

A STUDY OF IMPORTANCE AND SATISFACTION ON THE CHARACTERISTICS OF UKM'S ODL LEARNING MANAGEMENT SYSTEM

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ABSTRACT

The research aims to determine the level of student satisfaction at UKM in engagement with LMS for Distance Learning (ODL) programs. Although UKM uses LMS like Moodle to facilitate teaching and learning, the platform lacks features to analyze data and identify behavior such as style learning and cognitive traits. In response to this issue, research will collect, evaluate and disseminate data about the LMS to make recommendations in relation to identifying, adopting and evaluating user satisfaction and the importance of the chosen LMS direction. The analysis method used is Improvement Performance Analysis (IPA) through its four quadrants. Findings show two attributes are placed in the first quadrant, five attributes are placed in the second quadrant, four attributes placed in quadrant three followed by an attribute in quadrant four. As a result, this study suggests that all LMS attribute resources and strategies must be managed with efficient to achieve maximum benefits and minimize negative effects on academic programs that use LMS

Keyword: Learning Management System, Over Distance Learning, Improvement Performance Analysis, University Kebangsaan Malaysia

I. INTRODUCTION

According to Ohliati et al. (2019), the growth of the internet has had an impact on the development of education, where education now needs to be flexible. Method flexible learning that can be done anywhere and anytime without any geographical restrictions has become very demanding to meet the educational needs of professionals, entrepreneurs, and even housewives who want to continue studying to a higher level. Based on the results of a previous study by Karim and Khalid (2016), it can be concluded that there are six platforms used by higher education institutions Malaysia. The platforms are Moodle, Sakai, ATutor, Blackboard, SuccessFactors and SumTotal. Each platform has its own unique to support requirements administrators and students. In line with the initiative, the National University Malaysia (UKM) has introduced a Learning Management System (LMS) which is used to support many off-campus courses at UKM from February 2020.

UKM has a history of exploring and adopting appropriate technologies to improve teaching and learning process. With the increasing prominence of the Internet in learning and teaching, the use of web-based technology to support teaching is the natural step up. Learning Management System (LMS) software has become part of the teaching at UKM and used to support many courses at UKM, including during epidemics. UKMFolio is UKM's learning management system (LMS), developed by the Center for Teaching & Curriculum Development (Teaching-UKM). This system was made available on 18 February 2020. The UKM Folio is part of the initiative AktivUKM Digital Learning Space and AktivUKM Learning.

Although learning institutions use Learning Management Systems such as Moodle, Claroline and Blackboard to facilitate teaching, it does not have features to analyze data and identify behavior behaviors such as learning styles and cognitive traits. Instead, they only produce certain statistical reports from record daily access hence the importance of behavioral analysis such as satisfaction LMS users and the importance of LMS to users and UKM benefits (Lawandeet al 2021). Bujang et al. (2020) claim there are challenges in identifying platforms and suitable digital learning tools to engage students in learning at their own pace. It emphasizes the need to explore characteristics that determine use and behavior that will determine their acceptance and future use of LMS as a learning platform online. According to Annamalai et al (2021) understanding of these characteristics are considered very important for distance learning, because currently LMS is the main platform which is used to facilitate distance teaching and learning. The more complex argument is that the diversity of distance education students due to resources, location maturity, educational background and possible technology applications differ in variables from the way traditional students see teaching and learning online.

This paper consists of five (5) sections. Section I discuss the background of this study including the issues and problems of Learning Management System implementation. Section II discuss the previous research on the learning Management System issue. Section III elucidates the methodology used in the study. Section IV presents the findings of the work and discussion. Lastly, section V concludes the paper with a summary of the findings and recommended future work.

II. LITERATURE REVIEW

A. Issue and Challenge of Learning Management System

According to Rabiman et al (2020) Learning Management System (LMS) is becoming an important platform for university students. The use of LMS in teaching and learning process which focuses on the content subject has provided a wider opportunity for the teaching and learning concept and implementation not only to apprehend the content but also to apply them in over distance learning

emergency contexts such as Covid 19. Hence according to Turnbull et al (2019) the LMS should be dynamic; that is, it should be active, flexible, customizable and adaptable. Whether a LMS is a proprietary or open source, it will need to be capable of executing a variety of functions that work together to provide a seamless experience for the user. Given that behavior analytic is not a part of default LMS function Furthermore, learning analytics for the LMS at UKM, by their volume, timeliness, and composition, “expands the capacity and ability of organizations to make sense of complex environment” and promises to improve pedagogy, course design, student retention, and decision-making by providing personalized feedback for users (Lester et al,2017).

B. Students Satisfaction in Using Learning Management System

According to Ohliati and Abbas (2019) the satisfaction of students toward LMS is influenced by the quality of the information, system and services provided by educational institutions. The quality of communication in the LMS needs to be concerned, as the learning process runs via online without meeting each other. The quality of good communication through media affects student satisfaction. Another factor of satisfaction is where the LMS is easy to learn and can help the learning performance.

Based on the explanation Ohliati and Abbas (2019) of the framework, it can be described the paradigm of related research to information quality, system quality, service quality, perceived usefulness, perceived ease of use, and communication quality. Refer to Figure 2 for research framework reference. It concluded that student satisfaction towards learning management system influenced positively by all variables mentioned in their research framework however the variable service quality has the highest coefficient value of other variables. This shows that service quality is the most dominant factor affecting students' satisfaction on learning management system (LMS) compare to other variables in the proposed framework Better information access for planning and managing the institutions.

III. RESEARCH MODEL

The objective of this study is to investigate the perceive importance and satisfaction on the characteristics of UKM's ODL learning management system in Malaysia. Therefore, based on the conceptual study and the research literature, a model based on the Importance Performance Analysis (IPA) has been adopted. The model contains IPA quadrant analysis accomplished by locating each attribute into appropriate quadrant in order of its relative importance and performance, moving from the top to the bottom (Lee et al,2021). A Quadrant chart used to analyze performance under two parameters assessed for each entity. Depending on how an entity performs under either of the parameters, the entity is grouped into either of the quadrants. After identifying which quadrant the entity belongs to, actions can be taken to improve performance under relevant parameters

The procedure adopted from Lee et al (2021) are as follows:

- A. Based on the predetermined attribute, two dimensions are classified: (1) the importance of each attribute and (2) judgments of its satisfaction.
 - B. Therefore, the questions (refer to Appendix A) was developed to assess each attribute that surrounds the significance of the attribute.
 - C. The questions were asked to the selected respondents to get their feedback.
 - D. Using the feedback gathered from the respondents, central tendency of each (mean values) attribute is calculated and rank ordered from high to low categories.
 - E. The central tendency of each attribute's importance and performance will be paired and used as coordinates for plotting respective attribute in two dimensional grid that has been divided into four quadrants
 - F. Each quadrant in IPA is divided by the importance of attribute from high to low (in vertical axis) and the performance of attribute from high to low (in horizontal axis).
 - G. As a result, the disparity between importance and performance can be established.
- Further analysis of IPA can be accomplished by locating each attribute into appropriate quadrant in order of its relative importance and performance, moving from the top to the bottom.

IV. **METHODS: PARTICIPANTS AND DATA COLLECTION**

The participants of the study were 33 UKM students using LMS ODL during pandemic years. All UKM ODL students have participated in this research, with selected demographic attributes were age, race, marital status, residency, employment sector and work experience. The calculated value of α -cronbach was 0.991. Therefore, this shows the item's reliability value is at an excellent level above the minimum level of 0.70 set.

V. **RESULTS & DISCUSSION**

A. Descriptive Analysis

Data collected using questionnaire on "The Importance and Satisfaction of Management System Features Learning for Open and Distance Learning at UKM" provided by <https://ms.ukmodl.com> focuses on seventy-four (74) dimensions. Descriptive analysis using a total of 74 questionnaires of Part A, B, C, D, E and F. IPA only use questions survey Section C of the Learning Management System (LMS).

This questionnaire contains SIX sections:

1. Part A: Demographics
2. Part B: Curriculum Design
3. Part C: Learning Management System (LMS)
4. Part D: Learning materials
5. Part E: Infra/Info structure Facilities
6. Part F: Evaluation System

Figure 1 display a clearer picture of all the variables considered in this study. From the table said, it is very clear that on average, all seventy-four (74) variables in the questionnaire received unusually high rating total with seventy-four (74) variables.

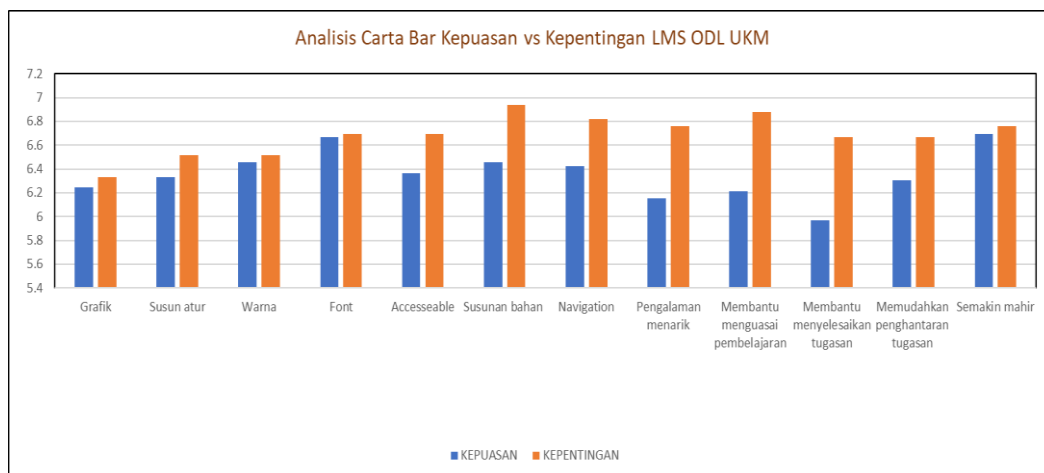


Figure 1 Descriptive Analysis

Source: Develop for Research

B. Improvement Performance Analysis

IPA Quadrant analysis showed by figure 2 categorize and analyze data or information into four distinct quadrants based on the “concentrate here”, “Keep up the good work”, “Low priority” and “possible overkill”. To Identify areas for improvement, the attributes that are high in importance but low in performance are the areas where improvement is needed. However, prioritize actions based on the results of the analysis is to prioritize efforts to improve customer satisfaction by focusing on areas of

high importance but low performance concern as well as the necessary actions for improving customer satisfaction.

This analysis Attributes "Membantu Menguasai Pembelajaran" and "Pengalaman Menarik" which located in the first quadrant (I) this has high importance, but low performance. It is indicative of two (2) attribute performance deficiencies. This is critical where the attributes of importance fail to satisfy the respondents. If it doesn't immediately solve, it may be a major weakness that has the potential to mitigate level of competitiveness. Attributes "Membantu Menyelesaikan Tugas", "Memudahkan Menghantar Tugas", "Susun Atur Warna" and "Grafik" placed in this third quadrant (III).have low importance and low performance. It shows the attribute is underperforming, but it does not require further action because of it does not affect the improvement of service in the eyes of respondents who use it. The attribute "Susun Atur Warna" in the fourth quadrant (IV) is important which is low but high performing. It shows the attribute was done successfully but unfortunately considered irrelevant by the respondents. At this point, is important to redefine the need to allocate more resource towards that attribute

I	Concertrate here		
II	Keep up the good work		
III	Low priority		
IV	Possible overkill		

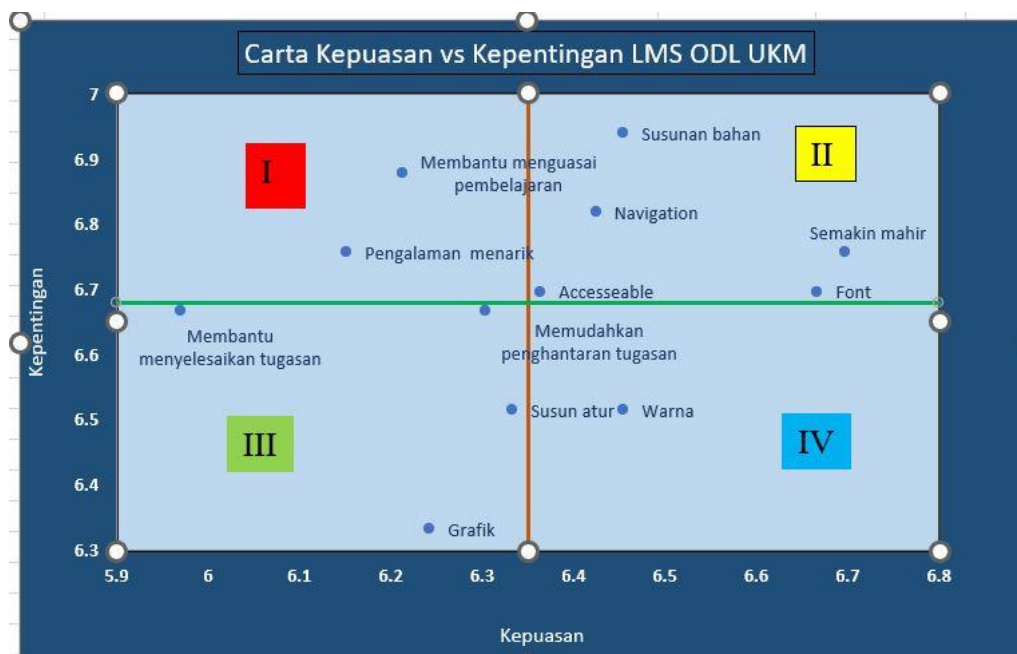


Figure 2: Improvement Performance Analysis

Source: Develop for Research

VI. CONCLUSION

This study was designed to identify factors and items that measure a study of interest and satisfaction on the characteristics of UKM's ODL learning management system. The published Readiness-Improvement Performance Analysis (IPA) by Lee et al (2021) have been adopted in this study and supported by literature review from previous studies. The analysis method used is Improvement Performance Analysis (IPA) through its four quadrants. Findings show two attributes are placed in the first quadrant, five attributes are placed in the second quadrant, four attributes placed in quadrant three followed by an attribute in quadrant four. As a result, this study suggests that all LMS attribute resources and strategies must be managed with efficiency to achieve maximum benefits and minimize negative effects on academic programs that use LMS.

Future studies for research should include more sample sizes to better represent data sets for meaningful understanding of things. At the current time the limited sample size (33) is due to the issue and pandemic problems. Adapt the questionnaire to capture the essence of the framework theory better and combining theories such as IPA and PRCA is also possible added in future research. The questionnaire also does not clearly define all the best characteristics of LMS Moodle as mentioned by Karim and Kasim (2016). A questionnaire which is more comprehensive and in-depth to cover the best aspects of LMS Moodle is proposed to be built. In addition, the difference in socioeconomic background for each respondent can be used as a catalyst to improve research accuracy also. With the right parameters, this research can be used to explore more LMS issues and problems for Malaysian students specifically.

ACKNOWLEDGEMENT

The authors would like to thank, Faculty of Information Science and Technology, Universiti Kebangsaan Malaysia and University of Malaya by giving the authors an opportunity to conduct this research.

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