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ABSTRACT
                Not only do computers offer rich motivational appeal
with students, but they also boost speech communication professors'
credibility. Research indicates that the use of multimedia leads to
enhanced learning on criteria such as acquisition of content,
development of skills, efficiency, learning, and satisfaction with
instruction. Multimedia technology provides educators with hardware
and software that permits combined use of text, graphics, animation,
and sound. Computer assisted learning is an approach used to create a
variety of interactive learning media in conjunction with a computer
system. It is difficult to doubt the impact multimedia has had on
public school instruction and the impact it is now having in the
universities. Computer media improves student understanding, brings
immediacy to the classroom, and improves the perception of instructor
competence as viewed by both the students and the professor. To
maintain a competitive edge and to provide a more stimulating
learning environment, educators must find ways to overcome their
initial resistance to computer-mediated communication, programs must
be designed and implemented to integrate computer-based methods and
communication skills into the entire speech curriculum. A combination
of the essential elements of quality teaching and technology is
possible. Technology is revolutionizing the world, and it is time for
educators to revolutionize their classrooms. (Contains 30
references.) (RS)

Computers: The Unrealized Motivational and

Credibility Factors for Speech Communication Educators

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Abstract

Computer technology is altering teaching and learning.
Its impact is felt from kindergarten through graduate
school. Not only do computers offer rich motivational
appeal with students today, but they also boost
professorial credibility. Several multimedia concepts
are introduced and a recommendation for teacher
training concludes the paper.

Computers: The Unrealized Motivational and
Credibility Factors for Speech Communication Educators

Toddlers arrange an array of boxes, buckets, and
stools in order to reach the cookie jar. Teenagers
spend countless hours of quality time with their
parents, just "cruising," in order to obtain a driver's
license -- with the goal of avoiding parental quality
time. Doctorate candidates re-write countless
proposals. It is amazing what one is willing to suffer
in the name of lear ning when one is truly motivated
to learn. McKeachie (1986) points out that "students
will learn what they want to learn and will have great
difficulty in learning material in which they're not
interested...but the sorts of learning for which
students are motivated is not always that which
contributes to attaining the goals of our courses" (p.
221). It is apparent then, that our students are
capable of learning if they are motivated. It is the
purpose of this paper to explore the rapidly expanding
arena of multimedia assisted instruction. The

contention is, that not only do computers offers rich motivation appeal with students today but they also boost professorial credibility. A recommendation for teacher training will conclude the paper.

Motivational Appeal

Numerous studies from various quarters have been conducted regarding student motivation factors. Aristotle defined communication rhetoric as logos, ethos and pathos. Maslow presents his hierarchy, Bloom his taxonomy, Dale his cone of experience, and Hawthorne his "effect." Surely every communication instructor reviews the communication process of sender-message-receiver. There are probably as many theories of motivation as there are books on education.

What more is there, then, that we can do to motivate our students? How do we put these theories into effect? Unfortunately, too many of us are content to construct our lectures and expect the student to be a willing vessel. Bonwell and Eison (1991) suggest that in addition to lecture, the professor might vary the structure of the course by offering

demonstrations, discussions, cooperative learning,

debates, drama, role playing, simulations, games, peer

teaching, computer-based instruction, and a modified

lecture where the instructor pauses and asks questions

for enhanced retention and comprehension. Some

professors have augmented their courses with readings,

field trips, exhibits, films, and videos. Still, the

overhead projector is found to be the popular

electronic medium used in the classroom today.

Technology is left to research labs in the "hard"

disciplines of math, science, and electronics.

Unfortunately, the student can receive more stimulation

on a home PC than in the "soft" courses of English,

art, communication, and social studies (Willis, 1992).

It is amazing that these courses are so slow to embrace

computer visuals, when one realizes how interwoven

visual images, visual teaching, and visual learning are

to the very core of these subjects.

It has been found that "audio-visual technology

arrests attention, arouses interests of the students

and brings vicarious experience into the classrooms.

When creatively and appropriately used the audio-visual

dynamics prolongs retention of learning. We learn

through the sensory (sic) of seeing about 80% and

hearing, about 12%" (Yam, 1986, p. 46). Additional

findings were reported by Falk and Carlson (1991).

Their research indicates that the use of multimedia

leads to enhanced learning on criteria such as

acquisition of content, development of skills,

efficiency of learning, and satisfaction with

instruction.

How often have we heard the lament, "Oh, if kids

were only as motivated in school as they are in playing

Nintendo." Soloway (1991) suggests we use this

interest to motivate further self-expression,

ownership of ideas and communication. If a student is

not motivated, learning does not take place.

Technology can facilitate those intrinsic motivators.

Computer Technology

Multimedia technology for today's educators

provides hardware and software that permits combined

use of text, graphics, animation, and sound. Open any

technological journal or computer magazine and read ads
like these:

* Big impact. Minuscule price. That's our
astonishing true-color LCD Panel. Use it to
project from almost any computer and your lessons
will blow away MTV!! -- InFocus Systems

* Jostens Learning Brings High Performance
To Your Classroom. -- Jostens Learning

* In every teacher's life there's something
that's transformed them professionally...for me,
it's been the Mac -- Macintosh

What is multimedia? Smith (1992) defines
computer-mediated communication as "communication among
individuals facilitated by computer hardware, software,
and a hardwire or telecommunications link" (p. 5). In
today's technology jargon, multimedia

is the combination of sound, motion and still

pictures, and text on one display device,

particularly a personal computer....The

information is not just the pretty pictures and

sounds, but also the text and quiz questions and

graphics. And, the majority of the information is accessed in the sequence chosen by the user, not the linear presentation of the traditional videotape or film. (Whitaker, 1992, p. 27)

The slogan "You've come a long way, Baby," certainly applies to educational technology. Brittain (1992) reminds us that fifteen years ago educational technology consisted of mainframe computers in the district office; typewriters in business-education labs; and movie, slide and filmstrip projectors in the media center that teachers could check out for use in the classroom. Now we have advanced bibliographical systems that put library CD-ROM research into the home, dorm, or classroom via a modem.

Additional computer resources include computer supported testing programs which allow instructors to create tests from a supplied text bank and/or supply some questions of their own. Of interest to communication teachers is a design that provides a series of comments appropriate to each different type of speech. Additionally, every comment is cross-

referenced to pages in the text and outside readings
(Berube, 1988).

Computer Assisted Learning is an approach used to
create a variety of interactive learning media in
conjunction with a computer system. This technique
claims the benefit of being learner-controlled and
highly motivating (Barker, 1989). The system can be
set in large classes allowing immediate two-way
communication between the students and the lecturer. A
laboratory setting allows students to study at their
own pace and review materials until they are mastered.

One relatively new computer technology, virtual
reality, has been creating excitement around the world.
"It provides for repeatable and controllable training,
engaging the trainee and encouraging participation"
(Meyer and Dunn-Roberts, 1992, p. 176). It can
stimulate imagination and provide intellectual
challenge in a manner that is non-threatening.

Trotter (1992) reports that many corporations are
training their employees with multimedia and that
"multimedia kiosks at shopping malls might soon

dispense government services" (p.20). As media

presentations reach increasing levels of sophistication

in business and research, so will the levels of demand

for those presentations increase in fields as diverse

as communication and mathematical science. If the

world is using new forms of presentation, the

university should also be using them.

Credibility

Speech Communication professors stress the

importance of speaker credibility. Lucas (1995)

indicates that "a speaker's credibility is affected by

two factors: competence--how an audience regards a

speaker's intelligence and knowledge of the subject

[and] Character--how an audience regards a speaker's

sincerity, trustworthiness, and concern for the well-

being of the audience" (p. 369). DeVito (1990) expands

the notion of competence by pointing out that there is

often a halo effect when listeners generalize their

perception of competence by extending credibility from

one area to other areas. It is time to practice what

we preach. Students are surrounded by computer

technology. Professors limiting themselves to the "horse and buggy days" of the overhead projector project more than the'transparency. The instructors' competence and character are both questioned. If they are not current in presentation methods, are they current in the field? Are they concerned that the students receive the most correct and up-to-date information? Students may determine whether or not the course has any value based on how competent they perceive the professor to be.

The impetus for technological competence comes not only from business and research institutions, but from the students themselves. In many cases, we teach students who are considerably more adept with computer skills than we are. They have worked with computers, seemingly, from infancy. The underpinnings of higher education, the public schools, often outdistance the university regarding computer use.

> Students in more than 12,000 schools across
> America are blazing a trail for coming generations
> by exploring the vast potential of online

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information services. Clearly, America's schools

and libraries are the proving ground for this new

generation of information movement and processing.

And students more often than teachers are pushing

the envelope...It is the "how" of this online

information service that tends to mystify adults,

although children grasp it immediately...Myriad

items are found on the daily menu, including:

U.S....international...business...and financial

news; editorials and other opinions from major

newspapers and news services across America...

[and] lifestyles. (Online Information Services,

1992 p. 58)

The "how" of computer technology is sweeping public

schools across the country. This is what the high

school student has experienced prior to coming to our

classroom:

> ※ Science 2000!, the first technology-based
>
> program adopted by the California State Board of
>
> Education, is an engaging, yet comprehensive,
>
> multimedia series that includes "model lesson

plans, simulations, investigations, hands-on experiments and manipulatives, films and videos, field trips and guest speakers, information on scientific careers and available databases, glossaries of related terms, and performance-based assessments that are open-ended (Kneedler, 1993, p. 73). All this information is placed in a computer and videodisc player and accessed immediately.

＊ Two students at Andrew High School in Tinley Park, IL, worked together on a video term paper about Martin Luther King using CEL Educational Resources' <u>The Video Encyclopedia of the 20th Century</u>... and juxtaposed scenes from a Ku Klux Klan march with the civil rights leader giving a speech on non-violence. (Greenfield, 1993, p.10)

＊ Utah's Granite School District offers a course in multimedia. A commercial for the class ran this message: "You want skills, you want excitement, you want to soar--to be transported.

You want creativity, you want it all: sound,
motion, animation, and the ability to make it all
work together. You want it operational, even
cultural, and to say all the right things at the
right time. (Shaw, 1993, p. 87)

＊ In Texas, The Panhandle-South Plains
Center consortium's mission is to integrate
technology into public teacher education and
training, and more than 60 school districts in the
region are involved with the collaboration. Brian
Lotven, dean of West Texas State University A &
M's College of Education and Social Sciences,
commented, "the applications are endless...in
virtually any mode of teaching, this can play a
part" (Walton, 1993, p. B 4).

It is difficult to doubt the impact multimedia has
had on public school instruction and the impact it is
now having in the universities. Lotven is correct;
virtually any teacher can take part. The impact goes
beyond influencing learning and teaching styles.
Students view the professor who is comfortable with

technology as more competent and the instructor
experiences positive intrinsic rewards relevant to the
interpersonal and affective domains. The instructor
feels more competent and effective. Consultant Saul
Rockman, who evaluated the Indiana Department of
Education's "A Computer for Every Teacher" program
explained how Indiana teachers grew professionally:
"Teachers and administrators universally reported a
better sense of professional competence as a result of
mastering the computer...they see themselves as more
professional in the eyes of their students" (Bracy,
1993, p. 9). Computer media improves student
understanding, brings immediacy to the classroom, and
improves the perception of instructor competence as
viewed by both the student and the professor. In spite
of these impressive findings, professors will still be
reticent in embracing a multimedia classroom.

Recommendation for Teacher Training

People tend to resist change. Teachers of higher
education are predictably rigid. However, Pang (1982)
concluded in her research that "the main drive behind a

lecturer using or not using instructional media...is conditioned by his knowledge of using the media" (Yam, 1986, p. 46). Professors need training in the use of instructional media. They need to understand the software as curriculum, the way they understand textbooks.

In fact, some educators are using computer software to create their own texts. Ed Green, a professor of education at Brigham Young University in Provo, Utah, has developed a "school of the future" where teachers--not book publishers-create and control the teaching materials. He has created a systematic integration of videotape, newsprint "text booklets," and computer disks. "We're going to show people how stimulating school can be--any school, rich or poor... I am offended by $60 textbooks. I'm going to make $1 texts and $2 disks that the rich schools will want and the poor schools can get" (Amiga Helps Education Professor Turn Dreams into Reality, 1993, p. 40). An instructor interested in constructing a programmed text might look to Green's "school of the future" or to

other reports about publishing online journals such as

"Teaching Faculty to use Networked Information

Resources," a cooperative effort offered by the

University of California at San Francisco, the

publishing firm Springer-Verlag, and AT&T Laboratories.

We teach as we were taught. Our challenge is to

incorporate new instructional tools. Falk and Carlson

(1992) remind us that

> Multimedia is a powerful teaching and learning
>
> tool. Hardware is becoming cheaper and more
>
> powerful, and the quantity and quality of
>
> applications almost grows daily. Unfortunately,
>
> until teachers are taught with this tool and have
>
> models for effective instructional design and use,
>
> the full potential of this technology will likely
>
> go unrealized (p. 96). . . . Everyone can
>
> participate in realizing this potential. Those
>
> who know more about multimedia and its use can
>
> share this information with others; those who know
>
> relatively less can seek opportunities to expand
>
> their knowledge. Teachers at all levels of

education can appropriately incorporate

multimedia. (p. 100)

Teaching practices change, and are strengthened,

as teachers use technology. According to the

researchers at the Bank Street College of Education,

teachers with computers expect more from their

students, spend more time with individual

students, and are more comfortable with students

working independently or in small groups, and

spend less time lecturing and teaching to the

whole class. They are more willing to take risks

with their students and have come to see

themselves more as coaches and facilitators.

(Bracey, 1993, p. 8)

However, it takes time to integrate innovative

instructional tools. Moreover, it is likely that

computers are available but are not being used. Elliot

(1992) warns, "If your teachers aren't using the old

machines well, they probably won't use the new ones

effectively either. A chunk of your technology budget

might be better spent on teacher training. After

you've held a good series of introductory and refresher
workshops, your existing computers might take on a
fresh shine" (p. 42). Educators need to take advantage
of on-site computer resource centers, convention and
conference seminars, community college extension
courses, commercially sponsored courses, colleagues,
and good old-fashioned hacking, until they are
comfortable enough to teach with a computer notebook
and projection panel or in a fully equipped multimedia
classroom. Furthermore, training must be a continuous
process if faculty and students are to keep ahead of
the technology.

Ruth Hoffman (1983), in her text, <u>Micro-Computers
and Teachers</u>, gives some practical advice to the novice
user and outlines the following benefits to educators:

* You do <u>not</u> have to be a mathematician or
computer scientist to use a home computer.
Everyone can learn.

* You should learn it <u>now</u>, while hundreds of
thousands of others are also in the learning
process.

* You can keep up with the rapidly advancing technology if you start with the basics and absorb each new development as it comes.

* You will find the computer an excellent supplementary aid, providing you with an additional presentation mode. (p. 1)

She goes on to list the benefits to students:

* Students show increased motivation to learn, to do assignments, and to explore and create.

* The computer is a powerful individualization tool.

* Computer usage in school enables students to prepare for life and for careers.

* Computer graphics provide students with increased visual representation of concepts and ideas.

* Simulations and other interactive modes allow students to have an active role in learning.

* Students are stimulated to analyze and explore the world beyond the classroom. (p.2)

Many institutions provide technology training for their faculty. The focus of Amarillo College's professional development computer center is to train faculty to integrate technology into curriculum. The focus is on implementing advanced technology applications for the classroom and the workplace, building measurable competencies and outcomes assessment into the curriculum, and tracking student progress and problems early and effectively.

In order to maintain a competitive edge and to provide a more stimulating learning environment, educators must find ways to overcome initial resistance to computer-mediated communication. Programs must be designed and implemented to integrate computer-based methods and communication skills into the entire speech curriculum.

Conclusion

The use of visuals, video tapes, films, and computer media capture students' attention, stimulate their motivation, and assist in student learning. They are particularly beneficial supplements to lectures and

discussions, especially when explanatory information is given before, and after, using these instructional media.

Instructional media is well established. Distance learning, tele-home-education programs, computer-video interactive learning programs, and computer assisted instruction will change the face of traditional teaching. Bowers (1992) points out that

one of the justifications for expanding the use of computers in the educational process is that we are entering the "Information Age," and thus must be competent in the use of this technology if we are to be functional citizens in the next century. The "Information Age" is a powerful metaphor that, like all metaphors, illuminates and hides at the same time...computer mediated knowledge does not encode the moral guidelines that have traditionally been part of cultures which have evolved ways of living in sustainable relationships with their environments. (p. 27)

It is apparent that while computers will change the face of traditional teaching, the importance of the teacher's presence is not diminished. No matter which program an instructor, or institution, selects to employ, interpersonal communication will continue to be a central factor in teaching. Multimedia provides an additional method of relating to students. The technology brings change and initial uneasiness; however, intrapersonal apprehension lessens with experience and allows expanded possibilities for interpersonal connections between instructors and students.

It is the contention of this paper that a combination of the essential elements of quality teaching and technology is possible. Creative and intelligent use of technology will mesh teaching styles with student learning styles. "Educators, researchers and students need tools that let them study, learn, teach and reach in natural ways. They need cost-effective tools that enable them to exploit an ever-increasing universe of resources. And they need tools

that will grow along with them, not be outgrown by
them" (Tyre, 1992, p.11). We must better use
technology in the curriculum. Shaw (1993) indicates
that the bottom line of multimedia use is that it "is
designed to increase the instructional skills imparted
by the school. This is the product of our profession
. . . The destinations we are reaching with these
technology applications are unreachable any other way"
(p. 87).

The greater use of technology also requires
greater assessment. We need to see a clear link
between new technology and measurable educational
goals. Student achievement is most often measured by
scores on standardized tests. As noted by Wilder &
Fowles (1992) data does not currently recognize that
such demands take little account of the actual
conditions that mark the implementation of technology
in schools. These include the fact that implementation
is a process that proceeds over a period of several
years; that computers are used in a wide variety of
ways by teachers and schools and for a range of

purposes; and that the widespread use of instructional

computing is too new to have been supported by a

systematic body of research about what does and does

not work. (p. 82)

Innovation must precede assessment. As stated in a

1992 survey report, "Education and New Information

Technologies,"

The potential of the new information and

communication technologies for improving learning

and teaching will not be realized unless teachers

are well trained and retrained in their

pedagogical use. Familiarization with the

technologies is not sufficient; the real challenge

is the training of teachers in the use

of...technologies for non-trivial applications,

such as simulations and model building, problem

solving, complex microworlds, or exploration and

discovery, and even judicious uses of basic

software packages such as word processing,

spreadsheets and databases. (Charp, 1993, p. 6)

Ferrante, Hayman, Carlson, & Phillips (1988)
declare "the computer is the most important invention
of the 20th century and one of the central inventions
in human history" (p. 77). The possibilities for
multimedia use as a teaching tool seem limitless. It
is a motivational factor for both the instructor's
teaching style as well as the student's learning style.
The use of technology impacts the student's perception
of the instructor's competence. Technology is becoming
an ever-increasing component of our daily lives and
educators must learn to use it effectively. Technology
is revolutionizing our world. It is time for us to
revolutionize our classrooms.

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