**The Contribution of Morpho-Orthographic Knowledge in Arabic to the Spelling of New Words by Regular Second through Sixth Grade Students**

**Abstract**

Numerous studies have examined different aspects of the development of reading among both strong and struggling students. However, relatively little attention has been devoted to the development of morphology and morpho-orthographic knowledge, and to the contribution this knowledge makes to the spelling of words and nonwords. Accordingly, the present study seeks to examine the contribution of morpho-orthographic knowledge to the ability to spell words in Arabic. It examines how this knowledge about word patterns promotes precision in spelling words derived from the same pattern.

In accordance with the Israeli Education Ministry’s curriculum for Arabic-speaking first and second graders, these students learn about roots and word patterns, and how to apply words to the basic verbal patterns. In third grade, students begin to identify the base letters in the root and in the verbal patterns. By fourth grade, they are able to identify roots in the past tense forms, represented orthographically by three to five consonants, and they expand their knowledge about the common graphemes shared by various written words. In sixth grade, the students acquire knowledge about forming word patterns from verbs and nouns.

The present study included 127 elementary school students, from second through seventh grade, whose mother tongue is Arabic and who do not suffer from any intellectual or sensory disorder or from any learning disability. During the study, the students were asked to spell 60 words belonging to six existing morphological patterns in the Arabic language: اِسْتَفْعَلَ, ستِفعال, مُسْتَفعِل, يَسْتَفْعِل, مَفْعَلَة, and فَعَّالة. Each pattern included 10 words. The basic research hypothesis was that the spelling of words based on familiar patterns would be more accurate than the spelling of words based on unfamiliar patterns. Regarding the pattern اِسْتَفْعَلَ, the study showed that mistakes in the spelling of words based on this pattern became less common as the participants’ age rose. Students in the fifth and sixth grades were able to spell words based on this pattern more accurately than those in the second to fourth grades. This finding shows that the exposure of the students to the pattern اِسْتَفْعَلَ increased in the fifth grade, and that the ability to spell words based on this pattern improved with age.

Similarly, when the students were asked to spell words derived from the patterns

مُسْتَفعِل and يَسْتَفْعِل, it also emerged that their ability improved with age. Accordingly, we can conclude that there is an increasing tendency to rely on morpho-orthographic analogy in spelling words, thanks to the enhanced exposure to morphological and orthographic knowledge.

As for the spelling of words based on the patterns مَفْعَلَة and فَعَّالة, the research showed that the students’ ability increases significantly from the third grade, alongside growing exposure to this pattern. This finding confirms the assumption that the spelling of words according to a pattern acquired at a relatively advanced age will be more accurate as the age increases. The study also found that fourth-grade students were more accurate in spelling words based on the above-mentioned patterns than those in other grades. In addition, it was observed that students in the sixth and seventh grades were more accurate than those in the second and third grades in spelling words based on these same patterns. The poorer performance of the younger students in spelling words based on the patterns مَفْعَلَة and فَعَّالة was due to their inadequate exposure to these patterns. Accordingly, the reliance of the second- and third-grade students on morphological knowledge was weak, in contrast to the students from the fourth to seventh grades, who performed better due to their exposure to these patterns.

The above findings show that the ability to spell improves with age, based on both morphological and orthographic knowledge. The research also showed that the acquisition of morphological knowledge, which is important to the understanding and proper spelling of words, also improves lexical, structural, and formal knowledge.

The research findings further show that the storage of morphological patterns in the memory contributes to students’ success in the proper spelling of new words to which they have not previously been exposed in the Arabic language. The exposure to the patterns helps the students to develop **covert** knowledge about morphological patterns, due to their exposure to words formed according to these patterns – even when they have not been overtly exposed to learning about these patterns. Accordingly, common orthographic patterns will be spelled correctly from an early age.

The main conclusion of this study is that prior exposure to morphological patterns enriches both the morphological lexicon and the orthographic lexicon, enhancing the ability to spell correctly.