

ABSTRACT

The level of digital literacy among students in West Java continues to face significant challenges, both from internal factors such as limited educational support and external factors such as socioeconomic disparities that affect access to and the quality of digital learning. To address these issues, this study aims to design a reference architecture for a collaborative, adaptive, and sustainable digital literacy ecosystem to improve students' digital literacy in an equitable manner. The methodology employed includes a Systematic Literature Review (SLR) to identify architectural needs and best practices in the development of digital literacy ecosystems. Subsequently, the initial design was validated and refined through Focus Group Discussions (FGD) with experts and stakeholders who have direct experience in digital literacy initiatives. The development of architectural artifacts is based on the TOGAF, covering aspects of business vision, business architecture, application and data, and technology. The outcome of this research is a reference architecture design for a digital literacy ecosystem for students in West Java that facilitates collaboration among students, teachers, schools, communities, government entities, and digital platform providers. This architecture supports the enhancement of digital literacy by ensuring equitable access to high-quality learning resources and fostering an inclusive learning environment that is responsive to technological developments. This study underscores the importance of a collaborative ecosystem approach as a foundation for sustainable digital education transformation.

Keywords— Digital literacy, Education ecosystem, Literacy development