

# Using computer technology to make students better and more motivated readers

## SESSION

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## I. Abstract

*1. Contents of Presentation:* In recent years there has been growing recognition of the importance of 1) a four-skills approach to language learning, and 2) integrating culture into this approach. As a result, many teachers, faced with the difficult task of trying to fit more material into the same amount of class time, are exploring ways that technology can both reinforce learning outside of the classroom and make it more effective and motivating for students. This session will show how computer technology can be used to: 1) train students to become independent critical readers by promoting active learning; and 2) create enthusiasm for reading by providing rich cultural contexts for the texts.

*2. Method of Presentation:* We will show two reading tasks which have been designed for beginning and intermediate language courses. The texts will be a travelogue in German and a French literary text. We will demonstrate how cultural materials are integrated into pre-reading, reading, and post-reading activities, and how expansion activities link reading to the other three skills.

*3. Benefits for Participants:* Participants will learn that by using an inexpensive, user-friendly authoring program, teachers with relatively little technical knowledge can create exciting reading activities that integrate reading strategies and cultural materials. They will also learn how to select texts and design activities that meet both the specific needs of their students and curricula goals.

## II. Introduction

Whether we teach beginning language classes or advanced literature courses, we as instructors have all too frequently experienced the frustration of assigning a reading text as homework, only to have our students tell us at the next class meeting that they “didn’t understand it.” In recent years, a growing amount of research has focused on second- and foreign-language reading, and educators have found a variety of research-based strategies to help students become more effective readers. Yet several concerns still need to be addressed. Knutson has pointed out that while reading research has led to the development of some excellent pedagogical materials at the beginning and intermediate levels, this research has not yet been adapted to teaching materials at the more advanced levels. As a result, instructors of these courses still have few published resources upon which to draw (Knutson 12). However, even instructors well-versed in the latest research results have difficulty finding time to include adequate instruction in reading strategies in an already overcrowded syllabus. This paper will help solve such problems by indicating ways in which computer technology can improve the reading skills of students at all levels outside the classroom.

First, we will outline recent findings in first and second language (L1 and L2) reading research and the applicability of this research to teaching reading in the foreign-language classroom. Next, we will describe in detail two projects on the Macintosh which incorporate research-based reading strategies. Both are designed to make language students of German and French more effective, independent readers. Additionally, we will show how instructors can reduce the amount of time needed to prepare exercises by using user-friendly authoring software that can be adapted to a wide variety of texts and text types. Finally, we will discuss ways in which these interactive student-centered programs are successful, both in teaching students effective reading strategies and in helping them to become proficient, independent readers.

## III. Reading research

Recent L1 and L2 reading research has focused on reading as a dynamic process in which the reader interacts with the text to create meaning (Carrell and Eisterhold; Barnett 1989; Swaffer; Omaggio). According to this view, reading is a “meaning-constructing system” that readers use to try to understand a text by relating it to what they already know (Bernhardt 1986a: 26). The knowledge that readers bring to a text, or “reader schemata,” include: 1) familiarity with background schemata, i.e., the topic of the text as well as cultural biases and real-life experiences which readers bring to the text; 2) an understanding of formal schemata,

i.e., of how different text types are organized; and 3) knowledge of the linguistic code of the target language (Carrell and Eisterhold; Bernhardt 1984; Barnett 1989; Omaggio). To understand a text, then, it is not enough for the reader simply to know the meaning of each individual word in isolation; rather, comprehension “involves fitting the meaning of the message to the schema that one has in mind” (Omaggio 135). Readers who utilize background and formal schemata to make sense of a text use “top-down processing,” whereas students who rely on linguistic clues to decode a text use “bottom-up processing” (Carrell 1984b; Carrell and Eisterhold). Several studies have shown that proficient readers employ top-down and bottom-up processing simultaneously, drawing both on background and formal schemata as well as linguistic decoding, whereas less proficient students depend primarily on bottom-up processing (Carrell 1989; Barnett 1989; Koda).

### **Background Schemata**

According to theories of schema and interactive reading, comprehension occurs when readers are successful in activating schemata that logically match those of the text. In order to schematize, students must: 1) realize that they need to do so; and 2) be able to associate new meanings with the background knowledge they already possess (Swaffer 126). Pre-reading exercises and a thoughtful choice of texts have been shown to be very effective in helping students schematize, for a variety of reasons. First, pre-reading activities can provide students with a clear purpose for reading, without which they tend to read aimlessly, fail to schematize, and, as a consequence, often misread the text (Swaffer). Pre-reading activities can also increase student comprehension and recall by bringing up their background knowledge, helping them anticipate the content of the reading, and encouraging them to make predictions (Bernhardt 1984; Carrell 1983; Carrell 1984b; Barnett 1989; Swaffer). Choosing topics familiar to readers can also increase comprehension, since the more readers know about a topic the more likely it is that they will bring up appropriate schemata. In fact, research shows that topic familiarity is the single most important factor in determining student comprehension and can make up for linguistic difficulty, especially at the beginning level (Bernhart 1986; Swaffer). When students are dealing with topics which are unfamiliar or cultural-specific, pre-reading activities can provide them with the necessary background and cultural information to allow them to activate appropriate schemata (Barnett 1989; Carrell and Eisterhold; Omaggio). Based on a study of students in German, Bernhart stresses the importance of providing activities and background information before

students read the text, since an initial inappropriate choice of schemata can cause the reader to completely distort the text’s meaning (1986a: 26–27).

### **Formal Schemata**

In addition to background schemata, knowledge of formal schemata also plays an important role in comprehension since the organization of a text is closely tied to “our awareness of why the text has been written, that is, its communicative function” (Wallace 34). L1 reading research has found that comprehension and recall of texts increased significantly when students understood text structure and the function of its components (Thompson; Cook and Mayer; Baker and Brown). Conversely, in a study of English as a Second Language (ESL) students, Carrell found that when a text’s organization did not match readers’ expectations, comprehension decreased (1984a). Moreover, she found that students’ comprehension increased when they were given training in recognizing and understanding the organization of different text types (1985).

### **Linguistic Code**

While students can compensate for linguistic weaknesses by using top-down processing techniques (activating background and formal schemata), a certain level of linguistic knowledge is nevertheless necessary for deep processing of a text, especially at the intermediate and advanced levels. As Barnett points out, readers will be unable to activate appropriate background schemata if they do not understand which schema is relevant to the reading (1989: 112). Furthermore, when readers possess limited control of the language, their efforts tend to be directed toward understanding unfamiliar words rather than deciphering the meaning of the text. As a result, even students who possess good reading strategies in L1 often revert to poor strategy use in L2, and fail to get past surface language to use higher-level interpretative skills in L2 (Clarke). Studies indicate, however, that providing students training in inferring lexical meaning from context, in recognizing cognates, suffixes, prefixes, compounds, word families, grammatical function, and discourse connectors, all increase students’ receptive vocabulary acquisition and reading comprehension (Barnett 1988; Carrell 1984b; Swaffer; Kern).

### **Reading Strategies**

Recent research in L1 and L2 learning and reading comprehension has made the reader its focus, recognizing the unique thinking processes, background and formal schemata, and linguistic knowledge that each brings to the text. One finding of this research is that few high school or university students, however intelligent, are criti-

cal readers in their native language or possess adequate learning strategies (Baker and Brown; Brown, Bransford, Ferrara, and Campione; Cook and Mayer). Reading research has also established that many students do not transfer the reading and analytical strategies they have acquired from one (con)text to another (Brown, Bransford, Ferrara, and Campione; Chamot and Kupper; Thompson; Baker and Brown). Students often fail to see, for example, that many of the same strategies can be used whether reading in a foreign or in their native language, whether reading ads, newspaper and magazine articles or literary texts in a foreign language. On a more encouraging note, much L1 and L2 research suggest that training in reading strategies can significantly increase reading comprehension (Baker and Brown; Brown, Bransford, Ferrara, and Campione; Brown, Campione and Day; Palinscar and Brown; Barnett 1988; Carrell 1985; Carrell 1989; Casanave; Kern). However, it has also been shown that instructors must make it very clear how strategies will help since students are more likely to use strategies if they understand their value (Brown, Bransford, Ferrara, and Campione; Baker and Brown; Carrell 1989; Chamot and Kupper; Thompson; Oxford; Wenden). As Baker and Brown point out, students “who receive only instruction in the skills often fail to use them intelligently and on their own volition because they do not appreciate the reasons why such activities are useful, nor do they grasp where and when to use them. Adding instruction in ‘awareness,’ or knowledge, about a skill’s evaluation, rationale and utility greatly increases the positive outcomes of training studies” (380).

As to which skills we need to teach our students in order to help them become independent, critical readers, L1 and L2 research has again been helpful. It has found that effective readers: 1) read with a purpose; 2) use any background knowledge they may have; 3) are able to identify text structure and use it as a means to increase their comprehension of it; 4) are able to locate main ideas; 5) are motivated and interact with the text; 6) self-monitor their comprehension; and 7) understand the relevance of the strategies they use for increasing comprehension and the transferability of these skills (Baker and Brown; Barnett 1989; Bernhardt 1986b; Block; Brown, Bransford, Ferrara, and Campione; Carrell 1989; Cook and Mayer; Goodman; Nunan). How, then, do we as instructors help our students acquire these skills?

#### **IV. Classroom applications**

Barnett suggests a “lesson plan” for teaching reading, similar to that proposed by Phillips, which includes four steps: pre-reading, reading, post-reading, and follow-up activities (Barnett 1989). Barnett’s pre-reading activities are designed to: 1)

activate relevant background and formal schemata; 2) encourage students to predict content; 3) give necessary cultural information; 4) stimulate student interest; and 5) provide them with a purpose for reading the text. Activities that Phillips and Barnett suggest include: brainstorming about ideas and vocabulary that will likely appear in the text; using titles, photos, and graphics to predict text topic and activate background knowledge; developing vocabulary through semantically-based activities; reviewing text types to help students identify text structure; practicing skimming and scanning (in order to activate reader background knowledge, identify text type, and locate main ideas); and encouraging students not to read word for word.

Barnett’s reading exercises help students acquire reading strategies, improve their command of the linguistic features of the target language, and decode difficult passages. Recommendations for the reading step include activities to: 1) help students learn to infer word meanings from context; 2) give them practice in recognizing cognates, prefixes, suffixes and word families, grammatical structures, and function words; and 3) teach them when and how to use a dictionary effectively.

The purpose of Barnett’s post-reading exercises is to verify that students have understood the text. Types of comprehension check activities will vary, however, depending on the text type and the amount of comprehension required by the reading objectives the instructor has established. For example, Barnett points out that one reads classified ads in order to buy or sell something, a bus schedule to see bus arrival and departure times, and a short story for pleasure or to gain a new perspective on life (135). As a result, comprehension activities should reflect these various reading purposes.

Barnett’s follow-up activities provide students with opportunities to go beyond the text either by learning strategies that they can then apply to other texts, and/or by developing student creativity and “high order thinking skills” (Bloom). To help students learn to transfer strategies from one text to another, Barnett suggests that instructors provide follow-up readings to which previously learned strategies can be applied (140). Follow-up activities also encourage students to think creatively and critically about what they have read. Such activities might include comparing one’s own point of view with that presented in the text, recreating the theme of a story in a new context, writing on a topic from a variety of points of view, and recreating the theme of the text in a different literary or art form, to name but a few.

## V. High-tech interactive learning on a low-tech budget

This session will show how instructors can develop exciting interactive reading activities based on sound pedagogical research that are enjoyable, engaging, and stimulating for the student, using relatively inexpensive and user-friendly technology. We will explain how to produce and show examples of two interactive learning activities: 1) Videotaping, digitizing, and designing task-based activities with students as the “start” – that can be placed on a hard drive or server for use either in the “language learning center,” computer labs, or on a campus-wide network; 2) designing activities for using digitized slides, realia, and short segments of movies (with permission for educational use) Participants will learn how to produce high-tech reading activities on a low-tech budget, and will receive a handout with samples of task-based activities using digitized materials.

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