Chapter 70
Technology to Facilitate the General Education Curriculum

Cindy K. Sherman
University of Maryland, College Park, USA

Susan De La Paz
University of Maryland, College Park, USA

ABSTRACT

Information and Communication Technology is becoming an essential learning tool for teachers and students in the classroom. The use of Information and Communication Technology scaffolds learning in a pedagogically meaningful way and gives students with learning disabilities more equal opportunities in school. This chapter discusses ways in which Information and Communication Technology benefits students with special educational needs, both academically and socially. Various computer applications create greater possibilities for inclusion by fostering collaborative learning and enhancing peer interaction. New technology also allows students more autonomy in the writing process and helps students develop historical thinking skills.

INTRODUCTION

This chapter highlights specific applications in which Information and Communication Technology has been used to support students with special education needs. The use of Information and Communication Technology has been shown to scaffold student learning in a pedagogically meaningful way and has given students with learning disabilities more equal opportunities in school (Lipponen & Lallimo, 2004; Mavrou, Lewis, & Douglas, 2010). Use of several computer applications has led to greater possibilities for inclusion by fostering collaborative learning and enhancing peer interaction (Gillies & Ashman, 2000; Mavrou, Lewis, & Douglas, 2010). For students with more severe learning problems, Information and Communication Technology provides exploratory environments for learning that may otherwise not be available (Florian &

Hegarty, 2004). Recent examples of Information and Communication Technology that have been beneficial for students with special educational needs will be reviewed in this chapter.

NARRATIVE ANALYSIS

Faux (2005) investigated ways in which middle school students with special educational needs used an Information and Communication Technology multimedia environment to produce stories. This author used a multimedia authoring software (*TextEase2000*) to assist students in their writing. Instruction was divided into two phases. Each phase consisted of six lessons:

1. Overview of the software and developing a resource bank,
2. Making collages to be used in the story,
3. Learning to use a scanner,
4. Video-recording acting and importing video clips into the software,
5. Adding components to the resource bank and starting the story, and
6. Completing the story.

The purpose of the first phase was to teach students how to use the software. Thus, activities were based on work with which the students were familiar (i.e. *Beowulf* and *The Pied Piper*). During the second phase students were asked to write their own stories based on the theme of "finding things." Students were asked to develop their own resource bank before writing their story. Disposable cameras were distributed and a story plan was provided to help students map out their ideas. Checklists were also provided to ensure that students considered all available multimedia components. The results of this study indicated that while two of the three students found it difficult to move away from a traditional way of writing, they were able to take advantage of certain aspects of the multimedia approach to create an interac-

tive story or convey the genre. The third student relied entirely on the multimedia approach; this child used multimedia as a narrative device to develop an interactive story. Because the program offered written, aural, and pictorial representations, students were able to capitalize on their areas of strength. Faux's research suggested that the multimedia software allowed students to create high-quality presentations, and contributed to students working more autonomously. She also found the software to be effective in scaffolding instruction, particularly in relation to spelling. In the end, the use of Information and Communication Technology enabled students to experience using language for information-giving purposes--modeled and scaffolded by the teacher/researcher--which consequently augmented their thinking and learning.

Bouck and colleagues (Bouck, Okolo, Englert, & Heutsche, 2008) examined the relationship between a Web-based instructional environment and the cognitive apprenticeship of students with special educational needs into the discipline of history. The authors developed the Virtual History Museum, a Web-based history-learning environment that uses the metaphor of a museum, in which teachers and students take on the roles of curator, members, and guests (Okolo, 2006). As museum curators, teachers select artifacts and create their own exhibits in the Virtual History Museum. Artifacts include primary and secondary sources, written documents, images, sound clips, and video. Students are then given the opportunity to respond to each exhibit in activity settings based on the analysis and interpretation of the exhibit (Bouck, Courtad, Heutsche, Okolo, & Englert, 2009). Bouck and colleagues (2008) examined the impact of the Virtual History Museum with middle school students with high-incidence disabilities. Two history units were created within the Virtual History Museum. Students experienced the exhibits, teachers facilitated student discussion, and students were asked to complete activities based on their interpretations and synthesis of

Related Content

Listening to Images: Exploring Alternate Access to a Digital Collection
Kathleen C. Lonbom (2014). *Assistive Technologies: Concepts, Methodologies, Tools, and Applications (pp. 1571-1579).*
www.irma-international.org/chapter/listening-to-images/80689

Hedonic Utility Scale (HED/UT) Modified as a User Experience Evaluation Method of Performing Talkback Tutorial for Blind People
Eduardo Emmanuel Rodríguez López, Jean Sandro Chery, Teresita de Jesús Álvarez Roblesand Francisco Javier Álvarez Rodríguez (2020). *User-Centered Software Development for the Blind and Visually Impaired: Emerging Research and Opportunities (pp. 62-77).*
www.irma-international.org/chapter/hedonic-utility-scale-hedut-modified-as-a-user-experience-evaluation-method-of-performing-talkback-tutorial-for-blind-people/231082

Mental Health, Post-Secondary Education, and Information Communications Technology
Jenny Martinand Elspeth McKay (2014). *Assistive Technologies: Concepts, Methodologies, Tools, and Applications (pp. 1209-1226).*
www.irma-international.org/chapter/mental-health-post-secondary-education-and-information-communications-technology/80669

Effective Physical Rehabilitation System
Yee Mon Aungand Adel Al-Jumaily (2016). *Virtual Reality Enhanced Robotic Systems for Disability Rehabilitation (pp. 180-197).*
www.irma-international.org/chapter/effective-physical-rehabilitation-system/143482

Integrating Virtual Worlds and Mobile Robots in Game-Based Treatment for Children with Intellectual Disability
Franca Garzottoand Mirko Gelsomini (2016). *Virtual Reality Enhanced Robotic Systems for Disability Rehabilitation (pp. 69-84).*
www.irma-international.org/chapter/integrating-virtual-worlds-and-mobile-robots-in-game-based-treatment-for-children-with-intellectual-disability/143476