

The World Wide Web: Taking on the Pedagogical Challenge

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Abstract

This paper describes ways of integrating World Wide Web technology into an already established curriculum. It suggests some ways technology can be used in light of time and effectiveness, and instructional design. In addition, it addresses issues of assessment and credibility of resources.

As the World Wide Web's (WWW) wealth of information and accessibility grows, this medium has taken on a more prominent role in society. The benefits of this technology include the ease and instantaneous access to resources and experts, opening new doors to the educational process. Students no longer have to be satisfied with dated videos and books for their information. The Information Superhighway showcases the most current materials, which are then easily and often updated by WWW publishers all over the world.

It is important to remember that the WWW is merely a tool, as is a chalkboard, overhead projector, or VCR. Tools don't teach. When effectively implemented they assist in the learning process. If learning on the part of the student has been helped by the use of a tool, then the tool has been used successfully (Shrum & Glisan, 1994). With the advent of Internet technology, teachers are now faced with deciding how to make this new tool work most effectively. The Internet offers unparalleled diversity for students as an interactive research tool and as a medium for publication. Its hyperlink system lends itself to a student-centered learning environment, thus soliciting a new direction for pedagogy in many content areas. Incorporating the Internet into instruction will have a tremendous impact on both the student's and the instructor's approaches to learning and teaching.

Introducing Technology into the Curriculum

The WWW presents challenges to instructors who incorporate it in their instruction.

These hurdles in utilizing modern resources, in addition to traditional approaches, involve the issues of time and effectiveness, instructional design, and credibility of the new resource.

Step one is establishing the instructor's comfort zone with technology. When working with the WWW, the instructor must first become familiar with the technology prior to assisting students in reaching their learning goals. Like beginning the year with a new textbook, instructors need to have a general idea of what information is available and how to access it. The time needed to feel comfortable varies greatly among instructors. Once acquainted with the new medium, the instructor should choose a project already established in the curriculum and instead of relying on traditional (outdated) book resources to develop it, incorporate the Internet as the information resource. The instructor can require that students who are assigned a report on a foreign country use the Net to access newspapers from that country. Students should include in their report current affairs from the native perspective. The simplicity of the assignment allows the instructor to remain comfortable and confident; its only change has been a request for current information from website sources. Students sense their instructor's assurance and respond with a similar positive attitude. By beginning with this simple but significant assignment, the instructor has maintained his or her teaching style but at the same time taken a sure-fire first step toward the WWW.

Step two is establishing a comfort zone for the students. Once the assignment has been identified to include this new tool, it is time to introduce students to the WWW. This phase will vary with the technology competency level of the students. In some instances, it will be necessary to schedule group sessions, with aides on hand; experienced students within the group may also be willing helpers. It is important that students clearly understand what the assignment is, how long they have to complete it, and exactly what their topic for the project will be. As Keller and Suzuki (1988) pointed out, the simple act of making the learners aware of the learning objectives, including the criteria for evaluation and the conditions under which they will be evaluated, helps them develop confidence. In addition, clear goals will help keep them on task and working in a timely fashion when traveling in cyberspace.

Achieving Curricular Goals

Although the task design can be similar to the instructor's prior designs, some modifications will exist. Besides adding another resource, differences may include creating more in-depth and relational questioning sequences. This change is due to the hyperlinking network, which allows students to easily probe multiple levels of a given topic. By viewing the Internet as a way to enhance an already developed curricular goal, the instructor decreases development time. For example, a Spanish

class studying art may search for information on the work and life of Picasso. Students can view some of his works on-line, discover his influences, and find out where his works are presently displayed. Perhaps the subject is surrealism. In this case students would compare and contrast artists' paintings, reviews, and get general background knowledge on surrealism. For instructors who teach current events, accessing periodicals on-line in all languages can keep students updated on world events from the viewpoint of countries other than their own. As students become more comfortable, they can gather more information quickly. It is very important, however, that curricular goals are clearly identified and that a time line is established so that students avoid becoming overwhelmed by the volume of information available.

As with the first visit to a library, instructors should accompany students to the computer lab. Beginning with a search engine, students should look for information on their topic. In order to allow for this partially structured approach, the instructor must be flexible and open to student discovery. Students are likely to find sites that even the instructor never knew existed. In the meantime, students will learn how to work with the Internet software as they develop their research skills. Some guidance with respect to linking to related documents, going to specific locations if students have an Internet address, and narrowing or broadening a search to be most useful will make the job much less time consuming and intimidating. But rather than teaching the technology itself, instructors should focus on guiding students in exploring the subject matter through the utilization of technology. Content is the students' goal, and software questions should be addressed to the group only as they occur.

Anti-glitch insurance. For instructors who are accustomed to a more controlled environment, one solution is to begin students at a particular location on the WWW that offers links to other related sites. For this approach, it is essential to verify the existence of the starting site on the same day as your students will be working in the lab. This step is important because Internet addresses change quickly and servers may also be down. Instructors should consider having a backup plan just in case they don't find what they had anticipated. In addition, instructors should be aware that when all students are accessing the same location at the same time, students may encounter difficulty downloading that page due to too much traffic. For this reason, it is recommended to move away from the more structured lesson and allow for the flexibility offered by search engines. The end result will be a more learner-centered environment.

Resources and Assessment

After gathering sufficient data, students should face the challenge of presenting their information for evaluation. In doing so they will be citing their electronic

information just as they would an encyclopedia or other traditional resource. Therefore, it is important to teach them about citations for electronic documents. Lafayette College Libraries have published an impressive WWW site that links to [citation information](#) for various types and styles of electronic sources.

One major difference to consider with electronic documents: traditional publications have passed through the hands of a publishing company that has reviewed and accepted it as a legitimate information source. The WWW, on the other hand, is much more casual. Anyone can learn basic HTML scripting and can publish their thoughts on the WWW. For this reason, students need to look beyond the information they have gathered and consider the author and source. They need to decide if the source is credible enough to use the information and to defend their decision. It is here that students learn more than just the information needed for their project. They also develop life skills of investigation and discrimination of sources. Because the WWW is not a censored medium and permits all ideas and opinions to be broadcast worldwide, it becomes the students' responsibility to decide what is supportable evidence and what is exploitation. Instructors should keep in mind that these issues of credibility can serve as good topics for discussion and can broaden both students' and teachers' perspectives. Expect the unexpected.

Meeting the Technology Challenge

When deciding what technology to use and how to incorporate it, consider your audience. What are their needs and how well will they adapt to the responsibility presented by this new medium? Computers tend to be intrinsically motivating, at least at first. Although students may seem excited to use them, shortly thereafter anger and frustration often follow. This is due in part to the vast quantity of information available, which makes it hard to determine what is useful and how to find it. Some students need more support than others. By working in pairs or small groups for projects, students can help and encourage each other. Computers can be a way to bring students together to interact, to negotiate meaning, to think and to negotiate strategies related to the social and academic tasks at hand (Johnson, 1991). Pair-work will build students' cooperative learning skills and take some of the pressure off of the instructor. Nonetheless, Johnson stresses the teacher's role as an essential part of learning. Teachers will not be replaced by technology; their style of disseminating information may change from lecturer to guide.

Assessment

Assessment of the learning process should take place so that instructors can evaluate ways in which students learn most effectively. It is important to

remember that the use of technology in education usually teaches process as much as content. In other words, students learn the process of accessing information and how to relate data to ascertain a richer understanding of the content. As a result, alternate forms of assessment should be developed. For example, instead of a traditional test of the facts, instructors could have students do oral presentations with visuals, to teach their peers about what they have learned. The learners, in this case, should also be made responsible for what they are being taught by the presenter. This may take the form of questioning the presenter or perhaps having the presenter give the learners questions to answer based on the presentation. The students would then take responsibility for not only their own learning but also the learning of their peers. Instructors should keep in mind that the first projects are the most difficult. By developing projects one at a time, the instructor can better discern to what extent the WWW is a more or less effective tool than traditional options.

Summary

The Internet is a vast network of information waiting to be explored by inquiring students. Although at first the implementation of this new medium may take more time, the time spent is worth the final result of taking on the challenge. Initially it may seem overwhelming, but a discovery-oriented classroom environment can lead students to take control of their own learning. With the use of the WWW, the instructor can act as guide to help students learn to establish relationships between information. Students will also learn to challenge information and sources. These are all important life skills that students can achieve within the context of an established curriculum.

References

- Johnson, D. M. (1991). Second language and content learning with computers: Research in the role of social factors. In P. Dunkel (Ed), *Computer-Assisted Language Learning and Testing: Research Issues and Practice* (pp.61-83). New York, NY: Newbury House.
- Keller, J. M. (1988). Use of the ARCS motivation model in courseware design. In D. H. Jonassen (Ed.), *Instructional Designs for Microcomputer Courseware* (pp.401-429). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Shrum, J. L & Glisan, E. W. (1994). *Teacher's handbook: Contextualized language instruction*. Boston, MA: Heinle and Heinle Publishers.

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