

VCCS May Symposium

May 8 –11, 2001

Virginia Western Community College

Best Practices in Content Development Findings

June 4, 2001

Goal: Operationalize the principles of good practice in distance/online learning for the content developer -- by providing the 10 most important practices faculty & instructional designers should incorporate into their courseware.

Best Practices for Content Development

Criteria common across the quality documents reviewed

10 elements that are crucial to success online learning environments

•Provides interaction – Faculty/student, Student/student (VCCS* 3)
•Involves active learning – student is engaged in the learning process
•Provides feedback – frequent/meaningful responses from faculty & other students (VCCS 17)
•Acknowledges differences in student backgrounds & learning styles – takes advantage of multiple options & resources for learners (VCCS 18, 19)
•Causes “learning” – instills a desire in students to learn/know more
•Reflects scholarship – value/integrity of faculty as content expert(VCCS 4,20)
•Uses current content/resources (VCCS 18, 19)
•Has clear objectives/outcomes
•Has a clear, logical plan to achieve objectives/outcomes(VCCS 2)
•Organizes content clearly – navigational paths, ease of use, leads/directs/guides user

* VCCS Quality Assurance for Asynchronous Learning

Documents reviewed

VCCS Quality Assurance for Asynchronous Learning (21 criteria)

<http://164.106.217.32/issues/best%5Fpractices.htm> (lots of leads to exemplary sites)

<http://www.so.cc.va.us/vccsit/Quality.pdf>

◆ **Curriculum, instruction & learning**

1. Each program or course of study results in learning appropriate to the rigor and breadth of the degree or certificate awarded.
2. Degree or certificate program or course offered electronically is coherent and complete.
3. Course or program provides for appropriate interaction between faculty and students and among students.
4. Qualified faculty provide appropriate supervision of the program or course that is offered electronically.
5. Academic standards for all programs or courses offered electronically are equivalent to those for other courses or programs delivered at the institution where they originate.
6. Student learning in programs offered electronically is comparable to student learning in programs or courses offered at the campus where they originate.
7. Faculty to student ratios in distance education courses are appropriate for the type of delivery system and technology involved.

◆ **Institutional context**

8. Program or course is consistent with the institution's role and mission.
9. Review and approval processes ensure the appropriateness of the technology being used to meet program or course objectives.

◆ **Students**

10. The program or course provides students with clear, complete and timely information on:
 - ◆ the curriculum
 - ◆ course and degree requirements
 - ◆ nature of faculty/ student interaction
 - ◆ prerequisite technology competencies and skills
 - ◆ technical equipment requirements
 - ◆ availability of academic support services, financial aid resources, costs and payment policies
11. Enrolled students have reasonable and adequate access to student services and resources appropriate to support learning.

12. The institution has admission/ acceptance criteria to assess whether the student has the background, knowledge and technical skills required for undertaking the course or program.
13. Advertising, recruiting and admissions materials clearly and accurately represent the program and the services available.
14. Program or course announcements and electronic catalog entries provide appropriate information.

◆ **Faculty Support**

15. The program or course provides faculty support services specifically related to teaching via an electronic system.
16. Institution ensures appropriate training for faculty who teach using echnology, based on the needs of the particular institution and the specific technology being utilized.
17. The program or course provides faculty with adequate equipment, software and communications for interaction with students, institutions and other faculty.

◆ **Resources for Learning**

18. Program or course ensures that appropriate learning resources are available to students.
19. Program or course evaluates the adequacy of access to learning resources and the cost to students for access to those resources. It also documents the use of electronic resources.

◆ **Commitment to support**

20. Policies for faculty evaluation include appropriate recognition of teaching and scholarly activities related to programs or courses offered electronically.
21. Institution demonstrates a commitment to ongoing support, both financial and technical, and to continuation of the program or course for a period sufficient for students to complete a degree or certificate.

Seven Principles

(Arthur Chickering/Steve Erhmann)

IMPLEMENTING THE SEVEN PRINCIPLES: Technology as Lever

by Arthur W. Chickering and [Stephen C. Ehrmann](#)

In March 1987, the AAHE Bulletin first published "Seven Principles for Good Practice in Undergraduate Education." With support from Lilly Endowment, that document was followed by a Seven Principles Faculty Inventory and an Institutional Inventory (Johnson Foundation, 1989) and by a Student Inventory (1990). The Principles, created by Art Chickering and Zelda Gamson with help from higher education colleagues, AAHE, and the Education Commission of the States, with support from the Johnson Foundation, distilled findings from decades of research on the undergraduate experience.

Several hundred thousand copies of the Principles and Inventories have been distributed on two- and four-year campuses in the United States and Canada. (Copies are available at cost from the Seven Principles Resource Center, Winona State University, PO Box 5838, Winona, MN 55987-5838; ph 507/457-5020.) — Eds.

Since the Seven Principles of Good Practice were created in 1987, new communication and information technologies have become major resources for teaching and learning in higher education. If the power of the new technologies is to be fully realized, they should be employed in ways consistent with the Seven Principles. Such technologies are tools with multiple capabilities; it is misleading to make assertions like “Microcomputers will empower students” because that is only one way in which computers might be used.

Any given instructional strategy can be supported by a number of contrasting technologies (old and new), just as any given technology might support different instructional strategies. But for any given instructional strategy, some technologies are better than others: Better to turn a screw with a screwdriver than a hammer — a dime may also do the trick, but a screwdriver is usually better. This essay, then, describes some of the most cost-effective and appropriate ways to use computers, video, and telecommunications technologies to advance the Seven Principles.

1. Good Practice Encourages Contacts Between Students and Faculty

Frequent student-faculty contact in and out of class is a most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students’ intellectual commitment and encourages them to think about their own values and plans.

Communication technologies that increase access to faculty members, help them share useful resources, and provide for joint problem solving and shared learning can usefully augment face-to-face contact in and outside of class meetings. By putting in place a more “distant” source of information and guidance for students, such technologies can strengthen faculty interactions with all students, but especially with shy students who are reluctant to ask questions or challenge the teacher directly. It is often easier to discuss values and personal concerns in writing than orally, since inadvertent or ambiguous nonverbal signals are not so dominant. As the number of commuting part-time students and adult learners increases, technologies provide opportunities for interaction not possible when students come to class and leave soon afterward to meet work or family responsibilities.

The biggest success story in this realm has been that of time-delayed (asynchronous) communication. Traditionally, time-delayed communication took place in education through the exchange of homework, either in class or by mail (for more distant learners). Such time-delayed exchange was often a rather impoverished form of conversation, typically limited to three conversational turns:

1. The instructor poses a question (a task).
2. The student responds (with homework).
3. The instructor responds some time later with comments and a grade.

The conversation often ends there; by the time the grade or comment is received, the course and student are off on new topics.

Now, however, electronic mail, computer conferencing, and the World Wide Web increase opportunities for students and faculty to converse and exchange work much more speedily than before, and more thoughtfully and “safely” than when confronting each other in a classroom or faculty office. Total communication increases and, for many students, the result seems more intimate, protected, and convenient than the more intimidating demands of face-to-face communication with faculty.

Professor Norman Coombs reports that, after twelve years of teaching black history at the Rochester Institute of Technology, the first time he used email was the first time a student asked what he, a white man, was doing teaching black history. The literature is full of stories of students from different cultures opening up in and out of class when email became available.

Communication also is eased when student or instructor (or both) is not a native speaker of English; each party can take a bit more time to interpret what has been said and compose a response. With the new media, participation and contribution from diverse students become more equitable and widespread.

2. Good Practice Develops Reciprocity and Cooperation Among Students

Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's ideas and responding to others' improves thinking and deepens understanding.

The increased opportunities for interaction with faculty noted above apply equally to communication with fellow students. Study groups, collaborative learning, group problem solving, and discussion of assignments can all be dramatically strengthened through communication tools that facilitate such activity.

The extent to which computer-based tools encourage spontaneous student collaboration was one of the earliest surprises about computers. A clear advantage of email for today's busy commuting students is that it opens up communication among classmates even when they are not physically together.

For example: One of us, attempting to learn to navigate the Web, took a course taught entirely by a combination of televised class sessions (seen live or taped) and by work on a course Web page. The hundred students in the course included persons in Germany and the Washington, DC, area.

Learning teams helped themselves "learn the plumbing" and solve problems. These team members never met face-to-face. But they completed and exchanged Myers-Briggs Type Inventories, surveys of their prior experience and level of computer expertise, and brief personal introductions. This material helped teammates size one another up initially; team interactions then built working relationships and encouraged acquaintanceship. This kind of "collaborative learning" would be all but impossible without the presence of the media we were learning about and with.

3. Good Practice Uses Active Learning Techniques

Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.

The range of technologies that encourage active learning is staggering. Many fall into one of three categories: tools and resources for learning by doing, time-delayed exchange, and real-time conversation. Today, all three usually can be supported with "[worldware](#)," i.e., software (such as word processors) originally developed for other purposes but now used for instruction, too.

We've already discussed communication tools, so here we will focus on learning by doing.

Apprentice-like learning has been supported by many traditional technologies: research libraries, laboratories, art and architectural studios, athletic fields. Newer technologies now can enrich and expand these opportunities. For example:

- Supporting apprentice-like activities in fields that themselves require the use of technology as a tool, such as statistical research and computer-based music, or use of the Internet to gather information not available in the local library.
- Simulating techniques that do not themselves require computers, such as helping chemistry students develop and practice research skills in "dry" simulated laboratories before they use the riskier, more expensive real equipment.
- Helping students develop insight. For example, students can be asked to design a radio antenna. Simulation software displays not only their design but the ordinarily invisible electromagnetic waves the antenna would emit. Students change their designs and instantly see resulting changes in the waves. The aim of this exercise is not to design antennae but to build deeper understanding of electromagnetism.

4. Good Practice Gives Prompt Feedback

Knowing what you know and don't know focuses your learning. In getting started, students need help in assessing their existing knowledge and competence. Then, in classes, students need frequent opportunities to perform and receive feedback on their performance. At various points during college, and at its end, students need chances to reflect on what they have learned, what they still need to know, and how they might assess themselves.

The ways in which new technologies can provide feedback are many — sometimes obvious, sometimes more subtle. We already have talked about the use of email for supporting person-to-

person feedback, for example, and the feedback inherent in simulations. Computers also have a growing role in recording and analyzing personal and professional performances. Teachers can use technology to provide critical observations for an apprentice; for example, video to help a novice teacher, actor, or athlete critique his or her own performance. Faculty (or other students) can react to a writer's draft using the "hidden text" option available in word processors: Turned on, the "hidden" comments spring up; turned off, the comments recede and the writer's prized work is again free of "red ink."

As we move toward portfolio evaluation strategies, computers can provide rich storage and easy access to student products and performances. Computers can keep track of early efforts, so instructors and students can see the extent to which later efforts demonstrate gains in knowledge, competence, or other valued outcomes. Performances that are time-consuming and expensive to record and evaluate — such as leadership skills, group process management, or multicultural interactions — can be elicited and stored, not only for ongoing critique but also as a record of growing capacity.

5. Good Practice Emphasizes Time on Task

Time plus energy equals learning. Learning to use one's time well is critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty.

New technologies can dramatically improve time on task for students and faculty members. Some years ago a faculty member told one of us that he used technology to "steal students' beer time," attracting them to work on course projects instead of goofing off. Technology also can increase time on task by making studying more efficient. Teaching strategies that help students learn at home or work can save hours otherwise spent commuting to and from campus, finding parking places, and so on. Time efficiency also increases when interactions between teacher and students, and among students, fit busy work and home schedules. And students and faculty alike make better use of time when they can get access to important resources for learning without trudging to the library, flipping through card files, scanning microfilm and microfiche, and scrounging the reference room.

For faculty members interested in classroom research, computers can record student participation and interaction and help document student time on task, especially as related to student performance.

6. Good Practice Communicates High Expectations

Expect more and you will get it. High expectations are important for everyone — for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. Expecting students to perform well becomes a self-fulfilling prophecy.

New technologies can communicate high expectations explicitly and efficiently. Significant real-life problems, conflicting perspectives, or paradoxical data sets can set powerful learning challenges that drive students to not only acquire information but sharpen their cognitive skills of analysis, synthesis, application, and evaluation.

Many faculty report that students feel stimulated by knowing their finished work will be "published" on the World Wide Web. With technology, criteria for evaluating products and performances can be more clearly articulated by the teacher, or generated collaboratively with students. General criteria can be illustrated with samples of excellent, average, mediocre, and faulty performance. These samples can be shared and modified easily. They provide a basis for peer evaluation, so learning teams can help everyone succeed.

7. Good Practice Respects Diverse Talents and Ways of Learning

Many roads lead to learning. Different students bring different talents and styles to college. Brilliant students in a seminar might be all thumbs in a lab or studio; students rich in hands-on experience may not do so well with theory. Students need opportunities to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily.

Technological resources can ask for different methods of learning through powerful visuals and well-organized print; through direct, vicarious, and virtual experiences; and through tasks requiring analysis, synthesis, and evaluation, with applications to real-life situations. They can encourage self-reflection and self-evaluation. They can drive collaboration and group problem

solving. Technologies can help students learn in ways they find most effective and broaden their repertoires for learning. They can supply structure for students who need it and leave assignments more open-ended for students who don't. Fast, bright students can move quickly through materials they master easily and go on to more difficult tasks; slower students can take more time and get more feedback and direct help from teachers and fellow students. Aided by technologies, students with similar motives and talents can work in cohort study groups without constraints of time and place.

Evaluation and the Seven Principles

How are we to know whether given technologies are as useful in promoting the Seven Principles and learning as this article claims? One approach is to look and see, which is the aim of the "[Flashlight Project](#)," a three-year effort begun by the Annenberg/CPB Project to develop and share evaluation procedures. The Flashlight Project is developing a suite of evaluation tools that any campus can use to monitor the usefulness of technology in implementing the Seven Principles and the impacts of such changes on learning outcomes (e.g., the student's ability to apply what was learned in the academic program) and on access (e.g., whether hoped-for gains in time on task and retention are saving money for the institution and its funders).

[For more about the Flashlight Program, see [Stephen Ehrmann's "Asking the Right Questions: What Does Research Tell Us About Technology and Higher Learning?"](#) in the March/April 1995 *Change*.]

Technology Is Not Enough

The Seven Principles cannot be implemented by technophiles alone, or even by faculty alone. Students need to become familiar with the Principles and be more assertive with respect to their own learning. When confronted with teaching strategies and course requirements that use technologies in ways contrary to the Principles, students should, if possible, move to alternatives that serve them better. If teaching focuses simply on memorizing and regurgitating prepackaged information, whether delivered by a faculty lecture or computer, students should reach for a different course, search out additional resources or complementary experiences, establish their own study groups, or go to the professor for more substantial activities and feedback. Faculty members who already work with students in ways consistent with the Principles need to be tough-minded about the software- and technology-assisted interactions they create and buy into. They need to eschew materials that are simply didactic, and search instead for those that are interactive, problem oriented, relevant to real-world issues, and that evoke student motivation. Institutional policies concerning learning resources and technology support need to give high priority to user-friendly hardware, software, and communication vehicles that help faculty and students use technologies efficiently and effectively. Investments in professional development for faculty members, plus training and computer lab assistance for students, will be necessary if learning potentials are to be realized.

Finally, it is appropriate for legislators and other benefactors to ask whether institutions are striving to improve educational practice consistent with the Seven Principles. Much depends on the answer.

Note: This article draws on Arthur Chickering's participation in "The Future of Face-to-Face and Distance Learning in Post-Secondary Education," a workgroup chaired by W.L. Renwick as part of a larger effort examining The Future of Post-Secondary Education and the Role of Information and Communication Technology: A Clarifying Report, carried out by the Center for Educational Research and Innovation, Organization for Economic Cooperation and Development. Paris: 1993, 1994.

The Flashlight Program is now a part of the non-profit [TLT Group](#), the Teaching, Learning, and Technology Affiliate of the [American Association for Higher Education](#). The TLT Group provides a range of services to help faculty, their institutions, and their programs make more sensible use of technology.

- Wisc-Online (Wisconsin Online – LAAP grant activity – building re-usable content
- ◆ <http://wisc-online.com/>

Quality Standards Applied to All Learning Objects

[Wisc-Online Home](#)

Quality Standards: The learning object...
• Shows a clear purpose, i.e., is immediately relevant to the learner.
• Reflects a specified learning preference (visual, auditory or kinesthetic).
• Supports the competency at the appropriate level (Bloom).
• Helps learners understand the concept being presented.
• Is able to be applied to courses in different subject areas.
• Is able to be applied to different programs of study.
• Can be grouped into larger collections of content, including traditional course structures.
• Requires interaction on the part of the learner with the learning materials, i.e., responding and acting to apply higher-order thinking skills.
• Can stand alone, i.e., is not dependent on external sources (textbook chapters, videos)
• Contains all information and materials needed by learners to complete the activity, e.g., introduction, conclusion, learning content
• Is easy to use for the learner.
• Applies appropriate Principles of Good Practice (AAHE).*
• Applies appropriate Learning College Principles (O'Banion).**

* "Seven Principles for Good Practice in Undergraduate Education" (AAHE 1987)

<http://www.aahe.org/technology/ehrmann.htm>

Learning College

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- ** Six Learning College Principles (O'Banion 1996)**
1. The learning college creates substantive change in individual learners.
 2. The learning college engages learners as full partners in the learning process, assuming primary responsibility for their own choices.
 3. The learning college creates and offers as many options for learning as possible.
 4. The learning college assists learners to form and participate in collaborative learning activities.
 5. The learning college defines the roles of learning facilitators by the needs of the learners.
 6. The learning college (and its learning facilitators) succeed only when improved and expanded learning can be documented for its learners.

University of Guelph

What Do We Believe In? Best Practices in Distance Education

The Office of Open Learning of the University of Guelph is committed to providing the highest quality distance education courses. Within a learner-centred, research intensive environment, distance learning experiences should reflect the high pedagogical standards for which the University of Guelph is known.

The following criteria have been developed to guide us in our development and redevelopment of distance education courses.

Distance education courses should:

- reflect the highest levels of scholarship in discipline and subject area
- utilize and provide access to current content, materials, and resources

- exhibit well thought out aims, goals, and objectives
- have pedagogically sound learning outcomes
- have a clear and logical structure and sequence of learning activities (learning plan)
- disseminate current research findings and promote various forms of inquiry
- set realistic yet challenging expectations of learners
- promote active learning, independence of thought, and where appropriate, problem solving
- exhibit a clearly definable educational philosophy and teaching/learning strategies
- accommodate a variety of learning styles (visual, auditory, kinesthetic)
- utilize a variety of appropriate learning resources (print, video, CD-ROM, WWW, etc.)
- link to the University of Guelph library and to the Counselling and Student Resource Centre
- foster learner-instructor and learner-learner communication and interaction
- integrate appropriate technology into the course learning framework
- allow for frequent and meaningful feedback on learner progress
- provide for suitable assessment methods measuring success in accomplishment of course goals and outcomes
- exhibit sensitivity to learners of varying ages, backgrounds, and experience
- be appropriate for an international audience (awareness of and sensitivity to cultural differences)
- exhibit proper standards in the use of the language of instruction and the rules of grammar

VCCS MERLOT Activity – What the attendees said (Group 1)

- Interactive & engaging
- Lesson fits the goals
- Provides a challenge
- Responds to individual interest
- Involves problem solving & project based activities
- Includes a pre-test
- Is consistent, clear & user friendly
- Provides opportunity for application
- Is learner-focused
- Provides opportunity for critical thinking
- Simulates real-world experiences
- Provides for rapid feedback
- Assesses student performance
- Reflects expertise of instructor
- Isolates skills & concepts in the lesson
- Recognizes student success

VCCS MERLOT Activity – What the attendees said (Group 2)

- Introduces vocabulary through visual aids
- Identifies deficiencies
- Guides & structures interaction
- Invites active student involvement
- Provides for practical application
- Organizes content clearly
- Provides relevant content at appropriate level
- Encourages students to want to know more
- Includes clear objectives
- Adheres to standard content model
- Allows team projects
- Builds in means for effective communication
- Provides for learner assessment

MERLOT – Evaluation standards used in rating learning modules in the database

- Quality of content
 - Does the software present valid (correct) concepts, models &
 - Does the software present educationally significant concepts, models, skills
 - Content is core curriculum within the discipline
 - Content is difficult to teach & learn
 - Content is pre-requisite for understanding more advanced material
- Potential effectiveness as a teaching/learning tool
 - What stage(s) in the learning process could the materials be used
 - What are learning objectives – what should students be able to do
 - Characteristics of target learners defined

Other general elements to be considered for effectiveness as a teaching tool

- Does (object) improve faculty and students ability to teach/learn
- Can software be readily integrated into the curriculum
- Can (object) be used in a variety of roles
- Are learning goals easy to identify
- Can good learning assignments be created

- Ease of use
 - Labels, buttons, menus, text & layout consistent & visually distinct
 - Does user get trapped
 - Can user get lost
 - Is feedback provided
 - Is software flexible
 - What documentation, support, instruction needed
 - Is info provided in ways that are familiar for students
 - Is info provided in a way that would be attractive to students

VCCS Distance Learning Student Survey

Students indicated they liked the convenience of online courses and 96% said they would take another. They were better able to manage work and family obligations while pursuing their educational goals.

When asked what they liked least about the online courses, the most frequently cited elements were:

(337 students responding to the question)

Lack of interaction	32.3%
Rigor/pace of course	18.7%
Technical difficulties	12.5%
Lack of timely feedback from instructor	10.0%

When asked what they would change, the most frequently cited elements were:

(144 students responding to the question)

More interaction with instructor/more direction	16.7%
More discussion/interaction with other students	11.8%
Improved web site navigation and information	11.1%
Less reading/rigor	9.0%
Class meetings or set discussion times	8.3%