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Advanced Review

Data mining in foreign language learning

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Abstract

Educational data mining (EDM) combines the techniques of data mining with educational data in order to provide students, instructors, and researchers with knowledge that can benefit academic processes. Due to globalization, foreign language learning (FLL) has become increasingly important. This work seeks to gain insight as to how data mining (DM) is being used to benefit FLL. For this purpose, an advanced review of pertinent research published from 2012 to 2017 was performed. After applying our screening method, 208 papers were selected for the exhaustive analysis. This analysis was divided into four aspects: context (educational environments, educational level), number of items, DM methods, and DM applications. The results indicated that 54% of studies were conducted in traditional environments, while only 3% of studies were performed in an m-learning environment. In addition, 25 and 72% of the research was conducted in either a primary or secondary level, or in tertiary or adult level, respectively. Likewise, 76% of studies

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contained datasets of less than 1,000 items. The most utilized EDM methods were: factor analysis, regression, text mining, correlation mining, and causal DM. In addition, the studies analyzed showed that DM is mainly employed to predict the performance of students, to check learners' motivation, and to provide feedback for instructors. These results seem to indicate that although DM has much to offer the increasing number of language students, it is not being used to its full potential.

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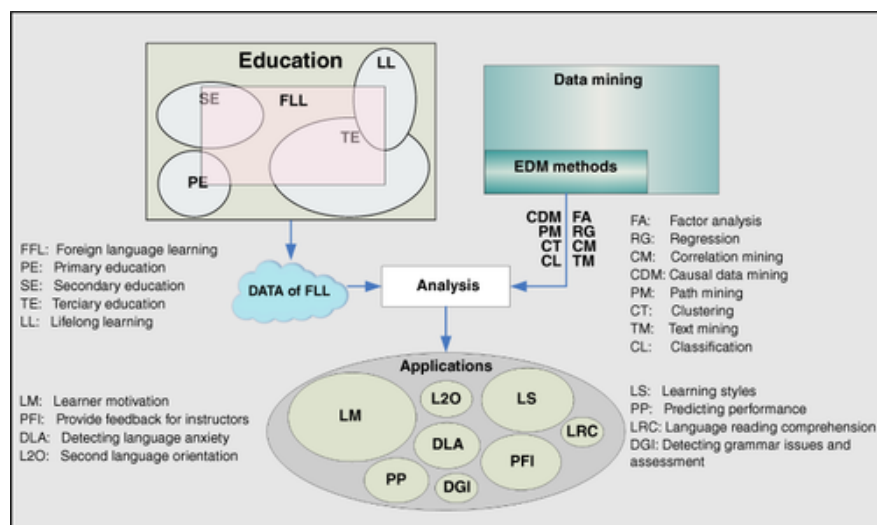
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