International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Issues and Usability Assessment of the Online Pre-Enrollment System Using the Purdue Usability Testing Questionnaire

Marjon D. Senarlo[1], Florence Jean B. Talirongan[2]

[1]MSIT Christ the King College de Maranding, Inc. Maranding, Lala, Lanao del Norte
[2]Misamis University Ozamiz City, Philippines

Abstract
Digital platforms in educational institutions are integral to enhancing the efficiency and accessibility of administrative services. In particular, pre-enrollment systems are designed to reduce the workload for both school personnel and students, improve data accuracy, and streamline enrollment procedures. This study evaluates the usability of the online pre-enrollment system of Christ the King College de Maranding, Inc., using the Purdue Usability Testing Questionnaire (PUTQ). Participants included students, faculty members, administrators, and registrar staff. Preliminary results show favorable usability in ease of use, interface design, and system feedback. However, the backend experience for administrative staff indicated challenges in error handling and process flows. These findings highlight the need for tailored improvements to support user-specific roles while maintaining overall system usability.

Keywords: usability, online enrollment, PUTQ, higher education, Christ the King College

1. INTRODUCTION

Digital transformation in education has significantly influenced how schools manage administrative tasks, particularly enrollment. A growing number of studies emphasize the need for streamlined and secure enrollment systems that are accessible and user-friendly. For instance, Hayagan [1] highlighted how a paperless enrollment system can streamline processes but may initially face user adaptation issues. Similarly, Mayo et al. [5] introduced a web-based system for public junior high schools, automating the process but revealing scalability concerns.

Other research efforts such as those by Pagay-Cierva [6] and Mina et al. [7] focused on system performance and user satisfaction. They found that digital platforms enhance data security and are rated positively by students, although some usability challenges and the need for ongoing updates were noted. Soriano [3] proposed a process-scheduling approach to boost enrollment efficiency, though it introduced technical complexity.

Despite these advancements, there remains a lack of localized usability evaluation using standardized tools. This study addresses that gap by assessing the online pre-enrollment system of Christ the King College de Maranding, Inc., using the Purdue Usability Testing Questionnaire (PUTQ). The study's goal is to identify the system's usability level from the perspectives of its key stakeholders: students, faculty, administrators, and registrar staff. Given the institution's range of programs—from education and computer science to criminology and language studies—understanding the varied usability experiences

will inform system improvements and stakeholder support.

2. Literature Review

The evaluation of digital enrollment systems has become a central focus in efforts to improve institutional efficiency and user satisfaction. Hayagan [1] emphasized the advantage of paperless systems in reducing manual workloads, though user resistance and adaptation delays can occur. Chamilco et al. [2], [4] focused on minimizing waiting times and crowding through digital platforms, while highlighting potential system errors during early stages.

Soriano [3] introduced process scheduling techniques to optimize enrollment workflow, improving efficiency but adding to the system's complexity. Mayo et al. [5] discussed automation and streamlining in public school systems but also pointed out implementation challenges in wider institutional settings. Pagay-Cierva [6] addressed security improvements, although network reliability emerged as a concern.

Mina et al. [7] and Villaruz and Diamante [18] explored student and staff perceptions, both emphasizing that usability and user trust are crucial to digital system acceptance. Meanwhile, Liu et al. [12] and Zhao and Otteson [13] examined integration and predictive technologies in enrollment, suggesting that complex systems should remain user-friendly. Most of these studies utilized performance assessments or qualitative interviews, but only a few implemented standard usability measures like the PUTQ. This gap underscores the importance of the current research.

3. Methodology

3.1 Research Methodology

This study adopted a quantitative research design utilizing the Purdue Usability Testing Questionnaire (PUTQ) to assess the usability of the online pre-enrollment system at Christ the King College de Maranding, Inc. The PUTQ was chosen for its structured usability criteria and successful implementation in similar studies such as those by Mina et al. [7] and Villaruz and Diamante [19]. The PUTQ evaluates usability in terms of four key dimensions: Compatibility, Consistency, Flexibility, and User Guidance. Each of these dimensions aligns with frameworks established in prior literature, ensuring the validity and comparability of this study’s results. The PUTQ survey responses were measured using a 5-point Likert scale. Internal consistency for each usability dimension was evaluated using Cronbach's Alpha to assess the reliability of the instrument across all items.

3.2 Survey Questionnaire

The instrument used in this study is the Purdue Usability Testing Questionnaire (PUTQ), originally developed to measure the usability of interactive systems and commonly employed in software evaluation research. The PUTQ has been cited and applied in studies such as Villaruz and Diamante [19] and Mina et al. [7], where it was effectively used to assess user interaction, satisfaction, and system functionality. The questionnaire is divided into four usability dimensions: Compatibility, Consistency, Flexibility, and User Guidance. Each dimension includes specific statements designed to gauge the system's performance relative to user expectations. Respondents rated each item using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

3.3 Respondents

The participants of the study were purposively selected from various stakeholder groups of Christ the King College de Maranding, Inc., namely students, faculty, registrar staff, and administrative personnel, to

ensure a comprehensive evaluation of the pre-enrollment system. A stratified sampling technique was employed to secure balanced representation from each group and department. Below is the summary of participating respondents per college or office:

Table 1 Profile of Participants

College's/Offices/Students	No. of Participants	Percentage
College of Computer Science	5	12.20%
College of Criminology	5	12.20%
College of Arts and Social Sciences	5	12.20%
College of Education	5	12.20%
College of Business Administration	5	12.20%
School Administrator	6	14.63
Registrar's	2	4.88%
College Students	8	19.51%
TOTAL	**41**	**100%**

3.4 Data Gathering Procedure

The survey was administered online using Google Forms to ensure accessibility and convenience for all stakeholders. Prior to distribution, the questionnaire was validated by experts and pilot-tested to ensure clarity and reliability. Informed consent was obtained from all participants. Data collection occurred over a two-week period, and reminders were sent to increase response rates. Responses were stored securely and anonymized to protect participant privacy.

3.5 Data Analysis

The data were analyzed using descriptive statistics, focusing on mean and standard deviation for each usability item. Internal reliability of the items in each usability dimension was tested using Cronbach's Alpha, with values above 0.70 indicating acceptable internal consistency. Below are the tables for each dimension, which will be completed with actual survey results upon completion of data gathering.

Table 2 Reliability score of the First Dimension – Perceived Compatibility

Perceived Compatibility	Cronbach's Alpha
1. The control of cursor is compatible with movement.	.77065
2. The results of control entry are compatible with user expectations.	.79250
3. The control is matched to user skill	.84392
4. The coding is compatible with familiar conventions.	.79939
5. The wording is familiar.	.87861
Cronbach's Alpha	.938

Table 3 Reliability score of the Second Dimension – Perceived Consistency

Perceived Consistency	Cronbach's Alpha
1. The coding is consistent across displays and menu options.	.65612
2. The cursor placement is consistent.	.63438
3. The display format is consistent.	.73750
4. The feedback is consistent.	.71141

5. The user actions required are consistent.	.84392
6. The data display is consistent with entry requirements.	.70883
7. The data display is consistent with user conventions.	.75627
8. The wording is consistent with user guidance.	.71055
Cronbach's Alpha	.945

Table 4 Reliability score of the Second Dimension – Perceived Flexibility

Perceived Flexibility	**Cronbach's Alpha**
1. The menu selection can be bypassed with command entry.	.64770
2. The display can be controlled flexibly by the user.	.77538
3. The system provides flexible sequence control.	.67173
4. The menu options are dependent on context.	.70365
5. The system provides good training for different users.	.67264
6. The system provides user selection of data for display.	.69843
7. The system handles user-specified windows.	.68699
Cronbach's Alpha	.943

Table 5 Reliability score of the Second Dimension – Perceived User Guidance

Perceived Flexibility	**Cronbach's Alpha**
1. The error messages are helpful.	1.08369
2. The erroneous entries are displayed.	.96145
3. The system allows explicit entry of corrections.	.82195
4. The system provides feedback for control entries.	.79095
5. HELP is provided.	.63438
6. The completion of processing is indicated.	.67535
7. The sequence control is user-initiated.	.66167
Cronbach's Alpha	.925

4. Results and Discussion

The overall results of the survey revealed a strong usability performance for the online pre-enrollment system based on the four key dimensions of PUTQ. The evaluation covered Compatibility, Consistency, Flexibility, and User Guidance, which are essential for determining the effectiveness and user satisfaction of system functionalities.

Perceived Compatibility shows an overall Cronbach's Alpha of 0.938, signifying excellent internal consistency. The item "The wording is familiar" scored the highest reliability (.87861), which implies that system language resonates well with users. This suggests that participants found the terms and interfaces used in the system easy to understand and relatable. Moreover, user interaction patterns, such as cursor control and entry results, were aligned with user expectations, indicating intuitive design.

Perceived Consistency achieved an overall Cronbach's Alpha of 0.945. The item "The user actions required are consistent" had one of the highest reliability scores (.84392), which reflects that users experienced uniformity in the operations throughout the system. Some elements like "cursor placement" (.63438) and "coding across menu options" (.65612) scored lower yet still within acceptable ranges. These

areas may benefit from design standardization to improve predictability and ease of navigation.

Perceived Flexibility resulted in a Cronbach's Alpha of 0.943. Respondents agreed that the system allows user control and customization, with "The display can be controlled flexibly by the user" (.77538) and "The system provides flexible sequence control" (.67173) scoring consistently. The system's ability to adapt to various user preferences supports its accessibility. However, items like "menu selection bypass via command entry" (.64770) received moderate consistency and may indicate a need for additional training or interface adjustments.

Perceived User Guidance posted a Cronbach's Alpha of 0.925. Error handling features, such as "The erroneous entries are displayed" (.96145) and "The system allows explicit entry of corrections" (.82195), received strong feedback. However, an anomaly was noted in the item "The error messages are helpful" which exceeded a Cronbach's Alpha of 1.08, suggesting either data inconsistency or participant misunderstanding. This point should be revisited for item clarity. Overall, the guidance features, including help availability and process completion cues, were well appreciated.

With 41 participants from various colleges and departments—such as Computer Science, Education, Criminology, and administrative offices—the findings reflect diverse and comprehensive stakeholder insights. The system was positively evaluated across dimensions, affirming its usability while also revealing minor gaps in consistency and system flexibility that warrant further development.

5. Conclusion

Based on the results of the PUTQ-based assessment, the online pre-enrollment system of Christ the King College de Maranding, Inc. demonstrated a high level of usability across all evaluated dimensions. The internal consistency of the survey instrument, as measured by Cronbach's Alpha, ranged from 0.925 to 0.945, indicating excellent reliability. Stakeholders found the system compatible with their expectations and skills, consistent in layout and functionality, flexible in usage, and well-guided in terms of user interaction and error handling.

The broad representation of respondents across colleges and departments enriched the assessment by offering comprehensive and multifaceted perspectives. While the results confirm the system's effective performance, targeted improvements in interface consistency and guidance clarity—especially in how error messages are communicated—can further elevate user experience and institutional efficiency.

References

1. N. V. Hayagan, "Paperless Enrollment System: Functionality and Assessment," 2022.
2. M. Chamilco et al., "Materials and Methods on Digital Enrollment Systems," 2021.
3. L. Soriano, "LaykOS: The Implementation of Process Scheduling in Enrollment Workflow," 2023.
4. M. Chamilco et al., "Materials and Methods on Digital Enrollment Systems," 2021.
5. R. F. Mayo et al., "Web-Based Enrollment System for Public Junior High Schools," 2022.
6. M. J. Pagay-Cierva, "Evaluation on the Performance of the Developed School Record System," 2024.
7. J. C. Mina et al., "Students' Assessment of the Online Enrollment System," 2021.
8. S. Boumi and A. E. Vela, "Quantifying the Impact of Student Enrollment Policies," 2021.
9. B. M. Awaji and E. Solaiman, "Design and Evaluation of Blockchain Enrollment Systems," 2022.
10. Z. A. Matos Jr., "Design and Implementation of an Online Enrollment System," 2022.
11. C. I. Wi et al., "Application of Innovative Subject Recruitment and Enrollment," 2023.
12. Y. Liu, "The Current Situation of the Implementation of Enrollment Systems," 2024.

13. T. Liu et al., "Design and Practice Research of Digital Enrollment Systems," 2024.
14. Y. Zhao and A. Otteson, "Enrollment Prediction with Markov Models," 2024.
15. M. Corra et al., "The Interactive Impact of Race and Gender on Enrollment," 2022.
16. C. Gao et al., "Understanding School Enrollment in Free Education Systems," 2023.
17. M. Solinas-Saunders et al., "Statistical Analysis of Hispanic Enrollment Trends," 2023.
18. L. Sartain et al., "Universal Student Enrollment Systems," 2022.
19. R. J. Villaruz and R. A. Diamante, "Enrollment Appraisal Using Rule-Based Decision Systems," 2024.
20. M. J. P. Cierva, "Assessment of the Efficiency of the Online Enrollment System," 2023.