Computers in the Classroom: Clarifying Communication, Increasing Comprehension

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Introduction

Computers in the classroom are assets. Computer-based learning is viewed by many educators as the 1990s version of the textbook. A computer program can scroll text across a screen at a pace determined by the learner/student. Questions may follow each segment with the answers available at the end of each lesson. Computer software is quite accessible to many people. Software makes it easy and fast for learners/students to access information. Another plus of computer-based learning is that the student controls the pace. Computer programs can also summarize discussions; present parts of the lessons about which the instructor has little knowledge; or provide breaks to maintain enthusiasm and interest (Rae, 1994). At all levels in the educational experience, computers can be used to introduce ideas; to reiterate previously taught material; or to provide graphic representations of complex concepts. Students of all ages can benefit from exposure to computers. This exposure can be in the form of demonstrations, hands on activities, or video tapes. Each provides information about how computers are used in today's world to clarify communication and increase comprehension. The earlier the exposure, the less intimidated students are, the more likely they to are make use of computers now and in years to come.

The microcomputer is one of the most exciting new resources available to primary school teachers (Barry-Parsmanne & Kepner, 1982). It serves three major functions in the resource center: (1) an instructional tool in many parts of the curriculum; (2) provides an environment of excitement and fascination; (3) has valuable recordkeeping features. The computer is a very effective tool for skill development, especially through "drill and practice" programs or activities. The teacher does the teaching but the computer's role is to reinforce what has been taught by presenting drills. My daughter has been using computers with her Kindergarten classes for three years. As a teacher, she uses computers to reinforce colors, numbers, alphabets, and symbols. Her classroom is arranged in stations and the students are grouped for balance by gender and ethnic background. During the course of the day, students rotate through the stations for reading, writing, storytelling, numbers, shapes, etc. The computer station is one of their favorite activities.

Personal Computer Instructional Experiences of a Teacher

Here at North Carolina State University (NCSU), computers have been an integral part of my teaching and learning experiences since the early 1980s. Computers are used in my classes to introduce new concepts; to reiterate old concepts; to test retention; and to illustrate complex paradigms. Multimedia computers are used to capture attention, then engage the imagination and spark analytical thinking skills of college undergraduate and graduate students. For example, using a multimedia computer connected to a panel which projects images to a big screen, students can visit many of the parks managed by the National Park Service. The software is called National Parks of America by Multicom Publishing, Inc., 1993. With this software, students can determine when are the best times of year to visit a site. A map of the park can be printed. Names, addresses, and phone numbers can be generated, if additional information is desired. Topics such as overcrowding, waste management, facility design, and program development can be discussed. The students now have a realistic view of the park being studied to accompany the assigned reading.

Another exciting use of computers in the classroom is connecting to the World Wide Web and visiting other cultures. Students interested in the travel and tourism industry are fascinated when we explore historic sites, museums, hotels, etc. on other continents. Such adventures help these students, as well as others, appreciate diverse cultures and life-styles. Virtual travel provides learning experiences that facilitate international understanding. This experience may ultimately make American students more tolerant and more marketable as they become more global in thought and deeds. By traveling more extensively to learn about other cultures, students learn that we are all connected environmentally, economically, politically, and socially. The computer images, videos and pictures from previous trips can serve as catalysts to peak the interest of students who go on to travel on educational/cultural exchanges. Web visits allow virtual travel and continue to encourage students to venture to other lands where they can meet students and professionals in their fields of study.

Computers can be used in any course in the Park/Recreation/Leisure Service curriculum. They can be helpful to a first year student as well as a graduate student. In the Parks, Recreation, and Tourism Management Department (PRT) at NCSU several classes have computer activities and assignments. Examples of uses in classes taught (past, present, and future) by this writer include the following:

(1) Students in the PRT Introduction to Recreation course are required to use computers for word processing. One example is an essay responding to the question-"Of what value are leisure and recreation in my life?" Computer graphics may be used to illustrate the student's philosophy of life and leisure or leisure preferences.

(2) In the Recreation Programming class for juniors, students are taught to create brochures, fliers, posters, invitations, and banners for special events which they plan, implement, and evaluate. These programs are provided for elementary schools, park and recreation departments, or other community groups.

(3) In the Exploring Leisure Alternatives class, which is a social science/ humanities elective for non majors, students use computers to create color graphics to depict their philosophy of life and leisure as well as materials for presenting their "most memorable leisure experiences." Paradigms are created and duplicated to explain complex ideas. Scanned images are provided when pictures or graphics can not be reproduced through other methods.

(4) Students in the Recreational Sport Programming class are taught to generate schedules, round robin tournaments, and forms of various types on the computer. Before computer techniques are introduced, students are taught the formulas, shown how to make schedules, and assigned exercises to complete. These exercises are designed to discourage complete reliance on the computer and encourage a basic understanding of the process.

(5) Theories of Sport and Fitness Management, a graduate class, uses computers to create organizational charts for the agencies in which students desire future employment. These charts are part of an oral presentation which each student makes on her/his management strategy for an assigned position which includes philosophy, principles, policies, and procedures. Visual aids often include transparencies, posters, and videos clips.

(6) Leisure and World Cultures is a senior level Special Topics class that will be offered for the first time in summer school 1996. One goal of the course is to introduce cultural and leisure pursuits of countries from at least three continents (i.e. Africa, Asia, Australia). Compact discs, World Wide Web sites, videos and books have been identified for instructional purposes. Providing virtual international experiences for students will make them more global in awareness. Nurturing a global perspective of culture and leisure impacts personal and professional development. This class acknowledges the fact that any effort to understand a society must take into consideration the institutions that are the preservers and perpetuators of its culture. These institutions include schools, museums, libraries, theaters and other facilities for the performing arts, sports, nature preserves, forests, and park agencies/organizations. Leisure and World Cultures course will add a comprehensive, competitive, multilateral-international dimension to teaching effectiveness and student learning. The class will foster an environment in which students can acquire the knowledge, skills, and attitudes necessary to become responsible and productive citizens of the world.

The Computer as a Marketing Tool for the Major

During the 1995-1996 academic year this writer developed computer-based special teaching/learning modules for fourteen instructors and 750 new students who have not selected a major at NCSU. This computer project with Multidisciplinary (MDS) classes for the First Year College in the Division of Undergraduate Studies allowed the creation of new

uses for multimedia computers, digital photography, Power Point and video clips. The modules were created to introduce new students to the University in general and specifically to each of ten academic units called "colleges" or "schools" at NCSU. Power Point software was used to create slides with information about majors, concentrations, job opportunities, internships, co-ops, national and international exchange programs. Digital photographs were taken of each administration building where First Year College students would go to transfer into a major field of study in one of the colleges or schools. Video clips with narration and music were added to the slides and photos to produce an upscale five to fifteen minute multimedia presentation in the style to which young Americans have grown accustomed. Each video tape contained two colleges or schools. A different tape was presented each week for five weeks. The tapes were accompanied by color transparencies about the colleges' mission statements and other pertinent information.

Ways Computer Technology Helps in the Classroom

In the College of Forest Resources at NCSU, several professors are experimenting with placing course materials on line. Examples include:

(1) All PRT course syllabi are placed on the Web site each semester.

(2) One professor requires each student to activate an e-mail account that is available to all students at no additional cost. In the Introduction to Recreation class students submit homework assignments electronically and meet in groups electronically. This process saves time in classes, saves trees, and saves the "my printer ran out of ink" excuses. In another class, a list server provides students with scenarios to which each must respond at least once to one other person's point of view. The instructor always places an initial comment about the problem to be solved so the first student to sign on will have something to which to respond.

(3) In another class, students use World Wide Web frequently to access information. As a result, numerous requests for additional information have been received from other parts of the world.

(4) Another professor uses computers extensively in the cartography classes. Projects include transportation maps and maps of vegetation, water resources, and wildlife habitats in parks, forests, and battlefields. Blueprints of buildings have been replicated through digital plotting. Master plans for playgrounds, parks, and greenways have been designed on microcomputers by both graduate and undergraduate students.

We Have the Ability to Create a "Virtual Classroom"

Students can do some of their assigned readings on line, submit their papers electronically, and review exhibits and other materials on their personal computers or in the

computer center (Young, 1995). The Web makes it possible for professors to deliver the same handouts they have printed and distributed in class in the past. It also provides a one-stop location for reviewing literature, getting old exams, reading announcements, gathering questions and answers, locating office hours, and checking (Young, 1995).

Technology cannot make us smarter, but it can support human memory and help us become experts faster (Colvin-Clark, 1995). For example, apprenticeship is a time-honored way to combine formal training with on the job experience to build expertise. Apprenticeship exposes the learner to real situations that allow the accumulation of patterns of expertise gradually in long-term memory. This process can take years. Technology can accelerate this growth of expertise primarily by presenting simulators that compress experience into short time frames. For example, budget, finance, and revenue generation procedures can be gained through simulations that allow the student to allocate dollars to programs, materials, labor; to set fees and charges; and to manage facilities for one fiscal year during a 50 minute class for fifteen weeks. At the end of the first five-week period, results are evaluated by the instructor.

Students proceed with the same or a different simulation for another five-week period. This time, however, other students are assisting with the decision-making via a list server. The team results are evaluated by the instructor electronically. Verbal feedback is also given in a group setting. During the final five weeks of the course, students get to review projects electronically by all other individuals and teams with comments. Technology enhances classrooms and can compress experience into short time frames.

Summary

Computers have positive impacts on teaching and learning experiences. They allow students to learn at their own pace; to access information provided in the class at various sites (i.e. home, computing center, library); and to interact with others in the class, university system, and the world through internet. Multimedia computers help professors meet the challenges posed by students of the 1990s. These students have been exposed to high tech, fast-paced, color-coded data from birth. To get their attention initially, presentations in the classroom must rival the pace to which they have grown accustomed. Students are impressed by the quality of computerized sight and sound. No one goes to sleep nor acts disinterested during such presentations. Questions on the topic are more specific and relevant with follow-up on the discussions more likely. Computers provide professors opportunities to develop materials (e.g. color transparencies, color slides, color handouts, video clips) that depict the diversity in leisure, recreation, and parks programs and facilities in America as well as in other cultures. Using technology can serve as a catalyst for discussion. It can also provide vicarious experiences for those who may never leave their home state. A three dimensional picture is worth more than a thousand words.

References

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