Chapter 1

Effects of Annotations on Inferring Meaning within a Listening Comprehension Environment

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ABSTRACT

In this chapter, the author analyzes students’ abilities to understand aural texts while accessing annotated information in a multimedia-based environment. In particular, the study examines inferencing in the aural environment and students’ abilities to infer meaning from an aural text when processing it in one of four treatments: the aural passage 1) with no annotations; 2) with pictorial annotations only; 3) with written annotations only or; 4) with written and pictorial annotations. Overall, students who accessed pictorial and/or written annotations most often inferred meaning significantly better compared to those who did not access such annotations. And too, while the relationship of recall and inferencing was highly correlated based on annotation type, the relationship between vocabulary knowledge and inferencing based on annotation type was not strong.

INTRODUCTION

This current study focuses on inferring meaning from an aural passage presented in a computer-based multimedia environment that provides relevant keyword annotations. While studies have long addressed the influence of written and pictorial annotations on students’ learning (e.g., Abraham, 2008; Chun & Plass, 1997; Jones, 2003, 2004, 2006, 2009; Jones & Plass, 2002; Lin, 2010; Plass, Chun, Mayer, & Leutner, 1998, 2003; Yoshi, 2006), to date, how pictorial and written annotated information may help students infer meaning from aural comprehension activities in a multimedia environment has not been addressed.

DOI: 10.4018/978-1-4666-8499-7.ch001
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Inferencing is gap-filling, building bridges and ideas based on the aural content presented; it is an essential process that occurs when one constructs meaning from a text (Winne, Graham & Prock, 1993). Of central concern in this study is the interaction of a multimedia application, its design, and whether or not the presence or absence of pictorial and written annotations influence students’ abilities to demonstrate such inferencing from an aural passage. Utilizing the collected raw data from previous projects (e.g., Jones, 2003, 2004, 2006, 2009; Jones & Plass, 2002), this quantitative study provides a new, alternative examination of this data as it relates to inferencing. It examines how four progressively different multimedia treatments that provide varied access to annotations (pictorial and/or written or no annotations) might affect students’ inferencing and its relationship to recall and vocabulary knowledge. These treatments address the hypotheses of this study using a posttest/delayed posttest design. With regards to linguistic ability, the study examines: a) comprehension and inferred comprehension measured through immediate and delayed recall protocol tests; b) vocabulary acquisition measured through immediate and delayed vocabulary identification (multiple choice) or vocabulary production (translation) tests. The overarching premise is that access to both pictorial and written annotations will increase students’ ability to infer meaning and that such inferencing will positively correlate with vocabulary knowledge and explicit recall.

BACKGROUND

Inferencing is an essential component of reading and listening comprehension (Kintsch, 1998; Nassaji, 2003a, 2003b). Indeed, as an individual processes an aural text for comprehension, cognitive processing is well underway from the basic word comprehension level to the text level (Lepola, Lynch, Laakkonen, Silvén, & Niemi, 2012; Oakhill & Cain, 2007). It is in this later stage whereby an individual strives not only to understand vocabulary, but to make guesses to help understand the players, plots and motives of the text itself (Lepola et al., 2012; Oakhill & Cain, 2007). Thus, inferred meaning is developed when an individual fills in gaps where text is implicit and not explicit. This is different from lexical inferencing that entails guessing meanings of words while relying on context, world knowledge, and vocabulary knowledge (e.g., Haastrop, 1991; Hu & Nassaji, 2012; Nassaji, 2006).

Definitions of inferencing abound. Early on, Carton (1971) referred to it as a process whereby familiar contexts and attributes in a text are utilized to recognize the unfamiliar. More recently, it has been described as the construction of knowledge between concepts as one works to interpret the text (Brown & Yule, 1983; Nassaji, 2006). Chickalanga (1993) also spoke of the crucial nature of inferencing for filling in slots or gaps in comprehension. He researched the differences in inferencing ability between 8th graders and 10th graders and found that the ability to infer improves with age, and that such development coincides with exposure to the second language (L2).

More recently, Lepola et al. (2012) and Kendeou, Bohn-Gettler, White, and van den Broek (2008) have referred to inferencing as the process of identifying information not explicit in the text, integrating the information throughout the text itself, as well as with one’s prior knowledge. Kendeou et al. (2008), in particular, studied the number of recalled and inferred events from a listening comprehension activity to understand the extent to which students’ inferencing would generalize across different forms of media. Identifying inferred statements as those that did not reflect literal events in the narrative but yet