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A Machine Learning Prediction of Automatic Text Based Assessment for Open and Distance Learning: A Review

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Abstract

In this systematic literature review, automatic text-based and essay type assessment grading system using Machine Learning and Natural Language Processing (NLP) techniques was investigated. The major focus is on text-based and essay type assessment in ODL courses. Text-based and essay type questions is an important tool for performing quality examination and assessment to help the students gain mastery over the task and widen their horizon of knowledge and increase the learner's development and learning than, for instance subjective question type, single choice question (SCQ), multiple choice question (MCQ) and true/false question type. Automatic text-based and essay type assessment grading system can be used as an important tool in ODL institutions, where assessment and examination can be quickly and easily evaluated for the purpose of efficient feedback. We carried out this study using quality, exclusion and inclusion criteria by selecting only studies that focuses on NLP and Machine Learning techniques for automatic text-based and essay type assessment grading task. Searches in ACM Digital Library, Semantic Scholar, Scopus, IEEE Xplore, Google Scholar, Microsoft Academic, Learn Tech Library and Springer is performed in order to retrieve important and relevant literature in this research domain. Conference papers, journals and articles between the year 2011 and 2019 were considered in this study. This study found 34 published articles describing automatic text-based and essay type assessment and examination grading task out of a total of 1260 articles that met our search criteria.

Keywords

Automatic text-based assessment grading NLP Machine Learning ODL Systematic literature review

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