

1. Pendahuluan (*Introduction*)

Telkom University, through its Learning Management System (LMS), supports the achievement of learning competencies and benefits in online learning through online discussion forums. Learning through forums can help solve problems, enhance the understanding of specific realities, foster respect for other's opinions, and provide various types of learning variations. It is known to enhance learning motivation, stimulate students' thinking abilities, and offer flexibility in terms of location, time, and learning style [1]. According to a preliminary research validation survey conducted with 37 respondents, 86.5% of the participants accessed Telkom University's LMS discussion forum using a PC, while 13.5% preferred to access it through a smartphone. Therefore, a less-responsive LMS interface on smartphones significantly affects user experience (UX). However, an interactive and well-designed UI/UX can increase user engagement and satisfaction when utilizing a discussion forum [2][3]. In addition to the issue of the less responsive LMS interface, students expressed dissatisfaction with the forum discussion feature. The features of the LMS discussion forum were limited to each course and class. Moreover, the LMS forum is confined to formal discussions based on classes and specific course themes. These limitations restrict students from accessing information and create a narrow and rigid discussion ecosystem.

To overcome the rigidity of the existing discussion forum in E-Learning LMS, previous researchers have attempted to implement and adopt features from social media within E-Learning LMS [4]. This approach fosters interactive relationships between teachers and students. Another factor that influences the intensity of the student learning atmosphere is students' learning styles. Previous researchers have adopted learning styles in e-learning [5], and the results have shown that incorporating learning styles into e-learning can facilitate students' reception of learning information. The challenge lies in accommodating different user learning styles in the application development process and, ensuring that users are effectively facilitated when using the application. One model of student learning style is the Felder-Silverman Learning Style Model.

Based on the facts and data presented above, the researcher proposes designing a prototype mobile application for student discussion forums using the Design Thinking methodology and adopting a Felder-Silverman Learning Style (FSLs). The main focus of research which adopt FSLs using Design Thinking method is Discussions Forum. So important to make sure the main feature in this prototype can handle heterogeneity of user's learning style model. Forum discussions in the learning system are essential to enhance students' understanding of specific materials. In response to students' dissatisfaction with the Learning Management System (LMS), especially regarding the discussion forum features, there is a need for a dynamic, flexible, and user-friendly mobile-based discussion forum application that accommodates user heterogeneity. One of the development methods that can address heterogeneity and encompass problem identification, strategy, and solution is Design Thinking. Design Thinking allows the creation of a design through direct prototype development and testing. Furthermore, Design Thinking is also employed in this research to design a concept map for adopting FSLs within the Discussion Forum. To evaluate the effectiveness of the developed application in addressing the identified issues, usability testing can be employed.

Previously, there have been similar studies that adopted FSLs [17][19][18] or other learning styles [5] using the design thinking method to design an E-Learning platform capable of accommodating all student learning styles. In those studies, only four model strategies were used for implementation, namely Active-Sensing-Visual-Global, Active-Sensing-Visual-Sequential, Active-Intuitive-Visual-Global, and Reflector-Intuitive-Visual-Global.

However, in this research, the focus will be on one specific feature of the Celoe LMS website, which is the discussion forum. Ideally, the discussion forum serves as a platform for exchanging ideas and opinions. With this objective and essence in mind, the GUI (Graphical User Interface) should feel more like a social media application. Nevertheless, it is crucial to remember that this feature is part of an LMS, used by users with diverse learning styles. Hence, the discussion forum needs to be capable of handling such diversity.

Referring to the existing research references [17][18][19][20][21], where almost all studies adopting FSLs and Usability methods were used in designing smart E-learning systems capable of adapting the interface and features according to user personalization. In contrast to the studies mentioned, this research employs the same methods to design the interface of a Discussion Forum application. In today's era, discussion forums have become essential spaces for dialogue, sharing ideas, opinions, and thoughts. The presence of discussion forums on E-Learning platforms is expected to foster a dynamic, interactive, and communicative learning environment closely related to the learning materials. The researcher's primary foundation lies in recognizing the differences in individuals' learning styles, reflecting the determination to understand more effective ways to tailor the learning approach to each user's unique needs. Therefore, this research will provide a contribution, which is the adoption of FSLs into the Discussion Forum application, where FSLs is typically only adopted in E-learning applications. The hope is that through this study, readers can understand that the FSLs method can be adopted

not only in E-learning but also in any application that features material sharing facilities.