

Evaluation of Software Quality Characteristics of Academic Information System Mobile Application

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Abstract- This study was conducted to evaluate the software quality characteristics of academic information system mobile application for Capiz State University Mambusao Campus using ISO 9126 criteria in terms of functionality, reliability, usability, efficiency, maintainability, and portability;

The respondents were the randomly selected ninety (90) students, ninety (90) parents, twelve (12) faculty and staff of CAPSU Mambusao Campus and five (5) IT Experts who are in line with database and mobile development. The mean was used as statistical tool for this study.

The result of the system's evaluation regarding the system compliance to the ISO 9126 standards evaluated by the IT experts, students, parents, faculty and staff is effective in terms of functionality, reliability, usability, efficiency, maintainability, and portability;

Index Terms- software quality characteristics, Academic information system, mobile application

I. INTRODUCTION

Nowadays, mobile devices are being used in many important activities in many fields in our life such as disaster alert and event notifications. Such mobile activities are served according to the user's preferences, location, and device limitation. Hence, the mobile computing promotes flexibility, mobility, and adaptability through small, light, and movable devices (Netbiscuits 2013).

Academic Information System is a school management system that manages the entire academic processes and student life cycle starting from course planning, student enrolment, and class registration to financial aid information and billing – providing a centralized data warehouse that gives you a single source of information to make well-informed financial and operational decisions in real time (Polytronics 2013).

Since academic information system is very much in line with one of the frontline services of an institution, it would be timely to conduct this study so as to relate the results to the present study. Such study is from Llanera (2016) who assessed the level of student satisfaction on frontline offices such as the Office of the Registrar, Library, Accounting and Collecting Office, Guidance Office, and Medical/Dental Clinic of six satellite colleges of Capiz State University and concluded that the level of student satisfaction on the frontline services of CapSU Satellite Colleges was “very satisfied”.

II. RESEARCH ELABORATIONS

This study was done at Capiz State University Mambusao Satellite College. Questionnaire was sought to evaluate the system using the standards set by ISO 9126 otherwise known as the Software Quality Model in terms of six main characteristics of good software, namely, functionality, reliability, usability, efficiency, maintainability and portability (Pressman 2005). The evaluators were five (5) IT Experts who are in line with database and mobile development. For the users, it was evaluated by ninety (90) parents, ninety (90) students, and twelve (12) faculty and staff of CapSUMambusao Campus who were chosen based on random selection.

The researcher used the five (5) point Likert Scale as the basis for evaluating the system. Description of Very Effective was rated 5, Effective= 4, Moderately Effective= 3, Ineffective= 2 and Very Ineffective= 1. The result of the evaluation was tabulated using the Statistical Package for Social Sciences (SPSS) software and mean was used to determine the result of the evaluation.

To determine the effectiveness of the application the mean scores were categorized as follows:

Scale	Verbal Interpretation
4.21 – 5.00	Very Effective
3.41 – 4.20	Effective
2.61 – 3.40	Moderately Effective
1.81 – 2.61	Ineffective
1.00 – 1.80	Very Ineffective

III. RESULTS OR FINDINGS

In terms of functionality, the Academic Information System Mobile Application was rated by Technical Experts (M = 4.04) Student (M=4.11) and Parent (M=4.10) as “Effective”, and Faculty and Staff (M =4.58) as “Very Effective”. When taken as a whole, it was rated as “Very Effective”. This means that the system functions appropriately according to its specified attribute. It is also effective in producing accurate results. It functions without errors effectively.

In terms of reliability, the Academic Information System Mobile Application was rated by Technical Experts (M = 3.66) Student (4.04) and Parent (M = 3.96) as “Effective”, and Faculty and Staff (M =4.27) as “Very Effective”.

This means that the system has the ability to maintain its service and withstand to factors that may affect it. When taken as a whole, it was rated as “Effective”. The respondents were satisfied of the system developed by the researcher. Specifically, Faculty and Staff rated “effective” in terms of all criteria set in

the ISO 9126 standards. This implies that the system can perform its function and the users can rely on its services.

In terms of Usability, the Academic Information System Mobile Application was rated by Technical Experts (M = 4.33) Faculty and Staff (M = 4.63) Student (4.22) and Parent (M = 4.22) as “Very Effective”. When taken as a whole, it was rated as “Very Effective”. This means that the system is highly usable and the system is easy to operate. It also means that different types of users could easily use the system. It does not require technical skill and sophisticated learning efforts on the part of different types of users in order to make use of the system.

In terms of Efficiency, the Academic Information System Mobile Application was rated by Technical Experts (M = 3.91) Student (4.11) and Parent (M = 4.05) as “Effective”, and Faculty and Staff (M = 4.62) as “Very Effective”. When taken as a whole, it was rated as “Effective”. This means that the system’s performance was not affected by the amount of resource utilization and could continue to deliver its function under certain conditions.

In terms of Maintainability, the Academic Information System Mobile Application was rated by Technical Experts (M = 3.75) Student (4.13) and Parent (M = 4.14) as “Effective”, and Faculty and Staff (M = 4.49) as “Very Effective”. When taken as a whole, it was rated as “Effective”. This means that the respondents believed that the system could easily adopt to changes such as new specifications, operating environments or upgrade in system requirement without affecting its operation.

In terms of portability, the Academic Information System Mobile Application was rated by Technical Experts (M = 3.79) and Parent (M = 4.18) as “Effective”, and Faculty and Staff (M = 4.56) and Student (4.26) as “Very Effective”. When taken as a whole, it was rated as “Effective”. This means that the

Academic Information System is highly portable, could easily adapt to changes such as new specifications, operating environments or upgrades in system requirement without affecting its operation and can be installed easily.

IV. CONCLUSION

1. The software quality characteristics of academic information system mobile application for Capiz State University Mambusao Campus using the ISO 9126 criteria was effective in terms of functionality, reliability, efficiency, maintainability, and portability.

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