Constructing Technology Integrated Activities that Engage Elementary Students in Learning

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INTRODUCTION

This article presents four **technology-integrated** activities that engage elementary students in learning. These **educational technology** activities were designed to be easily duplicated and modified by teachers for their students. The constructivist framework of the activities motivates students to be creative and to use problem-solving skills. Most of the technology-integrated activities were developed using the Internet and/or Microsoft programs that are commonly available, such as MS Word (2007), MS Excel (2007), and MS Paint (2001).

The **curriculum-designed** activities integrate technology into a variety of subject areas; mathematics, science, art, social studies, and language arts. The technology activities included are Playing Musical Computers with Creative Writing; What's the Connection?; Be an Artist, Paint a Picture-Story; and Where in the World is…? Each technology-integrated activity includes a description, an illustrated example of the activity, engaging activities for student to construct their learning, and ideas for presenting and sharing the projects.

BACKGROUND

All of the **technology-enhanced learning** activities were developed using the constructivist learning theory. Vicki Sharp (2002) explains that **constructivism** evolved from the work of developmental theorists such as Jerome Bruner, Jean Piaget, Lev Vygotosky, and Seymour Papert. Constructivism is based on the theory that students build their knowledge through the process and completion of various activities. The research by Huba and Freed (2000) supports the theory that students learn through construction of their knowledge, not by receiving knowledge from others. Therefore, the constructivist theory can provide the guidance for our teaching.

There are a variety of methods of developing constructive activities, but Rakes, Fields, and Cox (2006) believe that technology-enhanced instructions can play a vital role. Shelly, Cashman, Gunter, and Gunter (2004) also noted that technology provides opportunities for teachers to develop a constructivist learning environment. The students in a constructivist environment are provided with the opportunities and tools to construct their knowledge.

Seymour Papert (1993), an MIT professor that worked with Jean Piaget, believes that students should be the creators rather than the consumers of knowledge. Even in the early years of the computers, Papert encouraged educators to utilize the computer as a tool for students to use in their learning process.

MAIN FOCUS: TECHNOLOGY INTEGRATED ACTIVITIES

Playing Musical Computers Creative Writing Activity

Playing Musical Computers Creative Writing activity was developed for **teacher education** and in-service programs, and has proven to be an effective way for teachers to begin integrating technology into their curriculum. This activity is comprised of two parts: picture selection and creative writing. Students begin this activity by opening a blank page in a **word-processing program**, such as Microsoft Word (2007), and select a designated number of pictures (i.e., four; five; six) from clip art or a picture file to paste on the blank page.

After the students have copied and pasted their pictures, the teacher explains that they are going to play musical computers by moving to a different computer where one of their peers has selected pictures. If a teacher wanted to add a little drama, music could be played while students are moving to different

computers. After moving to a computer with pictures that were selected by a peer, the student then writes a creative story that includes all the pictures selected by their peer, Figure 1. The assortment and selection of pictures usually inspire the students to write creative and interesting stories.

Engaging Activities for Student to Construct their Learning with Musical Computers

- Change the number of pictures for creative writing to match the level and needs of students; Example: The teachers may want young or lower level students to select only four pictures.
- Develop a picture gallery from pictures relating to specific subject areas; Example: A social studies teacher can select relevant pictures from clip art program on China or the Rain Forest.
- Have students emphasize a particular part of speech when writing; Example: Students can print out their stories and underline all of the adjectives or exchange papers with a peer and find the adjectives in the peer's story.
- Printed stories can be bound together to make a class book; Example: A class book of stories about China or a collection of students' creative stories.

- Build-a Story, a progressive writing activity; Students can take turns going to the computer to add a section to the story. Together the students can build a class story. Example: The story can center on a class field trip or topic in a subject area (e.g., If I Lived in Brazil, I Would …..).
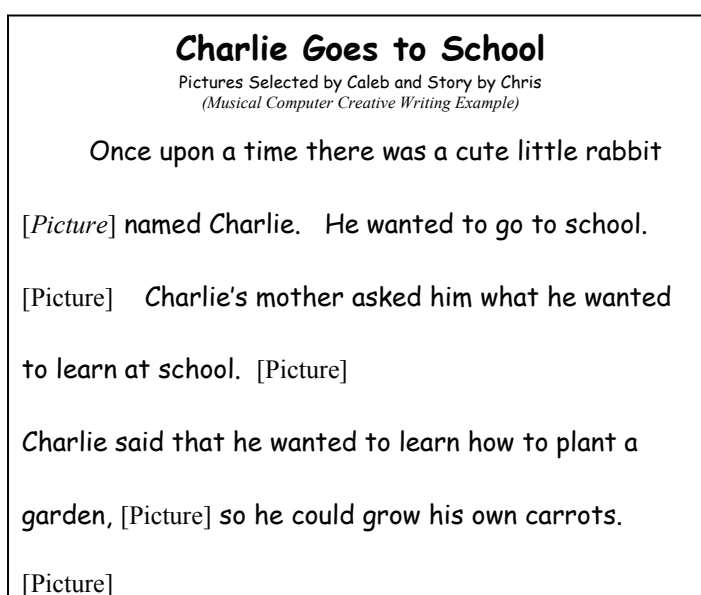
Ideas for Students to Present and Share their Musical Computer Projects

Students can print their stories and share them with their peers in small groups or with the whole class. Class books can be developed by laminating and binding the students' pages. The students can also share their stories with younger students in their school by reading their story to the younger students and giving them a copy to keep.

What's the Connection? Activity

What's the Connection? is an example of versatile **implementation of educational technology** in the classroom. It can be easily adapted to integrate technology with science, social studies, and language arts. What's the Connection? activity can also be used to introduce, to develop, or to assess concepts and knowledge. This activity is implemented by using a program that can develop a concept-webbing map

Figure 1. Sample page for musical computers and writing activity.

Charlie Goes to School
Pictures Selected by Caleb and Story by Chris
(Musical Computer Creative Writing Example)

Once upon a time there was a cute little rabbit

[*Picture*] named Charlie. He wanted to go to school.

[Picture] Charlie's mother asked him what he wanted

to learn at school. [Picture]

Charlie said that he wanted to learn how to plant a

garden, [Picture] so he could grow his own carrots.

[Picture]

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