

Teaching and Technology Task Force
Report to Board of Governors
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I. Mission

The overall mission of the Teaching and Technology Task Force is to promote models which demonstrate the integration of teaching and technology. This is an important endeavor since theatre and theatre education, as cultural practices, must adapt themselves to new cultural realities created by the shift from the Industrial Age to the Information Age. At the same time, we must remain aware that possession or use of technology are not ends in themselves; they are means to enhance the educational experience of our students. Thus, no single model or set of models can serve as a preferred paradigm for integration of teaching and technology. The learning and teaching styles of those directly involved in the pedagogical process will be crucial factors for determining the most advantageous application of technology.

With regard to assigned tasks, the task force decided that identifying and showcasing models of current teaching technologies in theatre (#3) was the most important at this time. This will provide the best resources for the future. The bulk of this report is dedicated to this area. In the course of its investigation, it became clear to the task force that the field is broader, deeper and more complex than envisioned. The variety of technologies available and the many ways of using them could prove daunting to the teacher who wishes to incorporate technology into pedagogy but who has little expertise. The learning curve is both shallow and steep. Learning how to use any particular technology is comparatively easy; a short workshop is usually sufficient to get one started. On the other hand, learning how to integrate this into one's teaching methods or restructuring these methods can take significantly longer. In many ways, educating oneself in the use of technology can be as !
long-term a process as educating oneself in theatre or teaching.

Thus, the leadership of ATHE must make some decisions as to how the organization can best serve its members in the promotion of teaching technologies. Individual teachers can discover for themselves both appropriate technologies and uses; many already have. However, deciding which ventures have the most potential for the membership in general and would be most productive for the association to support is no easy question. ATHE cannot provide information or training in all possible areas. Jumping into projects without a clear sense of benefit to members can be a disservice. In light of these factors, this report is primarily narrative, attempting to provide ATHE's leadership with an overview of the field, an indication of key issues and some possibilities for future action.

Until such time as decisions regarding general directions are made, the task force felt it was premature to pursue some of the other tasks. Providing vendors at the conference and experts to train users (#2), while informative, could be counterproductive if the user has not yet made the commitment to

utilize the technology. Advances occur so rapidly that training may only be useful for six months to a year. At the same time, identifying funding sources is difficult until specific projects have been determined. The viability of the source depends upon the nature of the project. In this vein, however, the task force did discover that the NEH offered grants dedicated to the integration of teaching and technology this year. The future of these grants, as well as the NEH itself, is uncertain at this point. Information about teaching and technology might be discussions and sent reports to the task force chair.

In order to provide some context for its investigations, the task force adopted a number of assumptions. First, technology is taken to be a process, not a thing. That is, technology is seen not as the existence of hardware devices in the classroom but as the role those devices play in the pedagogical process. Second, technology is not necessarily high-tech. A book is a technology; a blackboard is a technology; an overhead projector is a technology, etc. While our investigations centered around higher-tech applications, we should not forget that these more traditional technologies may still make significant contributions to one's teaching-and probably will for the foreseeable future. Third, technology, in itself, does not guarantee a better educational experience. Procuring equipment is the first step. However, the students' education will be enhanced only if the teacher is proficient and creative in the use of that equipment.

With this in mind, the task force looked at a variety of ways in which technology can be integrated with teaching, focusing on newer technologies with which many ATHE members may not be familiar. These are presented in Section III below. While not a comprehensive list, the examples cited should provide a reasonable guide to the range of possibilities.

III. Technologies

A. Technologies that enhance delivery of information or exploration of process

1. Computerized presentations

There are a number of software programs and various pieces of hardware that allow a person to prepare notes and visual aids on a computer and then project them to the class. This saves the time of writing on the blackboard and preserves "erased" material. It also allows the teacher to continue to face the class. Presentation materials are edited more easily than handwritten notes or overhead transparencies. Most of the software packages allow the use of color and graphics, which can enhance the "look" of the information.

2. CD-ROM

CD-ROMs allow the storage of large amounts of information, textual or visual, that is randomly accessible. Students can uncover or search material at a much faster rate than when using printed resources. They can also print desired information more quickly than taking handwritten notes.

While technology for creating or customizing CD-ROMs is not generally available (ROM stands for "read only memory," which means that you cannot create your own CDs), publishers are beginning to produce CDs related to theatre studies. Farley Richmond has a Kutiyattam project coming out on CD

from the University of Michigan Press. Bruce McConachie is exploring the production of a CD-ROM version of the history of performance.

3. Skill-specific software

In design areas, software applications can assist the teacher in presenting classroom demonstrations or help students to explore the creative process. For example, computer-aided design (CAD) applications facilitate the production of draft-quality set designs. They also allow quick revisions to designs. Painting and drawing programs can be used to produce sketches for set, costume or lighting design. The computer allows rapid changes in color or line, which can assist in demonstrating the effect of these elements. A number of applications specific to lighting design exist. All these programs can be particularly valuable to institutions that do not have physical design labs.

4. Hypertext

Hypertext is basically a way of linking documents (text or images) to each other. It is the basic paradigm of the World Wide Web. Programs such as HyperCard allow the individual user to create hypertext collections of interrelated information. For example, a hypertext version of the script for one of Shakespeare's plays could contain a link to a drawing of an Elizabethan theatre. By "clicking" on this link, students (or teachers) would call up that picture on the computer screen. The picture might, in turn, have other links. For instance, clicking on the firing house might call up a narrative description of that structure. Clicking on a human figure might call up, in a more sophisticated program, one or more video presentations of scenes. Each document could have multiple links.

This technology allows the instructor to assemble information in non-linear ways, allowing a variety of paths through a topic. Hypertext presentations can also be self-guided instruction modules for students, allowing them to explore a topic in the way it interests them.

Claudia Barnett began planning for a hypertext version of Adrienne Kennedy's *A Movie Star Has to Star in Black and White*. Due to a number of factors, the project did not come to fruition, but planned components were the complete text of the play, videotaped scenes, production reviews, critical essays, written and/or audio statements by the playwright, historical contexts of the play and the author, descriptions of all five films incorporated into the play, diagrams of possible set designs, photographs or drawings of costumes, and comments by actors, directors and audience members.

5. Interactive video

This technology allows individuals to interact with videotaped presentations. For example, the Language Lab at Siena College has the ability to remove one side of dialogue in a taped conversation. This allows the student to attempt to "enter" that dialogue. This might be used to drill students in style acting, as they could "play" scenes with actors utilizing those styles. More sophisticated technology allows the individual to influence the progress of the videotaped event. For example, law enforcement agencies utilize a set-up in which an electronic "gun" is connected to a video screen showing crimes in progress. The actions of the trainee determine how the scenario will play out, as the system will show different clips depending on what the person does. (While this is a complex and potentially quite expensive technology, it

is one that has been incorporated into arcade video games, so widespread use may be feasible sooner than one might expect.)

6. Virtual reality

This technology allows people to interact in real time with an artificially created environment. Although this technology is not readily available to the average consumer, commercial applications are appearing more frequently. Mark Reany (University of Kansas) uses virtual reality software to plan sets and also in actual presentations of plays.

7. The multimedia classroom

This is not necessarily a separate technology, but it is an institutional structure that can provide the instructor with ease of accessibility and use for various technologies. It represents a commitment to the integration of teaching and technology on the part of the institution. For instance, Notre Dame has an entire building of multimedia classrooms, including such features as centralized access to video. Such facilities save the teacher set-up time and encourage the use of technology.

B. Technologies that enhance student access

1. Electronic communication

Email can provide a number of opportunities to students. For one thing, it is an efficient way for students to communicate with teachers outside the constraints of office hours. Some professors allow or require students to submit assignments via email. For instance, Steve Schrum has incorporated seven email assignments into his Introduction to Theatre course. Steve notes that more students read the assigned plays as a result of email assignments and note how much more accessible he is. Students can also communicate with each other through email. This can facilitate group projects or further discussion. Claudia Barnett set up a listserv for her playwriting class. This allowed students the opportunity to continue dialogue about established playwrights or their own work. This was so successful that some students requested that the listserv continue after the end of the course. Email also allows access to off-site personnel.

MOO environments allow students to interact in real time via computer connections. These interactions can be with each other or people outside the class who might be anywhere in the world. Some MOOs allow role playing.

Studio Z is a non-profit play development organization based in Chicago. They provide a number of online theatre activities which promote "live" interactive theatre worldwide. Their Playwright in Electronic Resident (PIER) program allows playwrights to work together and with students in developing their plays.

2. Online course documents

Professors can store important documents (syllabi, class notes, class announcements, assignment guidelines) on a central server. Students currently enrolled in the course would always have easy access to the documents. Other students can access them to get an idea of what the course is like.

3. Self-instruction modules

Teachers can develop self-study modules that can be stored on a central server. These can be used for review before exams, for presentation of supplementary material, for self-paced study, etc. Patricia Lavender has developed some computer-driven modules for her theatre history course.

4. Internet

The Internet, via Gopher, FTP and the World Wide Web (WWW), provides a host of resources that can supplement any institution's holdings. Students and teachers have relatively easy and rapid access to documents, images and people that would not otherwise be available. These can assist research efforts or individual class presentations. Teachers can also set up their own WWW home pages. These pages can link students to theatre-specific sites or any information on an Internet-accessible computer the instructor deems appropriate.

C. Technologies that restructure the teaching-learning paradigm

1. Distance education [information from Far West Laboratory for Educational Research and Development]

Distance education is instructional delivery that does not constrain the student to be physically present in the same location as the instructor. This is a well established field, with an extensive literature, at least four journals and at least three professional organizations. There are two ways of delivering distance education.

a. synchronous delivery

Students and teachers interact in real time. Technologies used include interactive television, audiographics, computer conferencing, IRC (chat) and moo.

b. asynchronous delivery

Students choose their own instructional time frame and gather learning materials according to their schedules. Instructors may establish certain deadlines for completion of assignments. Technologies include email, listservs, audiocassette courses, videotaped courses, correspondence courses and WWW-based courses.

2. Computer-driven collaborative projects

Such projects might use the same technologies as listed in Sections 1H.B.1 and 111I.B.4. However, the difference would be that, in this context, the technologies would hold the potential for altering the nature of the classroom. For example, students might find it just as easy to collaborate with students at other institutions as with their classmates. Interdisciplinary courses could be developed across institutions or across departments where the instructors are not always physically present to each other or to students. Departments or programs could develop instructional modules that can be combined in various ways to produce different courses or different time frames for a course.

3. Teleconferencing

This is actually a combination of various technologies in a unique usage. Teleconferencing allows real-time video and audio interaction among people at diverse geographical locations. This can eliminate obstacles created by geographical remove from resource persons and redefine to some extent the notion of an instructor. This is a key technology for synchronous distance education. It can also be used for guest lectures, workshops, panel discussions, interviews, and an array of other activities. Many campuses have teleconferencing facilities. There are also regional facilities that may be available to instructors. In addition, there are some technologies that allow individual users similar capabilities. For example, CUSeeMe allows users to videoconference utilizing personal computers and video cameras.

4. Peer instruction

A number of the above technologies can be utilized to promote mentoring, tutoring and mutual instruction among students. This can shift some of the responsibility for the educational process to students themselves.

5. Pioneering efforts

There are many researchers investigating and creating new technologies that both respond to and construct the culture of the Information Age. While these technologies are experimental, they give an idea of where things are headed and the further "catch up" that theatre educators may need to accomplish. The following projects from MIT's Media Lab serve as examples of emerging technologies.

- a. Escher's World: a place where students create art and mathematics simultaneously in a studio setting.
- b. Programmable Bricks: building computational power directly into LEGO bricks. Children can create "things that think." A theatrical application might be a set design that provides feedback to the designer.
- c. Visual Intelligence: an attempt to discover the dynamics of vision in order to produce machines that are visually fluent and able to cooperate with humans in activities such as design, editing, assembly, repair and play.
- d. Hyperinstruments: expanding musical instruments, using technology to give extra power and finesse to virtuosic performance.
- e. Brain Opera: a web of interactive music "games" recording, shaping and producing music and images that will be incorporated into collective performances that will be modified by each audience through feedback mechanisms.
- f. Electronic Paper Books: a book with pages that can display variable content, provided by some transfer medium, akin to displaying information from a floppy disk on a computer screen.
- g. Animated Conversation: a system that integrates gesture, intonation and facial expression into multi-modal human-figure animation. A future goal is to adapt the system to handle human-computer interaction.
- h. MOOSE Crossing: a MOO environment specifically designed for children.

D. Innovative uses of traditional technologies

The task force felt that this was an important area, since many theatre educators are continually revising their classroom techniques without moving to 1-dgher-tech applications. Due to the complexity of exploring more complex technologies, the task force did not conduct extensive investigation into this area. The annual conferences routinely feature a number of panels devoted to innovations in theatre education. These provide excellent resources to ATHE members. Given that only a small percentage of ATHE membership might be able to attend any particular session, it might be worthwhile to consider ways of disseminating this information to a wider audience.

IV. Ethics of technology usage

A. Service to the field

It is important to remember that the basic "technology" of theatre and theatre education is the human body and voice. Interaction between human beings is at the center of both these processes. Adoption of new technologies should always be done within this context and should be aimed at service to students. If the association promotes the incorporation of new technologies into theatre education, it must not make the use of technology an end in itself. Sensitivity to the interaction between teacher and student may be more important for theatre-at least in performance classes-than for other disciplines. In its advocacy in this area, ATHE must keep in mind the goal of creating sensitive and intelligent artists and audiences.

B. Faculty development

The promotion of the use of technology in theatre education must involve proper preparation for teachers. Many, if not most, theatre educators have little experience and expertise with the types of technologies discussed in this report. It will take them some time to acquire both proficiency and comfort with technology use. ATHE can provide some training at annual conferences or regional meetings, but this would likely be rudimentary and not carry the promise of technical support. Effective development will require some support from home institutions. Financial resources for procurement of equipment will need to be identified. At the same time, release time, overtime or workshops may need to be arranged for faculty members interested in mastering new technologies. ATHE may need to advocate for such institutional support as part of its efforts to promote the integration of teaching and technology.

A related issue is the acceptable minimum competence. It is dear that education will continue to incorporate new technologies. To what extent should we expect theatre teachers to keep up? Some of the new technologies will most likely develop into standards the way the telephone, the photocopier or the word processor have. The ability to use such standard technologies becomes a matter of collegiality if the regular business of one's institution is conducted through these means. From preliminary investigations, it seems that theatre is generally behind other fields in the adoption of new technologies. ATHE should consider what this means in terms of the professional standing of theatre education.

C. Access

This is a key issue for these new technologies. Finances often present a major obstacle. Personal or institutional funds may not be available for purchase of technology, even if the desire to use it exists. Even in cases where basic technologies are provided by institutions, access may be limited. For example, the school may have an Internet connection but may restrict the features available to users. A school's computer or media facilities may not be able to meet demand. An institution may not be able to provide technical support for new technologies. This could lead to a division between the technology "haves" and "have nots." While promoting the integration of teaching and technology, ATHE must be careful about creating the sense of a privileged class of teachers, i.e., those who have ample technology at their disposal.

Faculty members should also be aware of differential access. At one's institution, students may not have the same level of access to technology resources as a teacher. This must be considered when utilizing technology-dependent assignments. In a similar vein, teachers should bear in mind that they and students have access computer accounts, equipment, Internet connections, etc.-which may be unavailable or costly for others. The Media Lab at MIT is pursuing some projects aimed at providing access to those in poorer neighborhoods.

D. Intellectual property and fair use

The ease with which information is shared via these technologies, particularly the Internet, also facilitates the improper use of other people's work. Educators must be vigilant in assigning due credit and just compensation to those whose work they utilize. This is not always easy because the laws and guidelines for these sorts of usages are still being determined. A number of lawsuits have arisen in relation to protection of intellectual property on the Internet.

E. Identity in a changing educational culture

If the technologies discussed become more standard in higher education institutions, a redefinition of what it means to be a teacher will likely occur, especially with those technologies that restructure the teaching-learning paradigm. Our understanding(s) of the pedagogical process may no longer be applicable to our students' educational experience. This situation would require some rethinking of mission. It would probably also produce some degree of fear, particularly with regard to job security. Mid- or late-career teachers may see themselves as past the point of retraining. Early-career teachers may encounter a vastly different job market. For example, if distance education allows students at various institutions to take courses from a master teacher, does each institution need to support a teacher or a department in that area? Will the adoption of these technologies cause us to restructure the time frame of higher education or the notion of residency? Will widespread In!

ternet access encourage students to enroll at low-cost institutions while still being able to utilize the resources of higher-cost schools? Of course, these are highly speculative situations, but they offer some suggestion of the ways in which we may need to redefine ourselves as we integrate technology into our teaching.

V. Possible action items for the future In light of the above perspectives and considerations, the task force recommends that the next step be a discussion of which services might be the most beneficial on an association-

wide basis. As mentioned, ATHE cannot be expected to bring all of its members up to speed on all of these technologies. At the same time, in responsibility to the profession, there is an obligation to assist members in preparation for new educational methods and cultures. Theatre education has been comparatively slow in adopting these. Following are some suggestions for projects that might be pursued to promote the integration of teaching and technology.

A. Workshops

1. Conference

These would provide only minimal training, but they could create enthusiasm that can be carried back to one's home institution. The timing is problematic because short, annual workshops may not meet the need.

2. Regional

Experts could be engaged to provide more frequent workshops in various locations, increasing access and the potential for technical support.

B. Encouragements to technology use

1. Teleconferencing

Holding ATHE meetings via teleconference could demonstrate the usefulness of this technology. While it would probably not be accessible to the entire membership, it could provide an initial lesson for those who would be able to implement it.

2. MOO classes

ATHE members more experienced in technology use could provide guidance through ATHEMOO sessions. While these do not provide the direct demonstration of a workshop, they are more easily arranged and executed.

3. Member discounts

ATHE could try to arrange for discounts for products of new technologies: CD-ROMs, software, projection equipment, etc. Since some of these might be tied to volume sales, there would be an impetus for wide dissemination.

4. Member testimonials

Descriptions and guides for the use of technologies could be placed in ATHE publications. While this is easy to implement, it tends to be a "weak" motivation for actual adoption. People do not develop as much enthusiasm for technology from written descriptions as from live demonstrations or hands-on workshops.

C. Facilitation of technology use

1. Technology exchange

Those members who have developed specific applications (e.g., HyperCard stacks, self-instruction modules) might offer them to other members. Attention to the issues of intellectual property would be crucial here.

2. Subsidies

Through grants or other funding mechanisms, ATHE could subsidize the use or promotion of technology usage (similar to the plan to provide email access to those in the leadership who could not obtain it on their own). The most efficient way might be to subsidize those who are pursuing innovations. The "payback" could be workshops, distribution of the application or subsidized travel to other institutions for hands-on demonstrations.

D. Collaborations

1. American Association for Higher Education (AAHE)

AAHE has a Teaching, Learning and Technology Roundtable, that, from initial appearances, seems to be more advanced than ATHE's efforts in this area. (contact: Steven Gilbert, Director, Technology Projects) Establishing connections with the Roundtable may provide a means of "catching up."

2. Performance history project

Bruce McConachie is looking for sponsors and scholars for his CD-ROM performance history. Some people in each area have been engaged, but there is still need. ATHE members could serve in either function. ATHE might also consider some institutional support for this project in return for some distribution deal. This could be a good entry-level project because it does not require a command of advanced technologies.

3. MIT Media Lab

This would be the most adventurous, long-term and open-ended collaboration. Without a mandate to do so, the task force did not investigate what such a collaboration would entail or whether it would be feasible. However, since the Media Lab is actively involved in investigating the role of technology in culture, it seems a fertile resource. A number of their projects are specifically addressed to the arts. ATHE might look to placing a scholar at the Media Lab or engaging someone on staff there as a consultant. In the latter case, the consultancy would relate to the development of emerging technologies, not the use of existing ones.

The task force can provide further resources or discussions on these matters if the Board of Governors so desires.

Respectfully submitted,

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