Characteristics of early spelling errors in Arabic: The impact of visual-orthographic features

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Early spelling acquisition research has traditionally focused on universal aspects such as phonology and morphology, particularly within European alphabetic writing systems. However, recently, a growing body of researchers has begun to emphasize the significance of writing system-specific dimensions and the challenges that they may pose for young spellers (e.g., Daniels & Share, 2018). The current study aimed to explore the impact of Arabic's unique visual-orthographic features, along with other universal factors, primarily phonology, on early Grade 1 spelling performance. The visual-orthographic features include (i) *the similarity of the basic letter forms*; (ii) *ligaturing*, where most of the letters within a word connect to adjacent letters; (iii) *allography*, refers to the variability of letter forms; (iv) *non-linearity*, characterized by the extensive use of diacritic-like signs (tashkil) predominantly placed above or below letters; and (v) Letter formation reflects the complexity of letter construction, where certain letters comprise several essential components necessary for accurate formation.

The study delved into spelling errors in a structured word dictation task among a representative sample of 124 Arabic-speaking first graders. Spelling errors were analyzed according to six error categories: *Visual-orthographic*, *phonological, lexical*, *distortion, orientation, and other* error categories. The results showed that while phonological errors were the most common, with around 70% of the children committing one or more phonological errors, visual-orthographic errors ranked second, with almost 50% of the sample making one or more visual-orthographic errors on the set of eight test words. These findings provide compelling evidence of the dimensions of writing system complexity in Arabic, which have been relatively overlooked in spelling research. They also highlight the significant role of visual-orthographic features in mastering basic spelling skills alongside the essential phonological knowledge required, especially in the early stages of literacy acquisition.

Daniels, P. T., & Share, D. L. (2018). Writing system variation and its consequences for reading and dyslexia. *Scientific Studies of Reading*, *22*(1), 101–116.