

ABSTRACT

Issue. Web Application Programming Interfaces (APIs) play an important role in enabling communication between systems. However, poor web API design can make it difficult for developers to understand and use APIs effectively. This study aims to evaluate the effect of a Domain-Driven Design (DDD) approach on improving developers' understanding of web APIs.

Importance of the Topic. Developers often have difficulty understanding complex or poorly designed web APIs. This prevents them from using, modifying, or improving the API, leading to the risk of bugs and unmaintainable code.

Solution. DDD offers a systematic approach by emphasizing a deep understanding of the business domain to improve software design. This research adopts the DDD approach to redesign a web API. The new API design was evaluated using a hybrid crossover and between-subjects experimental approach on five front-end developers directly involved in the case study. Developer comprehension was assessed based on time, correctness, and Timed Actual Understandability (TAU) scores.

Results. Based on the evaluation results, the average TAU score increasing from 0.24 to 0.39, the correctness rate from 43% to 70%, and the completion time decreasing from 50.57 seconds to 44.01 seconds. These results show that DDD can improve developers' understanding of Web APIs.

Keywords: domain-driven design, web API design, understandability