

Intercultural User Interface Design (IUID) in Learning Management Systems for International Students

Timotius Ariel TANDRA^{1*} and Lily El Ferawati ROFIL¹

¹ Bina Nusantara University, Communication Department, 11480 Jakarta, Indonesia

Abstract. This article discusses how cultural values drive the ways students engage in a Learning Management System (LMS) and perceive its usability from the perspective of Intercultural User Interface Design (IUID). Universities around the world employ LMS as an integral part of online learning but the cultural significance of the interface design remains under debate as it is believed to be an enhancing aid for information processing and learning. Analyzing data from qualitative interviews and usability testing on Indonesian and international students in an international university in Indonesia, this article provides remarkable insights for both students and educators. Evidence shows that nationality-embedded cultural values as reflected in students' personal characteristics regulate their learning behaviors. Cultural dimensions such as individualism versus collectivism, power distance, uncertainty avoidance, and masculinity versus femininity are present in students' attitudes toward online learning. For this reason, this study suggests that the cultural values and backgrounds of LMS users need to be taken into account in designing an online learning platform.

1 Introduction

A Learning Management System (LMS) has been around in learning environments within higher education institutions, but the COVID-19 pandemic pushed universities around the world to enhance and maximize the use of it for the center of remote learning. This situation gave persistent challenges for students worldwide to adapt to new learning environments. The utilization of LMS in online learning approaches can prove to be a significant departure from what students were accustomed to in their home country, thus leading to further challenges and adaptation struggles for these individuals [1]. Whether the innate cultural values indicated in each group will influence the usage of LMS will be analyzed through the methodology of qualitative usability testing and user interviews.

International students have been the subject of prior research regarding their adaptation to online learning, with many finding it difficult to adjust to both cultural and academic means [1]. Furthermore, cultural inclusivity for international students should be strived for in LMS design, to better help them with both cultural adjustment and pride in their academic learning [2]. For this reason, educational service quality through thorough preparation of learning tools is essential to both educational satisfaction as well as long-term learning overall [3].

The discussion in this article is mainly centered around the usability of *Binusmaya*, the LMS utilized in an Indonesian university *Universitas Bina Nusantara* or *Binus*. Created in 2013, *Binusmaya* was developed by *Binus* University's Digital Media Development team and was made to incorporate MCL (Multi-Channel Learning) for students on campus. The LMS serves as a

one-stop center for students and lecturers as well as supporting staff to exchange information regarding lectures, examinations, internships, graduation, and others. On the 2nd of November 2021, an update was made to *Binusmaya* to better facilitate online learning during the COVID-19 pandemic with simplified design and clean dashboard (as seen in Figure 1). The university's self-built LMS also comes in a mobile app that provides actual reminders about lecture schedules and notifications of discussion forum entries.



Fig. 1. *Binusmaya* Dashboard

Binusmaya as a learning management system utilizes English as a main language with no other language options. Though the English fluency of both international students and Indonesian students has been assessed through *Binus* University's English proficiency tests prior to entering. However, according to Alharbi and Smith [4], prior research has indicated that English fluency can remain a considerable factor for international students in their pursuit of higher education. To further this, Hibatullah [5] also considers that a lack of usage for English outside of educational settings could ascertain an international student's

* Corresponding author: timotius.ariel@binus.ac.id

deficiency in overall education. For international students studying in Indonesia, English itself, though universally utilized on campus at *Binus*, is not utilized as often as Bahasa Indonesia. This could lead to further issues with adaptation for international students as a whole as language barriers in online learning can present obstacles for both students and lecturers with a mutual goal for satisfaction in higher education [6]. With this understanding the research aims to (a) analyze the cultural values indicated by a pre-existing LMS through user perspective, and (b) understand the possible cultural differences in usage between Indonesian and international students with an LMS.

2 Literature Review

Cultural inclusivity in the implementation of a Learning Management System (LMS) becomes a central question in a higher education environment where students come from different cultural backgrounds. Current literature points out that LMS is often engineered to promote individual self-learning and self-assessment and neglects the culturally diverse backgrounds of students which leads to the digital divide [7-8]. Reviewing policies and guidelines for LMS in Australian higher education institutions, Dreamson [8] identifies that inclusive learning principles and strategies on an LMS for indigenous students remain less significant.

Yalamu [9] shows that positive feedback is apparent for an LMS that is engineered to accommodate user preference and the cultural background of students in Papua New Guinea. Engaging in positive cultural interactions through online learning has also been found to impact international students' satisfaction with their experience with higher education [3]. Though international students have been found to have more internal motivation to utilize possibly unfamiliar e-learning technology like LMS [10], Sleeman, Lang and Dakich [11] mentions that international students would prefer to use social networking sites (SNSs) instead of proper utilization of academic tools like LMS for the aspect of social interactions with their fellow peers. This shows that adaptation to current usage of LMS can be difficult for international students. Furthermore, cultural adaptation in regard to online learning in particular can prove to be difficult for international students, and possible preparation for tools like LMS should be considered greatly beforehand [1].

Studies focusing on international students regarding LMS usability and the possible cultural implications remain underrepresented. One such case by Young [12] specifies the need for usability of online platforms created by universities for international students. This study, however, focuses on the university's website in particular and not on the specific pedagogical usage of the online materials that universities provide. This emphasizes the importance of understanding the usability of LMS and its relations to the cultural implications that international students might have towards it.

In some studies, the application of cultural dimensions in LMS appears to be a significant

consideration. Tinmaz and Lee [13] state that LMS design in particular should consider Hofstede's cultural dimensions. Hofstede's six cultural dimensions framework serves to understand how cultural values embedded in nationality drive people's behaviors in various aspects of life including learning [14]. The six dimensions include power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, long-term versus short-term orientation, and indulgence versus restraint [14]. Recent studies show that cultural dimensions—especially uncertainty avoidance, collectivism, and long-term orientation—influence knowledge-sharing [15-16]. In the context of online learning, Sadykova and Meskill [17] specify the importance of understanding online learning accommodation for international students in cultural dimensions such as power distance in course design and culturally specific learning practices for online learning environments.

With that context in mind, the role of cultural dimensions has been established as playing a large role in both pedagogy and online learning, whether it be for user interface design or user experience matters. For this research, and for international students currently studying in Indonesia, there is a possibility that Indonesian cultural values are reflected in the design of the online learning in Indonesian universities. This is implied by studies [18-19], wherein design as well as online learning curriculum follows Indonesian cultural dimensions. Furthermore, Usman et al. [20] finds that current learning culture of online learning in Indonesia is prevalently affected by the cultural values adopted by the country as a whole, such as having high power distance and a high uncertainty index. Hanoum and Silvana [21] confirm this by mentioning that due to the influence of cultural values like high power distance, collectivism as well as high uncertainty avoidance, Indonesian students can face problems in online learning, and solutions through instructional needs should therefore be supplemented. Studies in regard to Indonesian LMS analysis in particular are lacking, however, which furthers the need for this research.

Aside from that, user interface design has also been found to be culturally relevant in the creation of LMS according to studies [22-25], with distinct cultural values corresponding to the design of a webpage's attributes such as uncertainty avoidance and even power distance. As a matter of fact, intercultural user interface design frameworks like IUID (Intercultural User Interface Design) encourage the prominence of these cultural values to appear in the design of pedagogical tools or websites, inciting cultural inclusivity [26]. Guidelines have already been published regarding the possible usage of a culturally inclusive website or learning management system [27]. However, regarding this concept, LMS usability must also be considered in a cultural context as well, citing the importance of LMS being both cultural and functional in design [28]. Alexander [29] creates a guideline based on how websites from varying countries differed in web attributes and user interface design, which can correlate to positive experiences in each respective country