

Arabic Error Feedback in an Online Arabic Learning System

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Abstract. Arabic is a Semitic language that is rich in its morphology and syntax. The very numerous and complex grammar rules of the language could be confusing even for Arabic native speakers. Many Arabic intelligent computer-assisted language-learning (ICALL) systems have neither deep error analysis nor sophisticated error handling. In this paper, we report an attempt at developing an error analyzer and error handler for Arabic as an important part of the Arabic ICALL system. In this system, the learners are encouraged to construct sentences freely in various contexts and are guided to recognize by themselves the errors or inappropriate usage of their language constructs. We used natural language processing (NLP) tools such as a morphological analyzer and a syntax analyzer for error analysis and to give feedback to the learner. Furthermore, we propose a mechanism of correction by the learner, which allows the learner to correct the typed sentence independently. This will result in the learner being able to figure out what the error is. Examples of error analysis and error handling will be given and will illustrate how the system works.

1 Introduction

Computer-assisted language learning (CALL) addresses the use of computers for language teaching and learning. CALL emerged in the early days of computers. Since the early 1960's, CALL systems have been designed and built. The effectiveness of CALL systems has been demonstrated by many researchers [6, 7]. More than a decade ago, Intelligent Computer-Assisted Language Learning (ICALL) started as a separate research field, when artificial intelligence (AI) technologies were mature enough to be included in language learning systems. The beginning of the new research field was characterized by intelligent tutoring systems (ITS), which embedded some NLP features to extend the functionality of traditional language learning systems. The continuous advances in ICALL systems have been documented in several publications [2, 3, 5, 9].

One of the weaknesses of current Arabic ICALL systems is that learners cannot key in Arabic sentences freely. Similarly, the system cannot guide the learner to correct the most likely ill-formed input sentences. The learner just accepts the information,