



# Development and Evaluation of the Student Academic Record Evaluation Kiosk (SAREK) for College of Engineering, Architecture and Technology

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**Abstract:** *This study is conducted to develop and evaluate the proposed academic record evaluation kiosk for College of Engineering, Architecture and Technology students of Isabela State University, Ilagan Campus, Isabela.*

*Specifically, it attempted to answer the questions (a) what are the problems encountered in the present system as perceived by the faculty/evaluators and students on the academic records evaluation in terms of: Performance; Information; Efficiency; Control and Security; Economics and Service? (b) what is the evaluation of the two groups of respondents in the proposed system in terms of: Functionality; Reliability; Usability; Efficiency; Maintainability and Portability?*

*The present academic record evaluation system has a problem on performance such as the academic records evaluation are not prepared or given in expected schedule and number of students evaluated in a day is less than what is expected. Information needed is also difficult to produce sometimes because they are ready when they are needed. In terms of efficiency, the students and the faculty/evaluators exert too much and effort in performing their task and excessive materials like bond papers, folders and forms are required for the task. Control and security is also needed to be improved because records are filed on an open location and academic records are not adequately updated. Reproduction of files and records are too costly is very much a problem on the present system and expensive on the part of the students because forms are redundantly prepared.*

*The proposed student academic record kiosk as perceived by the students and faculty/evaluators has a great impact on the procedures of managing the academic records of the students of the college of engineering, architecture and technology. The respondents strongly agree that the proposed system would be of great help though it has to be improved more.*

*Based on the findings and conclusions made, the recommendations are strongly recommended (a) The institution may consider the perceptions of the respondents regarding the present academic records evaluation system. (b) The implementation of such academic record evaluation kiosk is very essential not only for both respondents but the entire college and university as well because it improves the services of the university can offer to its clients – the students. (c) The proposed system should be improved by implementing it in a network. (d) Training should be provided to the end-user/s to for the familiarization on the system. (d) There should be a capable and official employee who would maintain the system.*

**Key Words:** *Automation, Kiosk, SDG 4 Quality Education, Information Technology, SDG 8 Decent Work and Economic Growth.*

## 1. INTRODUCTION:

Students are the most important clients of every school, thus, they should be getting the best service from it. The updated evaluation of the academic records of the students is the expectation that the university has to meet.

For the past years, CEAT have been doing the evaluation of academic records of its students manually. Thus, records are less secure and sometimes data loss and inconsistency arises and since there are more than a thousand students in the college every semester considering that it is only the program chair and its secretary who evaluates the



academics records of the students, they are exerting more time and effort in doing the job but still it is not enough. Hence, this research came into existence.

An academic record evaluation kiosk is a very useful tool for both the college and the students this system will be an avenue for relieving their grievance associated with the evaluation of their academic records such as data loss, inconsistency of grades and backbreaking experiences on getting their evaluation records because of falling in line for how many hours before getting an access to their records.

An information kiosk (or information booth) dispenses free information in the form of maps, pamphlets, and other literature, and/or advice offered by an attendant. An electronic kiosk (or computer kiosk or interactive kiosk) houses a computer terminal that often employs custom kiosk software designed to function flawlessly while preventing users from accessing system functions. Indeed, kiosk mode describes such a mode of software operation. Computerized kiosks may store data locally, or retrieve it from a computer network. Some computer kiosks provide a free, informational public service, while others serve a commercial purpose (see mall kiosk). Touchscreens, trackballs, computer keyboards, and pushbuttons are all typical input devices for interactive computer kiosk.

## 2. LITERATURE REVIEW:

The increasing reliance on digital systems in educational institutions especially following the COVID-19 pandemic—has highlighted the critical need for efficient, automated solutions for student academic records management. In response to these demands, the development of the Student Academic Record Evaluation Kiosk (SAREK) is anchored in existing literature on student information systems, kiosk technologies, and user-centered design principles.

Daim et al. (2024) explored the adoption of student information systems (SIS) in Turkish higher education institutions post-pandemic. Their study, based on the Unified Theory of Acceptance and Use of Technology (UTAUT), revealed that performance expectancy, effort expectancy, and social influence significantly affect system adoption. These findings reinforce the importance of designing academic systems like SAREK with usability and efficiency at the forefront. Rao (2024) introduced an information management system using data mining techniques for physical education records. With modules built on decision trees and association rules, the system demonstrates how intelligent data processing can enhance academic evaluations. This approach informs SAREK's potential for integrating predictive analytics in academic assessments.

Similarly, Duruin and Siddayao (2024) developed a Student Records Management System (SRMS) evaluated using ISO 25010 software quality standards. Their findings confirmed the system's high compliance in terms of functionality and usability criteria that are also central to SAREK's development and evaluation.

Emerging technologies such as blockchain are also transforming student record management. Kong (2024) proposed a blockchain-based system to ensure the integrity and confidentiality of electronic school records. While SAREK does not currently employ blockchain, the emphasis on secure access and data traceability remains aligned with these advanced system goals.

The challenges of managing student records in public schools were documented by Riño and Daing (2022), who found that teachers struggle with data entry and retrieval. Their study identified the need for more intuitive systems, suggesting that kiosks like SAREK can significantly reduce administrative burdens. The use of kiosks in educational environments has expanded beyond administrative functions. Dewpuraarachchi and Baig (2022) demonstrated how ASP.NET-based check-in kiosks improved institutional operations. Their research emphasizes the value of customizable kiosk software—a core design principle in SAREK. Albrecht et al. (2023) developed an "Examination Kiosk" for blended assessment that fosters self-directed learning. This concept shows the versatility of kiosks in supporting various academic functions beyond evaluation, highlighting potential extensions for SAREK in the future. Gutierrez (2022) assessed the use of an electronic class record system at Cavite State University-Naic. The study revealed that digital grade encoding tools reduce time spent on computations and improve accuracy an efficiency that SAREK aims to replicate in evaluating academic records. At St. Paul University Philippines, Babaran (2024) implemented an AI-powered interactive kiosk evaluated using ISO/IEC 25010 standards. The system demonstrated high performance in functionality, maintainability, and usability, validating the use of international standards in assessing academic technology systems such as SAREK.

Kiosk applications in special education were explored by Lee and Lee (2024), who designed a kiosk education app for students with intellectual and developmental disabilities. Their study confirms that well-designed kiosk systems can be effective educational tools, even for diverse user groups, prompting the SAREK project to consider accessibility and user inclusivity in its design.



The issue of accessibility is also central to the work of Kim, Kim, and Lee (2023), who evaluated the usability of kiosks for visually impaired college students. Their findings emphasize the need for inclusive design features—a consideration that is particularly relevant in ensuring SAREK can accommodate all types of users. In language education, Kim and You (2024) proposed task-based kiosk training for Korean language learners to improve real-life interaction skills. This example illustrates how kiosk interfaces can be tailored for practical educational outcomes, a concept transferable to academic evaluation kiosks.

Military medical training has also benefited from kiosk technologies. Li et al. (2025) applied the Kano model to optimize a Tactical Combat Casualty Care (TCCC) training kiosk, identifying features that significantly affect user satisfaction. This user-centered approach echoes the iterative development process adopted in the SAREK system.

From a system development perspective, Safonov (2023) documented the creation of an interactive information kiosk at Innopolis University. The study emphasized modular architecture, backend/frontend separation, and security principles that guide the software engineering of SAREK.

Beyond education, kiosk systems are widely applied in healthcare. Garg et al. (2025) presented a telehealth kiosk developed for rural India, equipped with diagnostic tools for remote consultations. Although SAREK focuses on academic functions, it shares the goal of increasing service accessibility through kiosk technology.

Lastly, de Los Santos et al. (2021) developed an e-voting kiosk system for school-based elections. The study highlighted secure identity verification, real-time result processing, and user authentication, all of which are applicable in academic kiosks like SAREK, where data privacy and security are essential.

These studies establish a strong foundation for the development and evaluation of the SAREK. The literature emphasizes the convergence of usability, system quality, accessibility, and user satisfaction, each of which plays a vital role in ensuring that academic kiosks effectively address the needs of modern educational institutions.

### 3. OBJECTIVES :

This study is conducted to design, develop and evaluate the performance of the academic record evaluation kiosk for College of Engineering, Architecture and Technology students of Isabela State University, Ilagan Campus, Ilagan, Isabela.

Specifically, it attempted to answer the following questions:

1. What are the problems encountered in the present system as perceived by the faculty/evaluators and students on the academic records evaluation in terms of:
  - 1.1. Performance;
  - 1.2. Information;
  - 1.3. Efficiency;
  - 1.4. Control and Security;
  - 1.5. Economics and
  - 1.6. Service?
2. Is there a significant difference in the problems encountered as perceived by the two groups of respondents in the present system in terms of performance, information, efficiency, control and security, economics and service?
3. What is the evaluation of the two groups of respondents in the proposed system in terms of:
  - 3.1. Functionality;
  - 3.2. Reliability;
  - 3.3. Usability;
  - 3.4. Efficiency;
  - 3.5. Maintainability and
  - 3.6. Portability?
4. Is there a significant difference in the evaluation of the two groups of respondents in the proposed system in terms of functionality, reliability, usability, efficiency, maintainability and portability?

### 4. RESEARCH METHOD:

This research used the *Project Development Method* (PDM), wherein the researcher conceptualized the design, development and evaluation of the system. Hence, revisions are made for any observed defects of the project until it can be seen functional.

A descriptive-evaluative research design was applied to determine the problems encountered on the present system and performance of the proposed student academic record evaluation kiosk to its beneficiaries. In getting the



perception of the of two groups of respondents as far as the problems encountered during the present system, the PIECES framework were utilized and to evaluate the proposed system, the ISO 9126 was also used.

The five-point Likert's scale rating will be applied to determine the descriptive meaning of the indicators of the variables used. Meanwhile, weighted arithmetic mean will be used to interpret the data gathered.

The system will be design and developed using Visual Basic 6.0 as the front-end and Microsoft Access 2003 as the database application.

## 5. RESULT & FINDINGS:

**Table 1. Summary of the Weighted Mean and Descriptive Interpretation on Perceived Problems of the Respondents on the Present Academic Records Evaluation System**

PROBLEMS ENCOUNTERED	STUDENTS		FACULTY/EVALUATORS	
	WEIGHTED MEAN	DESCRIPTIVE INTERPRETATION	WEIGHTED MEAN	DESCRIPTIVE INTERPRETATION
1. Performance	4.15	Much a problem	4.31	Very much a problem
2. Information	4.42	Very much a problem	4.35	Very much a problem
3. Efficiency	4.33	Very much a problem	4.75	Very much a problem
4. Control and Security	4.51	Very much a problem	3.88	Much a problem
5. Economics	3.61	Much a problem	4.00	Much a problem
6. Service	3.89	Much a problem	4.19	Much a problem
<b>Grand Mean</b>	<b>4.15</b>	<b>Much a problem</b>	<b>4.25</b>	<b>Very much a problem</b>

Table 1 shows the summary of the weighted mean and descriptive interpretation on perceived problems of the respondents on the present academic records evaluation system.

Table shows that control and security on the present academic records evaluation system is "Very much a problem" for the students having a weighted mean of 4.51. However, it also shows that on the present academic records evaluation system in terms of control and security is "Much a problem" on the part of the students having a grand mean of 4.15.

On the other hand, analysis also shows that the summary on the perceived problems of the respondents on the present academic records evaluation system have a grand mean of 4.25 with a descriptive interpretation of "Very much a problem".

**Table 2. Summary of the Weighted Mean and Descriptive Interpretation on the Proposed Academic Records Evaluation Kiosk**

CRITERIA	STUDENTS		FACULTY/EVALUATORS	
	WEIGHTED MEAN	DESCRIPTIVE INTERPRETATION	WEIGHTED MEAN	DESCRIPTIVE INTERPRETATION
1. Functionality	3.81	Agree	3.88	Agree
2. Reliability	3.92	Agree	3.83	Agree
3. Usability	4.21	Strongly Agree	3.63	Agree
4. Efficiency	4.00	Agree	4.08	Agree
5. Maintainability	4.09	Agree	4.13	Agree
6. Portability	4.23	Strongly Agree	3.92	Agree
<b>Grand Mean</b>	<b>4.04</b>	<b>Agree</b>	<b>3.91</b>	<b>Agree</b>

Table 2 shows the summary of the weighted mean and descriptive interpretation on the proposed academic records evaluation kiosk.

The table shows that the students are "Agree" with the proposed academic record evaluation kiosk having a grand mean of 4.04.



Moreover, results show that the faculty/evaluators “Agree” on the proposed academic records evaluation kiosk having a grand mean of 3.91. It only implies that the proposed academic records evaluation system needs some improvement in all the software criteria.

## 6. SUMMARY:

These are the findings obtained with regards to the problems encountered as far as present academic records evaluation is concerned by the two groups of respondents.

- Performance

Analysis show that on the performance of the present system such as “The academics records evaluation are not prepared or given in expected schedule” is “Very much a problem” to the students having a weighted mean of 4.20. However, shows that the performance of the present system as perceived by the students is “Much a problem” having a grand mean of 4.15.

It also presents that the faculty/evaluators denotes that “Records needed are not ready” is “Much a problem” having a weighted mean of 4.00 and rated performance of the present system as “Very much a problem” having a grand mean of 4.31.

- Information

Results show that “Information is captured redundantly – same data is captured more than once” is “Very much a problem” for the students having a weighted mean of 4.58. Furthermore, the student respondents perceived that information on the present academic records evaluation system is “Very much a problem” having the grand mean of 4.42.

Furthermore, analysis also show that “Information is stored redundantly in multiple files and/or databases” and “Information is not well organized” are “Very much a problem” on the part of the faculty/evaluators with the weighted mean of 4.75 respectively and a grand mean of 4.35 with a descriptive interpretation of “Very much a problem”. This only means that there is really a problem on the information management system of the academic records of the students.

- Efficiency

Analysis shows that “Materials or supplies required for task is excessive” is “Very much a problem” having a weighted mean of 4.61 on the part of the students. It also shows that the efficiency of the present academic record evaluation system is “Very much a problem” having a grand mean of 4.33.

Results show that “Materials or supplies required for task is excessive” and “Data is redundantly inputted” are “Very much a problem” for the faculty/evaluators having a weighted mean of 4.75 respectively. Analysis shows also that the present academic records evaluation system in terms of efficiency is “Very much a problem” having a grand mean of 4.75.

- Control and Security

Analysis shows that “Academic records or grades are not adequately updated” is “Very much a problem” for the students having a weighted mean of 4.60. Table 2 also presents that on the present academic records evaluation system, control and security is “Very much a problem” having a grand mean of 4.51 because some records are just placed in an open shelf which anyone could just see someone else’s record.

Moreover, results show that “Academic records or grades are not adequately updated” is “Very much a problem” for the faculty/evaluators having a weighted mean of 4.75. However, the table also presents that on the present academic records evaluation system, control and security is “Much a problem” having a grand mean of 3.88.

- Economics

Analysis show that the present academic record evaluation system in terms of economics is “Much a problem” on the part of the students and faculty/evaluators having a grand mean of 3.61 and 4.0 respectively.

- Service

Analysis show that the present academic record evaluation system in terms of service is “Much a problem” on the part of the students and faculty/evaluators having a grand mean of 3.89 and 4.19 respectively.

These are the findings obtained with regards to the problems encountered as far as proposed academic records evaluation is concerned by the two groups of respondents.

- Functionality

Analysis shows that the students and faculty/evaluators “Agree” on the proposed academic records evaluation kiosk in terms of functionality having a grand mean of 3.81 and 3.81 respectively.



- Reliability  
Analysis shows that the students and faculty/evaluators “Agree” on the proposed academic records evaluation kiosk in terms of reliability having a grand mean of 3.92 and 3.83 respectively. It only shows that the proposed software is fault tolerance and easy to understand.
- Usability  
The table shows that the students are “Strongly Agree” with the proposed academic record evaluation kiosk in terms of usability having a grand mean of 4.21.  
Moreover, results show that the faculty/evaluators “Agree” that the proposed academic records evaluation kiosk is usable having a grand mean of 3.63.
- Efficiency  
The table shows that the students are “Agree” with the proposed academic record evaluation kiosk in terms of efficiency having a grand mean of 4.00.  
Moreover, results show that the faculty/evaluators “Agree” that the proposed academic records evaluation kiosk is usable having a grand mean of 4.08.
- Maintainability  
The table shows that the students are “Agree” with the proposed academic record evaluation kiosk in terms of maintainability having a grand mean of 4.09.  
Moreover, results show that the faculty/evaluators “Agree” that the proposed academic records evaluation kiosk is maintainable having a grand mean of 4.13.
- Portability  
The table shows that the students are “Strongly Agree” with the proposed academic record evaluation kiosk in terms of portability having a grand mean of 4.23.  
Moreover, results show that the faculty/evaluators “Agree” that the proposed academic records evaluation kiosk is portable having a grand mean of 3.92.

It also found out that there is no significant difference in the problems encountered as perceived by the two groups of respondents in the present system in terms of performance, information, efficiency, control and security, economics and service.

Results also show that there is no significant difference in the evaluation of the two groups of respondents in the proposed system in terms of functionality, reliability, usability, efficiency, maintainability and portability.

## 7. COCLUSIONS:

The following are the conclusions with regards to the problems encountered during the present academic record evaluation system and the proposed system based on the perception of the two groups of respondents:

The present academic record evaluation system has a problem on performance such as the academic records evaluation are not prepared or given in expected schedule and number of students evaluated in a day is less than what is expected. Information needed is also difficult to produce sometimes because they are ready when they are needed. In terms of efficiency, the students and the faculty/evaluators exert too much and effort in performing their task and excessive materials like bond papers, folders and forms are required for the task. Control and security is also needed to be improved because records are filed on an open location and academic records are not adequately updated. Reproduction of files and records are too costly is very much a problem on the present system and expensive on the part of the students because forms are redundantly prepared.

The proposed student academic record kiosk as perceived by the students and faculty/evaluators has a great impact on the procedures of managing the academic records of the students of the college of engineering, architecture and technology. The respondents strongly agree that the proposed system would be of great help though it has to be improved more.

There is no significant difference in the problems encountered by the two groups of respondents it terms of performance, information efficiency, control and security, economics and service.

There is no significant difference on the evaluation on the proposed student academic evaluation kiosk of the two groups of respondents in terms of functionality, reliability, usability, efficiency, maintainability and portability.

## 8. RECOMMENDATIONS:

Based on the findings and conclusions made, the following recommendations are strongly recommended:

- The institution may consider the perceptions of the respondents regarding the present academic records evaluation system.



- The implementation of such academic record evaluation kiosk is very essential not only for both respondents but the entire college and university as well because it improves the services of the university can offer to its clients – the students.
- The proposed system should be improved by implementing it in a network.
- Training should be provided to the end-user/s to for the familiarization on the system.
- There should be a capable and official employee who would maintain the system.

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