E-Assessment System for Open and Short Answer (Applied to a Course of Arabic Grammar in 7th Year in Tunisia)

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ABSTRACT

The goal of this article is the development of an evaluation system based on the Arabic language. This article contains four parts. The first part is the corpus construction from the 7th year basic education classes’ grammar book in Tunisia. Then, the second part is on the construction of the Concept Maps (CMaps) ontological for simple Arabic sentences from this corpus, where the automatic extraction of terms is completed. This extraction is based on two major approaches: linguistic and statistical. The third part in this article is the automatic instantiation. The last part is devoted to the application of the similarity measure chosen in the CMaps ontological fusion, which summarizes the various semantic links and which ends with a judgment according to the calculated score.

KEYWORDS

Concept Maps, E-Assessment, E-Learning, NLP, Ontology, Semantic Similarity Measure

1. INTRODUCTION

In the process of learning, the evaluation is a main task to know the degree of the students ‘understanding of any material. In fact, it is an integral part of teaching, because it determines whether the objectives and the educational criteria of the lessons are achieved or not (Shamizanjani, Naenini, & Nouri, 2014). Many researchers say that the multiple-choice questions serve only to assess the lower levels in the taxonomy of Bloom. But when it is necessary to measure the upper levels, the questions with open answers are the most appropriate. Among the subcategories of the opened answer, we are interested in a short open answer and its remote evaluation. It is a built response element and pupils have to build their answers in natural language as well as to make the same profit without any intervention. This implies a different form of cognitive processing and memory recovery in relation to the elements of the answer selected. The questions with open and short response are a subclass of responses or writings of free text. These are open questions which necessitate learners to generate response. They are frequently used in analyses to test the thoughtful and basic accepting (low thinking-related levels) about the subject before asking more broad questions on the subject. The questions with open and short responses do not have a plain and common thing drug structure (Griffin et al., 2014). They can be used as a part of giving feedback within an ongoing class, and showing how effective a course was at the end, because their structure is almost the same as the inspection requests. Students are extra acquainted with the preparation and sensation fewer nervous. Evaluation

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by computer and which are known under the name of evaluation assisted by computer has been studied since the sixties. It is a branch to innovate e-learning that has attracted more attention these last years, mainly for a rapid assessment of answers issues. In this task of research, we are interested in the evaluation of the questions of short open answers within a simple Arabic sentence form. These are questions for which the learner must provide a short answer corrected with a standardized grid (model). They allow assessing the capacity of the problem analysis. Their reliability is relatively good, but their correction is however long and more difficult to standardize as well as automate. They differ in terms of evaluation techniques, algorithms and notation measures. We can note that the recent developments have seen the introduction of assessment engines based on the natural language, but no system uses the ontological aspect as a technique of knowledge representation and especially with the arabic language. In the process of learning, the use of ontology allows you to find what the student has educated, and the problems met, also to discover concepts that are not yet agreed and must consequently be treated better (Litherland et al., 2013; Kardan et al., 2016). In our research, we will use the ontologies knowledge representation in the process of short answer questions evaluation. It is an effective educational technique.

The rest of this papers is organized as follows; in section 2, presentation the previous works on the evaluation of the learners as well as research problems that we discuss in our work. In section 3, description of the approach for the evaluation of short and open answers questions based on the ontology using concept maps as well as the different functions and definitions used. The results our approach application in real terms are presented in section 4. Finally, we present the conclusions and our future work in section 5.

2. RELATED WORKS

During the course of our bibliographic study, we distinguish three main axes to achieve a complete evaluation system which treats the short and open answers. The first axis is the type of questions with open and short response: there are some practices to assess the knowledge of the learner. Among those, we find the issues with open-ended and short answers, where the student should improve an answer composed of a few words, (Callear et al., 2001). This test category is distinguished since the problem by a small development, using the question that requires only single data as an element of reply. Though, the response to a short response question runs numerous information. In relation to the question with a little or lengthy progress, the correction of the test with open short responses is simpler and extra particular. This type of question can assess the existing or honest information, with a lesser equal of difficulty, also the assessment with a short development is superior appropriate to the intelligent capacity assessment (Burstein et al., 2001). Moreover, the learner’s answer, while small, validates a great level of intelligent running (Martin & White, 2003(.

The second axis is responsible of the evaluation systems used for this type of question: the assessment is an important activity in any educational process. This process is, in fact, an instrument of communication between the learner and the teacher on the subject studied. How can we evaluate the issues with a short open and automated answer?

Several tools have been developed to automate this type of evaluation. There is a great diversity of currently used approaches (Pérez-Marín et al., 2009; Ziai et al., 2012).

We note that there is a great diversity of approaches currently used. Most of the short answers rating systems approaches focus on the learning environment. Certain effort on the simple tests, on the assessment of the answers to the foreign language complete questions reading. Others aim to assessment tests University, in particular in the medical sector.

We select specific structures such as facets Method (Ziai, 2012), Texas (Mohler, 2011), CoMiC-EN (Meurers, 2011a), CoMiC-DE (Meurers, 2011b) and CoSec-DE (Hahn & Meurers, 2012). They are current and exciting examples of their particular fields. Their method based on calling facets. These facets mean the illustrations of the sentences measures (Ziai, 2012). They are built habitually
Considerations for Online English Language Learning: The Use of Facebook in Formal and Informal Settings in Higher Education
[www.igi-global.com/chapter/considerations-for-online-english-language-learning/183552?camid=4v1a](www.igi-global.com/chapter/considerations-for-online-english-language-learning/183552?camid=4v1a)

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