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Using the keyword method in the classroom: Is the interacting imagery necessary?

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A B S T R A C T

The Keyword Method (KWM) is one of the most extensively researched methods used in foreign language vocabulary learning. However, evidence for its successful classroom application is limited and research results are mixed. This paper reports two experiments using a simple teacher-friendly procedure in which assessment of the KWM on Romanian speaking subjects was used for the first time. Results indicate that showing simultaneously a picture for a new L2 vocabulary word and one for the keyword increases retention, even when pictures show no interaction of keyword and target word meanings when applied in elementary (studies 1 and 2) and middle school classrooms (study 2). The outcome of this research may benefit teachers and support immediate and long-term efficiency of the KWM.

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1. Introduction

The Keyword Method (KWM) is one of the most extensively researched methods used in foreign language vocabulary learning. Initially introduced by Atkinson and Raugh (1975), the method was developed to facilitate learning of new content words by establishing an acoustic and an imagery link between a new word and a familiar one. With this two-step method, the learner initially associates the sound(s) or look of the new word spoken in a foreign language with the sound(s) or look of a familiar keyword spoken in a native language, creating an acoustic or orthographic link. Then, a mental image (the imagery link) is formed that connects the meaning of the new foreign language word with the image of the keyword. For instance, when English speaking students need to remember that *pain* (new word) is the French word for bread, they can imagine a loaf of bread in a *pan* (keyword). Interacting pictures can also be provided to facilitate visualization.

Evidence for the efficiency of the KWM has been shown in a variety of learning circumstances. The successful implementation of the method for foreign vocabulary learning has been demonstrated for young children (e.g. Avila & Sadoski, 1996; Elhelou, 1994; Pressley, 1977; Wyra, Lawson, & Hungi, 2007), teenagers (e.g. Rodriguez & Sadoski, 2000), adults (e.g. Atkinson & Raugh, 1975; Beaton, Gruneberg, Hyde, Shufflebottom, & Sykes, 2005; Sagarra & Alba, 2006; Shapiro & Waters, 2005), and the elderly (e.g. Gruneberg & Pascoe, 1996). The KWM has been shown to be equally effective for good and poor vocabulary learners (Pressley et al., 1980); it has also proven efficient in teaching abstract vocabulary to students with learning disabilities (Mastropieri, Scruggs, & Fulk, 1990), teaching simple sentences in a foreign language (Kasper & Glass, 1988), on teaching science concepts (Rosenheck, Levin, & Levin, 1989), teaching the names of state capitals (Levin, Shriberg, Miller, McCormick, & Levin, 1980), or in teaching facts such as names and accomplishments of people (Shriberg, Levin, McCormick, & Pressley, 1982). The KWM has also been used to facilitate learning of a variety of foreign languages. Most experiments have focused on English speaking subjects learning Spanish (e.g. Sagarra & Alba, 2006; Wyra et al., 2007).

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The method has also been applied on subjects speaking or learning other languages such as Russian (Atkinson & Raugh, 1975), German (Desrochers, Wieland, & Cote, 1991), Dutch (Van Hell & Mahn, 1997), Tagalog (Thomas & Wang, 1996), Chinese (Wang & Thomas, 1992), Arab (Elhelou, 1994), Latin (Shapiro & Waters, 2005), and Italian (Hogben & Lawson, 1994). No studies have yet investigated the application of the KWM on Romanian-speaking subjects.

Despite the large body of research attesting to the advantages of the KWM, its utility and effectiveness have been questioned on several occasions. For instance, Hall, Wilson, and Patterson (1981) show that free study can produce results superior to the KWM when applied to college students. Hall (1988) also argues that the KWM's efficiency can be influenced by items' characteristics, and cautions that, depending on circumstances of the study, the KWM can lead to poorer performances when it is used as the exclusive vocabulary learning method. Wang and Thomas (1995) indicate that, unless it benefits from repeated testing and rehearsals, the KWM becomes fragile over time and its long-term effectiveness can be questioned. Other studies (Hogben & Lawson, 1994; Van Hell & Mahn, 1997; Willerman & Melvin, 1979) indicate that the KWM can produce similar or inferior results compared with traditional learning methods (rote learning), and that experienced language learners benefit less from the KWM than the inexperienced learners. Some authors (Beaton et al., 2005; Wyra et al., 2007) help to explain the contradictory results by pointing out that critics have used different procedures, testing protocols, and item characteristics than the studies supporting the KWM.

1.1. The KWM in the classroom

Although research on mnemonics has shown their effectiveness, there is little evidence of their use by foreign language teachers and/or learners. For instance, a survey conducted among about 10,000 foreign language teachers from Western Europe and North America indicated that only 2% of them used any kind of mnemonics in their lessons (Sperber, 1989), while O'Malley, Chamot, Stewner-Manzanares, Küpper, & Russo (1985) showed that less than 1% of beginning and intermediate English as a Second Language learners use keywords.

Of the large number of studies on the KWM, only few have investigated its classroom utility specifically, and their reports have been mixed as well. Kasper (1993) shows that the KWM could be used efficiently in a classroom and argues that it needs to be treated as a tool to help students succeed as foreign language learners by helping them to learn a large number of content words in a short time and by facilitating the transition from individual vocabulary to its application in sentences. Campos, González, and Amor (2003) indicate that the KWM is less effective than rote learning when applied to adolescents and adults in classroom settings. Their findings are consistent with those of Levin, Pressley, McCormick, Miller, and Shriberg (1979), who find that the KWM does not work well when applied in high school classrooms but can have significant positive effect when applied to elementary school classrooms. Authors have also found that inexperienced high school learners can benefit more from the KWM than their more experienced peers. Positive results on the KWM's classroom performance are reported by Avila and Sadoski (1996), who show that the KWM is superior to the traditional method when applied to elementary school children (5th graders) and when teachers provide students pictures with interactive images. Rodriguez and Sadoski (2000) use a combination of the KWM with context learning (inserting foreign language words in sentences written in native language) on adolescents in foreign language classrooms. The results of the combination in the KWM/context are superior to rote rehearsal, context learning, and the KWM individually.

The studies above suggest that the KWM's successful application in the classroom context needs to be regarded with caution, and that the KWM can be efficient especially if applied to elementary school children and when interacting pictures are used. However, use of the latter in the classroom context can have its limits. The first would be the unavailability of the KWM interacting pictures that are needed for each lesson and need to be adapted to the specific curriculum. Second, assuming the sets of interacting pictures are available, purchasing those instruments would represent an extra expense for the classroom materials funds, which can be limited as well. Third, teachers would need both time and artistic skills to draw the two interactive pictures themselves, which would dramatically reduce the number of teachers both willing and able to do so.

1.2. Present study

This paper does not question the benefits of facilitating a visual link between the new word and the keyword, as originally proposed by Atkinson and Raugh (1975). Creating a visual link would require deeper cognitive processing, which would consequently result in a better retention of the new words. At the same time, as mentioned above, producing an interactive picture to facilitate the development of a visual link might be challenging for classroom teachers. Thus, this paper aims to clarify the necessity of displaying an interacting picture representing the two words. Although not emphasizing the image link would probably diminish the KWM's positive impact on retention, avoiding the necessity of interacting pictures would simplify the teacher's job significantly. The teacher would thus simply access a pool of clip art or an on-line picture gallery, and show students two pictures representing the new word and the keyword simultaneously.

In order to assess whether the KWM is still efficient when diminishing the impact of a major component (image interaction), three variables were considered:

1.2.1. *Imagery value*. Given the fact that visual stimuli usually produce strong memories (Shepard, 1967; Standing, 1973), and considering the advantages of dual coding in learning (Paivio, 1971), it can be argued that the efficiency of the KWM can