Chapter 2  
Annotating Abstract Vocabulary Using Multimedia  

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ABSTRACT

This chapter reports a research study that investigated the effectiveness of multimedia vocabulary annotations (MVAs) in facilitating acquisition of second language (L2) abstract vocabulary. Twenty-one collegiate L2 students read a hypermedia passage that contained marginal MVAs for eighteen unknown abstract words. Their knowledge of these words was assessed immediately after the reading activity and twelve days afterwards. The quantitative data from vocabulary assessments indicated that these students neither acquired more vocabulary knowledge nor retained this knowledge better by using MVAs than using traditional text-only annotations. The qualitative data collected from two questionnaires suggested that the participants had applied various strategies for assessing MVAs and they had encountered certain difficulties in understanding the visuals. The results are interpreted based on multimedia learning and visual perception theories. The implications of the results for designing multimedia L2 reading and listening materials are discussed.

INTRODUCTION

There is common consensus that L2 learners acquire a considerable amount of vocabulary knowledge through comprehension-focused reading and listening tasks (e.g., Horst, Cobb, & Meara, 1998; Krashen, 1989) and that providing them with accessible textual annotations in various formats (e.g., L1 or L2, single or multiple-choice, word-level or sentence-level) further enhances the likelihood of this incidental vocabulary acquisition (e.g., Hulstijn, Hollander, & Greidanus, 1996; Watanabe, 1997). With rapid advances and increased accessibility of computer technology in the last two decades, multimedia vocabulary annotations (MVAs) began to be incorporated in the design of computer-mediated L2 reading and listening materials. A large body of research has investigated the efficacy of such multi-modal annotations for L2 vocabulary acquisition. Generally, it was found that MVAs outperformed text-only annotations in promoting L2 vocabulary learning (Mohsen & Balakumar, 2011; Xu, 2010). A plausible
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and well-accepted interpretation of this finding is that vocabulary knowledge that is encoded in dual modes (both verbal and visual) in the mental lexicon is more efficiently retrieved than that encoded in a single mode (verbal only).

Nevertheless, the target words in the above-mentioned MVA studies were mainly highly concrete items that can be easily visualized and vividly remembered (de Groot & Keijzer, 2000; Mayer, 2009). As compared to concrete words, abstract words do not have specific real-world counterparts and are therefore less likely to arouse mental images (Paivio, 1969). According to Xu (2010), it remains an open question as to whether word concreteness has certain impact on the efficacy of MVAs. Stated another way, we are unclear whether MVAs would still show advantages over textual annotations if the words being annotated solely convey abstract ideas.

To fill this gap, the present study investigated MVAs’ effectiveness in facilitating L2 learners’ incidental acquisition of abstract vocabulary in a hypermedia reading activity. The specific research questions are stated as below:

1. Does the mode of vocabulary annotations have an effect on incidental acquisition of L2 abstract vocabulary?
2. How do L2 learners process multimedia information during reading and what are their opinions on MVAs’ helpfulness and effectiveness for vocabulary learning?

LITERATURE REVIEW

Studies on the Effectiveness of MVAs for Incidental L2 Vocabulary Acquisition

The research on MVAs began approximately in the mid-1990s. Chun and Plass (1996) conducted three pioneering studies with 160 university L2 German learners to investigate the effectiveness of different modes of annotations—first language (L1) text, L1 text plus picture, and L1 text plus video—for incidental L2 vocabulary acquisition. In these studies, the learners read a German story via a multimedia application that permitted them to look up difficult words in any of the three modes. Meanwhile, their look-up behaviors were recorded by the application. By assessing these learners’ post-reading vocabulary knowledge and associating the test results with their look-up behaviors, the researchers concluded that dual-mode annotations were overall more effective than single-mode annotations and that text plus picture seemed to be the optimal mode.

A series of studies that followed in the footsteps of Chun and Plass confirmed the advantages of MVAs over text-only annotations. In a study performed with thirty English as a second language (ESL) learners, Al-Seghayer (2001) found that the learners achieved higher vocabulary growth by utilizing multi-modal annotations than text-only annotations. Further, the researcher concluded that text plus video was the most effective mode as it “better builds a mental image” and “better creates curiosity leading to increased concentration” (p. 202).

Kost, Foss, and Lenzini (1999) tested the effects of three annotation conditions (L1 text plus picture, L1 text only, and picture only) on incidental vocabulary acquisition. Fifty-six L2 German learners were instructed to read a printed passage and were randomly assigned to one of the annotation conditions. The study found that the group that received dual-mode annotations performed reasonably better in both immediate and delayed vocabulary posttests than the other two groups that received single-mode annota-