# Extending Virtual Access: Promoting Engagement and Retention through Integrated Support Systems

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**Abstract**

"Extending Virtual Access: Promoting Engagement and Retention through Integrated Support Systems" focuses upon expanding the scope of on-line instructional delivery to include academic support systems critical to ensuring that virtual learning environments are inclusive, accessible, instructive, and responsive to changing student needs. Using examples from the University of Illinois at Springfield's experience of on-line program expansion in the College of Liberal Arts and Sciences, this paper examines: benefits of and barriers to integrating extended programming; specific approaches that facilitate virtual support and outreach; and strategies to promote continuous student support for distant students.

> "Information technology can be the excuse and the means to move closer to educational goals that we have been unable to achieve for decades - and to some new ones. With enough commitment of resources, thoughtful effort, patience, and luck, technology will help more than it hurts" (Teaching, Learning, and Technology Group [TLT Group], 2002, para. 24).

One of the largest gaps in web-based higher education continues to be institutions' limited abilities to provide time and location-independent integrated access to the array of instructional support systems, services and programs required to facilitate successful articulation, persistence, and degree completion processes. Thorpe (2002) observed that support programming "…is the arena within which transformations in the nature and the scale of activities made feasible by online teaching … [generate] widespread change in pedagogies and learning communities, and across institutions as a whole in open and distance learning" (p. 113). She defined critical systems as including "…all those elements capable of responding to a known learner or group of learners, before, during and after the learning process" (p. 109). Thorpe concluded her remarks emphasizing support services as critical "…to the meeting of needs that all learners have because they are central to high quality learning: [for example,] guidance about course choice, preparatory diagnosis, study skills, access to group learning in seminars and tutorials, and so on" (pp. 106 - 107). Carnwell and Harrington (in Yalama and Aydin, 2004) identified more specific support components, to include "… 1) activities that enable students to progress satisfactorily; 2) [instructional] strategies such as cognitive, affective, metacognitive and motivational, and 3) skills such as informing, advising, counseling, assessing, enabling and feeding back" (p. 2).

Yalama and Aydin (2004) noted that inadequate mechanisms for ongoing affiliation, participation, and connectedness actually undermine instructional effectiveness, with the ultimate impact of fragmented support systems measured in elevated student attrition rates (p. 1). It is generally believed that student retention through academic program completion increases as

equal access to integrated services such as writing/math tutoring, computer skills training, career development and placement, grievance and appeals processes, or co-curricular activities are visible, accessible, and responsive via the instructional medium by which a student learns (Tait, 2000; Ludwig-Hardman and Dunlap, 2003; Palloff and Pratt, 2003; Tinto in Ludwig-Hardman and Dunlap, 2003; Yalama and Aydin, 2004). The support needs of students exclusively studying in a virtual environment are sufficiently unique to demand a redefinition of academic programming that emphasizes the integration of institutional systems in order to ensure virtual students have access to comparable educational resources, experiences, and environments as their on campus peers. Such integration requires broad-based collaboration to re-vision the internal relationships and systems that enable reliable, consistent access and, ultimately, facilitate instructional effectiveness as evidenced by participant (faculty and student) retention, learning achievement, and program completion.

**The Case for Integrated Support**

As Internet use rapidly increases by students and faculty alike, a virtual learning environment limited solely to the provision of web-based courseware is insufficient to meet a growing demand for integrated networked business, academic, instructional, and student support services. This increasing prevalence of Internet use among traditional college students in the United States was the focus of a report recently produced by the Pew Internet and American Life Project, titled "The Internet Goes to College: How Students Are Living in the Future With Today's Technology" (2002). Based on survey responses from 2,054 students at 27 schools throughout the U.S., this report identified the growing prominence of computer and Internet use by college students, noting, for example, "One fifth of today's college students began using computers from the ages of five to eight; 86 percent of them had gone on-line compared with 59 percent of the general population; 72 percent checked e-mail messages at least once a day; instant messages, used daily by 12 percent of the general population, were used by 26 percent of college students; and, nearly 75 percent of college students said they used the Internet more than they used the library to look for information; just nine percent said they used the library more" (sec. 1). As these data indicate, increasing numbers of students come to universities accustomed to using technology for a range of communication, business, entertainment, and social activities; it is imperative that universities are able to meet their growing expectations for broad access to learning experiences via the medium with which they are most familiar.

An inadequate and ineffective institutional response to integrating technological capability impacts both short and long-term attrition rates for students participating in distant programs. As Tinto (1975) observed, "...the process of dropout from college can be viewed as a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experiences in those systems (as measured by his normative and structural integration) continually modify his[/her] goal and institutional commitments in ways which lead to persistence and/or to varying forms of dropout" (p. 94). He (in Ludwig-Hardman and Dunlap, 2003) determined that "... student persistence is strongly predicted by degree of academic integration (e.g., performance, academic self esteem, identity as a student, etc.) and social integration (e.g., personal interaction, connection to academic community, etc.)" (sec. 3). An institution's commitment to ensuring ongoing persistence and degree completion for virtual students is evidenced by the extent to which support programs and services enable such integrative experiences, building on curriculum and instruction to facilitate comprehensive development. Virtual students quickly become isolated when they receive inconsistent information, conflicting policies, and limited access to procedures and processes as a result of inadequate and inaccessible programs, fragmented services, and limited technical support. Particularly in institutions in which the majority of the student population is comprised of

traditional campus-based students, those labeled "distant" are intrinsically vulnerable to systemic barriers that separate them from academic programs and the larger university.

The critical role of support programs in engaging & retaining distance students. The importance of providing opportunities for communication, participation and interaction has been well documented as it relates to the cognitive development possible in web-based classrooms. For example, Fredericksen, Pelz, Pickett, Shea, and Swan (2001) surveyed 1,406 on-line students about their experiences in, satisfaction with, and perceptions of virtual courses; their results substantiated the correlation between, and importance of, student-to-student and instructor-to-student interaction to perceived learning effectiveness in virtual environments. However, Ludwig-Hardman and Dunlap (2003) noted that support programs traditionally focus on administrative/systemic processes (for example, admissions and registration procedures), as opposed to building on cognitive competencies to make services available to distant students such as career and personal counseling, entrance and exit assessment, tutoring, etc. They (2003) recognized ".... A focus on cognitive outcomes - in particular that learners have various needs, including the need to belong, to interact with each other, and to be a part of a community leads to creating a learner support services program 'where students feel at home, where they feel valued, and which they find manageable' " (Tait in Ludwig-Hardman and Dunlap, 2003, sec. 4).

Moreover, it is widely accepted that students' development is not limited to the cognitive domain; to extend opportunities for growth beyond the intellectual necessitates a coordinated approach to facilitating and supporting the process of learning, regardless of instructional medium. In "The Student Learning Imperative," Schroeder, et al. (1993) identified the importance of linking the institution and curriculum to academic, social, and professional learning experiences, noting "... the key to enhancing learning and personal development is not simply for faculty to teach more and better, but also to create conditions that motivate and inspire students to devote time and energy to educationally-purposeful activities, both in and outside the classroom" (para. 2). Oliaro, et al., in "Principles of Good Practice in Student Affairs," emphasized "... Focusing on [such] learning rather than instruction [requires] a fundamental shift in perspective" (para. 2). In a web-based learning environment, facilitating such a shift requires instructional and support functions to be seamlessly and consistently linked.

The critical role of support services to facilitating comprehensive personal and academic development continues to be well documented. Both research and anecdotal information indicate that system components such as the following promote retention for distant student populations in a web-based environment: reliable, stable technology and related support and training; available, accessible, and visible instructional, business, and student support systems, programs, and services; ongoing responsiveness from and communication/interaction with support staff and faculty members; available career readiness and transition information; and, the creation of strong, congruent and interactive learning opportunities (Boettcher, 1999; Palloff and Pratt, 1999 and 2001; Fredericksen, Pickett, Shea, Pelz, and Swan, 2001; Western Cooperative for Educational Telecommunications, 2004). Table 1 identifies details of such program components necessary for the comprehensive provision of integrated virtual support systems (Palloff and Pratt, 2003; Buchanan, May, 2000; Everhart, May, 2000).

**Table 1. Extending Virtual Access: System Components for Integration**

| Academic Support | Business Systems Support | Technology Support | Student Support | Instructional Support |
| --- | --- | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Advising | Accounting & Payroll | Computer Lab Management | Admissions, Records, & Financial Aid | Faculty Training & Development |
| Tutoring | Property & Purchasing | Email/ Web Access | Registration | Course System Development & Management |
| Assessment | Student Accounts | Hardware/ Software | Governance | Instructional Design & Course Development |
| Course Materials Distribution | Human Resources, Personnel, & Employment | Development & Integration | Grievance & Appeals | Needs Assessment |
| Electronic Grading | Marketing & Public Relations | HELP Desk | Student Life | Evaluation of Instruction |
| Library Services | Outreach, Capacity Building & Planning | Supervision | Student Services: - Alumni - Career/ Personal Counseling - Disability - Health - Multi-Cultural | |
| Study Skills Support | | Network Services Coordination | | |
| Test Proctoring | | Operating Systems Training | | |
| Writing Support | | | | |
| Orientation/ Online Learning | | | | |

Typically developed as separate programming components, these five functions, when constructed as one integrated and seamless system, provide students access to the range of information, systems and services that enable institutional affiliation and extend educational opportunities and resources. As an example of the purpose and function of such programming, Ludwig-Hardman and Dunlap (2003) emphasized, "Student support services start with making sure that there is an appropriate fit between the students' learning and professional goals and current capabilities with the offerings and structure of the education provider's on-line programs. .... [For example,] Recruitment practices can have a big impact on a student's ability to self-assess whether there is a fit and for the education provider to do the same" (sec. 6). Palloff and Pratt (2003) specifically emphasized the link between support and instruction in a virtual learning environment, noting "Attention to writing skills and academic quality is not just a service that institutions and faculty can provide - it is a critical component in the development of

quality on-line courses and programs" (p. 57). As these experts illustrate, academic support functions provide critical connections linking the curriculum, instruction, learning environment, and participants.

**Developing Virtual Programs that Contribute to Academic Development**

Experiences that have been noted as contributing to academic development are frequently unavailable to distant students, for instance: participation in internships and graduate assistantships; attendance at academic rituals (e.g., convocations and graduation ceremonies); participation in "in house" opportunities for research and publication; involvement in service learning and volunteer opportunities; and use of the entire range of services and resources of the library, bookstore and larger physical campus. Likewise, experiences that have the potential to supplement intellectual development are also inaccessible, for instance: attendance at cultural, social, and athletic events; access to career development and transition information specific to professional focus and geographic region; or participation in co-curricular activities, such as forensics events or performance arts. Finally, opportunities to be fully represented in the university community, such as access to university governance or grievance and other appeal processes, are invisible to distant students. Such experiences are not unavailable because technology can't support them, but rather because institutions don't prioritize these types of experiences as contributing to the overall learning and academic development of students studying from a distance.

Particularly within the past five years, institutions have strengthened remote support provision to distant students in unique ways, and there are multiple exemplary models of single-focused program development. For example:

- Portland State University (2004) provided comprehensive resources about career and academic planning via the Internet, making them widely accessible to both residential and non-residential students.
- The University of Manitoba's Student Counseling and Career Center (2004) assisted students to explore a range of occupations, and included detailed and current labor market information for further guidance.
- At Facts.org (2004), an example of a highly integrated academic support system, statewide Florida students accessed an impressive array of advisement resources, including transcript retrieval and audit, academic records, institutional application/admissions processes, and course registration.
- Foothill Community College (2004) students were able to participate in interactive discussions related to undergraduate transfer with academic advisers from partnership member institutions throughout the United States via an asynchronous conferencing platform.
- At Capella University (2004) inquirers, applicants, and current students communicated with a team of academic advisers via a synchronous web-based conferencing mechanism, referred to as the "Two Minute Adviser."

Many institutions have noted the benefits of providing a web-based orientation course for new and continuing on-line students. For example:

- The University of Central Florida (2004) enabled both on campus and on-line students to participate in an interactive new student orientation course that provides information, activities, and mechanisms for ongoing communication.
- The College of Liberal Arts and Sciences at the University of Illinois at Springfield (2004)

also included discipline specific new student orientation courses for degree seeking on-line students.

As increasing numbers of institutions develop fully on-line degree programs, they have acknowledged the importance of comprehensive tutoring and technical support related to writing, computer use, and mathematics. For example:

- The University of Indiana at Purdue (2004) developed an extensive virtual writing lab that includes e-tutoring, newsletters, topic-specific virtual presentations and workshops, and a variety of tutorials.
- The University of Texas at Austin (2004) developed an interactive online writing guide known as "Virgil" to assist remote students, leading "…writers through their work with a series of questions and answers that mimic the style of UWC [University Writing Center] consultations" (sec 2).
- The University of Texas at Austin (2004) also developed an on-line computer writing and research lab that assists graduate students to explore the use of technology in the fields of writing and literature.

Acknowledging the importance of comprehensive student development:

- Excelsior College's Electronic Peer Network (2004) enables students to asynchronously interact and communicate both academically and socially through a combination of discussion forums, listservs, e-mail, and chat platforms.
- Washington State University (2004) constructed extensive interactive on-line learning communities in order to promote an increased sense of affiliation among remote students, including access to participation in student government and alumni activities.
- Students attending Columbia University (2004) accessed information about a wide range of issues related to emotional and mental health, and had their individual questions answered by a staff of highly trained counselors via the Internet.

While these types of programs can provide very effective solutions for specific support needs of distant students, very few institutions integrate these systems into a single approach promoting persistence, achievement, and degree completion. Those institutions in which instruction and support were highly integrated were most often those for which a substantial proportion of the student population is remote, for example, Capella University, The University of Maryland University College, or the University of Phoenix Online. The continued absence of both integrated, web-based systems offering comparable access and consistent and reliable avenues for engagement indicate that these aspects of virtual learning environments are only beginning to be understood as relevant to the quality of educational experiences provided to distant students.

**Toward Integrated Systems: Students as the Primary Focus**

There are inherent challenges to establishing integrated support systems; web-based learning environments have unique and specific support requirements, and these often are incompatible with larger university processes and information systems. Such support functions frequently develop "around" standing systems, requiring both the development of new as well as the migration of obsolete systems. Additionally, cultural beliefs, competing political interests, and administrative hierarchies limit opportunities for collaborative planning, governance, and management. Resources are disproportionately allocated to support direct instruction at the cost of developing and maintaining widely accessible support services; a lack of resources and support for, and expertise in broad-based systems integration inhibits necessary collaboration

between academic faculty and support personnel.

Organizations that promote combined systems demonstrate their responsiveness through identifying and confronting cultural, political, and operational barriers to integrative processes and decision-making, and maintaining a student-centered focus in the implementation of all current and developing technology-based systems. Moreover, they incorporate core institutional commitments/values regarding technology-based programs through the realistic determination of enrollment goals, ensuring that recruitment, advising, and other support activities enable these goals. Figure 1 illustrates those components that, when integrated, ultimately facilitate student persistence.

**Figure 1. Supporting Access Through Seamless Systems Integration**
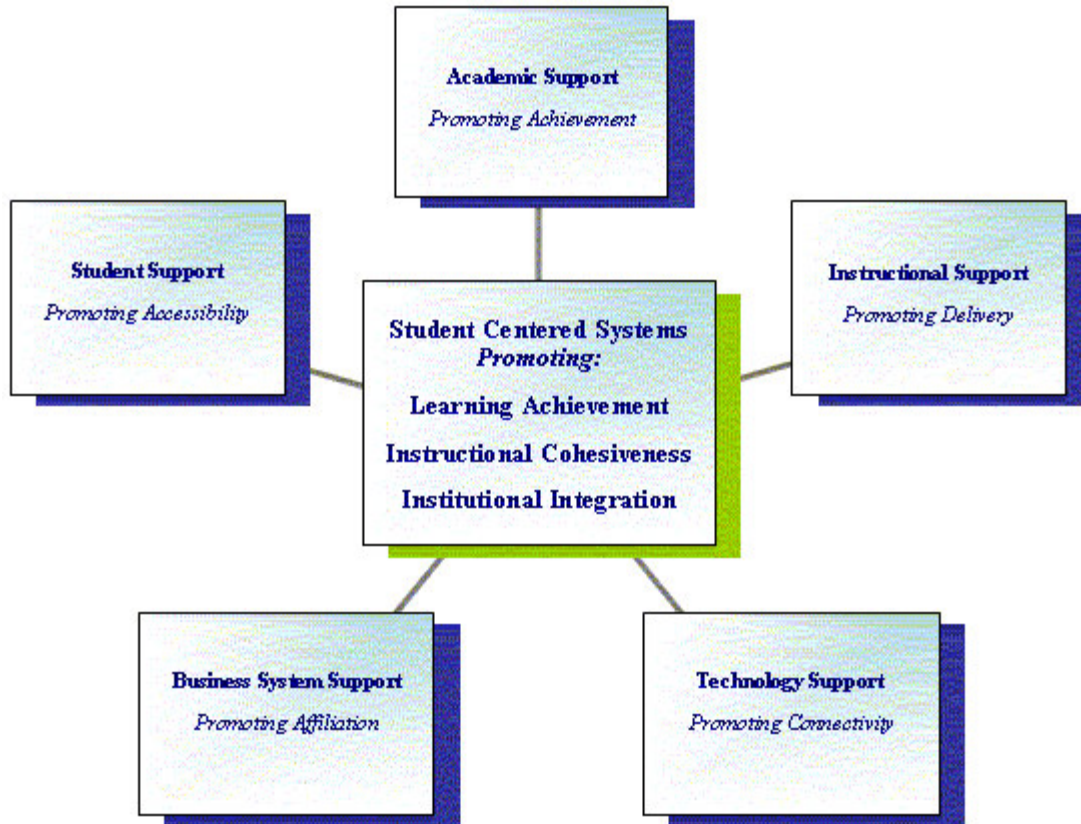


Providing continuous, comprehensive access to a web-based campus is an ambitious undertaking, but one that is critical if an institution is to responsibly provide on-line course delivery. To continue to integrate technology into all aspects of on-line program implementation, the University of Illinois at Springfield organized a campus-wide committee, the On-line Technology Integration Sub-committee, which brought together campus partners key to delivering web-based instruction, including academic, student, business, and technology support personnel, to identify and remediate delivery barriers. This Committee was instrumental in promoting campus-wide collaboration in support of integrated web-based instructional delivery; the result of this collaboration has included increased access to coordinated systems for all members of the campus community.

As noted by the Teaching, Learning, and Technology Group President Steven Gilbert (2001), the rationale for such integration is clear: "Because more people will be able to learn and teach better" (p.2). In a vision statement to promote a unified e-learning strategy, Britain's Charles Clark (2003) stated "If we can support students better as they move up the education ladder, we may be able to reverse the trend of poorer levels of attainment at successive stages (p. 30).

Delivery, accessibility, connectivity, and affiliation not only promote short-term student retention among distant students; combined with support and instruction, they ultimately enable academic achievement and persistence through degree completion.

**Methods that Facilitate Support Integration**

Institutions that realize increasing and consistent enrollment gains and degree completion rates understand that not even one on-line course should be offered in the absence of a continuum of critical support services and programs. When determining the allocation of resources to virtual capacity building, establishing a reliable infrastructure for hardware and software use, developing web-based courseware, and training instructors are initial priorities. Because the immediate development and integration of such systems are costly, requiring developmental implementation over a period of time, there are methods that temporarily can be utilized while the institution develops capacity and integrates its support infrastructure. For example, creating a technical support system, on-line library services, skeletal web-based student services (e.g., admission, registration, financial aid), and instructional assistance programs (e.g., tutoring, writing support, computer skills training) as first priorities allow distant students to access essential academic supports, enabling a strong foundation for academic achievement. Ensuring that such an infrastructure includes a coordinated "first response system" links recruitment, advising and enrollment management functions by guaranteeing that services are immediately responsive, easily accessible, and available on a continuous, consistent, and well-published basis.

Institutional participation in local, statewide, or regional consortia, task forces, and work groups assists in building capacity through sharing licensing agreements, hardware/software, scheduling networks, and training resources. Opportunities must be consciously sought for integration through outreach to internal and external partners, involving stakeholders at all levels of program implementation. Institutions must maintain an awareness of initiatives developing locally and regionally, drawing from the experiences of peer institutions, participating in consortia agreements, and investigating opportunities to share resources. To this end, growing numbers of organizations have implemented partnership agreements that facilitate the development of consortia; these, in turn have enabled shared resources and expertise. For example, the Illinois Community College On-line (2004) offers its membership a course exchange system that enables statewide community college districts to share instructional resources, courses, etc.

Additionally, identifying methods utilized by similar organizations in the region/country allows institutions to develop "best practices" for program development and delivery. The Western Interstate Commission on Higher Education's (2004) "Guide to Developing On-line Student Services" was an example of an important resource that provides guidance in the development of effective on-line approaches to delivering student support services, including ideas for designing and customizing programs, narrative presentations about a range of student support services for on-line and distant students, guidelines for delivering these services via the Internet, and profiles of exemplary institutional practices in universities and colleges using the Internet to offer a variety of services and programs.

Recognizing that support was critical to remote both student retention through degree persistence as well as web-based program stability, the UIS College of Liberal Arts and Sciences On-line developed an internal capacity to offer individualized student advising, important not only to individual students, but also to referring community college counselors, parents, and others affiliated with the extended university community. In the absence of integrated virtual systems, this unit collaborates with campus-based student life programs, instructional and technical services, and business and enrollment management personnel to provide web-based academic

programming, identify unmet needs, and promote support integration. The University of Illinois system augments internal support capacity through mobilizing the resources of the state's virtual campus resources. Although the Illinois Virtual Campus provides a range of resources through a virtual "Student Support Center," such general services do not replace the need for university specific virtual services; however, they do augment specific campus-based systems to include web-based tutoring, self-assessment, and career development and orientation information programs.

## Promoting Integrated Virtual Support Systems

Broad-based systems integration is difficult to achieve, particularly in institutional environments that are under-funded, lack strategic planning, or resist a collaborative approach to academic support. It is essential to develop a plan for support integration that is congruent with the organization's larger strategic vision for the integration of technology with academic programming. Particularly in programs requiring quick start-up, such as grant-funded programs, there exists a tendency for implementation to proceed without requisite strategic planning at the delivery level. This results in fragmented systems that provide inconsistent response to students and other stakeholders, further distancing remote students from the larger institution.

Under circumstances in which program planning is completely disconnected from development and delivery functions, it is possible to develop localized action plans that include short- and long-term goals, identify strategies for goals achievement, and integrate evaluation activities. It is equally important to strategically budget for systems integration to accompany the utilization of technology by incorporating a systemic approach to technological capacity building in all planning and development activities. Successful systems integration requires that institutions ensure decision-making processes regarding delivery technology engage all stakeholders, e.g., student support personnel, systems users, and related practitioners; involving a range of stakeholders in needs assessments, evaluation efforts, and training activities enables continuous and consistent capacity building. The institution's virtual presence must be visible and reliable in order to enable distance programming that is credible, responsive, and accessible.

## Conclusion

Web-based instructional programs continue to develop rapidly, sometimes so much so that systems and policies critical to virtual student persistence often compete with an institution's priority of providing a technical infrastructure and on-line courseware. As rapidly increasing numbers of students access a wide range of non-traditional academic options to facilitate ongoing education and credentialing, institutions remain challenged to provide support in ways that will ensure successful learning and teaching outcomes. An integrated response to service delivery requires that the role and functionality of support systems be critically examined within the context of new technologies. Fragmented systems will not be assisted by technological applications, and in fact, such applications may serve to exacerbate long-standing problems. However, technology can be used as a tool to re-vision antiquated support systems as increasingly accessible and affordable applications are available to resolve barriers. Evolving needs must be continuously assessed and support systems modified based on assessment/ evaluation data, changing student demographics, and new delivery technologies.

In order to extend systems and policies that reinforce persistence and completion for virtual students, institutions must guarantee that students are offered comparable opportunities for learning, development and affiliation that are as substantial, meaningful, and relevant as their on campus peers. Regardless of the scope and nature, an integrated approach to conceptualizing,

developing, and implementing necessary support systems and personnel enables learning achievement among students, stability and retention in programs, and strategically planned institutional growth. A systems approach to educational programming suggests that technology is only one aspect of an instructional process, and cannot and should not be conceptualized independently of other key functions and initiatives identified for inclusion. Such support systems that facilitate communication, participation, interaction, affiliation, and visibility for distant students guarantee inclusive virtual access for all students, regardless of the medium by which they study.

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