Using HyperStudio in the Classroom

By Kathy Conville Sims

Introduction

To meet the changing educational demands of students, educators and schools need to create a more visually stimulating learning environment. The modern needs of visual learners can be met through the addition of technology and hypermedia in our nation's classrooms. Until recently, the only books children were every exposed to were those read from the printed page. While library books can be interesting and informational, there is little interactivity between the reader and the book. The learner experiences limited opportunities to be creative and interactive with the use of textbooks alone. But all to often students are taught in traditional classrooms with traditional materials taught by traditional teachers with little or no technology included. However, with HyperStudio, a multi-media authoring tool, students at all grade levels can create and enjoy their own experiences in learning. HyperStudio is useful in creating multimedia presentations where the learner must exercise critical thinking skills, planning, and collaborative teamwork. These significant skills are fundamental educational tools that are vital to our children's future. Developed by Roger Wagner, HyperStudio was particularly designed for educational purposes. Its programs provide text, audio, and video capabilities that allow the user to create brilliant full-color pictures, lively animation, and authentic sounds along with text. Used in combination with computer technology, it is an effective learning tool that allows the user to create interactive presentations for all types of instructional purposes (Davitt, 1997; Eiser, 1994).

HyperStudio's Features

Carter (1994) described HyperStudio as a software package designed specifically for education that combines animation, clip art, sound, digital video, and text in an easy to use format. User interaction is accomplished through the click of the mouse on on-screen buttons. These buttons, with a variety of shapes, are navigational and may launch other applications such as playing a QuickTime movie, sound, or animation. Carter introduced this authoring system to students ages 6 to 16 and found that the younger students were able to manage HyperStudio as easily as the older students. Carter believes the reason for HyperStudio's popularity is that it "comes with an extensive collection of clip art, sounds, example stacks, and an interactive tour" (p. 32) and "scripting environment within HyperStudio called HyperLogo" (p. 32) with language that can be used to control HyperStudio. However, he argues that HyperLogo is sometimes awkward to master and less preferable than some of the other features of this authoring system. HyperStudio's roll credits feature adds a professional look to presentations. HyperStudio benefits the teacher as well as the learner: "when used with the built-in testing functions, timed interactive tests can easily be constructed and responses automatically recorded" (p. 32) when the use of this integrated media technology is in student-created programs.

Flexibility of Instruction with HyperStudio

Dyrli and Kinnaman (1995) related the endless possibilities with HyperStudio's authoring capabilities. They consider HyperStudio as one of the most important educational features of multimedia. The visual images, sights, and sounds provided in these resources can have a positive impact on student learning, retention, motivation, attention, and achievement. It provides the capacity for student interaction and control. The user's ability to switch from topic to topic and media to media makes HyperStudio a revolutionary aid in the classroom. HyperStudio's flexibility includes the variety of built-in tools that allow instructors and students to create their own presentations using scanned graphics, music, narration, photographic and video images via the digital camera. Everything from multimedia reports, yearbooks, and presentations can be created

with the HyperStudio authoring tool. Students have unlimited possibilities with the interactive buttons and links that provide the choice of linear or nonlinear manipulation of instruction material. The interactive capabilities of HyperStudio allow students to exercise their own imaginations in generating and constructing knowledge-based presentations.

Snepp (1994) focused on the integration of HyperStudio in an after-school program called computer PMs. As a computer specialist and educator, Snepp was eager to try a new multimedia project with his students. After an introduction to HyperStudio and brief lessons on how to create links and buttons, play sounds, and activate the laserdisc player, her fifth grade students began planning their projects. This teacher was astonished at how quickly her students learned to use the authoring program. Students designed and organized a HyperStudio stack representing the school campus. The first card is a detailed map of the entire school plant. It displays each classroom and location. The user clicks on one of the classrooms and is immediately connected to a new card giving information pertaining to that particular class. The selected classroom teacher is captured on video giving essential information concerning the subject taught. Each classroom on the map located on the first card is a navigational button that takes the user to a new card revealing information about the teacher and subject taught in that location of the school. This HyperStudio activity was an intensive project that lasted eight weeks and was found very effective in preparing students for the necessary skills to work collaboratively toward completing a HyperStudio project. Snepp found the media integration to be a resource that had a positive impact on student learning, motivation, attention, and achievement.

Teaching Social Studies with HyperStudio

In the educational arena, HyperStudio can be used by the learner to create projects that reflect research, creativity, and knowledge construction. Orwig (1997) related how HyperStudio has become an integral part of the core curriculum within a Springfield, Illinois school campus. The school, which has no computer lab, possesses a computer to student ratio of 1:5. Annually, the students use the HyperStudio authoring system to create multimedia presentations of the local

Springfield Township history. The students become familiar with this project as they review previous projects completed by former students. Students develop concept maps and research local history through personal interviews, digital pictures, and archives. Teachers have an "ask three and then me" rule (p. 43), that promotes student collaboration of troubleshooting, designing, and planning projects.

The students present their multimedia history reports in the classroom, at various school functions, and technology conferences. The school administration provides technology workshops for staff development throughout the school year. During the entire school year, teacher training and exploring of possibilities for integration of HyperStudio into the curriculum is an ongoing instructional design. The key focus of staff development centers on the use of multimedia and hypermedia as teaching and learning tools. "Teachers learn strategies for having multiple classroom activities going on at the same time, and center on practical issues such as working without enough equipment and space" (p. 43). Teachers brainstorm curriculum integration ideas and learn basic computer skills so that this technology can be a viable part of student learning (Orwig, 1997).

Thorp (1995) associated the various learner choices with educational potential with HyperStudio in the curriculum. As an educator, Thorp searches for ways students can create their own adventure stories based on real events from the past. She believes in promoting student involvement and interest in the subject matter through the student authored multimedia presentations. Students begin the adventure project researching and completing background reading of the encounters of 15th and 16th century European explorers. Students vicariously take the place of these early explorers as they recreate the decisions of the past. Each story starts with the description of an authentic historical situation where the chosen explorer has to select an appropriate action. This project challenges each student to create, with the use of higher order thinking skills, two separate choices that an explorer might have. One choice must be pure invention allowing the students to use their critical thinking skills to discover what they might have done in the explorer's place. After prewriting the story, students are introduced to the HyperStudio

authoring system. These young authors also create background pictures using paint tools to illustrate the consequences. Geographical conditions are incorporated into the story description. The students are able to apply cause and effect, choice, and consequence as they manipulate the HyperStudio program created to bring history to life.

Coffey and Holzberg (1996) described the benefits of HyperStudio in history, geography, political science, anthropology, and sociology instruction. HyperStudio is considered an essential tool in the various curricula as it allows students to import maps and graphics into multimedia creations. "Students not only begin to learn about their own communities and those concentric circles around them, but they start to examine what was (and is), why events happened, and whether it all could have transpired differently" (p. 26). As students construct their own knowledge, HyperStudio creations represent their findings.

Using HyperStudio in Science

Wiburg (1994) related several recent studies reflecting the newest educational trends in the use of multimedia products in science education. Students from an Iowa consortium of K-12 schools created multimedia products using HyperStudio in combination with other technological authoring tools. Teachers served as content advisors while students designed templates and completed multimedia projects. Students developed program designs after exploring and investigating science subject matter. The study revealed that students felt more positive and achieved greater success in learning new science material with HyperStudio multimedia instruction over traditional methods of science instruction.

An international science study involving American and Israeli students examined factors such as the interrelationships of student learning with the additional of technology, social interactions, problem solving skills, and the enjoyment of science through HyperStudio and other multimedia. The findings showed all students put forth greater intellectual effort in the learning process when engaged in multimedia projects that support a cooperative approach to learning science. HyperStudio was found to be very appealing to these students as they organized science

material collaboratively and shared scientific research (Wiburg, 1994).

Integrating HyperStudio across the Curriculum

White (1994) recounted an Arizona junior high school situation, where students used HyperStudio capabilities to create a multimedia presentation entitled, “HyperTravel”. Through the technology of computer programs, students were allowed to travel allover the stated of Arizona and report on their journey without ever leaving the school campus. Students were able to experience authentic scenery, history, and recreation found in the state of Arizona through video, audio, text, graphics, navigational buttons, and cards. While using the HyperStudio system to create this “HyperTravel” presentation, students were required to include detailed information concerning Arizona’s scenery, travel routes, historic events, restaurants, famous celebrities and athletes, and special activities found all over the state. Math, English, Arizona history, and computer programming were some of the subjects encompassed in the unit. Students had to apply math skills to determine the miles per gallon of fuel used when traveling between specific locations. With the integration of various subject matter and technology, students were required to use higher level thinking skills to create an interactive report containing authentic facts and exciting pictures in a presentation with linear and non-linear capabilities.

The primary objective of “HyperTravel” was to use the computer technology of HyperStudio in cross-curricular instruction. This technology allowed students from fourth to eighth grades to learn about their state using a different teaching strategy. “HyperTravel” revealed to administrators, teachers, parents, and students that the only limitation in a student’s education is one’s own imagination. The HyperStudio unit could “be used by any teacher and in any discipline to make learning come to life” (White, 1994, p. 29).

Innovative Instruction and Assessment

Baugh (1994) explained how K-12 teachers in Kentucky schools are using HyperStudio across the curriculum as an alternative to the traditional methods of instruction and assessment.

The shift from traditional evaluation to performance based assessment is being experienced in all subject areas. Students are using a combination of hypermedia tools to research, investigate, and report essential ideas found in content areas. Student performance is appraised using a scoring rubric that classifies student achievement as apprentice, proficient, or outstanding, rather than scoring with traditional letter grades or percentage points.

Baugh (1994) cited numerous advantages to using HyperStudio and other hypermedia technology in the classroom for instructional purposes. The key advantages include the increased attention span of students, motivation, and expanded capacity to remember. HyperStudio is customized by curriculum planners and educators to complement the curriculum requirements and individual needs of all students. Using HyperStudio allows student learning to be personally experienced while promoting a higher level of learning.

HyperStudio for Special Needs

Since the passage of the landmark Education for All Handicapped Children Act (Public Law 94-142), an increasing number of students with learning disabilities (SLD) are receiving daily instruction from the general education classrooms in their schools (Stainback & Stainback, 1992). Approximately 90% of students with SLD are being taught in regular education settings. Inclusion presents a challenge for educators to find innovative methods of teaching the variety of learning styles found in today's classroom. Teachers are continuously searching for new and effective techniques that will enhance the learning of all students, especially those with disabilities.

Speziale and LaFrance (1992) established the effectiveness of HyperStudio technology in assisting high school students with SLD in passing the Pennsylvania driver's education exam. Students with SLD were frustrated with the traditional learning environment, demonstrating poor motivation, and difficulty with the language and perception. With the HyperStudio authoring tool, students created a driver's education manual to aid students in preparing for the driver's exam. Students who had previously experienced great difficulty in expression through writing found HyperStudio graphics and video capabilities made content easier to understand than when

using text alone. Student reading abilities ranged from non-reader to fifth grade level. By working in cooperative groups, students broke down the sections of a very difficult study guide into neat, easily understandable information. HyperStudio allowed the students to generate graphics using clip art and drawing tools that replaced the wordy explanations of the original driver's manual. The user-friendly HyperStudio features motivated the students with SLD and allowed them to concentrate on the product rather than the process. The result with HyperStudio was the creation of a comprehensible manual. "Improved motivation, gains in problem solving abilities, increased attendance, creative expression, and a sense of accomplishment characterized the learning outcomes of the … project" (p. 34). All the students involved in this HyperStudio project became licensed drivers thus showing the success that comes from incorporating HyperStudio technology in the curriculum to promote learning.

Enhancing Learning Skills with HyperStudio

Bennett and Diener (1997) researched the performance assessment of students using skill-based instruction versus multimedia instruction project. Students who had previously been exposed to the traditional classroom instruction showed minimum gains. Classrooms that centered on technology revealed significant gains in student performance. Using multimedia to enhance learning, these instructors focused on seven habits of the mind: perseverance, problem-solving skills, cooperation, responsibility, confidence, positive risk taking, and willingness to complete a task. With the immediate feedback from computers and powerful collaborative benefits, students learned to make decisions about what to do next on the computer, gaining the confidence needed to work independently. Teachers observed changes in student motivation and pride in academic achievement as charts were used to track student growth in writing and performance. Students were interviewed on film and evaluated their own growth in the seven habits of the mind. Student motivation and self-esteem were high due to the small group interaction and unlimited access to technology tools. Parent participation and involvement increased dramatically providing an audience for students work to be presented. The most important aspects noted by

the teachers was the building of technological and communication skills.

The project model reinforced teacher beliefs in constructivism, metacognition, and use of curriculum that allows students to learn with respect to their own learning styles and strengths (Bennett and Diener, 1997, p. 21). This multimedia project created an imprint for success for students who had previously not fared well using traditional classroom instruction and remediation.

Constructivist Approach with HyperStudio

Steinberger (1993) related the successes of a HyperStudio project created by middle school students possessing a wide range of abilities, talents, and interests. These students completed a three-month study on the subject of bridges. This was a modular project integrating many subject areas in combination with HyperStudio using a constructivist approach to learning. All students contributed to this project by cooperatively working in groups to create maps, compose research papers, paint murals, erect models of bridges, and construct HyperStudio information stacks on the subject matter. The HyperStudio stacks contained text and graphic material on bridges. Students used animation, sound, video images, and buttons to help the user find related topics in a non-linear format. The technology was not treated as a separate subject, but was used to develop and enhance the bridge curriculum. HyperStudio helped the students collect, organize, analyze, and present the information gathered collectively. This multimedia project culminated with the construction of a mini-museum displaying a variety of student work. The HyperStudio information center on bridges was the major attraction at the museum.

Holistic Approach with HyperStudio

Agnew, Kellerman, & Meyer (1996) suggest that HyperStudio can be used for a multitude of classroom projects. The variety of available tools make using this authoring system flexible and experiential for the learner. HyperStudio authoring system “includes painting, animating, recording, and playing back with digital audio, playing CD-DA discs, CD-ROM discs, displaying Photo CD images, and playing laser discs. HyperStudio “supports the digital cameras and video”

(p.87). These HyperStudio features appeal to students of all ages, multiple intelligences, and emotional backgrounds. Students can create unique presentations using HyperStudio in a holistic setting. This form of technology provides the learner with an exciting method of expressing acquired knowledge across the curriculum.

Using the HyperStudio authoring system in a holistic teaching approach provides a blank canvas for the young writer to build stories using text, color graphics, sound, and animation. These interactive creations by teachers and students have the potential of including video presentations produced similar to that of television documentaries and used to present original interpretations of the subject matter. The possibilities are endless when considering what students might compose with HyperStudio technology across the curriculum. Interactive multimedia projects have been shown to be an extremely beneficial part of the K-12 school curriculum (Agnew, Kellerman, & Meyer, 1996).

Using HyperStudio in Publishing

A monthly tabloid newspaper was started over six years ago in a school setting to give student an opportunity to express their ideas and to supplement their school instruction through real world experiences with business and community leaders. The paper now involves approximately 1,200 primary and secondary students annually. Students from 60 different schools contribute to the production of this full-color newspaper containing advertisements of local businesses. Students contribute articles to the newspaper as they express their feelings on current issues and report on what is important to them. Multimedia provides the high-tech tools that produce the newspaper (MacLeod, 1995).

MacLeod (1995) described another school where students create a magazine using HyperStudio. The multimedia-based interactive magazine focuses on the community where the students live. The electronic magazine, San Rafael Community Express, is full of student authored stories and includes buttons for maneuvering, QuickTime videos that relate to the features, sound effects, and other multimedia elements. Story concepts, article writing and re-

search, selection of video clips, images and audio are all chosen and completed by the students. Computer companies in San Rafael supply the computer hardware and software. A partnership between the San Rafael local businesses and the community members provides the expertise necessary to assist the schools as they develop more authentic learning experiences for students. Enthusiasm and commitment by the students is necessary as the individual articles, photographs, and video clips are incorporated into the electronic magazine. The San Rafael computer experts who viewed the finished product were amazed at the professional quality of the HyperStudio project created by the students.

Conclusion

Research has shown that HyperStudio is the best-selling multimedia software for use in our nation's classrooms. There are approximately two million HyperStudio users in America today and the number is rising. The primary reason for the great demand of HyperStudio results from the learning that takes place in the process of using this authoring tool. The latest versions of HyperStudio offer Internet publishing features as part of the software capabilities. Users are able to apply the skills they already possess in creating multimedia projects and put them to use in creating Web pages on the Internet. According to Wagner, its creator, HyperStudio's best feature is "the capability of adding images, sounds, and movies in addition to conceptual links within a document that are not impeded by pages" (Davitt, 1997, p. 10).

Wagner related some technology considerations regarding traditional methods of education (Davitt, 1997). He feels that technology is modifying the complexion of the traditional classroom where the students passively sit and listen as the teacher lectures on subject matter. He believes that students should have HyperStudio technology available in the classroom to enable them to construct their own knowledge. Wagner also considers that it is essential to have good authoring tools in the hands of the learner. In his opinion, classrooms should have students who are actively participating "in the topics of their learning, the process of gathering and assembling information, and learning how to share the results with others" (p. 10). Wagner reports the

demand for HyperStudio has exploded, while the demand for word processors is becoming less widespread. The reason for this change is that the combination of text, graphics, images, audio, and video found in HyperStudio is much more compelling for the learner than simple text alone. Students no longer have to settle for books with printed pages. With HyperStudio, reading and learning becomes alive for the user with interactive capability and endless potential for all.

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