ABSTRACT

Advances in information and communication technology in the Industry 4.0 era have changed teaching and learning methods in various institutions, including through the use of e-learning applications. Quipper, one of the popular e-learning apps, utilizes technology to support learning activities. Customer responses on Google Play are important for Quipper to evaluate company goals and monitor product performance. However, since the reviews are diverse and numerous, manual analysis is ineffective. Therefore, automated sentiment analysis is needed to classify the sentiments. This research uses the Knowledge Discovery in Databases (KDD) approach to extract knowledge from review data. This research aims to classify user sentiment using K-Nearest Neighbor (KNN) algorithm and Latent Dirichlet Allocation (LDA) method to identify the main topics of the reviews. The KNN algorithm was chosen for its simplicity and high accuracy in text classification, while LDA was used to cluster keywords in the reviews into specific topics. The results showed that the KNN algorithm with the best K value of 14, and a training and testing data ratio of 70:30, resulted in an accuracy of 84.68%, precision 86.40%, recall 85.87%, and F1-score 86.09%. The majority of reviews were positive (55.1%), indicating user satisfaction with the Quipper app. LDA analysis identified 4 main topics from the positive reviews, namely ease of use, quality of learning materials, app feature support, and general praise of Quipper. Whereas negative reviews identified 3 main topics, namely payment issues, login and registration issues, and constraints regarding class codes and materials. This research shows that the KNN algorithm is effective in classifying user sentiment, while LDA manages to uncover specific aspects that Quipper needs to improve to increase overall user satisfaction.

Keywords— ***K-NN, LDA, quipper, sentiment analysis, topic modeling***