

Two Years Out -- A Progress Report: The Virginia Tech Cyberschool

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I. Executive Summary

After two years of preparation, planning and practice, the Virginia Tech Cyberschool now is proving the potential of computer mediated communications in teaching university-level classes "virtually" for both traditional students on campus in Blacksburg and Extended Campus learners elsewhere. To advance this project from an experimental test-bed to a more routine aspect of VPI&SU's operations as a "model land-grant university," these additional actions need to be taken:

- A. Focus the multipurpose flexibilities of Cyberschool teaching techniques on specific applications, beginning on campus with large-enrollment, core-curriculum courses to streamline course management, enhance the quality of course content, and improve student success levels, while thinking about tapping new off-campus markets with upper-division courses for community college students to obtain on-line bachelor's degrees, on-line graduate degree programs for students working in corporate and government settings, and innovative life-long learning programs for VPI&SU alumni
- B. Establish a clear university-wide identity for Cyberschool, perhaps as a "virtual college" or "virtual school" pulling together instructors and courses from all of VPI&SU's existing colleges, which could operate as a central clearing-house, organizational center, or administrative office to serve institutional, student, and faculty needs as part of the University's Extended Campus

- C. Expand the number of new on-line undergraduate courses, and eventually entire degree programs of undergraduate study, available through Cyberschool
- D. Oversee the development of new on-line graduate courses, and eventually entire degree programs of graduate study, for Cyberschool
- E. Support existing departmental efforts to buy equipment, develop courses, hire technical staff, and expand academic programs with additional funding at higher, more sustained levels for Cyberschool activities
- F. Establish a workable system to receive payment for, conduct assessments of, register students in, transfer credits through, and assign faculty to Cyberschool classes as a regular administrative feature of an Extended Campus for VPI&SU
- G. Explore new applications of Cyberschool methods for enhancing student retention on and off campus, recruiting new students with K-12 outreach, connecting with nontraditional students in need of new training, maintaining ties with alumni, or training those with special, more focused, and narrow educational requirements in government, business, and not-for-profit organizations
- H. Plan, organize, and administer a more efficient, capacious and powerful client-server network to avoid server overload, network failures, or lack of user access for Cyberschool with network redundancies, responsiveness to extraordinary use surges, and mirror server sites

II. Overview

Our first effort to envision the Virginia Tech Cyberschool, "Going Beyond the Conventions of Credit-for-Contact: A Preliminary Proposal to Design a "Cyberschool" for VPI&SU," was presented in November 1994 (see <http://www.cyber.vt.edu/docs/papers.html> for the document as cited here below). It now is two years later, and a progress report might help us assess what we have done thus far. In turn, this reassessment might give some directions for how we should advance in the months ahead.

The central place of information technology (IT) in the unfolding analyses of the University's new Self-Study is, in part, due to our efforts in Cyberschool; and, our collective experience--both positive and negative--to this point will assist the Self-Study working groups and the central administration decide where we want to go next. Similarly, the realignment of the Vice President for Information Systems to work more directly with President Torgersen underscores the new sense of urgency about preparing VPI&SU to conduct more of its teaching and outreach over the new statewide broad bandwidth computer-mediated communications network, or "NET.WORK.VIRGINIA." Finally, President Clinton's recent call to wire every school room and public library for Internet access by the year 2000 suggests that there will be tremendous demand for educational content over the network very quickly. With its Cyberschool experience, VPI&SU is well-positioned to be a leading educational provider of educational services on computer networks.

Still, even if all of these new IT infrastructure initiatives do not come on-line as rapidly as promised, the various participants in the Virginia Tech Cyberschool, as the operators of an up-and-running assemblage of workable educational packages, need to think about what kind of content it can provide, to whom it can deliver it, how it will provide services, when it shall be accessible, where it wants to provide serviceable access to its content, and who will be responsible for doing all of this with what material resources and rewards? To evaluate all of our options, an overview of Cyberschool's original purposes and progress is in order.

III. Review of the Original Cyberschool Design

To consider how far the Virginia Tech Cyberschool initiative has gone, we might return to the tentative outlines of "a cyberschool design" that was proposed in November 1994. In that document, we suggested:

Rather than remaining in the operational register of getting "computers into the classroom" as our vision of the educational promise of new technologies, we

need instead to get "classrooms out of the computer." Technical infrastructures composed of distributed personal computer networks tied together in high-speed networks capable of fairly transparent, cross platform image/audio/text/data transmission should be seen as technologies for fabricating and utilizing new social spaces suitable for virtualizing many educational activities.

In other words, the cyberspaces generated by distributed computing allow us to reinvent some of what we do in virtualized terms in virtual classrooms on virtual campuses; hence, the notion of a cyberschool. Most personal computer software now emulates some artifact or collection of artifacts in the virtualization of typing as wordprocessing, art studios as graphics packages, the post as e-mail, casual conversation as bulletin boards, bookkeeping as financial management systems, and recordkeeping as hypertextual databases. Cyberschool software packages would incorporate all of these innovations into the workings of a virtualized campus encompassing emulations of ordinary classrooms, art studios, university libraries, faculty offices, student centers, media centers, science labs, and administrative offices in different mixes for an on-line and off-line format.

In its on-line manifestation, the VPI&SU cyberschool could be designed to operate something like an on-line information service. That is, access to the system could be represented aesthetically or graphically as a trip to campus where the screen would display a rendering of campus. To access the course space, one might travel to or click on an icon/image/photo of McBryde Hall which would move one to a classroom where course syllabi, tests, lecture notes, student-teacher/ student-student interactions, and multimedia presentations could occur. To access the assigned class readings, one might travel to or click on an icon/image/photo of Newman Library where reserve readings, videotapes, audiotapes, reserve room information sources, and other on-line library services could be obtained. To access required readings, one might travel to or click on an icon/image/photo of the Campus Bookstore where full text facsimiles could be pulled down for actual printing or quick delivery through the mail of books and articles might be obtained. To access faculty, one might travel to or click on an icon/image/photo of a faculty office where an on-line real-time chat session or desktop video conferencing session could be scheduled just like ordinary "real" office hours. To access lab experiments as well as communications, music, art, and architecture studios, one might travel to or click on an icon/image/photo of science and art buildings where on-line virtual lab exercises, image generation, computer assisted design, or multimedia mixing software packages could be accessed by students. To access other students, one might travel to or click on an icon/image/photo of Squires Student Center where on-line real-time chat sessions or study tutorials could be scheduled for peer learning projects. And, finally, one might even have access-times and/or access-points driven by other graphic clues to film series, video programming, teleconferences, speaker's series, and athletic event broadcasts available only on-line through the

cyberschool campus ("Beyond Credit-for-Contact," 1994).

After two years, we have made considerable progress toward many of these goals. It is true that we have done much more on-line work than off-line, and Cyberschool is not so much an on-line information service as it is a constellation of loosely-linked websites for university-wide department and college intranets. On campus, we have found self-paced, teacherless modules do not work as effectively as mixing such modules with traditional teaching. Indeed, the practice of self-paced instruction is not appropriate for some students. Our graphical interfaces are still quite rudimentary, and we have not redesigned Virginia Tech entirely as a "Virtual Tech" or the "Virtual/Versity"--a vast task even as we proposed it in 1994. Nonetheless, we have made progress toward virtualizing library resources, lab experiments, studio practica, lecture halls, and course tutorials. Building a rich graphical on-line emulation of VPI&SU, like we imagined in 1994, is worth doing, but it also will take higher, more sustained levels of material support.

So now in practice during 1996, as we proposed in theory during 1994, Cyberschool is a working experiment at "pulling down" virtualized course activities and contents from interactive networks rather than "projecting out" canned noninteractive programming. In some sense, as we proposed in 1994, the Virginia Tech Cyberschool is partly distance learning, but in a new register.

Instead of relaying information from the Blacksburg campus to students elsewhere in the state in point-to-point two-way TV links, Cyberschool courses use the teleconferencing, telepresencing, and telecommuting capabilities in computer networks to bring teachers and students together on virtual campus sites accessible from anywhere equipped with the requisite computing/networking links....Some classes are on-supply synchronous interactions, linking students and teachers as a group interactively. Other classes are purely on-demand asynchronous interactions, looping individual students on their demand into self-paced, stand-alone course modules. Many classes include much more peer learning and team teaching, but a few also are small tutorials involving one faculty member with a small group of students. When fully developed, it should be possible for a student to do almost anything "virtually" in the cyberschool's infostructures that he or she would do in VPI&SU's physical infrastructures: attend classes, meet faculty during office hours, discuss coursework with peers, do library research, check a reserve room article, purchase a textbook, see a movie from a film series, perform a science lab exercise, submit a term paper, hear a distinguished speaker, etc. ("Beyond Credit-for-Contact," 1994).

We have not brought all of these innovations on line, yet. However, instructional innovations like these are coming from Cyberschool, the Newman Library, and NET.WORK.VIRGINIA.

The key issue for Cyberschool, as we anticipated in 1994, is the valorization of instruction in virtual teaching environments. Does a Cyberschool approach enhance and enrich the education we now provide? For the most part, our students tend to agree that it does, both as an on-campus complement for face-to-face instruction and an off-campus virtualization of on-campus educational activities. Students indicate that Cyberschool classes increase their interactions among themselves and faculty, expand more convenient access to learning opportunities, and enhance their opportunities to work with course materials in newer, more informative ways. At this point, then, we can say that Cyberschool has fulfilled many of our original design agendas. That is, as the 1994 cyberschool plan proposed,

the cyberschool must be designed as an experiment to change (but not increase) faculty workloads, enhance (but not decrease) student interactions, equalize (and not shortchange) the resources, prestige, and value of all disciplines, balance (and not over emphasize) the transmittal of certain vital skills, concentrate (and not scatter) the investment of institutional resources, and strengthen (and not reduce) the value of all academic services. Technologies do not have one or two good and bad promises locked within them, awaiting their right use or wrong misuse. They have multiple potentials that are structured by the existing social relations guiding their control and application. We can construct the cyberschool's virtual spaces and classrooms so that they help actualize a truly valuable (and innovative) new type of higher education ("Beyond Credit-for-Contact," 1994).

The multivalent potentials of computer mediated communication technology are being tested by Virginia Tech's Cyberschool, but we still are bound by the curricular forms, administrative procedures, disciplinary divisions, and time economies of a contact institution working with supply-side models of service provision. To be honest, this constraint many times has led to outcomes we do not want: increased faculty workloads, decreased student interactions of some types, less participation by some disciplines, and an overemphasis on skills for "net work" instead of "course work." The speed of technical change, a shortage of financial resources, and the search for real world practical skills drive many of these less welcome outcomes, but we should continually guard against existing social relations pushing us down paths we do not want to follow.

There have been many rewards in Cyberschool; in particular, students are enthusiastic about these innovations and many measures of their learning show considerable gains. Nonetheless, it has also proven sometimes to be a punishing way to work for faculty. Instruction modules take time to develop, and some on-line course interactions with students often are much more intense, time-consuming, and demanding than regular face-to-face teaching. Keeping machines, software packages, network links as well as course websites, listserves or chat rooms

up and running can be an exhausting ordeal on top of simply "teaching" the class once all of the IT components do, in fact, work on-line. The instructor for a virtual class actually becomes all too often, the functional equivalent of a computer help desk, a network troubleshooter, an on-line cop, an information service provider, a software consultant as well as remaining "the teacher." A website is a built environment with its own special maintenance needs. Even though it is a virtual domain, the professor frequently is by default "the webmaster" with roles, statuses, and powers that must be implemented gracefully to succeed. Otherwise, things will not work. Moreover, very few outsiders are attuned to how teaching in virtual spaces significantly alters student-teacher behavior in terms of the timing, frequently, or intensity of their interactions. The rewards of such teaching can be considerable, but they do not come without demanding new work obligations, particularly when so few departments can materially support or financially reward these creative new initiatives. And, of course, success brings additional expectations as faculty colleagues and administrators make demands upon the pioneers to do demonstrations, speak their mind about the pluses and minuses of cyberschooling work, or consult with the next generation as they launch Cyberschool-like classes.

Our 1994 proposal carried with it several important provisos. In reaching for this new space of teaching and learning, we sought to "change but not increase" faculty workloads as well as to equalize the resources, prestige, and value of all the disciplines involved in the project. In retrospect, these goals have proven, in a context of shrinking resources, the most difficult to achieve at the institutional level. Many of the changes in workloads have been, at bottom, increases as well as innovations: we do new kinds of work, but we also do more of it. Resources have been provided temporarily in some cases through infusions of one-time grants and other funds, but we have not made changes to the foundational structures of faculty rewards, let alone to an academic culture that still balances, for instance, the prestige and resource needs of humanities programs as against those of the sciences, business or engineering. Nor have we succeeded in substantially altering the rewards (in tenure and promotion, as well as in salary and the like) for the kind of teaching-centered research-and-development work that lie at the heart of many Cyberschool innovations.

These combined faculty challenges--measured in terms of workloads and rewards--already are after only two years leading to some cases of "burnout." Some who have helped initiate the Cyberschool project now feel that they cannot afford the costs that their participation weighs against professional research projects or the dangers this work can create for their tenure and promotion reviews. These early Cyberschool pioneers often now express a sense of exhaustion as they struggle to achieve excellence on both the new and the traditional scales of teaching, research and service. Cyberschool has been an initiative originating from among Virginia Tech's

faculty, most importantly Len Hatfield in English, Valerie and Gary Hardcastle in Philosophy, Mary Beth Oliver in Communications, John Husser in Music, Karen Swenson in English, Patsy Lavender in Theater Arts, Lucinda Roy in English, Bailey Van Hook in Art History, Scott Patterson in Communication, Richard Winett in Psychology, Bill Claus in Biology, Tim Luke in Political Science, and Art Buikema in Biology. In turn, most of Cyberschool's efforts have focused on the classroom. However, no school is merely a collection of classrooms for faculty teaching; every school also needs an extensive administrative infrastructure to support its activities. As Steve W. Gilbert from the American Association for Higher Education suggested in his December 11, 1996 presentation here at VPI&SU, there is a support services crisis nation-wide in university IT applications. Cyberschool will not be able to advance very quickly or effectively without much higher levels of support services for faculty, students, and administrators.

It now is time for Cyberschool to develop on-line, virtualized administrative spaces, procedures, and schedules, which can operate alongside Cyberschool classes in support of expanded instructional offerings on-line. These administrative resources could take the form of a new office to coordinate Cyberschool activities or they might come from retasking already available administrative personnel. Whether the university creates a new office or simply redesignates the responsibilities of existing personnel to manage this virtual college or school, Cyberschool now needs these administrative innovations to be even more successful.

IV. Some More Practical Recommendations

Up to this point, Cyberschool has been run on a "demonstration project" basis. In times of very tight budgets, Dean Robert C. Bates in Arts and Sciences was able to support Cyberschool with some college funds and the time of his staff, especially Associate Dean Lucinda H. Roy. Terry Wildman in CEUT has provided seed money for developing on-line courses, John Moore and Tom Head with their FDI support staff have helped immensely, and the Departments of English, Communications, Biology, Art and Art History, Music, and Political Science also have contributed to the Cyberschool initiative. Yet, it is now time to move beyond the "demonstration project" stage so that Cyberschool does not either lose momentum entirely, or merely become Project Demonstration to show an Internet-crazy world that "we've got some of that, too, here at Virginia Tech."

With scores of courses in several of VPI&SU's eight colleges using Cyberschool-like methods of instruction, the university needs to create a more solid economic footing for such instruction in terms of: a) rewarding faculty materially for their efforts; b) supporting departments materially for their engagement with these innovations; c) developing immediately administrative software, procedures, or rules for coping with expanded Cyberschool teaching; d) preparing students for

Cyberschool by insuring "one student-one PC" access levels with adequate network and computer support for all students; e) publishing information about Cyberschool course availability more widely to increase enrollment; and, f) organizing all of their activities through some central site to avoid duplication of efforts, standardize curricular planning, and reduce lead times in scaling up Cyberschool-like classes for access by anyone anywhere anytime. This will involve new expenditures of time, energy, and money, but the investment will be well-worth the small risks involved. With Cyberschool, VPI&SU can provide a wide array of courses to offer anywhere that students can pull them down to their desktop--at home, in a high school or community college, at work, in a public library. With NET.WORK.VIRGINIA, the Commonwealth does indeed become our campus along with any other market in the U.S. or abroad capable of accessing our virtualized education sites. And, with these distance education innovations, the conduct of classes on VPI&SU campus grounds--in NOVA, Blacksburg, Richmond, Tidewater, Roanoke, Riva San Vitale--also would be enhanced.

In 1994, we hoped to construct some virtual environments for Cyberschool that could provide:

- A. a set of basic orientation, enrollment, credit acquisition, syllabus, and fee payment information about all cyberschool instructional sessions;
- B. a system of secure access and use rules to insure that students are who they represent themselves to be, are fee-paying legitimate users of the system, and are guaranteed confidentiality in their interactions with the cyberschool, which also would guard this fair use of copyright restrictions of on-line materials;
- C. a series of multi-user domains, structured as on-line chat sessions or time-delayed bulletin board structures, that can be assigned to an instructor, a student or groups of instructors and students in order to work through pre-arranged course of instruction;
- D. a linkage to second-source educational packages switched from VPI&SU libraries, other VPI&SU college cyberschool systems, or off-campus sources of video/audio/textual educational information; and,
- E. a means of collaborating with off-campus corporate, university and government offices to test new networking, software, hardware, multimedia technologies and services that might improve the VPI&SU cyberschool campus ("Beyond Credit-for-Contact," 1994).

As this review indicates, the ACCESS/Sloan and LIT projects have begun, in part, to address Objective E, while changes at Newman Library with VT OnLine Course Materials and the "digital library" initiatives of many librarians there have moved us, in part, toward meeting much of Objective D. Clearly, there still are bottlenecks and shortfalls, but Cyberschool has done much to accelerate everyone's access to digitalized information held by both on-campus providers and off-campus partners. The Cyberschool server network in Educational Technologies, the EBBS server located in the Department of English, and the new Computer Integrated Classrooms around campus have moved us toward fulfilling Objective C. Indeed, the array of our courses offered during 1995 and 1996 can provide many examples of such assets being used very well. After nearly three years of operations, however, Objectives B and A still are not being adequately addressed.

In addition to enhancing our work as teachers, Cyberschool methods can be used to answer other challenges. For example, we could look at "student retention" issues. The asynchronous, on-demand learning structures of some Cyberschool courses appear well-suited for maintaining contact with VPI&SU students that must "drop out of school" for financial reasons. Unable to pay for living in Blacksburg and carry a full credit load, many of our students return home to earn the money that they need to return to full-time student status in residence. While they are away, many do not continue with their studies, while some enroll elsewhere on a much reduced load in the hopes of transferring these credits back to VPI&SU. A Cyberschool contact with this population of students could pay-off in several ways. Students would remain enrolled in active virtual classes from home or their places of work. They would not need to "drop out" when they return home. We also would not lose enrollments to competing institutions in NOVA, Richmond or the Tidewater regions during the students' absence; and, those students who decide to simply finish at George Mason, VCU or ODU after a reduced load there would not be lost to us.

The on-line community building techniques of some Cyberschool courses also seem well-suited for addressing the needs of VPI&SU students that choose to "drop out of school" due to some sense of alienation in large lecture classes. Anticipating that the changing academic drop and eligibility policies might increase this reaction among students, Cyberschool teaching techniques can be deployed to combat this sort of alienation and underperformance in large classes. By rethinking how such large lecture classes are conducted in terms of material presented, how the material is communicated, numbers and forms of required student written assignments, or means of student interaction with the instructor and other students, Cyberschool course design actually can increase student involvement, satisfaction, and learning in large lecture courses without watering down academic expectations.

In addition, the on-line, asynchronous and often collaborative learning environments of Cyberschool courses are suitable for exploring the needs of VPI&SU students that elect to "drop out" of the university studies due to a sense of burn-out from an endless regimen of seat-time in lecture and discussion sections on campus in Blacksburg. Some students seem to leave school to experience different intellectual challenges at paid work or volunteer activity settings. Cyberschool teaching approaches can be used to restructure courses around outreach activities, service learning contexts, cooperative education/internship settings, or other "learning by doing" activities out in the local, regional, or commonwealth context away from campus. Virtual class sites can serve as flexible meeting and instruction spaces, common collective projects, open community resource creation experiments, or team-centered writing/research/discussion spaces. Getting students out into these kinds of courses regularly every year or perhaps on the threshold of their decision to opt out of VPI&SU might keep many students enrolled who otherwise might quit their studies.

Arguably, then, our biggest needs now are logistical or administrative. We do not have friction-free means of publishing Cyberschool course details through an on-line catalogue, updating Cyberschool courses in an on-line timetable, registering students on demand for Cyberschool classes with on-line registrar packages, managing the mechanics of on-line class enrollments, administering the demands of on-line student grading or major/minor/core requirements fulfillment, or perhaps most importantly paying for class credits and other student fees on-line. Initially we imagined that the university could create a new office, which we imagined could be modelled on the financial/administrative lines used by summer school programs at many universities, to cope with the extraordinary managerial demands of Cyberschool as a "virtual school" operating all year round. Just like Summer School once was organized as a separate set of budget lines, course offerings, and administrative rules to provide courses to students in Blacksburg over the summer, Cyberschool might provide educational services to learners on demand all year round. Cyberschool now needs a fixed administrative housing to more effectively supply increased numbers of classes on-demand at any time both on campus and outside of Blacksburg. This will necessitate modifying quite a few administrative policies and practices, which were installed to cope with a fixed calendar, on-supply, face-to-face, synchronous style of contact instruction. Yet, Objectives B and A cannot be adequately addressed, and Cyberschool cannot live up to its full potential until this administrative infrastructure is constructed. We realize that new administrative software is under development at this time, but most of these questions are policy issues that new software will not answer unless and until many important administrative decisions are made at all levels of the university. With NET.WORK.VIRGINIA and the Cyberschool project, we have the IT components and instructional content for creating a virtual campus with thousands of potential students who can demand instruction from their homes,

high school and community college computer labs, public libraries, government offices, and corporate settings. We need to make these reforms now, and then publicize them as widely as possible that we can provide our services efficiently and effectively.

Cyberschool has been, up to this point, on a trial run. All of the courses have been undergraduate classes, no single program of study has been put entirely on-line, most of the courses have been core curricular offerings, and no course has been designed outside of the normal time/credit/work rules of conventional contact teaching. In the next phase, Cyberschool planning needs to turn its participants' time and energy to new challenges: graduate courses need to be developed, entire programs of study need to be readied for on-line delivery, more than core curriculum classes should be set up in on-line forms, and new classes should be given rein to be recast outside of the familiar time/credit/work rules of our existing conventional credit-for-contact teaching practices. Cyberschool can help us retain existing students as well as recruit new ones.

V. Summary

As we suggested in 1994, all of the technical capabilities needed for VPI&SU to develop a cutting-edge, world class Cyberschool program exist right now on campus. In 1996, we still only need to reorganize these existing pieces, while addressing some fairly complex institutional, legal, pedagogical and structural issues, into new administrative configurations to support our Cyberschool capabilities. The Cyberschool has involved administrators, faculty, and students in the design of its on-line and off-line forms to make them as user friendly as possible. We now need permanent administrative infrastructure to open these courses to more users. Getting resources to invest in such assets is not easy, but this now is what must be done.

This commitment of new resources is essential. Cyberschool thus far has been carried by VPI&SU professors without any clear sense of what the existing system for faculty rewards could contribute to their work on this project. Many untenured faculty have contributed to Cyberschool with a level of intensity that has put them at risk for promotion and tenure. Likewise, tenured faculty also have become concerned about merit raises and/or further promotions given their participation in Cyberschool. Without some significant and consistent recognition of their innovative contributions to the university through Cyberschool, there is a danger that faculty simply will stick to more tried-and-true conventional paths of career development.

To continue this project in the very short run, the Cyberschool could follow the lead of summer school sessions by stressing introductory courses, courses from the core

curriculum, and courses tied to independent study/internship/co-op credits. These courses either are in high demand (so shifting load to Cyberschool settings would improve course loadings on campus) or are well-suited to close computerized interactions (so the discipline of Cyberschool meetings could enhance what would otherwise be independent study experiences). With administrative support, all departments could be invited to offer courses in Cyberschool, but they would not be forced to do so at this time. Nonetheless, a more systematic means of determining Cyberschool course availability beyond the first-wave of already up-and-running pioneer classes clearly needs to be determined to open unserved markets in the Commonwealth of Virginia at community colleges or public and private four-year colleges as well as new markets in other American states or nations abroad. And, this new Cyberschool office should be directed toward coordinating all of these tasks university-wide as the first platform for developing a virtual college or school to offer Cyberschool courses anywhere on demand anytime.

At this juncture in 1996, as was quite true when it began in 1994, the Virginia Tech Cyberschool is still largely experimental. However, it has not fallen flat on its face due to a lack of interest; in fact, it is a resounding success, if only as one of the most prominent and successful manifestations of a new curriculum reform movement on the VPI&SU campus. Cyberschool ideas work well in practice, even though they may not meet all of the most promising expectations sometimes promised by them in theory. If Cyberschool is publicized more widely, if it presents many more courses-for-credit, if it continues to provide high-quality instruction unavailable elsewhere, and if it taps new constituencies of learners both inside and outside of Virginia, then Cyberschool will move beyond its current role as a successful but small experiment to answer some of the big challenges facing higher education at VPI&SU as well as the Commonwealth of Virginia in the coming years.