

Abstract

Arabic language one of the most complex and comprehensive languages, and the need to find a uniform and accurate pattern for analysis and understanding the language has become an urgent necessity in light of this technological acceleration, which can help in several areas, including education and research, and this may be helpful in trying to automating the education using the methodology of learning objectives and learning outcomes. The aim of this thesis is to analyze Arabic text in order to extract the meaningful learning objectives from the text based on the first two level from bloom's Taxonomy, remembering and understanding, using two main methodologies the first one by building Arabic Ontology (a primitive tree in this stage), which include Arabic words classification a fixed and unified classification based on the origin of the word, the second methodology is by adoption a standard templates for the learning objectives each template include several keywords and indicators then using three stages. First stage perform pre-processing operations on the text such as divide the text into (paragraphs, sentences, words), remove/set diacritic marks, exclude some words before processing, the second stage finding the indicators for each learning objective template and matching the sentences or paragraph with this template taking into account that there is a degree of matching depend on the number of template indicators found, the number of nouns in the sentence, and some symbols and numbers, the final stage is to extract all the words from the text which fall in the same classification in the Arab Ontology tree, this classification can also be used to exclude certain words to improve the degree of matching. The methods which used to test and evaluate the accuracy of approach using calculate precision, recall and f-measure. The results show satisfactory results for some learning objectives like extracting definitions with precision = 95% and recall = 90%, while the results for other learning objectives were fairly results.

Keywords – Learning Objectives, Arabic Ontology, Bloom's Taxonomy