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ABSTRACT

This study describes a pilot program utilizing various multimedia computer programs on a MacQuadra 840 AV. The target group consisted of six advanced dance students who participated in the pilot program within the dance curriculum by creating a database of dance movement using video and still photography. The students combined desktop publishing, video for dancers executing ballet, jazz, hip-hop, and acrobatic dance technique, music, and computer generated graphics into a multimedia choreographic presentation. A pre- and post-student questionnaire was administered to determine experience and attitudes toward computers, dance, and choreography. The results of the student questionnaire proved that the target group increased their level of knowledge not only in the manipulation of multimedia computer programs, but the utilization of that knowledge for dance choreography and presentations. The students found the pilot program worthwhile and worthy of continuing as part of the dance curriculum. Appendixes include: school district mission and belief statements; student pre/post questionnaire; dance terminology for computer database; pilot program review questionnaire; critical thinking and self-reflection checklist; and survey results. (Author/AA)

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ED 385 247

UTILIZING COMPUTER AND MULTIMEDIA TECHNOLOGY IN GENERATING CHOREOGRAPHY FOR THE ADVANCED DANCE STUDENT AT THE HIGH SCHOOL LEVEL

by

Irma A. Griffin

A Practicum Report submitted to the Faculty of the
Fischler Center for the Advancement of Education
of Nova Southeastern University in partial
fulfillment of the requirements for
the degree of Master of Science

December 1994

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ABSTRACT

Utilizing Computer and Multimedia Technology in Generating Choreography for the Advanced Dance Student at the High School Level
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Descriptors: Dance/ Dance in Secondary Education/ Digitized Dance for Computers/ Computers in Dance/ Computerized Dance Database/ Computer Generated Choreography/ Multimedia Presentations in Dance/

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Authorship Statement

I hereby testify that this paper and the work it reports are entirely my own. When it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I give this testimony freely, out of respect for the scholarship of other professionals in the field and in the hope that my own work, presented here, will earn similar respect.

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CHAPTER I

Purpose

Background

This practicum takes place in a high school located in the Southwest region of the United States in a major metropolitan area. The high school is situated in a middle class neighborhood in which the vast number of houses were built in the 1960's. The average cost of housing that surrounds the high school is in the $60,000 to $80,000 range. The neighborhood is comprised of many different minorities who are in the low to upper-middle class of the socio-economic spectrum.

This school district has been in existence since 1896, and the district now includes fifteen elementary schools, four middle schools, and four high schools. The school involved in the study was opened in the Fall of 1961. The school experienced great population growth from 1970 through 1982 when enrollment ranged between 2,200 to 3,100 students. However, a decline in enrollment started in 1983 and this pattern has not reversed itself as of this date.

The population of the school was approximately 1,321 students as of October 26, 1993. As of February 1, 1994, 159 students (85 males and 74 females) had withdrawn from the school's population. However, only 32 of these students dropped out of school with no intentions of re-entering a school setting. The dropouts included 10 freshmen, 10 sophomores, 5 juniors and 7 seniors. The student population was 1,162 at the time that this study is to be implemented. There are 334 freshmen, 298 sophomores, 254 juniors, and 276 seniors. There are 608 males and 554 females comprising the total student population. The age distribution of the student population is as follows: 14 year-olds, 103; 15 year-olds, 288; 16 year-olds, 301; 17 year-olds, 279; 18 year-olds, 147; 19 year-olds, 29; 20 year-olds, 8; and 21 year-olds, 7.

The student population is 87 percent (1,011) white, non-Hispanic. The Hispanic population is 7.8 percent (91), and the Black population is one percent (12). The American Indian population is 2.1 percent (24), and the Pacific Islander or Asian population is 2.1 percent (24). The English as a Second Language (ESL) program accommodates 32 students. Those 32 students speak the following languages: Spanish (18), Korean (2), German (1), Russian (1), Romanian (2), Japanese (1), Mandarin Chinese (2), Vietnamese (1), Cambodian (2), and Arabic (2).

Last available information on staffing shows 99 teachers at the high school are represented by 51 males and 48 females. The ethnic background of the teachers is 96 white and three Hispanic.

The age distribution of the teachers is as follows: under 30 years of age, three; 30 to 35 years of age, 14; 36 to 41 years of age, 13; 42 to 47 years of age, 23; 48 to 55 years of age, 28; and 56 to 65 years of age, 18. The students to teacher ratio is 22 to one.

The teachers at the high school have the following years of service in the district: one year or less, one; two to three years, six; four to five years, nine; six to 10 years, 18; 11 to 20 years, 31; 21 to 30 years, 27; and over 30 years, seven. The level of education of the teachers is as follows: Bachelors, five; Bachelors plus 15, four; Bachelors plus 30, 12; Bachelors plus 45, 17; Masters, three; Masters plus 15, six; Masters plus 30, seven; Masters plus 45, 15; Masters plus 72, 29; and Doctorate, one. The researcher is a graduate of the local university and has a Bachelors of Arts degree in Secondary Education with a major in Theatre. The researcher is presently completing the 12th year of teaching in the Fine Arts department at this high school. The Fine Arts Department consists of seven teachers. The Visual Arts staff has one art teacher and one crafts teacher. The Performing Arts staff has one band teacher, one choral teacher, one drama teacher, one strings teacher, and one dance teacher. The following courses are offered in Visual Arts: Art I through Art IV AP, and Crafts I through Crafts IV. The following courses are offered in Performing Arts: Drama I, Theatre II through IV, Varsity chorus, Advanced Choral Ensemble, Junior Varsity band, Varsity band, Jazz band, Marching band, Music Theory and composition, level I strings, beginning dance, Intermediate I and II level dance, and advanced dance.

The researcher serves as the Fine Arts chairperson. Initially the researcher taught beginning and intermediate Drama. However, the second year of employment, the researcher developed a dance program that has grown into a full schedule of dance classes. Within this curriculum, the major emphasis is mastering dance technique and performance. Freshman through senior level students may register for these classes.

The dance program is classified as a Fine Arts program, and it is an elective class. The dance program was developed by the researcher in the Fall of 1983. The dance program has grown consistently and the enrollment has been sufficient to support five full classes for the past seven years. Beginning dance is a prerequisite to all levels in the program. Beginning dance is the only level that can not be repeated for credit. Students are individually evaluated on their technical skills at the end of each school year. The researcher then places each student in the appropriate dance level for the following school year. Other than Beginning dance, students may be placed in the same level for the following school year until their technical dance proficiency is at the level for advancement.

All students are required to take one Fine Arts class for graduation. Although students may take more than one Fine Arts class, students are only required to take one class to satisfy the graduation requirement.

The researcher is involved in bringing computers and multimedia technology into the Fine Arts department, and specifically into the dance curriculum. The need for integration of technology into the dance curriculum is viewed as necessary and timely given the availability of such technology and the receptiveness of the students and the school district for such implementation.

Problem Statement

The researcher's school district is committed to the integration of all curriculums as evidenced by the school district's mission statement in the Strategic Plan of January 1992 which provides that: "the district will provide an enriched and integrated core of knowledge and experiences." This is based on the school districts' belief that the integrated approach to teaching and learning is essential (Appendix A: 65). At the time of this report, the school district has a technological task force in which a district-wide technology plan has been drafted and has been presented to the school board for review. It is the hope of the task force to implement the use of computers throughout all curriculums within the district. The researcher's school district also has created a district-wide committee entitled, *High School 2001* (Appendix B: 70). *High School 2001* has drafted a list of 18 competencies for graduation. Because the school district views "technology as an essential tool that helps individuals to gather and create information, organize and analyze information, and communicate ideas," competency number ten states that the graduate will use technology effectively (Appendix B, p.70).

Demonstrating proficiency in video, databases, interactive media, collaborative problem solving, graphics and music, and multi-media are just a few criterias suggested by the committee (Appendix C, p. 75).

The researcher's principal states that, "Technology in the future will be a standard way of life. A technology team has been established at this school site because of the belief that computer technology is essential. Evidence of our committment to computer technology can be seen in our five computer labs." The chairperson for the Business department states, "the State Department of Education requires computer instructors to integrate computers into all areas of the high school curriculum." Additionally, the chairperson of the technology team and media-center head instructor of the school site states, "the district is moving towards requiring all graduates to demonstrate a proficency in computer literacy as a prerequisite for graduation."

In Fine Arts department staff meetings, several concerns about the integration of computer technology has been expressed. The department is very positive and enthusiastic about integrating computers within the individual curriculums. However, the major concern is the funding for the technology for the individual curriculums. The band director at the school site states, "computer technology exists that allows students of lesser ability to compose musical compositions that they would not be able to accomplish without the technology. In essence, the student's musical technical proficiency is replaced by the computers ability to record and transcribe whatever is presented to it.

This aspect of computer technology within the music program would greatly enhance enrollment and meet the goals of the district." The art instructor expresses that, "the ability of the computer to manipulate objects, designs, and graphics allows the student to experiment and create his or her vision in a non-threatning way. Because it is fun to work with the computer, the students' stay on task longer."

One way to integrate computers into the dance program would be in choreograpy where students could experiment and manipulate dance movement. This would appeal to students not interested or able in the physical aspects of dance or dance performance, and would provide an alternative for a Fine Arts credit in the dance department. The researcher knows the majority of the advanced level population are repeat students and show great interest in choreography. At this time, classroom work is spent on technical dance skills and preparation for performances. Members of the advanced class are involved in five main stage dance concerts every school year. Advanced dance students who choreograph for performances have admitted to the researcher in class-exit interviews that they find the task tedious and time-consuming. Another complaint expressed was the inability to work alone due to needing other dancers to visualize the work in progress. The "trial and error" process can sometimes become frustrating and rushed (Appendix D, p. 77).

In the design of a dance piece, the choreographer decides on the style of movement, the style of music, the number of dancers, and the notated dance movement. Once this is accomplished, the dancers are

brought together and rehearsal begins. Availability of dancers, time, and necessary choreographic changes become a factor in the completion of a dance piece.

The amount of equipment and the high-powered software needed to do choreography on a computer is cost-prohibitive at this time for the high school level. The equipment that is currently available on site will allow for only four to six students to participate in such an endeavor. This is considerably less than the average class size of twenty students. According to the media-center head instructor at the researcher's school site, there is currently no computer choreography class being offered in any high school or community college in the area.

Ideally, more time could be devoted to the theory and creative aspects of choreography if a class could be offered solely for this purpose. The ability to utilize computers to create choreography would be the ideal avenue for young choreographers. A class in computer choreography would be challenging for the returning advanced dance student and would create an option for those interested only in choreographic design. Utilizing computers for choreography would allow advanced students to progress in their choreographic skills by eliminating the frustrations of scheduling rehearsals with dancers. The computers would also allow the choreographer to work whenever it is convenient for the choreographer and not just when the dancers are available.

The target group consisted of six advanced students selected by the researcher who meet the following criteria:

1. Students were returning advanced dance students.
2. Students scored among the six highest grade averages in technical dance skills in the placement exam at the end of second semester, 1994.
3. Students choreographed at least two selections in the Advanced dance concert or the Spring 1994 dance concert.
4. Students were literate on a Macintosh computer.

Outcome Objectives

Objective One

After twelve weeks of instruction in the pilot program, four out of six students will deem the creation of a dance movement database as a viable tool for choreography. This will be evidenced by the students responding "strongly agree" or "agree" during the post-test Student Questi~nnaire (Appendix D, p. 77). All six students will utilize the dance database to create choreography that is computer generated.

Objective Two

After twelve weeks of instruction in the pilot program, four out of six students will find the following computer technology user friendly and satisfactory to produce the desired choreographic results:
video recording with a video camcorder, transferring video into a computer program, digitizing video and still art graphics into a computer, creating text within a computer graphic program, editing video, editing computer graphics, editing music, transferring computer multimedia presentation onto videotape, and proficiency in *Action 1.0.4* , *PageMaker 4.2* and *Premier 4.0* computer programs. This will be evidenced by the students responding "strongly agree" or "agree" during the post-test Student Questionnaire (Appendix D: p. 77). It will also be evaluated by researcher and mentor observation, as well as as a representative of the school's technology team (Appendix F: p. 85).

Objective Three

After twelve weeks of instruction in the pilot program, four out of six students will find that computer generated choreography is more interesting and will prefer this process as part of their design and construction of future dance pieces. This will be evidenced by the students responding "strongly agree" or "agree" during the post-test Student Questionnaire (Appendix D: p. 77).

Objective Four

After twelve weeks of instruction in the pilot program, four out of six students will indicate a willingness to register for the course again due to the interest of computer generated choreography. This will be evidenced by the students responding "strongly agree" or "agree" during the post-test Student Questionnaire (Appendix D: p. 77).

The researcher realizes that a one hundred percent favorable response is ideal, but unrealistic. However, the researcher anticipates a reasonable success rate of four out of six students responding favorably to the outcome objectives.

CHAPTER II

Research and Solution Strategy

The use of computer technology in the Fine Arts curriculum is a relatively new phenomena in the secondary schools. The use of word processing, graphics, animation, scanners, and a variety of other technological possibilities are now available to the various disciplines within the fine arts curriculum. The majority of available literature is positive and flattering regarding the method, software, and evaluation of the computer in the area of fine arts, especially dance.

Computer technology and the fine arts are intrinsically related learning mediums.

> They share common content, the learning process is similar, and the products of learning are expressive. Furthermore, they enhance the development of the multidimensional nature of the child (Burton & Lane, 1989, p. 58).

Integrated learning in education would be incomplete without including computers. Computer technology shows how we can encourage thought rather than having predetermined thinking. Turkle (1984, p. 276)

believes "the computer is evocative not only because of its holding power, but because holding power creates the condition for other things to happen." The computer can hold a students attention and is a means of continuous exploration. Papert (1980) found that computers automatically become a part of the process that enable the child to extend and remodel intuitive knowledge.

A computer program that illustrates these thoughts/statements is *Logowriter*. *Logowriter* has the graphic capability to motivate students to develop programs to communicate with the computer. This exploration develops problem-solving, logical-thinking and spatial-visualization skills. In *Logowriter*, Burton and Lane (1989) found that students took control of their own learning, drew designs that stimulated other visual images and each student developed progressively. Teachers posed problems relating to all the fine arts disciplines such as a specific movement form in dance, drawing or painting in art, and designing and producing costumes or scenery for a stage production involving movement and music. There obviously has been a shift in project development from computer assisted instructional programs such as drills, tutorials, and games. Companies are finding that tool packages for the classroom are productive and more in demand. 1989 data from RICE (Resources In Computer Education) confirms this shift in computer development. "....Another factor is the growing interest among educators in multimedia, using technology to interactively blend computer text and graphics with video and sound " (Weaver, 1989, p. 5).

The use of computers has found the way into fine arts administration. Budget and management of the performing arts has made it necessary for this researcher to enlist the help of a computer. Gray (1984) states that computers are used extensively in such areas as accounting, fund-raising, membership records, volunteer management, visual image, inventories, time-sharing usage, box offices, and long-term planning.

Most fine arts departments have realized the one drawback with computer technology: it has a large price tag. Cicciarella (1983) found that interfacing the computer with other modern technology such as the videotape player, the videodisk, the audiotape player, and others has made such instructional programs quite sophisticated and expensive.

Speech and Drama have found a number of ways to incorporate the use of computers. In high school television production classes, students prepare graphics for logos, announcements and titles of TV programs. *Set Design* courseware helps arrange backgrounds for talk shows and interviews. "Drama students are learning set design, stage lighting and playwriting with the help of micros " (Pannwitt, 1984, p. 5).

Computer lightboards and dimmers are finding their way into many high school and college auditoriums and theatres. According to Gray (1984) computerized light boards and lighting designs are becoming more popular and programs are being developed for set designs and audio systems. David K.H. Elliot, the lighting designer for the San Francisco

Ballet Company, as cited by Gray (1989 a, p. 125) states that computer light boards and electronic dimmers are a lot smaller and lighter than any of their counterparts. Computer-based electronic dimming systems not only cost less to run but ".....can effectively cut in half the amount of time spent writing light cues."

In the area of Instrumental and choral music, there are now computer programs available to assist in classroom instruction. Some programs allow the student to compose music for up to sixteen (16) voices, play music entered in computer display notes on the monitor, edit written musical compositions and listen to music through stereo amplifiers. In one particular program for beginning through advanced levels, *Music Theory* , Pannwitt (1984, p. 4) found "eighteen (18) music theory lessons that combined Apple graphics and sound for drill and practice on music fundamentals such as terms and notation, rhythm, pitch, intervals, scales, and chords." An entire class of eighth grade students learned the functions of modules on the *Electrocomp Synthesizer*, and how to control them according to Fechek (1986). Programs such as these have enabled students to learn progressively on their own or in a large group.

O'Connell (1985, p. 26) states, "Using computers to make pictures is becoming common in many fields, from the arts and architecture to medicine and satellite weather forecasts." The use of computers in art is responsible for the creation of a picture that is neither a photograph nor a painting, but a unique work of new art. Computer graphics is the medium

of this new art form. Pannwitt (1984, p. 4) states, " this art form that combines color, animation, and often sound, is a major new part of schools fine arts curricula." Students are experimenting with television commercials, logos, cartoon shows, large display boards, changeable message boards, billboards, and newspaper and magazine artwork. Creating graphics with a computer by means of a video camera and digitizer is one way art students are exploring. Hubbard (1989 a) found that traditionally, students had to spend too much of class time drawing and painting a picture or developing and printing film. With the help of a computer, a finished image appears on screen within seconds. Adjustments can be made quickly along with important artistic decisions before a picture is finally made permanent. In art education, computers offer a special capability for individualized instruction. The student has the opportunity to explore through trial and error quickly. Problem-solving becomes less arduous and more enjoyable.

The computer can also ".....help art teachers explain and demonstrate aesthetic perception, art history and creative expression" (Pauler-Stovall, 1985, p. 19). There are more readily available programs in art than any other fine arts discipline. The *Koala Illustrator* is an example of a basic level program. Fechek (1986) found that individual students in art classes first learned and practiced drawing techniques with this program. The students enjoyed their experience and wanted to continue in the art program. Many students who do not necessarily possess a natural talent for art can benefit from the use of computers.

Computers can reach out to the many students who would not normally consider enrolling in an art program. On the other hand, computers can enhance the advanced level students abilities.

> Computers create the opportunity for students to be successful more often. Computers also open up to talented and experienced students a new realm of opportunities for manipulating images that earlier generations could only dream about (Hubbard, 1989, p. 31).

O'Connell (1985) states that the amount of memory and speed of operation on some microcomputer systems currently pose limitations for art programs. Art needs to be communicated with constant use of visual images. Unfortunately, schools lack adequate collections of images. School budgets and the cost of maintenance for equipment is too large for many departments to handle. Another problem also lies with "....attitudes which hold that computing is relevant for subjects that focus on factual information and is peripheral for subjects calling for aesthetic judgement " (Hubbard, 1989 b, p. 33). As long as subject matter specialists insist on working alone, the benefits of computer technology will never mature.

Making use of a computer in the dance field is a relatively new approach. According to Dunin (1991), a computer has been used as a tool to assist in storing research information, to sort and analyze field data, to produce illustrations, or to notate dance movements. The dance technology field is less than ten years old. Gray (1989 b) explains that only in the last decade a small group of dance researchers, choreographers and educators have proven their proficiency and

creativity with computer technology. This technology, "....has the potential to open up a new world for dance education " (Boettcher, 1983, p. 40). Once a computer is programmed, it can repeat a task over and over again. Any students with special needs or capabilities would benefit from such instruction. This type of approach could mean the difference between interest and success or apathy and failure. Boettcher (1983) found that with a computer teachers could simulate various dance related activities that could not be taught with the traditional curriculum due to limited resources, budgets, or facilities. In the dance education field, attempts have been made to develop computer assisted instructional programs for dance in the areas of dance composition and skill aquisition. Dr. Buff Brennan (Gray, 1989 b) developed a computer-assisted methodology for analyzing dance movement. Dr. Judith Gray designed and built a computer-based system for recording and analyzing dance teacher and learner behaviors. It has been adapted for regular classroom use. Computerized dance notation systems and animated body modelling techniques have led to experiments in computer choreography. The elements of movement used in dance choreography have been used in the design of a robot. Margo K. Apostolos used the six qualities of movement based on the elements of shape, space, time, and force to develop "....an aesthetic mode for common robot 'work' tasks " (Gray, 1989 a, p. 46).

The impact of blending art and technology with computer music, computer graphics, and robot choreography reflects technological influence. With the use of probes connected to a computer and a motion detector dance researchers, Alice Trexler and Ronald K. Thornton, found that physics students and dance students collaborated in a cross-disciplinary process and discovered "....that students often learn best by involvement in their own and in their peers' creations and that two collaborators from different fields offers new insights into the creative process " (Gray, 1989 a, p. 52). At the University of California between 1984-1988, an interactive graphic system for modeling three-dimensional objects called the Geometric Design Processor (GDP) was used by Dianna L. Petty. This technology had never been tried before and

> ...The intention was to present the dancers as mechanical as humanly possible--at the same time, present a "graphic dancer" as aesthetic and humanistic as GDP could design --creating an intriguing, yet mystifying blend between choreography and computer graphics (Gray, 1989 a, p. 115).

Experiments at the college level with a device called a photomultiplier is producing a unique kinetic art form. The imaging procedure consists of three distinct phases; capturing, processing, and displaying. Once this is accomplished the computer can expose the film one pixel at a time creating an unusual image. The dancer in relation to the environment

> ....will be limited only by the imagination of the choreographer and the power of the computer. The effects of digital processing on the visual quality of dance images is technically and artistically intriguing (Gray, 1989, p. 121).

Personal computers have found their way into the field of dance ethnology, the anthropological study of socio-ecomonic systems and cultural heritage. According to Dunin (1991) the advantage of computers is greater productivity, a fuller dimension of data processing, and control of data and print information. In 1987, Dunin also developed a program for editing Labanotation on a Macintosh Plus computer. The advantage of the program is that musical scores can be written synchronously with dance scores. The development of this program as text editor "...alleviates the burden of bad orthography, exhausting ink drawing and proof-reading for misspelled signs " (Fugedi, 1991, p. 101).

Most all of the dance literature mentioned the inexperienced dance student. With the help of a computer a beginning dance student can sometimes create fresh and unusual approaches to dance. Some dance theory courses could be computerized to teach dance improvisation and composition. Gray (1984) states that dance students could select dance movements or gestures from a menu, then with applications, they could experiment with spatial, temporal, and energy elements. This type of instruction represents the cognitive process that readily translates into psychomotor experiences. A wide variety of mini-courses, independent studies and tutorials are other possibilities for the use of computers in the classroom.

There is a firm belief

> ....that in order for dance teachers, choreographers and even coaches to strive for optimum effectiveness and high pupil achievement, it will be necessary to acknowledge the vast capabilities of computer technology and to put them to use (Gray, 1984, p. 20).

There are problems facing the advancement of computer usage in the dance field. Dance education should involve itself with computer animation. Animation is definitely one of the most exciting and intriquing areas that involve computers. However, it is an example of a difficult, "....time-consuming technique for creating realistic, human motion from a three-dimensional computer figure...." (Allen, 1983, p. 38). The human movement is visually complex. Gray (1984) points out that stick figures or two dimensional versions of the human figure do not match a satisfactory interpretation of human movement. Another area of difficulty are the graphic programs. Graphics tend to be more expensive to run than others. Training dance teachers and students to use computer terminals and to become computer literate is also a concern of Gray, (1984).

> The chief problems confronting the use of computers in dance are time, money, obtrusiveness of equipment, untrained personnel, lack of interface devices, and, above all, the difficulty of reproducing and preserving the vital aesthetic component of dance movement (Gray, 1983, p. 33).

There is a strong correlation with the fine arts and the use of the computer for desktop publishing. Desktop publishing has become quite popular in most school systems. This computer method allows one person to write, illustrate, layout, paste up and print entire publications. This application usually required large and expensive computer systems. With the cost of the laser printers decreasing and several good page make up programs, more school districts are being able to afford desk top publishing systems. One such program is *PageMaker* by Aldus. It is a page make up program that lays out text, illustrations and graphic elements on a page with the use of a Macintosh computer. King (1986) claims that *PageMaker* replaces the more traditional tools of graphic design and paste up. However, she also claims that it does not replace experience or expertise in graphic design. "The program has no means for making aesthetic decisions....the beauty of the piece is still up to you " (King, 1986, p. 79).

PageMaker allows the user to have more freedoom in the actual design of the piece. The application of desktop publishing has not been ignored by our schools. "Posters, tickets, office forms, test papers, student worksheets and handouts have suddenly taken on a professional apperance as more teachers discover the capabilities of the system " (Stanley, l987, p. 22). Now, less articulate and creative students can experience success where their abilities are limited only by their imagination.

Multimedia technology is an area of computer education that is currently receiving considerable attention. "Multimedia computers offer instructional applications that combine a wide range of media, such as sound, video, images, and text, to convey the subject matter " (Szabo & Hotch, l993, p. 65). David Baum claims,

> . . . interactive multimedia computer-based applications that combine text, graphics, video, audio and animation into a media experience for users. . . will give formerly passive viewers. . . almost total control over what they see, when they see it and what they do with it (l993, p. 89-90).

The school-age children today have grown up with television and video games. Most are familiar with manipulating images on a hand-held game or a television screen. Verity states, "Cheap, high-powered computers, sharp monitors, stereo sound, and data-packed CD-ROM disks seem to be just the right ingredients for grabbing the TV shaped minds of today's youngsters " (l994, p. 88). Schwartz et. al. believes that young people may be stimulated educationally by the new technology inmultimedia that allows the user to manipulate and control the various images, sounds and video. It allows the learner to move from passive experience to an active participant in the learning process (l991, p. 158).

Idit Harel, a multimedia research scientist at Massachusetts Institute of Technology, wants to see students become producers and not just consumers of multimedia technology.

In order for the technology to be effective, Harel, as cited by Schwartz, Del Valle, and McWilliams states:

> . . . multimedia systems must allow students to create their own works. In fact, she predicts that in the future, multimedia learning will move schools away from assessment based on standardized tests and more toward judging students on the projects they produce (l991, p. 162).

Brandt, Therrien, and Eng believe, ". . . schoolchildren will someday be creating homework on videotape - showing rather than telling how they spent their summer vacation " (l992, p. 74).

An increasing number of educational experts see ". . . interactive multimedia software as a key technology to revamp American education " (Armstrong, Yang, and Cuneo, l994, p. 81). Also, multimedia presents material in more than one mode and studies are showing that students are absorbing more when there is visual as well as auditory (l994, p. 8).

Most schools already have in place the capability to utilize multimedia technology.

> Already, about 68% of school districts have key hardware such as CD-ROM or laser-disk players, up from 30% three years ago, reports Quality Education Data Inc., a market researcher. These devices can be used to play video and music on PCs. (Schwartz, Del Valle, & McWilliams, l991, p. 162).

Apple Computer Inc., produces the program called *Quicktime* and includes it on most of the Macs it sells. "*Quicktime* lets any Mac act like

a VCR by digitizing video images for playback on the computer screen " (Brandt, Therrien, & Eng, l992, p. 72).

Chip makers are also producing chips that facilitate the digitizing process and enhance resolution. According to Brandt, Therrien, and Eng:

> *RasterOps, Avid Technology, Radius,* and *SuperMac* are building those chips into circuit cards for Macs. Meanwhile, software makers Adobe, Diva and Macromedia Publishing have created programs for editing and adding special effects. Many of these are also being adapted for IBM-compatible PCs. . . (l992, p. 74)

According to Roger Schank, effective educational software allows the learner to be an active participant in the educational process. He also states, "multimedia offers a serious way of improving simulation-based instruction. . ." (l993, p. 54). Schank also states that:

> the architecture of the multimedia system should be as follows. First, a simulation of the task to be learned is needed. Second, an on-demand video database that can supply relevant video as needed is necessary. Third, controls must be given to the student that allow user control of the process. The ultimate goal is to allow a user to see and hear what he or she wants, when he or she wants, without necessarily knowing what is desired. (l993, p. 54-56).

The advantages of using microcomputers have been summarized by Reglin (l990, p. 66). Some advantages are:

1. Students are motivated and encouraged.
2. Students are given preparation to work.
3. Independent study is fostered.
4. Immediate feedback is given to students during instruction.
5. Individualization is encouraged.
6. Computers help create a non-threatening environment.

The biggest factor in using computers for this type of program is that success can be created in a non-threatening environment.

Solution Strategy

Based upon the literature, the flexibility and speed of electronic media encourages the production of numerous solutions to artistic problems. Gray (1989 b) stated that current technology can provide new aesthetic problems to be explored that included the artists' expression and at the same time opens up new possibilites. Schwartz (1991) also agreed that the technology will allow the user to be more creative and have more input in the lesson being learned. Self-expression, creativity, diversity, and abstract interpretation are all components of dance and the fine arts. These characteristics make them a natural partner with technology. " Motivation is one of the most important ingredients in the teaching and learning process of instructional computing " (Boettcher, 1983, p. 40). Verity (1994) and Schwartz (1991) believed that the new technology would motivate and stimulate young people who were so impacted by television. Ultimately, the goal of education is to enable students to be facilitators of their own learning. Schank (1993) and Schwartz (1991) believed that the technology would allow the students to manipulate and control the various aspects of the leaning process. It

also would allow the students to become active participants in the educational process instead of just passive listeners. Burton and Lane (l989) found that in order to achieve this goal, the learning activities must be exciting adventures that provide the students room for self-expression. Verity (l994) and Schwartz (l991) agreed that the technology would provide the excitement and allow for student self-expression. That is also why Pannwitt (l984) states that computers should not only be used in the physical sciences and mathematics, but as an inspiring aid throughout the curriculum. Students found that overlapping subjects enriched and integrated their learning process. Armstrong (l994) found that students absorbed more when technology was part of the learning process. Unfortunately, Hubbard (l989 a) found that at many schools any attempt at modifying traditional programs to include computer usage is being firmly resisted. Some school leaders are encouraging teachers to exploit electronic media however, ". . . control in other schools continue to reside with subjects like mathematics and business " (Hubbard, l989 a, p. 32). However, Brandt (l992), Schwartz (l991), and Armstrong (l994) see computer technology as a natural partner with education and cite that the majority of school districts already have the hardware necessary to utilize and take advantage of the current technololgy.

Integrating computers within the dance curriculum would provide a number of advantages for the researcher, the students, and the program. The use of computers would allow the researcher to create a class for advanced students that would enable the students to progress to a point

that is not now possible. The work done by these students would benefit all students in all levels of dance. The students would benefit by having instruction in computers and multimedia in a non-traditional setting. Also, the students would benefit due to the control they would have over the learning process as well as the facility for creativity and self-expression. The program would benefit by meeting the mandate by the school district of integrating computers and computer technology within the curriculum.

The researcher has developed a pilot program for the Fall semester of 1994. Applying *Premiere 4.0* and *Action 1.0.4* computer program by Macromedia, the researcher believes that advanced dance students will be able to create a dance movement database (Appendix E, p. 82), and eventually manipulate these movements into computer generated choreography within a multimedia presentation. The pilot program would take place in one of the two television studios on campus. Due to the availability of only one MacQuadra 660 AV computer and the actual physical contraints of the television studio, only six advanced students will participate in this dance multimedia computer program.

The researcher believes that the pilot program is an important step in integrating computers into the dance curriculum. The researcher expects that allowing these students to create, manipulate, and experiment with a computer generated choreographic multimedia presentation will produce a new and inventive approach for design and construction of choreography.

CHAPTER III

Method

The researcher utilized the *Action 1.0.4* computer program by Macromedia. This program was the catalyst and instructional basis for the students to attempt and master the skills involved in the design work associated with multimedia and choreography. The six students who participated in this dance multimedia computer program were six returning advanced dance students who received the highest grade average in technical dance skills, who had previously choreographed at least two selections in the Advanced dance concert or the Spring l994 dance concert, and who were literate on a Macintosh computer. The pilot program consisted of 48 sessions over a 14 week period. Each session was 53 minutes. The first session was held in the regular classroom. Six sessions were held in one of the campus television studios. Six sessions were held in the editing room of the television computer lab. The remaining 35 sessions will be held in the television studio computer lab. All six students had access to one MacQuadra 840 AV that had *Action 1.0 .4* on the hard drive. *PageMaker 4.2*, *Quicktime 2.0*, *O'Foto 2*, and *Premier 4.0* computer programs were on the computer's hard drive. The following equipment was located in the same work station: a SyQuest

APS 200 mg. removable Hard Drive cartridge, a television video monitor and VCR, a Panasonic AG 455U video camcorder, and an Apple One and Apple Color One scanner. Each student had access to the SyQuest cartridge on which to save all work. One adult lab technician was available throughout all computer lab activity. The researcher is also computer literate and was available throughout the entire pilot program. The researcher administered any assistance required regarding problems and questions that occurred.

Week One: Session One

This first session took place in the dance classroom. During this first session, the researcher administered the Student Pre-Questionnaire to the six students chosen for the project (Appendix D, p. 77). The researcher discussed the purpose of the pilot program. A description of all the equipment to be utilized was given. All the equipment had not been set up due to the opening of school, therefore, the students were not able to view or experiment with the equipment this session. Students definitely showed signs of anxiety after completing the Pre-Questionnaire. Students stated they felt intimidated by the technological statements on the questionnaire. Once the students were given a list of dance movements to be videotaped, they related that they were quite curious and anxious about the project.

The students were pleased with the Ballet, Jazz, Hip-Hop and acrobatic dance styles to be represented in the dance database (Appendix E, p. 82). The reseacher informed the students that the student who received the highest grade in technical dance skills in the previous semester would perform the dance movements.

Week One: Session Two

This session took place in the television studio. During this session, the students experimented with one of the video camcorders being considered for this project and all it's functions. Each student took turns filming one another to become proficient with the camera. The remaining students became subjects. As the students practiced, they became aware of two factors: the designated dancer stated that she was uncomfortable performing all the dance techniques proficiently; and after viewing the videotape, the background in the studio was not suitable for the dance movement. After evaluating all the movement of the student dancers, the researcher decided to use three students for the videotaping. It was also decided by the mentor and the reseacher, that a blue curtain background would look better on videotape. It was decided to purchase the material before the next session.

Week One: Session Three

This session took place in the television studio. The students, reseacher, mentor and computer lab aid started constructing the blue curtain. The curtain needed to cover one wall of the studio, approximately 16' X 12' in area. Each person took a panel of material and began base stitching the panels together. The team realized that the construction of the curtain was going to take more than one session. The researcher had to take time to instruct a few of the students the art of hand stitching. The students enjoyed learning this new art.

Week Two: Session One

This session took place in the television studio. The students, lab assistant, and researcher continued sewing the blue curtain. Once this was accomplished, the curtain was installed in the studio. Two of the students used a steam iron to take out any wrinkles or folds in the fabric. It was decided that initial videotaping of the dance technique would begin with the next session. The student dancers decided it would visually be better to wear all black.

Week Two: Session Two

This session took place in the television studio. During this session, the students started videotaping the Ballet dance movement. Before filming, the three dancers evaluated each others execution of the Ballet technique and concurred which dancer should perform certain

movements. The following Ballet dance movements were filmed during this session: Ballet feet positions, Ballet port de bra, Grand plie (1st, 2nd, side view of 2nd position), Chassé (forward), Pas de Bourees (front and back), Glissades, Arabesque, Petit Battement, and Grand Battement. The mentor and researcher concluded certain dance techniques could be deleted due to the amount of memory needed to store the dance movement. Therefore, the researcher would study the technique list and decide what movement to delete from the database. A revised list would be determined after it was concluded how much memory was needed for all the technique. The tape was collected at the end of the session.

Week Two: Session Three

This session took place in the television studio. During this session, students continued taping the Ballet dance movements. The following Ballet dance movements were filmed during this session: Chainé turn (right and left), Piqué turn (right and left), outside right classical pirouette, outside left classical pirouette, Fouetté turn (right and left), Soutenues (right and left), developpé jeté (right and left), and grand jeté (right and left). The student dancers had a few problems executing the technique due to the contraints of the performing area. All the students reviewed the work to determine if angle, lighting and movement were correct. Many re-takes were needed to achieve all the movement in viewing frame. Each student had an equal amount of time operating the video camcorder. The tape was collected at the end of the session.

Week Three: Session One

This session took place in the television studio. The students began to tape the Jazz dance movements. Before filming, the three dancers evaluated each others execution of the Jazz technique and concurred which dancer should perform certain movements. The following Jazz dance movements were filmed during this session: Feet positions (1st and 2nd only), Jazz port de bra, Inverted knee positions with arms (right and left), Jazz kicks in 1st and 2nd (relevé position), Fan kick (right), Snap turn (right), Chassés into back Pas de Bourees (right and left), Jazz split to floor (right and left), roll on floor (legs through 2nd position), outside right jazz pirouette (double), and outside left jazz pirouette (double), Fouetté tuck turn (right), Hitch kick, and double and single stag jumps. The tape was collected at the end of the session.

Week Three: Session Two

This session took place in the television studio. The students started filming the Hip-Hop dance movements. The researcher decided that only one student dancer would perform this style. The following Hip-Hop movements were filmed during this session: the Butterfly, the Electric Slide, the Running Man, the Bart Man, Funk step #1, Funk step #2, Funk step #3, Funk step #4, Funk step #5, and Funk step #6.

The dance movements were completed by the end of the session. The researcher and the students will review the videotapes and determine if any re-taping needs to be done at this time. The tape was collected at the end of the session.

Week Three: Session Three

This session took place in the television studio. The students began filming the Acrobatic technique. Before filming, the three dancers evaluated each others execution of the Acrobatic technique and concurred which dancer should perform certain movements. The following acrobatic movements were filmed during this session: Back handspring, Cartwheel (right and left), Center split jump with prep, Extension (right and left), aerial (right and left), split (right and left), Front walkover, and center jump in second position from a standing position. A student stated that it would be difficult to arrange some of the technique without transition steps in-between some of the movement. The team determined that transition steps be added to the database in order to alleviate this problem. The following transition steps were filmed: Chassé, ball change (right and left), Jazz walk, traveling pas de bouree, and pivots (right and left). The tape was collected at the end of the session.

Week Four: Session One

This session took place in the television studio computer lab. The researcher and all students began reviewing all the dance videotapes. The process of the videotaping was discussed by the students and the researcher. It was agreed by all that the only problem was the contraints of the performing area. As the tapes were viewed, students took notes on any on any technique that would have to be re-taped. Re-taping of any movement would be completed during the next session. All work was collected at the end of the session.

Week Four: Session Two

This session took place in the television studio computer lab. The researcher and students continued viewing the dance tapes and making any notes for re-taping. Actual re-taping could not be done due to another project utilizing the television studio area. Re-taping was scheduled for the next session. Viewing of the tapes was concluded by the end of this session. Tapes and notes were collected at the end of the session.

Week Four: Session Three

This session took place in the television studio computer lab. The students began the re-taping of necessary dance technique. The mentor made the researcher aware of a few problems in the computer lab.

Due to the remodeling and construction in the building, the electricity and air conditioning was very erratic. The complete lab area, including the work station that this program was to position itself, was not completely set up. The mentor was also waiting for the updates of our two main computer programs; *Premiere* and *Action*. It was decided at this session to teach two of the students how to edit videotape. These students could run through the dance tapes and edit any footage not needed. This process could begin in the next session. All taping of dance technique was concluded during this session. Tapes and notes were collected at the end of the session.

Week Five: Session One

This session took place in the television studio editing room. The mentor explained to two of the students and the researcher how to use the editing machine. The students then began to edit the Ballet technique dance tape. The students and researcher were amazed at the precise ability of the editing machine. Tapes were collected at the end of the session.

Week Five: Session Two

This session took place in the television studio editing room. The two students continued editing the Ballet dance tape, while two students watched to learn the process. The students finished the Ballet tape, and started the Jazz technique tape. Tapes were collected at the end of the session.

Week Five: Session Three

This session took place in the television studio editing room. The same four students continued editing the Jazz dance tape. The students took turns using the editing machine. The Jazz tape was finished and the students moved on to the Hip-Hop technique tape. It was decided by the researcher and the students to conclude editing by the end of the next session. Tapes were collected at the end of the session.

Week Five: Session Four

This session took place in the television studio editing room and the computer lab. The same four students continued the process of editing the Hip-Hop technique, the Acrobatic technique, and the transition steps dance tapes. The researcher instructed the remaining two students to begin writing the text for the completed dance technique movements on a Macintosh SE computer. The text was written in the same order as the movements appeared on the individual videotapes. The text included the technique term and a brief description on execution of the technique.

The text was saved on a disk. All editing was completed during this session. All work was collected at the end of the session.

Week Six: Session One

This session took place in the television studio computer lab. The students continued to write the text for the dance technique. Since the editing process was complete, the researcher took the remaining four students and instructed them to help with the text. The students found that their descriptions were many times too long. Condensing the explanations made some of the students frustrated. The researcher viewed the text as it was written to make sure it was concise and easy to read. All work was saved on disk. The researcher was told by the mentor that the computer work station was ready. All work was collected at the end of the session.

Week Six: Session Two

This session took place in the television studio computer lab. The students continued writing the text. The researcher and mentor discussed the amount of memory it might take to store all the movement and text. Since this was an unknown variable, it was decided to finish the text and move on. All text was completed during this session. All work was saved on disk. All work was collected at the end of the session.

Week Six: Session Three

This session took place in the television studio computer lab. The researcher and mentor elected to switch the order of process with the computer programs. Since the process of digitizing the dance video movement would take more time, the mentor did an orientation into the *Premiere* program instead of the *Action* program.

The lab mentor illustrated to the students and researcher how to digitize a dance movement on video into computer by using *Premier 4.0*. The mentor presented an overview of the features and functions of the new updated version of *Premiere 4.0.* The mentor illustrated the following: selecting a full screen, selecting colors and background patterns and selecting a text tool, in which a font, color, size must be chosen, selecting and entering transition of text, selecting the entrance of transition, selecting duration of entrance, highlighting text, selecting the exit transition of text, selecting the exit area of text and how to use the control panel with the pause, stop, rewind, fast-forward, and play functions. The main functions utilized in this program was digitizing the video into computer. The students each had an opportunity to experiment on the computer and practice the order of sequence and the functions involved in the program. All students utilized their critical thinking skills throughout this process. The researcher and mentor were available for any problems or questions. All experimented work was saved on a hard drive cartridge. All work was collected at the end of the session.

Week Seven: Session One

This session took place in the television studio computer lab. Students were placed in three groups of two. The groups were labeled Group A, Group B, and Group C. During this session the researcher allowed the groups to decide what technique each group would digitize. Group A began working on the Hip-Hop technique tape. During this session, it was discovered that one second of movement required 1,000 bytes of memory. The researcher and mentor quickly concluded that the amount of text written and the amount of movement on video was going to exceed the memory available. The researcher instructed Group B and C to start another file for text. This edited version of text included the technique term and pronunciation only. The researcher and mentor elected to cut some dance movement as the students were digitizing. This process would allow more memory. Group A finished digitizing the following: the Butterfly, the Electric Slide and the Running Man. All work was saved on hard drive cartridge and disk. All work was collected at the end of the session.

Week Seven: Session Two

This session took place in the television studio computer lab. Group A continued digitizing the Hip-Hop movement. The researcher discovered the most efficient way to help the process was to utilize four students in this manner: one student to watch the counter on the video recorder for starting basis, one student to run the videotape, one student

to manipulate the computer and one student to write down specific frames. The following technique was finished during this session: the Bart Man, Funk Step #3, and #6. There were slight problems in the SyQuest cartridge in the process of saving the work. The students were finally successful. Group B and C concluded the edited text file. All work was saved on disk or hard drive cartridge. All work was collected at the end of the session.

Week Seven: Session Three

This session took place in the television studio computer lab. researcher and mentor elected to cut some dance movement as the students were digitizing. This process would allow more memory. Group B began digitizing the Ballet movement. The students then experienced a power surge and lost all their work. Students needed to repeat the process. The following technique was finished during this session: ballet feet positions and port de bra, Grand plié in 1st and 2nd and 5th, forward Chassés, front Pas de bouree, and glissades. All work was saved on hard drive cartridge. All work was collected at the end of session.

Week Seven: Session Four

This session took place in the television studio computer lab. Group B continued digitizing Ballet movement. The following technique was finished during this session: Petit Battement, Grand Battement, Chainé Turns (2-right), Chainé Turns (2-left), and Piqué Turn (1-left).

All work was saved on hard drive cartridge. All work was collected at the end of session.

Week Eight: Session One

This session took place in the television studio computer lab. Group B continued digitizing Ballet movement. During this session the computer experienced a power failure and students lost all their work. The students needed to repeat the process. The following technique was finished during this session: outside left classical pirouette, outside right classical pirouette, and fouettés (2-right). The mentor informed the researcher that the electrical problems were due to the remodeling in the building. All work was saved on a hard drive cartridge. All work was collected at the end of the session.

Week Eight: Session Two

This session took place in the television studio computer lab. First, Group B continued digitizing the Ballet movement, while Group C started the Jazz movement. During this session the SyQuest turbo was not accepting the data to save. It was determined by the mentor that the SyQuest was defective and needed to be fixed by the district. The students continued the process saving the work on the computers hard drive. In order to accomplish this, the mentor had to delete some files off the hard drive. The following technique was finished during this session:

fouettés (2-left), Grand jeté (right), Developpé jeté (right), arms and feet in Jazz 1st and 2nd parallel position, Jazz kicks in 1st, Fan kick (right), and Hitch kick (left). All work was saved on the computers hard drive.

Week Eight: Session Three

This session took place in the television studio computer lab. Group C continued digitizing the Jazz movement. Another power failure restricted the students ability to continue. Students lost all work for the session.

Week Eight: Session Four

This session took place in the television studio computer lab. Group C continued digitizing the Jazz movement. The following technique was finished during this session: snap turns (2-right), outside left Jazz pirouette, outside right Jazz pirouette, single stag leap, and double stag leap. The students were not able to save any more work due to the contraints of the computer's memory capacity.

Week Nine: Session One

This session took place in the television studio computer lab. Group C continued to digitize the Jazz movement. The mentor was able to locate another removeable hard drive to continue the work. The students noted that the use of the SyQuest made the process move very slow. Using the computers hard drive was much faster. The mentor

decided to add more memory to the computer by next session. The following technique was finished during this session: fouetté tuck turn (right), jazz split (left), and Extension (left). All work was saved on the hard drive cartridge. All work was collected at the end of the session.

Week Nine: Session Two

This session took place in the television studio computer lab. The mentor was able to install eight more megs. of memory in the computer to try to finish the digitizing process and make the movement smoother. The researcher had not heard anything on the repair of the orginal defective SyQuest cartridge. Group A started digitizing the Acrobatic movement. The lab experienced yet another power failure. The students lost all their work for the session.

Week Nine: Session Three

This session took place in the television studio computer lab. The original SyQuest cartridge was back. The researcher and mentor decided to experiment on movement that had been deleted from the database. The cartridge was still slow, although it was reading the data. A power failure hit once more. All work was lost during the session.

Week Ten: Session One

This session took place in the television studio computer lab. The researcher discussed with the principal that the power failures were

becoming quite a frustration for the students, the researcher, and the mentor. The principal decided to make this problem a priority. Group A began to work and we experienced no electrical power. Plans for this session were cancelled.

Week Ten: Session Two

This session took place in the television studio computer lab. Group A began digitizing the Acrobatic movement. The students were able to work the entire session without electrical power problems. The following technique was finished during this session: front walkover, cartwheel (right), aerial (left), back handspring, center split jump and an illusion. The work was saved on the hard drive cartridge. All work was collected at the end of the session.

Week Ten: Session Three

This session took place in the television studio computer lab. Group A continued to digitize the remaining movement. The students experienced a slight power surge at the beginning of the work. The students were able to save before the incident. The following technique was finished during this session: Chassé, ball change, jazz walk, traveling pas de bouree, and pivots (right and left). All work was saved on a hard drive cartridge. All work was collected at the end of the session.

Week Eleven: Session One

This session took place in the television studio computer lab. The team reviewed the digitized work. The researcher and mentor discovered that the co-processor was vital to the clarity of the picture on computer. If the co-processor is not operating correctly, frames will be dropped in the digitizing between video and computer. A team assessment was done during this session. The students digitized a total of 84 "movies" of dance movement. Each file or movement ranged between 2.9 through 6.3 mgs. of memory. It was concluded that in order to produce a viable multimedia presentation, the list of dance technique would have to be scaled down to accommodate the memory that was available. The researcher would have an edited list of technique by the next session (Appendix G, p. 87).

Week Eleven: Session Two

This session took place in the television studio computer lab. All students were given an orientation on the *Action 1.0.4* computer program. The researcher and lab mentor presented an overview of the features and functions of the the *Action 1.0.4* computer program. During this session the researcher and lab mentor instructed the students on the

following: opening the program, opening a new document, naming a scene and saving a document, selecting a full screen, selecting colors and background patterns and selecting a text tool, in which a font, color, and size must be chosen. The students each had an opportunity to experiment on the computer and practice the order of sequence and the functions involved in the program.

Week Eleven: Session Three

This session took place in the television studio computer lab. The instruction on the *Action 1.0.4* computer program was continued. During this session the researcher and lab mentor instructed the students on the following: review of the functions and sequence explained in session three, selecting entering transition of text, selecting the entrance of transition, selecting duration of entrance, highlighting text, selecting the exit transition of text, selecting the exit area of text and how to use the control panel with the pause, stop, rewind, fast-forward, and play functions. The students each had an opportunity to experiment on the computer and practice the order of sequence of the functions covered during this session.

Week Eleven: Session Four

This session took place in the television studio computer lab. The students were placed in the same three groups of two; labeled A, B, and C. During this session Group A applied their critical thinking skills and

began designing the first template to introduce the Ballet section of the database. Group B and C watched attentively to learn the process. The students discovered how easy it was to design a template once they remembered how each function performed. The students had some difficulty with the timeline and spent most of the session working on that function. All the students were actively involved in the process. The students decided to keep the template consistent for all the styles in the database. The students also decided to utilize the dissolve feature to bring in and out each movement and it's text. The researcher informed the students of the schedule for upcoming sessions on computer usage time. The researcher and mentor were available for any questions or problems. All work was saved on the hard drive cartridge. All work was collected at the end of the session.

Week Twelve: Session One

This session took place in the television studio computer lab. Group A continued to work in the *Action* program and the Ballet movement. The students discovered that the resolution would change when the images went from computer to T.V. monitor. The mentor explained how to adjust the resolution on the computer. The students needed to change from 512 X 384 to 640 X 400 high resolution to recieve a cleaner picture. The students also realized that when they transfered the templates to video, they lost brilliantcy. Group B then found in the manual that templates are made with 16 bits and when transferred, there

is a loss of eight bits. Group A and B students elected to return after school on this day to continue this process for at least three to four hours. All work was saved on the hard drive cartridge. All work was collected at the end of the session.

Week Twelve: Session Two

This session took place in the television studio computer lab. The students continued working in the *Action* program. The researcher and mentor discussed the problem with the SyQuest cartridge saving speed and the amount of memory needed to complete the project. It was concluded to stop using the SyQuest and instead the students would save their work on the computers hard drive. The mentor then tranferred all files from the SyQuest cartridge to the computers drive. The realization that there was not sufficient memory to digitize any 30 second dance pieces prompted another program change. The researcher instructed one of the student dancers to choose movement from the database, arrange a 30 second dance piece by hand, select music, and then perform it for videotaping. The students creation would be solely based on the movement available in the database. The mentor and researcher concluded that this would still be a viable way of constructing choreography. During this session, the students were able to finish the Ballet movement. All work was saved.

Week Twelve: Session Three

This session took place in the television studio computer lab. Group B started to work on the Jazz movement with the *Action* program. The researcher and lab mentor will be available for any problems or questions that might arise. The remaining students, the researcher, and mentor discussed a timeline to complete the project. It was determined to conclude the program in the following two weeks. During this session, the students were able to finish the Jazz section. All work was saved on the computer's hard drive.

Week Twelve: Session Four

This session took place in the television studio computer lab. Group C started to work on the Hip-Hop movement with the *Action* program. The researcher and lab mentor will be available for any problems or questions that might arise. During this session, the researcher and remaining students selected music for the various styles in the database. The music would be edited into the database once it was completed. During this session, the students were not able to finish the Hip-Hop section. All work was saved on the computer's hard drive.

Week Twelve: Session Five

This session took place in the television studio computer lab. Group C continued to work on the Hip-Hop movement with the *Action* program. The researcher and lab mentor will be available for any

problems or questions that might arise. The student dancer was ready to film her 30 second dance piece. The television studio was not available, so the students filmed the dancer in the gymnasium. During this session, the students were able to finish the Jazz section. All work was saved on the computer's hard drive.

Week Thirteen: Session One

This session took place in the television studio computer lab. Group A started to work on the Acrobatic movement with the *Action* program. The researcher and lab mentor were available for any problems or questions. The remaining students, the researcher, and mentor viewed the 30 second dance piece. It was found that the dancer used movement that was deleted from the database. It was determined that the dancer needed to be true to the existing database. The dancer would re-construct and re-tape her dance during the next session. During this session, the students were able to finish the Acrobatic section. All work was saved on the computer's hard drive.

Week Thirteen: Session Two

This session took place in the television studio computer lab. Group A started to work on the Transition movements with the *Action* program. The researcher and lab mentor were available for any problems or questions. The student dancer and remaining students filmed the 30 second dance piece in the gymnasium. During this session, Group A finished the Transition movements and the team viewed the 30 second

dance piece. All concurred that the dance was suitable for the project. All work was saved on the computer's hard drive.

Week Thirteen: Session Three

This session took place in the television studio computer lab. The team viewed the *Action* project on the computer. Notes were made on technical areas that needed to be re-structured. The main areas were in the timeline and could be easily corrected. Group B started the clean up. After the clean up was completed, the entire multimedia presentation was printed to videotape. The researcher, mentor, and remaining students decided that the music would be added at the next session. All work was saved on the computer's hard drive.

Week Thirteen: Session Four

This session will take place in the television studio editing room. The researcher and students were instructed by the mentor how to edit music into the database. It was decided by the mentor to add the music separately from the computer due to the memory contraints. The students experimented with fading music at beginning and end of each section. The students said they found this task enjoyable, due to the fact that it was exciting to see their own creations working so well with the music. During this session, the students were able to finish the Ballet, Jazz and Hip-Hop music. All work was collected at the end of the session.

Week Fourteen: Session One

This session took place in the television studio editing room. The students continued editing the music into the database. The students finished the Acrobatic and Transition section. The students decided to add the 30 second dance piece at the end of the videotape. All work was collected at the end of the session.

Week Fourteen: Session Two

This session took place in the television studio computer lab. During this session, the researcher, lab mentor, students, chairman of the media center, and the school principal viewed the completed dance database presentation. The researcher administered the Student Post-Questionnaire to all students (Appendix D, p. 77). The researcher also administered the Pilot Program Review Questionnaire to lab mentor, chairman of the media center, and the school principal (Appendix F, p. 85). The researcher also filled out a review questionnaire. The researcher and lab mentor provided positive reinforcement to all students in regard to the group and individual work.

CHAPTER IV

Results

The students began the pilot program by taking a Student Pre-Questionnaire (Appendix D, p. 77). This questionnaire elicited the student's ideas, opinions, and attitudes about computers and dance. The questionnaire also elicited the ideas, opinions, and attitudes about the student's self-involvement with computers and dance.

At the conclusion of the study, the students took a Student Post-Questionnaire (Appendix D, p. 77). The questionnaire elicited the same ideas, opinions, and attitudes about computers and dance as the Pre-Questionnaire.

The Student Pre-Questionnaire was administered to give the researcher an indication of the amount and quality of instruction in both dance and the use of computers that the students felt they possessed.

A comparision of responses between the Student Pre and Post-Questionnaire regarding abilities, attitudes and opinions about dance and computers showed some positive gains (Appendix J: p. 96).

Objective One

After fourteen weeks of instruction in the pilot program, objective number one was successfully attained as evidenced by six out of six students answering "strongly agree" and "agree" to question number eight on the Student Post-test Questionnaire (Appendix J: p. 96), on the use of the creation of a dance movement database and deeming the dance database a viable tool for designing computer generated choreography.

Objective Two

After fourteen weeks of instruction in the pilot program, objective number two was successfully attained as evidenced by six out of six students responding "strongly agree" and "agree" on questions twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, twenty-one, and twenty-two on the Student Post-test Questionnaire (Appendix J: p. 96). All questions related to the use and knowledge of the technology utilized in the pilot program orginally stated in objective number two.

In addition to the student pre-test and post-test questionnaire, a pilot program review questionnaire was also administered at the conclusion of the project (Appendix F, p. 85). The questionnaire elicited the programs educational value, its purpose and content, the presentation, utilization of technology, and viability within the dance

curriculum. The four adults that completed the questionnaire were the researcher, the mentor, the media center chairperson, and the school principal. In response to question number one (I feel that this pilot program has educational value), 100 percent of the adults answered "strongly agree" (Appendix K: p. 102).

In answer to question number two (I feel that the purpose and content of the pilot program is well defined and logical), 75 percent answered "strongly agree" and 25 percent "agree" (Appendix K: p. 102).

In reply to question number three (I feel that the dance database is presented in a concise and clear manner), 100 percent responded "strongly agree" (Appendix K: p. 102).

Question number four (I feel that the software and the multimedia computer technology is user friendly), 100 percent of the responses were "strongly agree" (Appendix K: p. 102).

In answer to question number five (I feel that the use of this technology and software by the students' in designing computer choreography has been utilized in efficient presentations), 100 percent again responded "strongly agree" (Appendix K: p. 102).

Finally, in question number six (I feel that this pilot program should be considered as a worthwhile course to be offered within the dance curriculum), 100 percent of the answers were "strongly agree" (Appendix K: p. 102).

Objective Three

After fourteen weeks of instruction, objective number three was met as evidenced by six out of six students finding that computer generated choreography is more interesting and would prefer this process as part of their design and construction of future dance pieces by responding "strongly agree" and "agree" to question number nine on the Student Post-test Questionnaire (Appendix J: p. 96). Also, six out of six students responded "strongly agree" to question number ten on the Student Post-test Questionnaire in reference to the enjoyment of using a computer for creative work (Appendix J: p. 96).

Objective Four

After fourteen weeks of instruction, objective number four was met as evidenced by six out of six students indicating a willingness to register for the course again due to the interest of computer generated choreography by responding "strongly agree" and "agree" to questions eleven and twenty-three on the Post-test Questionnaire (Appendix J: p. 96).

A videotape of the edited dance movement database is available on request.

CHAPTER V

Recommendations

The researcher recommends that a copy of the study be presented to the school site curriculum committee and the district curriculum committee in order to foster interest and act as a catalyst to initiate the prospect of computers and multimedia technology within the dance curriculum in the immediate future. The researcher recommends a conference and workshop be initiated with the principal, administrators, and mentor in an attempt to create a course within the dance department utilizing this pilot program and any current multimedia computer technology. The researcher also recommends that any and all technology utilized in the pilot program be duplicated, expanded and established within the confines of the dance program for easier accessability and sole usage for dance students. The completion of the original dance movement database was not able to be accomplished during this pilot program due to the limitations of computer memory. The amount of dance technique terms were edited from the initial 84 movements to 34 movements.

Establishing this pilot program would mean creating additional funding for the media center and the dance program to purchase computers that would accommodate the need for large memory capacity. The researcher suggests that investigation into educational grants be studied in order to accomplish the necessary additional funding.

The researcher further recommends sharing the study with other Fine Arts departments in the district. This is valuable because it provides another alternative to entice a wide variety of students in all levels into the dance programs within the Fine Arts departments.

The researcher also recommends planned visits to neighboring school districts to see what existing and new technologies are being utilized within established dance programs. The researcher further recommends investigation of dance course offerings at the local community colleges and universities for current technological innovations.

Finally, the researcher recommends continued attendance to lectures, seminars, and presentations that demonstrate and promote new technologies in the dance curriculum. The researcher continues to be a strong advocate of technological experimentation and advancements in the field of dance.

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Appendixes

APPENDIX A: School District Mission And Belief Statements

Our mission is to develop within all students the leadership qualities necessary to fulfill their roles as responsible citizens of a democratic society in a changing world.

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Strategic Plan

January 1992

A Sampling of Our Accomplishments

We are committed to realizing our mission:

By Providing:

- an enriched and integrated core of knowledge and experiences
- a successful learning experience for all students
- a positive caring environment

By Promoting:

- inquiry
- risk-taking
- cooperation
- joy of learning
- cultural appreciation
- respect for individuality
- skillful decision-making
- effective communication

We will know we are accomplishing our mission when all of our students have mastered the skills essential for lifelong learning and are:

- Self-Directed Learners
- Problem Solvers
- Collaborative Leaders
- Clear and Creative Thinkers
- Quality Producers
- Effective Communicators

Beliefs

1. Education is a lifelong process.
2. Each student is entitled to the highest quality educational opportunities.
3. The integrated approach to teaching and learning is essential.
4. Everyone can learn and be successful.
5. High expectations and hard work, driven by a positive vision, are essential to quality performance.
6. Education must advance the dignity, self-esteem, growth, and integrity of all individuals.
7. Education is the shared responsibility of the student, home, school, and community.
8. All persons and activities in the school district support the teaching and the learning process.
9. Shared decision-making is essential.
10. Receptivity to change is important.

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Goals and Strategies

Commitment to Excellence

Objective #1: By June, 1994, the Scottsdale School District will be perceived as one of the top 40 districts in the country.

Objective #2: By June, 1994, the Scottsdale School District will be perceived as being excellent by at least 80% of its students, staff and community.

Strategy 2.1: We will develop plans to personalize the District Strategic Plan so that everyone shares information, cares about each other, and dares to take and encourage risks.

Strategy 2.2: All members of the educational community will establish personalized educational goals to challenge themselves to reach their fullest potential.

Strategy 2.3: We will develop an assessment instrument to determine the 80% rating.

Community Relations:

Objective #3: Each year, we will increase parent and community participation in school and district related activities.

Strategy 3.1: Each school will develop a plan to increase parent and community participation in school and district-wide activities.

Strategy 3.2: The District will report annually to the community on parent/community involvement.

Curriculum and Instruction:

Objective #4: By June, 1993, the District will have in place a curriculum system which emphasizes the teaching of an integrated core of knowledge and effective communication.

Strategy 4.1: We will refine our process for curriculum development to delineate all components necessary to design, implement and evaluate our program.

Strategy 4.2: We will ensure that in each classroom the District will develop and implement curriculum based on an integrated core of knowledge.

Objective #5: By June, 1995, in order to provide a successful learning experience, all teachers and students will be committed to and engaged in integrated instructional processes which model and facilitate the District mission.

Strategy 5.1: We will establish guidelines for effective, integrated instruction.

Strategy 5.2: We will collect evidence of effective, integrated instruction for every classroom.

Strategy 5.3: We will establish district-wide outcomes to demonstrate student performance.

Strategy 5.4: We will establish a Curriculum/Instruction Council for all grades.

Strategy 5.5: We will collect evidence of effective assessment of student progress in every classroom.

Strategy 5.6: We will include the elements of the Strategic Plan instructional objective in the evaluation instruments for all employees.

Strategy 5.7: We will actively engage all students in their own learning and provide multiple opportunities to succeed.

Strategy 5.8: Each school will annually address how the instructional objectives of the Strategic Plan will be accomplished.

Strategy 5.9: We will establish a professional development program which ensures that all staff will have mastered the elements of this objective.

Strategy 5.10: We will develop and implement an instructional program which models and facilitates inquiry, risk-taking, leadership, communication, cultural appreciation, socialization skills, and integrated curriculum for staff, students, and community.

Funding:

Objective #6: The District will continue to provide annual increases to the M & O Budget of 3% greater than the formula increases provided by current state funding.

Strategy 6.1: We will aggressively pursue alternative public and private sources of funding.

Human Resources:

Objective #7: By January, 1993, the Scottsdale School District will design new standards for employment, and implement procedures to ensure that the best candidates will be hired and that only quality staff who continue to meet the standards will be retained.

Strategy 7.1: We will develop and implement specific written standards for a quality staff person.

Strategy 7.2: We will develop and implement a comprehensive plan to recruit the most outstanding staff.

Strategy 7.3: We will develop comprehensive procedures to screen, validate and hire the most qualified applicants.

Strategy 7.4: We will re-write and implement staff evaluation procedures to incorporate the standards for a quality staff.

Strategy 7.5: We will eliminate excessive surplusing, reducing-in-force, and transferring of certificated staff.

Strategy 7.6: We will encourage continuous improvement and assist employees to perform at optimum levels of energy and effectiveness.

Management:

Objective #8: By June, 1993, each school community will establish a management system that is driven by the District Strategic Plan and incorporates shared decision-making.

Strategy 8.1: We will develop and promote a comprehensive education package to support shared decision-making at all schools.

Strategy 8.2: We will provide incentives and rewards to those schools that create and implement a site-based shared decision-making management system.

Strategy 8.3: We will develop an on-going review process that highlights successes and addresses weaknesses of policy, procedures, and issues related to site-based shared decision-making.

Communication:

Objective #9: By June, 1993, we will establish a comprehensive, district-wide communication/information system.

Strategy 9.1: We will continually evaluate, revise, and enhance the existing internal and external communications system.

Strategy 9.2: We will develop and implement a system for communicating the strategic plan to each district department and school community.

Strategy 9.3: We will establish an information system which contributes to successful school operations.

Technology:

Objective #10: By June, 1994, all Scottsdale School District facilities will be equipped with state of the art technology.

Strategy 10.1: The Technology Steering Committee will develop and update a comprehensive plan for implementing and using technology to support instruction and management.

Objective #11: By June, 1993, a comprehensive technology staff development program will be developed.

Strategy 11.1: The Technology Steering Committee will develop and update a comprehensive plan to train staff for using technology to support instruction and management.

SCOTTSDALE PUBLIC SCHOOLS

Scottsdale Public Schools
Education Center
3811 North 44th Street
Phoenix, Arizona 85018
(602) 952-6157 • FAX (602) 840-4307

APPENDIX B: High School 2001

Mission Statements

High School 2001

- The Focus is on Lifelong Learning

The Mission of High School 2001 Is:

- The mission of high school education in the Scottsdale School district, as the leader in student-centered education, is to fulfill the District's mission through the innovative application of students' skills and knowledge to real life experiences.

High School 2001 Focuses on the Lifelong Learner

- In the Local and Global Community
- In the Workplace
- In the Academic Community

Characteristics of Lifelong Learners

- Self-Directed Learners
- Problem Solvers
- Collaborative Leaders
- Clear and Creative Thinkers
- Community Contributors
- Quality Producers
- Effective Communicators

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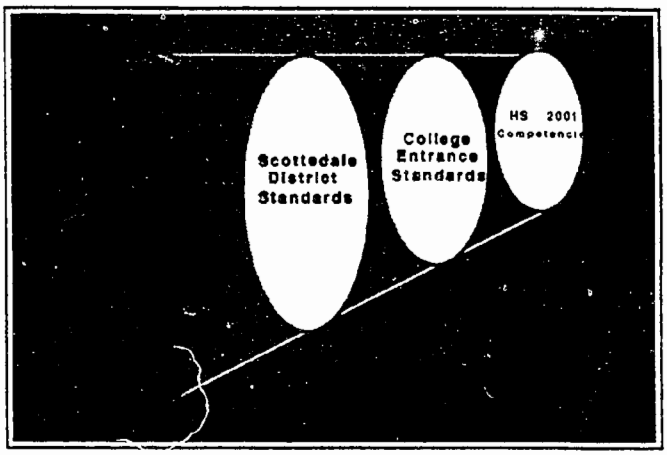
High School 2001: Expanding Educational Opportunities



Meeting Arizona Educational Requirements

- Meeting Credits Required for Graduation
- Meeting the Goals for Essential Skills

Meeting Scottsdale District Educational Requirements

- 25 High School Credits
- 5 Proficiency Exams
  - Writing Proficiency – 9th grade
  - Writing Proficiency – 10th grade
  - Writing Proficiency – 11th grade
  - Reading
  - Consumer Math

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Fulfilling State University Admission Standards

- Four Years of English
- Three Years of Mathematics
- Two Laboratory Sciences
- Two Years of Social Studies

Competency:

- Mastery of Essential Knowledge and Skills
- Application of Skills

High School 2001 Engages Teachers in:

- Identifying what students should be able to do
- Setting standards of competency
- Providing opportunities to demonstrate competency

High School 2001 Engages Students in Demonstrating Competencies

- Exhibitions
- Performances

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Sample Competency:

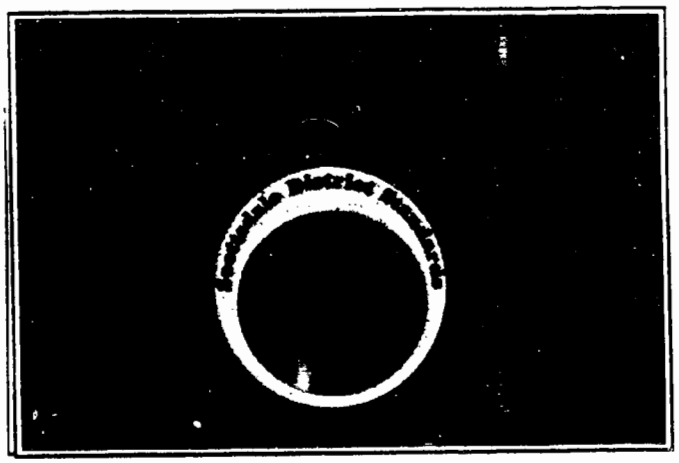
- The Scottsdale Graduate Speaks Effectively
  - Indicators of Effective Speaking
  - Proof of Proficiency With Standards

What Does This Mean for Our Students?

- Our Students Will:
  - Have Stronger Credentials
  - Be Better Prepared for the Work Place
  - Enjoy a Diversity of Meaningful Academic Experiences
  - Be Committed to Lifelong Learning

What Does This Mean for Our Community?

- A Strong School System:
  - Enhances the Quality of Life
  - Sustains an Educated Citizenry
  - Strengthens the Work Force
  - Increases Property Values



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APPENDIX C: High School 2001

Competency #10

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Draft

Competency #10: The Scottsdale graduate uses technology effectively.

Rationale:

Technology is an essential tool that helps individuals to gather and create information, organize and analyze information, and communicate ideas. Technology empowers individuals to be lifelong learners and to create meaning for themselves and others in a changing world.

Indicators of Effective Use of Technology:

To demonstrate this proficiency, students will

- access information globally
- create information
- organize information using appropriate systems and software
- apply technological tools to analyze information
- communicate ideas
- demonstrate ethical use of technology
- demonstrate initiative in the appropriate use of technology
- demonstrate proficiency in hardware and software management

Competency Criteria with Standards:

Each student will demonstrate initiative and proficiency of technological competencies in realizing the objectives in all courses. Upon completion of the high school graduation requirements, the student will demonstrate proficiency in the following areas of technology:

- video
- spreadsheet
- on-line databases
- word processor
- interactive media
- database
- collaborative problem solving
- graphics and/or music
- multi-media
- information networks: local & global

Recommendation:

As a means for demonstrating the technological proficiency, the students will include relevant samples of their work in their portfolios.

APPENDIX D: Student Pre-test/Post-test

Questionnaire

APPENDIX D

Student Pre-test/Post-test Questionnaire

Circle one

Female Male

1. I have had adequate dance instruction before taking this class.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

2. At this time, I feel comfortable about my abilities as a dancer.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

3. At this time, I feel comfortable about my abilities as a choreographer.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

4. I enjoy the process of creating choreography.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

5. Creating choreography in a traditional dance studio atmosphere can be tedious and frustrating.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

6. As a choreographer, scheduling dancers for rehearsals and constant choreographic changes can be tedious and frustrating.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

7. I want the opportunity to develop and create original choreography.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

8. The use of a computer generated dance movement database would help me to be more creative in designing choreography.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

9. Using a computer to create choreography would be more interesting than the usual traditional dance studio method.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

10. I enjoy using a computer for graphics, design, and other creative work.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

11. Having computers within the dance program to create choreography would be a major incentive in my registering for this class.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

12. I have had experience working with the *Action 1.0.4* computer program by Macromedia.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

13. I have had experience working with the *PageMaker 4.2* computer program.
A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

14. I have had experience working with the *Premier 4.0* computer program.
A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

15. I feel comfortable operating a video camcorder.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

16. I have had experience transferring video images into a computer program.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

17. I have had experience digitizing video and still art graphics into a computer.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

18. I have had experience creating text within a computer graphic program.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

19. I have had experience editing video.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

20. I have had experience editing computer graphics.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

21. I have had experience editing music.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

22. I have had experience transferring computer multimedia presentations onto videotape.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

23. At the present time, I would consider registering for this class again, even if it were not required for graduation.

A. Strongly Agree B. Agree C. Somewhat Agree
D. Disagree E. Strongly Disagree

APPENDIX E: Dance Terminology

For Computer Database

APPENDIX E

Dance Terminology For Computer Database

BALLET MOVEMENT

Ballet feet positions
Demi-plie in.....
(1st, 2nd, and 5th position)

Ballet port de bra
Grand plie in.....
(1st, 2nd, and 5th position)

Chasses (4 directions)
Glissades
Petit Battement
Echappes
Pique turn (right and left)
outside left classical pirouette
Soutenues (right and left)
grand jete (right and left)

Pah de Bourees (front and back)
Arabesque
Grand Battement
Chaine turn (right and left)
outside right classical pirouette
Fouette turn (right and left)
developpe jete (right and left)

JAZZ MOVEMENT

Jazz feet positions in.....
(1st & 2nd position)

Jazz port de bra

Inverted knee positions.....
(right & left)

Jazz kicks in 1st and 2nd in.....
(flat and releve position)

Fan kick (right and left)

Snap turn (right and left)

Chasses/back Pah de Bourees
(right and left)
roll on floor
(legs through 2nd position)
Fouette tuck turn (right and left)

Jazz split to floor
(right & left)
outside right jazz pirouette
outside left jazz pirouette
double and single stag jumps

HIP-HOP MOVEMENT

Funk step #1
Funk step #2
Funk step #3
Funk step #4
Funk step #5
Funk step #6

The Butterfly
The Electric Slide
The Running Man
The Bart Man

ACROBATIC MOVEMENT

Back handspring
Center split jump with prep
Aerial (right and left)
Front walkover
Center jump in second position from a standing position

Cartwheel (right and left)
Extension (right and left)
Split (right and left)

APPENDIX F: Pilot Program

Review Questionnaire

APPENDIX F: Pilot Program Review Questionnaire

1. I feel that this pilot program has educational value.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

2. I feel that the purpose and content of the pilot program is well defined and logical.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

3. I feel that the dance database is presented in a concise and clear manner.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

4. I feel that the software and the multimedia computer technology is user friendly.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

5. I feel that the use of this technology and software by the students' in designing computer choreography has been utilized in efficient presentations.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

6. I feel that this pilot program should be considered as a worthwhile course to be offered within the dance curriculum.

   A. Strongly Agree B. Agree C. Somewhat Agree
   D. Disagree E. Strongly Disagree

NAME:_____ DATE:_____

TITLE:_____

APPENDIX G: Revised List

Dance Terminology for Computer Database

Appendix G:
Revised List:
Dance Terminology for Computer Database

BALLET:

1st , 2nd, 3rd, 4th & 5th position/arms & feet
Grand Plié in 2nd
Front Pas de Bouree
Left Chassé
Grand Battement
Right Chainé Turn
Left Piqué
Outside Left Classical Pirouette
Right Fouetté
Right Grand Jeté

JAZZ:

Jazz kicks in 1st
Left Hitch Kick
Right Fan Kick
Outside right Jazz Pirouette
Single Stag
Right Fouette Tuck
Left Jazz split

HIP HOP:

Butterfly
Running Man
Bart Man (side view)
Flex Step
Robo

ACROBATICS:

Right Cartwheel
Left Aerial
Center Split Jump
Illusion

TRANSITION STEPS:

Chassé-Ball change
Jazz Walk
Traveling Pas de Bouree
Pivots

APPENDIX H: Software Evaluations

Practicum Software Evaluation Form

AUTHOR: Adobe

TITLE: Adobe Premiere 4.0

Check all that apply

TYPE: ___Academic Game ___Drill and Practice
___Administrative ___Simulation
___Test/Diagnostic ___Tutorial
___Problem Solving X Other Multimedia - Creating Desktop Video, Digitizing Video, Quicktime Movies

LEVEL: ___Preschool ___K-3 ___4-6 ___6-8 ✓ 9-12 ✓ Adult

PURPOSE: ___Remediation ✓ Developmental ✓ Enrichment

HARDWARE: Computer Macintosh Quadra 840 AV K Ram required 32 Color (Y) N
Number of Drives 1 Printer (Y) N Other Removable SyQuest (200 megs)

CONTENT

	Circle Rating		
1. Program has educational value	(Y)	N	NA
2. Grammar accurate and free of syntax errors	(Y)	N	NA
3. Stereotype free of (race, ethnic, sex, etc.)	(Y)	N	NA
4. Content adaptable to varied instructional strategies	(Y)	N	NA

INSTRUCTIONAL QUALITY

5. Purpose of the program well defined	(Y)	N	NA
6. Defined purpose is achieved	(Y)	N	NA
7. Presentation of content is clear and logical	(Y)	N	NA
8. Level of difficulty appropriate for target audience	(Y)	N	NA
9. Sequence organized for selected developmental steps	(Y)	N	NA
10. Graphics, color, sound appropriate for instruction	(Y)	N	NA
11. Student controls rate and sequence of presentation	(Y)	N	NA
12. Program is self-paced and controls the sequence	(Y)	N	NA
13. Entry level prerequisites specified	(Y)	N	NA
14. Program user friendly, easy-to-read, to understand (Takes extra time)	(Y)	N	NA

TECHNICAL QUALITY

15. Instructional text formatted, sized for easy reading	(Y)	N	NA
16. Students can easily operate program independently	(Y)	N	NA
17. Relevant computer capabilities used	(Y)	N	NA
18. Program reliable and student proof	(Y)	N	NA
19. Adequate error trapping	(Y)	N	NA
20. Easy escape from program provided	(Y)	N	NA
21. Record keeping/printouts of student progress	(Y)	N	NA

DOCUMENTATION

22. Manuals available and user friendly	(Y)	N	NA	
23. Clear operating instructions and trouble shooting	(Y)	N	NA	Memory Trouble Shooting
24. Constant reference to documentation unnecessary	Y	(N)	NA	
25. Table of Contents, Index, Glossary of Terms provided	(Y)	N	NA	

BEST COPY AVAILABLE

Practicum Software Evaluation Form

AUTHOR: MACROMEDIA

TITLE: ACTION!

Check all that apply

TYPE: ___Academic Game ___Drill and Practice
___Administrative ___Simulation
___Test/Diagnostic ___Tutorial
___Problem Solving ✓Other MULTIMEDIA

LEVEL: ___Preschool ___K-3 ___4-6 ✓6-8 ✓9-12 ✓Adult

PURPOSE: ___Remediation ___Developmental ✓Enrichment

HARDWARE: Computer MACINTOSH QUADRA 840 AV K Ram required 32 Color (Y) N
Number of Drives 1 Printer (Y) N Other REMOVABLE SYQUEST (200 MEGS)

CONTENT	Circle Rating		
1. Program has educational value	(Y)	N	NA
2. Grammar accurate and free of syntax errors	(Y)	N	NA
3. Stereotype free of (race, ethnic, sex, etc.)	(Y)	N	NA
4. Content adaptable to varied instructional strategies	(Y)	N	NA
INSTRUCTIONAL QUALITY			
5. Purpose of the program well defined	(Y)	N	NA
6. Defined purpose is achieved	(Y)	N	NA
7. Presentation of content is clear and logical	(Y)	N	NA
8. Level of difficulty appropriate for target audience	(Y)	N	NA
9. Sequence organized for selected developmental steps	(Y)	N	NA
10. Graphics, color, sound appropriate for instruction	(Y)	N	NA
11. Student controls rate and sequence of presentation	(Y)	N	NA
12. Program is self-paced and controls the sequence	(Y)	N	NA
13. Entry level prerequisites specified	(Y)	N	NA
14. Program user friendly, easy-to-read, to understand	(Y)	N	NA
TECHNICAL QUALITY			
15. Instructional text formatted, sized for easy reading	(Y)	N	NA
16. Students can easily operate program independently	(Y)	N	NA
17. Relevant computer capabilities used	(Y)	N	NA
18. Program reliable and student proof	(Y)	N	NA
19. Adequate error trapping	(Y)	N	NA
20. Easy escape from program provided	(Y)	N	NA
21. Record keeping/printouts of student progress	(Y)	N	NA
DOCUMENTATION			
22. Manuals available and user friendly	(Y)	N	NA MEMORY
23. Clear operating instructions and trouble shooting	Y	N	(NA) TROUBLE
24. Constant reference to documentation unnecessary	(Y)	N	NA SHOOTING
25. Table of Contents, Index, Glossary of Terms provided	(Y)	N	NA IF TEMPLA GETS TOO LARGE

Practicum Software Evaluation Form

AUTHOR: Aldus

TITLE: PageMaker 5.0

Check all that apply

TYPE: ___Academic Game ___Drill and Practice
___Administrative ___Simulation
___Test/Diagnostic ___Tutorial
✓ Problem Solving ✓ Other Desktop Publishing

LEVEL: ___Preschool ___K-3 ___4-6 ___6-8 ✓ 9-12 ✓ Adult

PURPOSE: ___Remediation ✓ Developmental ✓ Enrichment

HARDWARE: Computer Mac II Series K Ram required 4 megs Color Y (N)
Number of Drives ✓ Printer (Y) N Other _____
min. 6 megs. of space on hard drive

	Circle Rating		
CONTENT			
1. Program has educational value	(Y)	N	NA
2. Grammar accurate and free of syntax errors	Y	N	(NA)
3. Stereotype free of (race, ethnic, sex, etc.)	(Y)	N	NA
4. Content adaptable to varied instructional strategies	(Y)	N	NA
INSTRUCTIONAL QUALITY			
5. Purpose of the program well defined	(Y)	N	NA
6. Defined purpose is achieved	(Y)	N	NA
7. Presentation of content is clear and logical	(Y)	N	NA
8. Level of difficulty appropriate for target audience	(Y)	N	NA
9. Sequence organized for selected developmental steps	(Y)	N	NA
10. Graphics, color, sound appropriate for instruction	(Y)	N	NA
11. Student controls rate and sequence of presentation	(Y)	N	NA
12. Program is self-paced and controls the sequence	(Y)	N	NA
13. Entry level prerequisites specified	(Y)	N	NA
14. Program user friendly, easy-to-read, to understand	(Y)	N	NA
TECHNICAL QUALITY			
15. Instructional text formatted, sized for easy reading	(Y)	N	NA
16. Students can easily operate program independently	(Y)	N	NA
17. Relevant computer capabilities used	(Y)	N	NA
18. Program reliable and student proof	(Y)	N	NA
19. Adequate error trapping	(Y)	N	NA
20. Easy escape from program provided	(Y)	N	NA
21. Record keeping/printouts of student progress	Y	(N)	NA
DOCUMENTATION			
22. Manuals available and user friendly	(Y)	N	NA
23. Clear operating instructions and trouble shooting	(Y)	N	NA
24. Constant reference to documentation unnecessary	(Y)	N	NA
25. Table of Contents, Index, Glossary of Terms provided	(Y)	N	NA

APPENDIX I:

Critical Thinking and Self-Reflection Checklist

Critical Thinking and Self-Reflection Checklist

The GEM Practicum Internship

John Barell - (Adapted)

Using a scale of 1 to 5, rate your work setting according to the following items:

5=Very Often 4=Often 3=Sometimes 2=Seldom 1=Rarely

CLASSROOM

1.	When students pose unusual or divergent questions, I ask, "What made you think of that?"	5 (4) 3 2 1
2.	Information in the text is challenged.	(5) 4 3 2 1
3.	When a decision has to be made between involving the class discussion of an intriguing student idea (topic related) or moving on to "cover" content, I choose the former.	5 (4) 3 2 1
4.	I encourage participants to seek alternative answers.	(5) 4 3 2 1
5.	The target group receives positive reinforcement for initiating questions.	(5) 4 3 2 1
6.	Problems are used as a means for the target group to generate their own questions (or problems), which we then seriously consider.	(5) 4 3 2 1
7.	Teaching and learning occur without teacher talk.	(5) 4 3 2 1
8.	Most questions posed during class can be answered with short or one-word answers.	5 4 (3) 2 1
9.	Students spontaneously engage in critiquing each other's thinking.	5 (4) 3 2 1
10.	Students are encouraged to relate subject matter to experiences in other subjects or to their personal lives.	5 4 3 (2) 1

11. I stress how to think, not what to think.	5	4	3	2	1
12. Students often set objectives for their own learning.	5	4	3	2	1
13. Students spend time working collaboratively to solve subject matter questions.	5	4	3	2	1
14. One focus in my implementation is trying to help others understand how and why people (mentioned in texts) created ideas, solutions, experiments, rules, principles, and so on.	5	4	3	2	1
15. Students actively listen to each other.	5	4	3	2	1
16. I facilitate collaborative instructional problem solving.	5	4	3	2	1

APPENDIX J: Results of the Student Pre-test/Post-test Questionnaire

APPENDIX J

Results: Student Pre-test/Post-test Questionnaire

Target Group: 6 Female Respondents

1. I have had adequate dance instruction before taking this class.

	PRE-TEST	POST-TEST
A. Strongly Agree	2	4
B. Agree	3	2
C. Somewhat Agree	1	0
D. Disagree	0	0
E. Strongly Disagree	0	0

2. At this time, I feel comfortable about my abilities as a dancer.

	PRE-TEST	POST-TEST
A. Strongly Agree	2	3
B. Agree	3	2
C. Somewhat Agree	1	1
D. Disagree	0	0
E. Strongly Disagree	0	0

3. At this time, I feel comfortable about my abilities as a choreographer.

	PRE-TEST	POST-TEST
A. Strongly Agree	1	2
B. Agree	2	3
C. Somewhat Agree	2	1
D. Disagree	1	0
E. Strongly Disagree	0	0

4. I enjoy the process of creating choreography.

	PRE-TEST	POST-TEST
A. Strongly Agree	2	5
B. Agree	2	0
C. Somewhat Agree	1	1
D. Disagree	1	0
E. Strongly Disagree	0	0

5. Creating choreography in a traditional dance studio atmosphere can be tedious and frustrating.

	PRE-TEST	POST-TEST
A. Strongly Agree	2	3
B. Agree	0	0
C. Somewhat Agree	1	1
D. Disagree	3	3
E. Strongly Disagree	0	0

6. As a choreographer, scheduling dancers for rehearsals and constant choreographic changes can be tedious and frustrating.

	PRE-TEST	POST-TEST
A. Strongly Agree	3	3
B. Agree	2	2
C. Somewhat Agree	1	1
D. Disagree	0	0
E. Strongly Disagree	0	0

7. I want the opportunity to develop and create original choreography.

	PRE-TEST	POST-TEST
A. Strongly Agree	2	5
B. Agree	3	1
C. Somewhat Agree	1	0
D. Disagree	0	0
E. Strongly Disagree	0	0

8. The use of a computer generated dance movement database would help me to be more creative in designing choreography.

	PRE-TEST	POST-TEST
A. Strongly Agree	1	3
B. Agree	3	3
C. Somewhat Agree	2	0
D. Disagree	0	0
E. Strongly Disagree	0	0

9. Using a computer to create choreography would be more interesting than the usual traditional dance studio method.

	PRE-TEST	POST-TEST
A. Strongly Agree	1	3
B. Agree	2	3
C. Somewhat Agree	2	0
D. Disagree	1	0
E. Strongly Disagree	0	0

10. I enjoy using a computer for graphics, design, and other creative work.

	PRE-TEST	POST-TEST
A. Strongly Agree	1	6
B. Agree	2	0
C. Somewhat Agree	3	0
D. Disagree	0	0
E. Strongly Disagree	0	0

11. Having computers within the dance program to create choreography would be a major incentive in my registering for this class.

	PRE-TEST	POST-TEST
A. Strongly Agree	1	2
B. Agree	1	4
C. Somewhat Agree	2	0
D. Disagree	2	0
E. Strongly Disagree	0	0

12. I have had experience working with the *Action 1.0.4* computer program by Macromedia.

	PRE-TEST	POST-TEST
A. Strongly Agree	0	4
B. Agree	2	2
C. Somewhat Agree	1	0
D. Disagree	0	0
E. Strongly Disagree	3	0

13. I have had experience working with the *PageMaker 4.2* computer program.

	PRE-TEST	POST-TEST
A. Strongly Agree	3	3
B. Agree	2	3
C. Somewhat Agree	1	0
D. Disagree	0	0
E. Strongly Disagree	0	0

14. I have had experience working with the *Premier 4.0* computer program.

	PRE-TEST	POST-TEST
A. Strongly Agree	0	4
B. Agree	0	2
C. Somewhat Agree	2	0
D. Disagree	1	0
E. Strongly Disagree	3	0

15. I feel comfortable operating a video camcorder.

	PRE-TEST	POST-TEST
A. Strongly Agree	3	5
B. Agree	1	0
C. Somewhat Agree	2	1
D. Disagree	0	0
E. Strongly Disagree	0	0

16. I have had experience transferring video images into a computer program.

	PRE-TEST	POST-TEST
A. Strongly Agree	0	3
B. Agree	0	1
C. Somewhat Agree	1	2
D. Disagree	2	0
E. Strongly Disagree	3	0

17. I have had experience digitizing video and still art graphics into a computer.

	PRE-TEST	POST-TEST
A. Strongly Agree	0	3
B. Agree	1	1
C. Somewhat Agree	1	2
D. Disagree	2	0
E. Strongly Disagree	2	0

18. I have had experience creating text within a computer graphic program.

	PRE-TEST	POST-TEST
A. Strongly Agree	0	5
B. Agree	2	1
C. Somewhat Agree	1	0
D. Disagree	1	0
E. Strongly Disagree	2	0

19. I have had experience editing video.

	PRE-TEST	POST-TEST
A. Strongly Agree	1	3
B. Agree	0	2
C. Somewhat Agree	0	1
D. Disagree	2	0
E. Strongly Disagree	3	0

20. I have had experience editing computer graphics.

	PRE-TEST	POST-TEST
A. Strongly Agree	0	4
B. Agree	0	2
C. Somewhat Agree	1	0
D. Disagree	2	0
E. Strongly Disagree	3	0

21. I have had experience editing music.

	PRE-TEST	POST-TEST
A. Strongly Agree	4	4
B. Agree	0	2
C. Somewhat Agree	2	0
D. Disagree	0	0
E. Strongly Disagree	0	0

22. I have had experience transferring computer multimedia presentations onto videotape.

	PRE-TEST	POST-TEST
A. Strongly Agree	0	4
B. Agree	0	2
C. Somewhat Agree	0	0
D. Disagree	3	0
E. Strongly Disagree	3	0

23. At the present time, I would consider registering for this class again, even if it were not required for graduation.

	PRE-TEST	POST-TEST
A. Strongly Agree	5	5
B. Agree	1	1
C. Somewhat Agree	0	0
D. Disagree	0	0
E. Strongly Disagree	0	0

APPENDIX K: Results of the Pilot Program Review Questionnaire

APPENDIX K: Results of the Pilot Program Review Questionnaire

Four Adult Respondents

1. I feel that this pilot program has educational value.

A. Strongly Agree	4	D. Disagree	0
B. Agree	0	E. Strongly Disagree	0
C. Somewhat Agree	0		

2. I feel that the purpose and content of the pilot program is well defined and logical.

A. Strongly Agree	3	D. Disagree	0
B. Agree	1	E. Strongly Disagree	0
C. Somewhat Agree	0		

3. I feel that the dance database is presented in a concise and clear manner.

A. Strongly Agree	4	D. Disagree	0
B. Agree	0	E. Strongly Disagree	0
C. Somewhat Agree	0		

4. I feel that the software and the multimedia computer technology is user friendly.

A. Strongly Agree	4	D. Disagree	0
B. Agree	0	E. Strongly Disagree	0
C. Somewhat Agree	0		

5. I feel that the use of this technology and software by the students' in designing computer choreography has been utilized in efficient presentations.

A. Strongly Agree	4	D. Disagree	0
B. Agree	0	E. Strongly Disagree	0
C. Somewhat Agree	0		

6. I feel that this pilot program should be considered as a worthwhile course to be offered within the dance curriculum.

A. Strongly Agree	4	D. Disagree	0
B. Agree	0	E. Strongly Disagree	0
C. Somewhat Agree	0		

Attachments

Attachment A: Edited Dance Database Videotape

(see enclosed)