

Chapter 8

Technology and Second Language Learning: Developmental Recommendations for Early-Childhood Education

Nathan E. Ziegler

The University of Toledo, USA

Florian C. Feucht

The University of Toledo, USA

ABSTRACT

Technology is often viewed as a necessary component for the facilitation of learning, especially for second language learners in early-childhood education. However, integrating technology in the classroom is a difficult task. The existing literature often does not bridge the fields of technology, second language learning, and cognitive development in childhood. Therefore, the goal of this chapter is to develop a theoretical framework stemming from a critical literature review of conceptual and empirical works as they pertain to technology, second language learning, and cognitive development. This framework is used to describe conceptual issues and to identify educational implications for the use of technology in the second language classroom in early-childhood education. Furthermore, the chapter concludes with educational, conceptual, and methodological implications as they pertain to technology research and development in early second language classrooms.

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INTRODUCTION: MR. JOHNSON'S LESSON

Sitting in front of brand new computers in the computer lab of a modern language school in South Korea were 30 bright eyed 7 year old English second language learners. Once the teacher, Mr. Johnson, settled the students down and got an internet web-browser running on each computer, he began his lesson plan. Previously, Mr. Johnson had taught the students the different state capitals of the United States in a history lesson designed to teach content-specific information in a second language. The learners had prior experience with learning English. They knew basic vocabulary, could ask questions about content, but they had trouble reading longer texts that consisted of much more complex meaning than statements such as "The chair is yellow" or "Hello, my name is Jin". Nevertheless, the teacher had two goals for this lesson plan. First, Mr. Johnson wanted to teach the students about the political geography of the United States. That is, there are 50 states that make up the United States. Additionally, Mr. Johnson wanted to teach the students about population size, capitals, and state flags. Mr. Johnson also wanted the students to explain their understanding of one state that they researched on the internet to the class. In the input section of the lesson plan, Mr. Johnson used two states as examples to help show the differences of the flags, populations, and capitals of each state. After the introduction phase, the teacher wanted to have the students research the states using the internet in the computer lab.

In the computer lab, the learners began searching the Internet for information on the states. Mr. Johnson had to focus much of his energy on keeping the students from using Korean websites to find the information. Throughout the class period, the learners became confused and began to play computer games instead of searching for the information regarding the state of their choice. Eventually, the teacher grew weary and frustrated and searched for the information for the students.

Something went wrong. The type of technology that was used by Mr. Johnson was inappropriate for the early-childhood learners. Why did the students become so confused during the activity? Why did this part of the lesson plan seem to fail? What could he have done to use this type of technology more successfully?

In the following chapter, we will answer the following questions by looking at technology in the second language classroom from a developmental and methodological perspective. First, we establish a theoretical framework (see Figure 1) that looks at the relationship between cognitive development, second language teaching methods, and technology. More specifically, the framework aligns the different teaching methods and technology with Piaget's four level of cognitive development. To be used as a rubric, its purpose is to assist second language teachers in an early-childhood classroom in designing developmentally appropriate lesson plans with technology. Finally, we look at possible reasons why Mr. Johnson's lesson plan appeared problematic and suggest computer-based concept mapping as a more appropriate solution to working with technology in this teaching vignette. By the end of this chapter, it is our hope that teachers will be able to bypass some of the difficulties that Mr. Johnson faced in his lesson plan and for researchers to consider the framework to guide their study of second language learning.

Objectives

After reading this chapter the reader will have a better understanding of the interactive relationship between cognitive development, second language teaching methods, and technology. The reader will gain knowledge about why second language education is important to cognitive development and how language develops. The reader will:

- Identify the relationships between Cognitive Development, Second Language Methods, and Technology

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