation method;* – *I believe more questions and some small technical things;* – *All seems clear;* – *To sub-division the application;* – *Dynamic graph that presents in real time what you choose and appears in the result;* – *Student activities;* – *I would improve the prediction part as it was not very accurate in my case;* – *To improve forecasting;* – *The direction I am in should also be added and filled within them, since in some cases we may not know how many subjects we have in the second or third year;* – *I would add preliminary documentation of how the platform functions;* – *Add user manuals;* – *Student activities during lectures and exercises;* – *How much time per day should they study to complete the subjects of each year of studies?*
How do you think the platform can help improve student performance?	– *It could have a positive impact;* – *Positively;* – *It would increase the possibility of faster intervention by professors for students who may drop out of the faculty;* – *It could serve positively;* – *Anyway, it would improve performance;* – *Maybe it makes them more aware;* – *By adding a part of interest to students;* – *I think this assessment would be in the best interest of students;* – *From the assessment they receive from the platform;* – *Maybe the teaching part of the curriculum;* – *The platform can help identify students at risk and improve support for them based on performance factors that affect their graduation;* – *By increasing curiosity to learn new things;* – *By facilitating their plans;* – *In learning and in more effective time;* – *With other questions;* – *A prediction of the next steps in pursuing studies and completing the relevant courses to see how a satisfactory result can be achieved as an outcome, graduate;* – *I am satisfied with that;* – *I think that from this platform students can be well-informed about their academic development;* – *In evaluation;* – *I think this platform will help you a lot;* – *It helps a lot because it presents integrated functions;* – *I think that in general, it is beneficial for students;* – *Students are committed to being evaluated continuously;* – *Depending on the real demands of the situation we have as students;* – *It can have a great impact since it can be intervened earlier;* – *The platform can help teachers find those students who do not have good performance;* – *Students can predict their success;* – *It will enable me to find students who are in the dropout section.*

Table 6: User's opinion about accuracy platform

Question	What do students think about this question?
What features of the platform did you like the most?	– *I don't have;* – *Overall I liked it;* – *All the thinks about this platform;* – *Specification of how many subjects we have, and how many we have passed;* – *Option to choose the university, years of degree etc.;* – *Questions about completed courses;* – *Everything was fine;* – *Part one;* – *The platform can encourage students to stay engaged in their studies by providing them with direct information about their performance;* – *Identification of students who need support;* – *Short answers;* – *GPA;* – *Result part;* – *I liked the „Data Exploration" feature, as it offers the opportunity to analyze and visualize data interactively;* – *Compilation of questions in different versions which does not create monotony;* – *Questions with numbers;* – *Easy and simple use of the platform;* – *Easy and fast access;* – *I liked 90% of the features of this platform;* – *Rating;* – *It differs a lot from other platforms starting from questions, content, and structure;* – *Correctness;* – *Integration of the mother's and father's profession to predict performance;* – *The part of the data you have that is related to the results it provides.* – *I feel like they are my results in terms of accuracy;* – *The part of predicting if a student will drop out or graduate;* – *Integration of each academic year;* – *Integration of the points that we have been accepted to the faculty;* – *The part of academic success;* – *The academic part.*
Do you have any other comments or suggestions about the platform that are not mentioned above?	– *I don't have any comments or suggestions;* – *The enrolled section should also be integrated;* – *It would be useful to provide some additional clarifications;* – *My comment is that I have never heard of this type of platform before. I realize now that I am at the end of my studies;* – *No, I have no other comments or suggestions;* – *The platform was okay except that in the case where students need to know about the average grade for each year in the Faculty, they may not remember it. Maybe another way can be found to measure each year in the Faculty;* – *I hope that this platform continues;* – *Everything is okay;* – *I hope it is used more and has success;* – *Yes, to increase accuracy;* – *Yes, I propose that the subjects be presented automatically when we choose what faculty and direction we are in;* – *Yes, to add a user manual;* – *To add how many subjects we have in the following years, to specify for each direction.*

Table 6 presents the opinions and comments from students regarding the platform, highlighting features such as the ability to track the number of subjects they are enrolled in for each academic year, the number of subjects they have passed, the average grade for each academic year, and the encouragement it provides for students to engage with their academic performance. Additionally, students expressed appreciation for the platform's capability to visually analyze their data through data exploration. One feature mentioned by users is the structuring and incorporation of various factors influencing performance.

Regarding suggestions for improvement, students recommended integrating the average grade for each academic year. However, this was identified as a challenge, as students may not always remember their grades accurately. Another suggestion was to include the attribute specifying

the faculty and program of study. For instance, when a student selects a particular university, the platform should automatically display the relevant faculty (e.g., "Education") and program (e.g., "Primary Education"), along with details such as the number of academic years completed and the number of subjects for each academic year. Furthermore, several students noted that this platform represents a novel experience for them, as such an evaluation tool has not been encountered before in their academic journey.

5 Conclusions

The use of web services is increasingly prevalent across various fields, enhancing work efficiency and supporting data-driven decision-making. In this study, a web application was developed to predict student performance in Kosovo, with adaptable data for other countries. The platform enables educational institutions, individuals, and advisors to predict student success, simplifying performance forecasting. By utilizing Machine Learning (ML) and Artificial Intelligence (AI), the platform offers an effective solution for educational sectors, addressing key challenges in academic performance prediction.

Based on research findings, RQ1 shows that 62.96% of participants found the platform easy to use, with 53.33% rated the function placement as highly coherent. This high usability suggests that the platform effectively addresses common design challenges in educational tools. For RQ2, 89% of users would recommend the platform, highlighting its practical value for academic advising and performance monitoring. RQ3 findings show that 50.37% of users rated the platform's prediction accuracy at the highest level, confirming its capability to generate precise insight from preprocessed datasets. Open-ended feedback also emphasized the platform's role in early intervention, raising awareness of academic outcomes, and supporting faster courses completion.

However, a key limitation is the use of data exclusively from Kosovo, which may impact the generalizability of the findings to other regions with different educational systems. This geographic limitation could impact the applicability of the study in other countries, as certain attributes or factors may be specific to Kosovo and may not be present elsewhere.

Future research will consider including data from additional geographical and educational contexts to enhance the generalizability and applicability of the findings. The findings suggest that accurate predictions will encourage broader adoption by students, professors, and educational advisors.

Future work will focus on integrating the platform into university policies and adding attributes such as work experience and training to enhance its predictive capabilities.

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