The aim of the Journal of Asynchronous Learning Networks is to describe original work in asynchronous learning networks (ALN), including experimental results. Our mission is to provide practitioners in online education with knowledge about the very best research in online learning. Papers emphasizing results, backed by data are the norm. Occasionally, papers reviewing broad areas are published, including critical reviews of thematic areas. Entire issues are published from time-to-time around single topic or disciplinary areas. The Journal adheres to traditional standards of review and authors are encouraged to provide quantitative data. The original objective of the Journal was to establish ALN as a field by publishing articles from authoritative and reliable sources. The Journal is now a major resource for knowledge about online learning.

JALN

The Sloan Consortium
A Consortium of Institutions and Organizations
Committed to Quality Online Education

ISSN 1939-5256 (print)
ISSN 1092-8235 (online)

Journal of Asynchronous Learning Networks

JALN

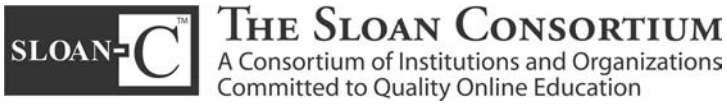
Volume 13 Issue 3 - October 2009

Journal of Asynchronous Learning Networks

Volume 13, Issue 3 - October 2009

Edited by *Janet C. Moore and Marie J. Fetzner*

JALN



The purpose of the Sloan Consortium (Sloan-C) is to help learning organizations continually improve the quality, scale, and breadth of their online programs according to their own distinctive missions, so that education will become a part of everyday life, accessible and affordable for anyone, anywhere, at any time, in a wide variety of disciplines.

Cover design by Leighton Ige.

Printed in the United States of America

0 9 8 7 6 5 4 3 2 1

International Standard Serial Number 1939-5256 (print)

International Standard Serial Number 1092-8235 (online)

Journal of Asynchronous Learning Networks

Volume 13 Issue 3 October 2009

This book was made possible by a grant from the Alfred P. Sloan Foundation.

Editorial and Advisory Boards

The Sloan Consortium, Inc. is a consortium of higher-education providers sharing the common bonds of understanding, supporting and delivering education via asynchronous learning networks (ALNs). With the mission of providing learning to anyone anywhere, the Sloan Consortium seeks to provide new levels of learning capability to people seeking higher and continuing education. For more information about Sloan-C, visit www.sloanconsortium.org.

THE ROAD TO RETENTION: A CLOSER LOOK AT INSTITUTIONS THAT ACHIEVE HIGH COURSE COMPLETION RATES

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The Sloan Consortium

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ABSTRACT
Although online course completion rates are commonly believed to be lower than in other delivery modes, some programs achieve equal or better course completion rates. This issue presents studies that suggest certain practices contribute to student success. Readers are invited to contribute to work-in-progress on key factors for a framework of effective practice.

KEYWORDS
Course Completion, Retention, Student Success, Community of Inquiry, Pillars of Quality

I. INTRODUCTION

From 2003 to 2007, enrollment in online courses nearly doubled, from 1.98 million to 3.94 million. By 2007, the 12.9% growth rate of online enrollments far exceeded the 1.2% growth of the overall higher education student population [1]. Online education will continue to grow as a significant percentage of the 19 million enrollments in postsecondary education projected for 2010 [2]. In a climate of shifting demographics and economies, demand for higher education grows. Understanding how students succeed online can lead to far greater access and success, contributing significantly to initiatives for doubling the number of United States college graduates [3]. Yet a barrier to greater access via online education is the belief that online retention rates are lower than in other delivery modes [4].

The early growth of online education was attributed to its convenience, flexibility and affordability. But many regarded it as a novelty, a second best alternative to face-to-face education. Today, however, the success of online education is more authoritatively attributed to its quality:

> For both first-year students and seniors, the percent of courses delivered primarily online was significantly related to level of *academic challenge* [italics added]. Online courses seem to stimulate more intellectual challenge and educational gains. This suggests that integrating technology-enhanced courses into the curriculum for all students might have some salutary benefits [5].

That cautious conclusion of the 2008 National Survey of Student Engagement (NSSE) was followed in 2009 by a stronger one from a United States Department of Education analysis of empirical research:

> Students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction. Learning outcomes for students who

> engaged in online learning exceeded those of students receiving face-to-face instruction… [6]

While these findings support the vision of online access to educational quality, scale and breadth that has spurred innovation since 1978 when Hiltz and Turoff envisioned a nation of networked education [7], online success rates are commonly claimed to be 10–20% lower than success rates in face-to-face courses.

In an environment in which 6-year completion rates for a baccalaureate are only 56% and achievement gaps are widening at all educational levels, retention is an increasingly recognized indicator of institutional effectiveness. For example, the Higher Education Act Reauthorization gives consumers decision-making information via College Navigator, a web site that provides 27 categories of information about each institution that participates in Title IV programs:

> …institutional mission; statistics on applications, admission, enrollment, SAT or ACT scores, transfer students, male and female students, in-state and out-of-state students, racial and ethnic groups, disabled students, degrees awarded, time to completion of degrees, faculty, cost of attendance and financial aid; alternative tuition plans; and campus safety information. …[and] in a sortable and searchable format, information on the cost of higher education for each institution that participates in Title IV programs [8, 9].

Just as the quality of an individual course is a confluence of teacher and learner expertise, academic challenge and design, technology and resources, and support services, each of the College Navigator categories reflects on the quality of an institution and the leaders who advance its mission. Each category influences institutional and individual success. As digital culture advances, public performance ratings will increasingly influence consumer choice. Calls for accountability lead to the rise of public ratings that are published by individuals and both non-profit [10] and commercial groups [11]. Ratings are not uniformly reliable [12] and choosing the right online program is still a daunting task; but as quality indicators become more public, sharing the frameworks and practices that support effective online education is in the interests of every institution.

Thus, this special issue asks:

> Why do some institutions achieve strong online course completion rates?
>
> What common practices do these institutions share?
>
> Can common practices begin a framework to guide retention efforts in diverse online contexts?

Reasoning from results to determine cause, the case studies in Part I address these questions. Six institutions that were featured in Volume 10:3 of the *Journal of Asynchronous Learning Networks* (JALN) [13] present practices that contribute to course completion rates of 85% or more. Common practices are compiled in a preliminary framework.

The collaborative and empirical study, "An Exploration of the Relationship Between Indicators of the Community of Inquiry Framework and Retention in Online Programs," finds that students experiencing effective social interactions are most likely to persist from one semester to the next.

Part II collects previously published empirical JALN studies on retention. We republish them here because their literature reviews, sample surveys and insights about the experience of online learners are useful in diverse institutional contexts.

Readers are welcome to comment and to contribute to developing a framework for retention practices at the Sloan Consortium website: http://www.sloanconsortium.org/node/2486.

II. CASE STUDIES

Six case studies are included in Part I of this issue. All six institutions share a definition of online course asynchronicity; namely, at least 80% of the course is online, requiring at most 20% face-to-face presence. This threshold follows the Sloan-C definition that courses delivered asynchronously 80% or more of the time are considered online courses as distinguished from blended, hybrid, mixed-mode or web-enhanced courses that require more face-to-face participation. The case studies are from institutions that have sustained high growth rates and high online course success rates for at least five years [9].

Focusing first on 100- and 200-level courses, four institutions report on how they have achieved student success rates of 85% or more in courses in which rates are customarily lowest in any delivery mode [14]. We focus on 1- and 200 level courses because beginning students are more likely to opt out than advanced students. In addition, two institutions report on very high graduate program or overall course success rates. Table 1 shows the range of institutions by overall size, acceptance rates, and the proportion of online enrollments in Fall 2008; it includes links to institutional websites and online program portals. Appendix A provides institutional mission statements.

	Type of Institution	Acceptance Rate	Online Enrollments in Fall 2008 (estimated % of total Enrollment)
Undergraduate 1-and 200 level course success rates above 85%			
Peirce College http://peirce.edu/ http://peirce.edu/Online.aspx Philadelphia, PA	Small, 4-year, Private not-for-profit	Open admissions	3516 (64%)
University of Illinois, Springfield http://www.uis.edu/ http://www.uis.edu/online/ Springfield, IL	Small, 4-year, Public	60%	3815 (25%)
Rochester Institute of Technology http://www.rit.edu/ http://online.rit.edu/ Rochester, NY	Medium, 4-year, Private not-for-profit	60%	9,121 (5%)
University of Cincinnati http://www.uc.edu/ http://www.uc.edu/distance/ Cincinnati, Ohio	Large, 4-year, Public	75%	2800 (8%)
Graduate and overall success rates above 90%			
SetonWorldwide of Seton Hall University http://www.shu.edu/ http://www.shu.edu/academics/setonworldwide South Orange, NJ	Medium, 4-year, Private not-for-profit	73%	Graduate 3132 (9%)

Dallas Baptist University http://www.dbu.edu/ http://dbu.edu/online Dallas, TX	Small, 4-year, Private not-for-profit	47%	Overall 5200 online enrollments (32%)

Table 1. Institutions with High Online Success Rates in Beginning Courses, Graduate Courses and/or Overall Enrollments: Small <5,000; Medium< 15,000; Large> 15,000

Standards and definitions for success online are no less daunting than they are in traditional delivery modes. To begin to develop a framework which might be useful across institutions, the case studies in this issue use the Sloan-C pillars of quality to explore commonalities and differences in their distinctive contexts. The goal of Sloan-C's quality framework (see Appendix B) is that any learner who engages in online education should have, at a minimum, an education that represents the quality of the provider's overall institutional quality and better, learning outcomes that meet professional and industry standards. Any institution can use the pillars as metrics by demonstrating progress towards quality goals in five inter-related areas: learning effectiveness, access, scale (capacity enrollment achieved through cost-effectiveness and institutional commitment), faculty satisfaction, and student satisfaction [15]. The pillar framework is intentionally flexible to be useful in any context—it works at the mission, department, program and course levels. As one of the case study authors points out, the starting point is, "the imperative to look within" [5]; thus, the institutional mission is the source for specific goals in each of the pillars.

In these institutions high success rates in online courses appear to be a product of institutional cultures that are committed to student success. Key people enact institutional policies in academic, technology and support offices using metrics to guide practices that achieve the goal of accessible education. One question that emerges from this review of effective practices is, "Do institutions with high online success rates focus the majority of their efforts on a particular pillar or set of pillars?" With this question in mind, in brief, representative practices drawn from the case studies as a whole are outlined below. Appendix C is a composite list of practices in place at each institution categorized by the Sloan-C five pillars of quality [16].

A. Access

The goal for access is that all learners who wish to learn online have the opportunity and can achieve success. Providing additional access to higher education is as appealing to institutions as anytime, anywhere learning is to prospective students. But one size does not fit all. For example, in many institutions and particularly in institutions that serve students with lower SAT scores and higher Pell grant levels, expenditures on student services that improve access are demonstrably related to retention and graduation rates [17]. Despite the efforts of rating agencies, it remains difficult to find the online program that aligns with individual learner needs and preferences. Thus, the challenge access brings is accommodating learners so that the course or program matches the institution's strengths with students' skills and interests, in ways that nurture a strong sense of belonging to an "inclusive educational and social community" [18].

1. Personalize

Thus, these successful institutions aim to personalize relationships via marketers, advisors, troubleshooters, peers and coaches throughout the student's academic career, even dedicating individual administrative or programmatic advisors who use established protocols in working with individual learners. Institutions introduce learners to the community in several ways: through a first year experience, through online student community websites, through face-to-face and online student orientations, and

through introductory courses to encourage online students to share concerns, questions, and solutions. One institution groups its online students into cohorts to promote community teamwork and sustained involvement, beginning with a week-end on-campus residency before classes begin [19].

2. Prepare and Assist

To prepare students for the significantly more active role that online learners must adapt to, institutions provide on-campus and/or online orientations to procedures, role adjustment and expectations. Setting the stage for student expectations is key, and these preparatory efforts assist in that effort. So that learners (faculty too) can get technical help whenever they need it, 24/7 online help desks are a boon for all, residential as well as online. Going beyond technical help, institutions also provide academic support, tutoring, library, registrar, financial and other support services online, including skill assessments before taking an online class. One institution provides free software so students have what they need to complete courses, and another institution provides free interlibrary loan services to online students.

3. Design and Observe

Once students are enrolled in courses, online delivery offers advantages in terms of designing for students with different learning styles and abilities. Understanding that students respond to interactivity differently (e.g. deaf and hard of hearing students' responses suggest they are even more favorable to higher levels of interaction than hearing students), one institution transcribes and captions media for the online learning environment; this service has proven to benefit all students who use the transcriptions for review. Another key for retaining students is using Learning Management Systems (LMSs) to observe how students are using features and interacting with the course. These observations are useful for refining design and for helping to identify and intervene with students at risk for non-completion.

B. Faculty Satisfaction

The goal for faculty satisfaction is the sense that teaching online is personally and professionally beneficial, an enthusiasm that communicates itself to students. Thus, institutional leadership endorses online faculty excellence, recognizing the benefits and the demands of online teaching and providing ongoing professional development, support, and recognition.

1. Introduce Online Teaching

At these institutions, faculty members and their respective programs are actively involved in content development and curriculum design, internal and external quality reviews, and community building. Initially, faculty are introduced to online teaching via online and/or face-to-face workshops, ensuring faculty have experience as online learners and benefit from received knowledge before they begin teaching online. Technology and instruction services occur online and at convenient places such as in campus libraries. For new instructors, institutions provide boilerplates and placeholders including a series of effective practices as for course design and delivery, often using institutional and/or external standards or rubrics. Faculty may also view sample online courses that illustrate effective practices in online teaching. They are supported via helpdesks, instructional designers, and technology and academic resource centers (e.g. http://ftrcucedu and http://wwwucedu/cetl/), and they know that additional professional development is available. The institutions survey and interview faculty to understand and improve faculty satisfaction with online teaching.

2. Provide Ongoing Professional Development and Support

To support the design and development of effective online courses and programs, institutions dedicate support from instructional designers, disability services, advisors, librarians and other personnel,

including a team member assigned to make sure all course links are working, dates are set correctly, and exams and quizzes are functioning. Additional support includes peer consulting and mentoring. Institutions provide or subscribe to an array of ongoing professional development workshops for new and experienced faculty with topics such as:

- understanding differences between online and face-to-face teaching
- reconceptualizing courses for online delivery co-teaching and team teaching
- prioritizing pedagogical priorities
- understanding copyright and intellectual property
- managing workload
- using Web 2.0 applications
- designing and managing effective discussions and
- creating and engaging students in online learning community

New and experienced online faculty benefit from teaching centers that emphasize prioritizing pedagogy, using teaching practices that have been demonstrated as effective, and being current with the scholarship of teaching and learning (e.g. the Center for Enhancement of Teaching and Learning http://wwwucedu/cetl/). Communities of practice encourage faculty to share and advance effective practice and provide opportunities for cross-discipline discussions on online pedagogy and course design.

3. Recognize Excellence

Award and recognition programs for outstanding online teaching and courses signal institutional commitment to online education, providing exemplars that communicate effective practice in-house and beyond the institution. One institution denotes award winning online courses in its course listings. Endorsing excellence, institutions link online teaching and quality reviews to promotion and tenure or other benefits such as funding for conference attendance, research presentations, and mentoring activities. Some institutions create various royalty arrangements or release time for teaching or developing online courses. Others provide additional compensation for research about online education and for developing courses and effective practices.

C. Learning Effectiveness

1. Compare Outcomes in Delivery Modes

The goal for learning effectiveness online is that learning outcomes meet or exceed industry and professional standards. As reported by NSSE and the Department of Education [5, 6], these goals are achievable. As we continue to learn about improving outcomes, institutions compare the differences in outcomes in delivery modes and use the comparisons to identify the components of effective pedagogy that can be used in all modes. Institutions regularly review and critique online courses to improve them; they recommend using the same curricula to achieve the same learning outcomes in face-to-face instruction and online delivery, understanding the affordances that support learning activities in the various modalities.

.

2. Emphasize Interaction

An especially important finding results in an emphasis on intensive faculty-student and student-student interactivity [20] that foregrounds teaching, cognitive and social presence. At least one institution provides faculty with expectations for teaching presence and feedback time, and another ranks all courses' interactivity as a measure of learner engagement.

3. Set Policy, Assess and Benchmark Quality

The institutions regularly use assessment tools, including course evaluations and student satisfaction surveys, regularly, to evaluate learning effectiveness and improve instructional design. Policies for class size differ among institutions according to course design, discipline and difficulty level, but the goal is to assure that class size is manageable for effective teaching and learning. Since interaction among peers engages students, the institutions advocate using LMS "groups" features for small group online discussion and team projects. They also enable feedback on effectiveness via online group project peer evaluation surveys to gather better data about what works in designing and conducting group activities.

Institutions also encourage peer tutoring because it encourages students to turn to each other so those who are reluctant to approach the teacher don't feel lost; peer tutoring or peer review also tends to give students greater confidence in negotiating their own learning. Partly for this reason, one institution uses cohort teams to help students perform and sustain learning communities due to comfort with interaction bred by familiarity with cohort members; cohort members who have to stop-out may return and join a new cohort. Another school provides on-demand tutoring that is free for students; this individual tutoring encourages students to get help as needed and stick with the program rather than giving up.

As further commitment to learning effectiveness, these institutions benchmark courses and programs in-house and externally with other quality courses and programs.

D. Student Satisfaction

The goal of student satisfaction with regard to progress towards course and degree completion is that students are pleased with learning and with support experiences and feel their effort is worthwhile. Many of the components of student satisfaction have to do with effective access, personalized support, community, relationships, and relevant learning. A primary principle for student satisfaction is adopting students' perspectives and assisting them with adjusting to becoming online learners, a significant adjustment from what is generally a more passive learning role. Students may come to online education with the usual expectation of receiving relevant knowledge from a knowledgeable instructor who provides fair and reliable feedback and grades. But they may also expect convenience to equate with easiness and passivity. Instead,

> while maintaining the usual expectations and privileges attached to the role of learner, online learners add such things as:
>
> - knowledge about, skill with, and acceptance of the technology
> - new modes and amounts of communication with instructors, peers and administrators
> - increased levels of learner self-direction, and
> - a new 'place' for learning in time (anytime, usually determined by the learner and their life circumstances) and space (anywhere, dependent upon equipment requirements) [21].

Thus, these institutions emphasize knowing their students, actively seeking their feedback, and using it for continuous improvement.

1. Introduce Online Learning

A one-stop shop helps introduce prospective students to what they can expect in online education, sometimes including a self-assessment "Is online learning for me?" Once students are admitted, they can use the one-stop site or student community site to get all the information they need, including advising, scheduling, registration and support. Most institutions require an orientation essentials course that includes technical and academic information about using the LMS, making effective discussion posts, accessing student services, time management, goal setting, and participating in community activities (i.e.

information much like that addressed in on-campus first year initiatives aimed at engaging students in the campus community). One institution requires a two-week on-campus residency to familiarize students with the institutional culture and the people with whom they will be working.

2. Assist Completion

The institutions are very aware of the fact that students choose online education because its asynchronicity and flexibility fit with their work and family schedules. Thus, institutions work hard to make sure courses are available when online students can take them, holding online seats for matriculated students until just before the course starts, and giving them course enrollment preferences. Institutional and peer support in student communities help students motivate each other to complete.

3. Listen

Students value knowing that they are an integral part of an institution that listens to them and recognizes they need to control the pace of their own multiple commitments. Thus, institutions regularly solicit and use student input, conduct online student satisfaction surveys and using results for continuous improvement, and by asking students to identify obstacles so the institution can eliminate them. Students value leadership opportunities in the online classroom, in groups or in leading discussions that better prepare them for and or align with formal electronic communications and expectations in the workforce.

E. Scale

The goal for scale is to achieve capacity enrollment, a measure of "the academy's greater appreciation of itself as a community focused on common goals" [22]. While there are a variety of business models for achieving scale [23], each of the case studies shows institutions that have grown significantly and have built infrastructures to accommodate much more learning by building reliable technical and people networks.

1. Make Retention a Visible, Mission-driven, Institution-wide Priority

"The whole point...is to increase access to education to a pool of learners who currently do not have this access, and so we need to be able to assess whether increased access is, in fact, being provided," [24] thus these institutions have strong leadership with an imperative for retaining students that is at least as important as recruiting them. Online programs are initiated strategically with an expectation that programs will be self-sustaining and viable, with budgets set for the number of students to be admitted annually; with estimated persistence and completion rates; and with anticipated income generated from anticipated tuition and fees aligned with investment expenditures in operational, production and infrastructure costs.

2. Build Sustainable Models

Each of the institutions has developed financially sustainable, scalable models with strategies for (1) developing programs , faculty, and courses; and (2)for providing student access, orientation and community [25]. They may have the same faculty teach both online and on-campus. have the majority of faculty from full-time on-campus faculty, or, in some cases, combine full-time faculty and part-time, compensating both on an adjunct overload basis.

3. Partner

Case study institutions are active members of Sloan-C and of regional and national professional organizations. This participation enables them to benchmark, share research and effective practices and other resources for improving the quality of online education as new knowledge unfolds.

III. ADDITIONAL STUDIES REPRINTED IN THIS VOLUME

"Getting Better: ALN and Student Success" summarizes factors that influence high course success rates at 13 institutions and systems. Thanks are due to people from institutions cited in that paper for generously contributing more detailed case studies for this volume.

Two studies of retention in graduate programs approached retention from students' perspectives explaining why they left and why they stayed. Both studies include surveys that are useful for gauging student perceptions. In "Factors that Influence Students' Decision to Dropout of Online Courses" researchers wanted to know if there were reasons specific to online delivery (such as feelings of isolation and disconnectedness, or problems with technology). Student surveys showed that the reasons students gave "were not very different from those typically given by dropouts from traditional face-to-face programs [26]." In "Why They Stayed: Near-Perfect Retention in an Online Certification Program in Library Media," the review of research on online retention also finds no conclusive evidence that reasons for dropping out differ by delivery mode. Asking why students stayed in the program, researchers created a survey drawn from the models of Tinto [27], of Bean and Metzner [28], and of the Community of Inquiry Model [29]. They find that "perhaps a necessary condition of retention for this population is the program being online, and afterwards, other conditions such as academic integration and relevance to the students' work lives may be sufficient to keep them enrolled" [30]. The survey results usefully compare the reasons that motivated students to enroll and the reasons that motivated them to complete.

"Using Asynchronous Learning in Redesign: Reaching and Retaining the At-Risk Student" documents increases in retention at the course level in large introductory courses at several institutions. These are the principles of redesign:

Whole course redesign (not just a section)

Active learning (rather than lecture or other passive assignments)

Computer-based learning resources (for self-checks, audits, and demonstrations)

Mastery learning (for greater learner self-direction)

On-demand help (expanded support from many different people and groups)

Alternative staffing (to free faculty from routine tasks)

Examples of redesign amply substantiate that these practices improve online retention, learning, and scale [31].

IV. CONCLUSION AND RECOMMENDATIONS

The last two decades witnessed rapid growth and innovation in higher education online. As the contributors to this issue know well, higher success rates are a result of institution-wide focus on improvements in access, learning effectiveness, scale and faculty and student satisfaction. The studies in this issue demonstrate that course completion rates can be as good as, and better than, course completion rates in face-to-face education.

The papers in this issue give a gestalt of practices that positively affect student success. No doubt the elements of each practice take different shapes at each institution that adopts them. Institutions that are committed to improving student learning will need to determine the cost of implementing and maintaining practices as they determine the impact of each.

The emergence of effective practices for engaging students and motivating them to persist can best be addressed through collaboration within and across learning organizations. Appendix D is such a collaboration, a work-in-progress blog with tips for faculty for achieving greater course engagement and success. The Sloan-C Faculty Development Advisory Board invites you to join its collaboration on tips for faculty at [link to be added], and you are welcome to comment on the studies in this issue.

V. APPENDIX A: INSTITUTIONAL MISSIONS

Dallas Baptist University

http://www.dbu.edu/

http://dbu.edu/online

The purpose of Dallas Baptist University is to provide Christ-centered quality higher education in the arts, sciences, and professional studies at both the undergraduate and graduate levels to traditional age and adult students in order to produce servant leaders who have the ability to integrate faith and learning through their respective callings.

Seton Hall

http://www.shu.edu/

http://www.shu.edu/academics/setonworldwide

Seton Hall is a major Catholic university. In a diverse and a collaborative environment it focuses on academic excellence and ethical development. Seton Hall students are prepared to be leaders in their professional and community lives in a global society and are challenged by outstanding faculty, an evolving technologically advanced setting and values-centered curricula.

University of Illinois at Springfield

http://www.uis.edu/

http://www.uis.edu/online/

The University of Illinois at Springfield provides an intellectually rich, collaborative, and intimate learning environment for students, faculty, and staff, while serving local, regional, state, national, and international communities. UIS serves its students by building a faculty whose members have a passion for teaching and by creating an environment that nurtures learning. Our faculty members engage students in small classes and experiential learning settings. At UIS, the undergraduate and graduate curricula and the professional programs emphasize liberal arts, interdisciplinary approaches, lifelong learning, and engaged citizenship. UIS provides its students with the knowledge, skills, and experience that lead to productive careers in the private and public sectors. UIS serves the pursuit of knowledge by encouraging and valuing excellence in scholarship. Scholarship at UIS is broadly defined. Faculty members are engaged in the scholarship of discovery, integration, application, and teaching. Excellence in teaching and meaningful service depend on a foundation of excellence in scholarship. One vital area in which UIS extends its scholarship, teaching, learning, and expertise beyond the campus is in the broad area of public affairs. From its location in the state capital, UIS shapes and informs public policy, trains tomorrow's leaders, and enriches its learning environment through a wide range of public affairs activities, programs, and organizations. UIS empowers its students, faculty, and staff by being a leader in online education and

classroom technology. UIS uses technology to enhance its distinctive learning environment and extend that environment beyond the boundaries of the campus.

University of Cincinnati
http://www.uc.edu/

http://www.uc.edu/distance/

The University of Cincinnati serves the people of Ohio, the nation, and the world as a premier, public, urban research university dedicated to undergraduate, graduate, and professional education, experience-based learning, and research. We are committed to excellence and diversity in our students, faculty, staff, and all of our activities. We provide an inclusive environment where innovation and freedom of intellectual inquiry flourish. Through scholarship, service, partnerships, and leadership, we create opportunity, develop educated and engaged citizens, enhance the economy and enrich our University, city, stateand global community.

Rochester Institute of Technology

http://rit.edu

http://online.rit.edu/

Vision, Mission and Values

Vision:

RIT will lead higher education in preparing students for successful careers in a global society.

Mission:

The RIT community engages and motivates students through stimulating and collaborative experiences. Our mission is to provide technology-based educational programs for personal and professional development. We rigorously pursue new and emerging career areas. We develop and deliver curricula and advance scholarship relevant to emerging technologies and social conditions. Our community is committed to diversity and student centeredness and is distinguished by our innovative and collaborative spirit.Internal and external partnerships expand our students' experiential learning. RIT is committed to mutually enriching relationships with alumni, government, business and the world community. Teaching, learning, scholarship, leadership development, and student success are our central enterprises.

Values:

Student Centeredness: Exhibits behavior, performs duties of position, and/or makes decisions that demonstrate and/or support the importance of students as the primary constituency of the university and/or contributes directly to student success.

Professional Development and Scholarship: Takes actions to continuously advance and/or improve in one's academic or professional discipline; as an individual contributor; as a team member; and/or as an organizational leader.

Integrity and Ethics: Does what it takes to deliver on commitments made to the department, college, or division and to constituency groups. Builds personal trust and relationships inside and outside the university by doing what one says he or she will do when it is promised.

Respect, Diversity and Pluralism: Provides a high level of service to fellow members of the RIT community. Treats every person with dignity. Demonstrates inclusion by incorporating diverse perspectives to plan, conduct, and/or evaluate the work of the organization, department, college, or division.

Innovation and Flexibility: Provides and/or encourages new ideas that could make the department, college, or division an even better organization. Open to, and adapts well to change.

Teamwork and Collaboration: Contributes to the efforts of the department, division, or college as a team player. Works well with others outside the department to accomplish cross-college or division goals

and objectives.

Peirce College
http://peirce.edu/
http://peirce.edu/Online.aspx
Founded in 1865, Peirce is a private, four-year, specialized institution providing practical, leading edge curricula to primarily working adult learners.

VI. APPENDIX B: BRIEF VERSION OF THE QUALITY FRAMEWORK

Brief Version of the Quality Framework			
Goal	**Process/Practice**	**Metric (for example)**	**Progress Indices**
Learning Effectiveness			
The quality of learning online is demonstrated to be at least as good as the institutional norm and meet or exceed industry and professional standards.	Academic integrity and control reside with faculty in the same way as in traditional programs at the provider institution.	Faculty perception surveys or sampled interviews compare learning effectiveness in delivery modes. Learner/graduate/employer focus groups or interviews measure learning gains.	Faculty report online learning is equivalent or better. Direct assessment of student learning is equivalent or better.
Scale			
The institution achieves capacity enrollment by continuously improving services while reducing costs.	The institution demonstrates leadership, financial, and technical commitment to its online programs. Tuition rates provide a fair return to the institution and best value to learners.	Institutional stakeholders show support for participation in online education. Effective practices are identified and shared.	The institution sustains the program, expands and scales upward as desired, strengthens and disseminates its mission and core values through online education.
Access			
All learners who wish to learn online can access learning in a wide array of programs and courses.	Program entry and support processes inform learners of opportunities, and ensure that qualified, motivated learners have reliable access to instruction and services.	Administrative and technical infrastructure provides access to all prospective and enrolled learners. Quality metrics for information dissemination; learning resources delivery; tutoring services	Qualitative indicators show continuous improvement in growth and effectiveness rates.
Faculty Satisfaction			
Faculty are pleased with teaching online, citing appreciation and happiness.	Processes ensure faculty participation and support in online education (e.g. governance, intellectual property, royalty sharing, training, preparation, rewards, incentives and so on).	Repeat teaching of online courses by individual faculty indicates approval. Addition of new faculty shows growing endorsement.	Data from post-course surveys show continuous improvement: At least 90% of faculty believe the overall online teaching/learning

			experience is positive. Willingness/desire to teach additional courses in the program: 80% positive.
Student Satisfaction			
Students are pleased with their experiences in learning online, including interaction with instructors and peers, learning outcomes that match expectations, services, and orientation.	Faculty/learner interaction is timely and substantive. Adequate and fair systems assess course learning objectives; results are used for improving learning	Metrics show growing satisfaction: Learner surveys and/or interviews Alumni surveys, referrals, testimonials Outcomes measures Focus groups Faculty/Mentor/Advisor perceptions	Satisfaction measures show continuously increasing improvement. Institutional surveys, interviews, or other metrics show satisfaction levels are at least equivalent to those of other delivery modes for the institution

VII. APPENDIX C: PRACTICES THAT CONTRIBUTE TO HIGH COURSE COMPLETION RATES

Access

Emphasize the flexibility as well as the responsibilities of asynchronous "any-time, any-place" learning

Publicize additional access to degree completion via online courses

Personalize access via administrative or programmatic contact people, marketers, advisors, troubleshooters, and coaches throughout the student's academic career

Establish protocols for student advising

Provide students with online student skill assessments before taking an online class and offer online and/or on-campus orientations to online learning

Develop or share an online student community website or introductory course that encourages online students to share concerns, questions, and solutions

Provide academic support, tutoring and support services online, including an institutional 24/7 Help Desk to reach all students

Provide necessary software free or at a reduced rate

Leverage technology to help identify and work with students who are at-risk

Faculty Satisfaction

Share information about the benefits and demands of online teaching

Involve faculty members and their respective programs in content, curriculum design, peer quality reviews, and community building

Support faculty via a Technology Resources Center, offering technology and instruction services online and at convenient places such as in University Libraries

Require an online teaching course for new online faculty and make ongoing online professional development available for new and experienced online faculty so that faculty develop confidence and

competence

Create boilerplates and placeholders to guide new instructors through a series of effective practices as they prepare their courses; use standards or rubrics to guide course design; develop sample online courses that illustrate effective design and practices

Provide a technical HelpDesk for faculty

Support online faculty via teaching/learning resources, peer consulting and ongoing workshops for topics such as understanding differences between online and face-to-face teaching, co-teaching and team teaching, prioritizing pedagogical priorities, copyright, tips and tricks for managing workload, designing and managing effective discussions, and for successfully creating an online learning community and engaging students

Dedicate personnel support for online faculty from instructional designers, disability services, librarians, technologists and other personnel, including team members assigned to make sure all links are working, dates are set correctly, and exams and quizzes are functioning

Conduct online surveys and interviews to measure and improve faculty satisfaction

Establish or encourage participation in venues for faculty communities of practice

Create various royalty arrangements for online courses

Provide additional compensation (seed money, operational funds, release time, etc.) to faculty for course development, research and mentoring and fund online faculty for conference attendance, research presentations, and mentoring.

Formally recognize outstanding online teaching and best courses for annual awards or recognition program

Learning Effectiveness

Compare differences online and face-to-face to validate learning effectiveness and to leverage respective affordance

Emphasize intensive faculty-student and student-student interactivity

Rank all courses' interactivity as a measure of engagement

Assure class size is manageable

Use "groups" feature for small group online discussion and team projects, measuring CMS features used as an index of interaction

Use cohort learning teams

Provide online group project peer evaluation surveys

Regularly review and critique the online courses to improve them

Benchmark courses and programs with other quality courses and programs

Use the same curricula to achieve comparable learning outcomes in face-to-face instruction and online delivery

Require or encourage prompt feedback from online faculty, explaining teaching presence expectations in advance of the course

Implement a teaching and learning technology center to help faculty and students with just-in-time academic support

Provide online peer tutors or commercial tutoring

Use assessment tools, including course evaluations and student satisfaction surveys, to evaluate learning effectiveness and improve instructional design and delivery

Understand that students respond to interactivity differently, and provide multiple options for interaction

Transcribe and caption media for the online learning environment

Scale

Integrate online education with the institutional mission

Make retention efforts and their results visible to the institution and beyond

Evaluate production costs and seek cost effective affordances

Develop infrastructure for growth in online and blended delivery

Set a reasonable expectation of return on investment of online initiatives

Set benchmarks for the number of students to be admitted annually; estimate persistence and completion rates

Require a long-term budget plan that addresses continuing viability in proposals for online programs

Partner with professional organizations to share faculty, student, administrative resources; professional networks, professional development; funding opportunities

Build a sustainable model based on the needs of your institution. Develop a budget model that:

- Compensates faculty on an adjunct overload basis, or
- Includes a majority of online instructors from on-campus full-time faculty, or
- Includes all full-time faculty, who teach both online and on-campus

Student Satisfaction

Conduct online student satisfaction surveys and use results for continuous improvement

Identify online learning obstacles to eliminate them for students

Promote flexibility in student scheduling

Assure matriculated online students receive course enrollment preferences

Hold online "seats" for matriculated online students until just before the start of the course

Require on-campus residency or peer support for cohort learning team students

Provide low-cost or free supplemental academic support to online students

Make available a technical helpdesk for students

Respond to the need for students being able to control the pace of their lives

Support students and enable them to support each other with online student community courses or websites, including student associations

VIII. APPENDIX D: WHAT DO FACULTY DEVELOPERS RECOMMEND TO FACULTY FOR IMPROVING COURSE COMPLETION AND RETENTION?

Thanks to members of the Sloan-C Faculty Development Advisory Board for posting tips they give faculty for helping students complete courses. You are welcome to add tips and comments to the blog at: http://www.sloanconsortium.org/node/2486.

- Open portions of the LMS course site before the semester starts. Giving students an early view of the syllabus, materials requirements, and a description of how the course will be conducted establishes a comfort level with the course requirements, design, and navigation. Early opening avoids last minute panic drops and establishes needed transparency from the start.

- Set the tone for engaging the class in a community of purpose, "we're all in this together."
- Have personal interviews or phone calls with each student or with small groups so they feel personally connected with you and with each other.
- Remember that online roles and virtual learning platforms are still new for students (and faculty). In the earliest parts of the course, acknowledge that fact and help the students understand that learning the system of asynchronous interaction is a process.
- Use plain language rather than academese to convey friendliness and accessibility, introducing concepts first in plain language and gradually introducing the vocabulary of the discipline (see "Virtual Facilitators Help Students Become Rhetorically Savvy," http://www.sloanconsortium.org/node/1084 and http://www.plainlanguage.gov/)
- Emphasize the relevance of the course to students' everyday activities, other courses, and long-term goals. For example, begin with a course-related challenge to which everyone can respond, drawing on each person's prior experience and knowledge. But remember that some learners may not have a lot of professional experiences, or may not be confident in writing about experiences they have had. Be sure to engage less experienced learners so that they do not feel lost or overpowered.
- KISS. Keep the course operation as simple as it can be while maintaining course quality and effectiveness. DO NOT include gratuitous activities (even if they're really cool) that do not support the desired learning outcomes. Simplify the learning space while leveraging the most powerful communications technologies. Don't go overboard on the technology (no matter how cool it is!) such that it is distracting to learners.
- Make the structure of the course and expectations for overall flow explicit. Use tables, charts, mind-maps, advance and graphic organizers, photos, cartoons—whatever it takes to help students see how the pieces of the course relate to one another and more importantly, how the students themselves fit into all of it (i.e., where, when, how are they contributing to building the course content and their own understanding).
- Make content accessible for different preferences and abilities (see http://www.sloanconsortium.org/cannect_home and Center for Applied Special Technology http://www.cast.org/research/udl/index.html).
- Link to student services and resources from within the course.
- Give students opportunities to practice with all functional/operational aspects of the course as early in the course as possible and in a low-stakes, non-threatening environment. Be certain to introduce all tools and systems that will be required later on in the course.
- Provide a detailed timeline for completing successive steps toward meeting the objectives (see UMUC Office of Evaluation and Assessment, Best Online Instructional Practices Study, http://www.umuc.edu/distance/odell/ctla/resources/bestpractices.pdf).
- Estimate time on task for assignments so learners get a sense of how they'll need to manage their time. Collect feedback on time actually spent to involve class members in co-design.
- Encourage self-direction and diversity by getting students to draw on their own experiences and perspectives as part of their learning and to incorporate their own goals into the work of the course (see UMUC Office of Evaluation and Assessment, Best Online Instructional Practices Study http://www.umuc.edu/distance/odell/ctla/resources/bestpractices.pdf).
- Encourage students to support each other, e.g. giving each other feedback and help on assignments before you assign a grade, perhaps even asking veteran students to help novices. Provide a "Student Cafe" where students can interact both in real-time or asynchronously outside of the classroom so that they can support each other. (see "Wizards" http://www.sloan-c.org/node/240 and Brown, R. "The Process of Community-Building in Distance Learning Classes." JALN 5:2, September 2001. http://www.sloanconsortium.org/publications/jaln/v5n2/v5n2_brown.asp).

- Encourage divergent thinking so that students learn to consider alternative interpretations of their own or others' experience (see UMUC Office of Evaluation and Assessment, Best Online Instructional Practices Study, http://www.umuc.edu/distance/odell/ctla/resources/bestpractices.pdf).
- Set consensus rules with the class for discussions and other activities (see Wang, Y, Chen, V. "Essential Elements in Designing Online Discussions to Promote Cognitive Presence—A Practical Experience." JALN 12(3): December 2008. http://www.sloanconsortium.org/node/1412).
- Scaffold problem-based or project-based approaches, enabling students to accomplish objective in small steps that can be revised as they lead to the completion of the final product.
- Present learning tasks in terms of problem solving, not only as accumulated knowledge, and encourage multiple approaches to problem solving (see UMUC Office of Evaluation and Assessment, Best Online Instructional Practices Study, http://www.umuc.edu/distance/odell/ctla/resources/bestpractices.pdf).
- Use audio and video for feedback to enhance immediacy (see "Asynchronous Audio Feedback to Enhance Teaching Presence and Students' Sense of Community," http://www.sloan-c.org/node/1085).
- Use student-designed exam questions (see Shen, J., Bieber, M., Hiltz, S.R. "Participatory Examinations in Asynchronous Learning Networks: Longitudinal Evaluation Results," JALN 9(3): October 2005. http://www.sloan-c.org/publications/jaln/v9n3/v9n3_shen_member.asp).
- Create a database of exam questions that students can answer to prepare for the final (see Heckman, R., Annabi, H. "Cultivating Voluntary Online Learning Communities in Blended Environments," JALN 10(4): December 2006. http://www.sloan-c.org/publications/jaln/v10n4/v10n4_heckman_member.asp).
- Think outside of the course management system to interact with people and resources that add relevance to course topics and skills. Use blogs, wikis, Twitter, FaceBook, YouTube, IM or other applications so people can stay in touch as the class proceeds. Use mobile learning as a way to connect learning to real-life. Be creative. For example, have learners upload their own photos, videos, or other objects created with mobile devices that relate to current topics (see, for example, Welcome to the Human Network video http://www.youtube.com/watch?v=hAdfYgEapT8&feature=related).
- Give students opportunities to publish their work (see "What is Student-Generated Content?" http://www.sloan-c.org/effective/callforcollection and "Content Area Vocabulary Digital Stories," http://www.sloan-c.org/node/1162).
- If your LMS allows students to manage the available communication tools—turn them on and let the students choose how they want to work together. Here's an excerpt from a faculty member who was surprised most by the fact that students willingly took ownership of the learning space (Scroll forward to 1:35 http://www.unc.edu/sakaipilot/blog/?p=46).
- Provide frequent and regular checkpoints (both student and faculty managed) for measuring student progress and gauging student's grasp of course material. Low-stakes questions, automated "check your knowledge" or question forums can go a long way to keep students engaged and on track.
- Provide multiple points of contact to the instructor. These may include using an email to create a personal connection, discussion forums, blogging, or using the "announcements" to keep student's abreast of course progress.
- Flexibility in communication and delivery requires underlying structure and predictability. Set patterns of instructor communication and meet and keep scheduled updates; students may interact in various ways, but the instructor establishes the solid center. See the Community of Inquiry Survey Instrument in JALN 13(3) for ways instructors enhance community.

- Use learning contracts and rubrics to help students track progress towards goals, but don't create overly-complex, verbose and restricting rubrics to explain your expectations. Leave room for quality, creativity and individualization to come through in assignments. Also consider providing several sample assignments so that learners can see examples of your expectations.
- Use discussions wisely. Avoid quantitative measures of engagement such as "post 5 comments every day" and devise grading schemes where discussion postings are evaluated on the quality of the overall participation, rather than the number of postings.See, for example, "(My) Three Principles of Effective Online Pedagogy" by Bill Pelz, JALN 8(3): 43, June 2004, http://www.sloan-c.org/publications/jaln/v8n3/v8n3_pelz.asp.

Thanks for the tips above to advisory board members: Allen Clarkson, Western Governors University; Nan Chico, California State University Eastbay; Phil DiSalvio, Seton Hall University SetonWorldWide; Kim Eke, University of North Carolina; Susan Ko, University of Maryland University College; Larry Ragan, Pennsylvania State University World Campus; Maria Puzziferro, Rocky Mountain College of Art and Design; and Shari McCurdy Smith University of Illinois Springfield.

IX. ABOUT THE EDITORS

Janet C. Moore is the Chief Knowledge Officer for the Sloan Consortium. She is an editor for the *Sloan-C View*, the *Journal of Asynchronous Learning Networks*, effective practices, and annual volumes in the Sloan-C quality series. She participates in various initiatives, including helping design and conduct Sloan-C workshops and seminars, and Sloan-C Catalog reviews. She is the author of Elements of Quality: The Sloan-C™ Framework, Pillar Reference Manual.

Marie J. Fetzner joined Monroe Community College (MCC) in Rochester, New York 1987 and currently serves as the Assistant to the Vice President for Educational Technology Services (ETS). In 2006-07, Marie served as Director of Online Information and Distance Learning at Montgomery College, Montgomery County, Maryland. From 2003–2006, she was on special assignment as MCC's Banner Project Manager. Marie is a founding member of the Monroe Model team that was created in 1997 to support MCC's online learning faculty and students. Marie serves on the editorial board of the *Journal of Asynchronous Learning Networks* (JALN), is a Quality Matters™ online course reviewer and is a peer reviewer on the Music editorial team for MERLOT (Multimedia Educational Resource for Learning and Online Teaching). She is an adjunct assistant professor (online) in MCC's Transitional Studies department and in the Visual and Performing Arts department. Marie is pursuing a Ph.D. degree in Education at the Margaret Warner Graduate School of Education and Human Development at the University of Rochester, where her research focuses on online student retention.

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PEIRCE COLLEGE AND STUDENT SUCCESS

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ABSTRACT

This case study describes the philosophy underlying the delivery of online programs and courses at Peirce College through Peirce Online®. The strategies used to implement the Peirce College model and the measures used to validate its success are outlined. These factors are reviewed in the context of the Sloan-C Five Pillars for quality learning environments.

KEYWORDS

Retention, Student Success, Course Completion, Strategies, Sloan-C Five Pillars

I. INSTITUTIONAL BACKGROUND

Peirce College is a private four-year specialized institution offering accredited business administration, information technology, and paralegal studies degree programs to address economic and workforce development needs. Founded as the Union Business College in 1865 to provide educational opportunities to Civil War veterans transitioning to the civilian workforce, Peirce College was at the forefront in providing career-oriented education for women in the 19th century and remains a leading provider of part-time business education for women in the Commonwealth of Pennsylvania. In keeping with the College's legacy of utilizing innovative technology to support its mission of providing practical, leading edge curricula to primarily working adult learners, Peirce created Peirce Online in year 2000. With its online business administration, information technology, and paralegal studies degrees, Peirce is one of the oldest accredited colleges offering a complete degree program online in the United States.

One of the College's most notable strategic accomplishments with respect to online learning has been its expansion from a strong regional brand to a national scope and international reach, serving degree seeking students from 38 of the 50 states and 24 foreign countries. More than half of Peirce's credits attempted are derived from its online program. Face-to-face instruction and online delivery use the same curricula, course descriptions, and professors; both delivery formats promote the same learning outcomes. These interchangeable formats are included under institutional accreditation through the Middle States Commission on Higher Education (MSCHE) as well as program specific endorsements by the American Bar Association (ABA) and the Association of Collegiate Business Schools and Programs (ACBSP).

II. SUCCESSFUL COURSE COMPLETION IN INTRODUCTORY LEVEL CLASSES

The College defines successful course completion as being enrolled in a course after the drop/add deadline and subsequently passing the course (i.e., not failing or withdrawing). In seven week classes students may drop the class without penalty before the end of the first week of class and may withdraw before the end of the fourth week of class. Using this definition, the success rate in 100- and 200-level online courses during the 2007–2008 academic year was 83.2%, slightly lower than the 85.2% rate for on

campus courses. For this case study, please note that all discussion of success is at the individual course level. In the 2007–2008 academic year, there were 3456 grades earned in campus classes and 6817 grades earned in online classes. The average class size was 11.43 and 18.63 in on campus and online classes, respectively. Most classes are seven weeks in length. Introductory paralegal studies courses are fourteen weeks in length and only offered in a face to face format as required by the American Bar Association. There are 14 week options for English 101 and some mathematics classes.

III. STRATEGIES FOR SUPPORTING SUCCESSFUL COURSE COMPLETION

A. Access

The College's approach to ensuring student success in online courses is straightforward and substantial. As an institution that works with primarily working adult learners (83% at least 25 years old and an average of 34 years old), Peirce has many support systems in place for all of our students whether they take online or face-to-face courses. Additionally, Peirce leverages technology wherever possible to identify students who are at risk of not successfully completing courses. The learning management system that the College uses provides a user activity report that details the amount of time students spend in their online classes during a specific time period. The College runs this report weekly to determine the amount of time students spent online for the previous seven days. This information is provided to program advisors who contact their students who have shown little activity in their courses. The College is, therefore, able to intervene quickly and provide needed support. Since all of our degree programs are available completely online, and that more than half of our credits attempted are taken in an online format, all members of the College community recognize that online education is a critical component of our students' success and ability to complete their degree programs.

1. First Year Initiative

There are several services that the College provides to all students to support course completion. Most of these services fall under the umbrella of our First Year Initiative which is designed to make all new and readmitted students, including online students, part of the College community. These include, but are not limited to, skills assessments, an orientation course delivered entirely online, a wide variety of workshops, and online tutoring offered through SMARTHINKING. All of the student associations meet in person but also have a strong online presence using a "course" in eCollege, our learning management system.

2. Skills Assessment

Students who apply to Peirce College without transfer credit in English 101 and/or college level mathematics are required to take skills assessments in those subjects. Students who answer at least 70% of the questions correctly may elect to enroll in a seven-week English 101 or college level mathematics course. Students who do not, and those who choose not to take the assessments, must enroll in a 14-week English 101 or college level mathematics course.

3. Orientation

Students become acclimated to Peirce College and learn about available support services, policies, and procedures in Peirce College 101, a required seven-week, one-credit, online orientation course that must be taken within the first 14 weeks of enrollment at Peirce. All online courses at Peirce College are in a seven week format. In this course, students learn to use the online platform on which all of their online

courses will be held. (All face-to-face courses have websites using this same platform.) The College's online course websites all have a similar design allowing students to focus on achieving learning objectives rather than learning the look and feel of the course website. This design has been developed over the eight years of our online program with the input of faculty, feedback from students, and instructional design support. In addition, during the orientation course, students complete the Noel-Levitz College Student Inventory. The results allow students to identify areas in which they need additional focus to be successful. The results of this inventory are used to advise students when they are enrolling in degree programs and courses and to create programming that supports students' needs.

4. Institution-wide Ongoing Support

The Walker Center for Academic Excellence (WCAE) provides student support services for all Peirce College students. The WCAE staff facilitates numerous workshops on a regular basis throughout the year. Topics include time management, stress management, test taking and study skills, success strategies for adult learners, computer skills, career development, and mathematics and writing skills. These workshops are available for all students, including students taking online classes. The workshops are available both on campus and online.

5. Free Tutoring

SMARTHINKING is a subscription-based online tutoring service that the College offers at no charge to Peirce College students. This online tutoring service provides assistance in the same manner as on campus tutoring support services. Students can connect in real-time with a tutor or submit a paper for review and receive feedback from a tutor within 24 hours.

6. Just-in-Time Advising

There are several administrative processes in place, specific to online courses, which leverage technology to assist with student completion. These include both faculty and advisors contacting students who have been minimally active in the course website in any week throughout the course. The drop/add period for our online courses is the first week of the course. Since user activity in online courses is readily available, near the end of the first week, faculty members contact students who have not yet logged onto the course website. This communication not only encourages the students to begin their coursework but also identifies the last day to drop the course without penalty. After the drop/add period, the College generates a User Activity report on a weekly basis for students in online courses. This information is sent to the students' advisors who contact the students to identify any issues that might be hindering their progress and/or to encourage them to resume their coursework. Faculty members have access to this user activity information throughout the course and are encouraged to contact those students who are falling behind. We have found that providing this information to the students' advisors allows the advisors to develop the relationship with their students that goes beyond just providing assistance with choosing a class schedule but allow them to understand more about the external influences on students' academic progress.

7. Faculty Responsiveness

The College has found that faculty participation is a critical component of student satisfaction and success in online courses. To that end, the College has a twenty-four hour response time policy for faculty to respond to students' questions. This twenty-four hour response applies to all faculty teaching face to face or online courses. Faculty are also trained on how to use the class websites during their orientation and are provided consistent support by the Instructional Design Specialist. Both faculty and students also have access to 24-hour-a-day phone, email or live chat technical support.

8. Access to Technology and Support

Technical access to, and communication within, online courses is also a critical component of success. To support students' access to online course websites, the College has a single sign-on to the course websites through the campus portal. The College provides 24-hour-a-day technical support to both students and faculty. The College has intentionally kept the technical requirements to access and participate in online courses low: there are very few additional applications that are required for successful completion of online courses. Lastly, the College provides a copy of Microsoft Office 2007 at no charge to students and faculty to allow for seamless communication.

B. Learning Effectiveness

Face-to-face instruction and online delivery use the same curricula, course descriptions, and professors and promote the same learning outcomes. The great majority of courses and all program concentrations are available in both an online and on campus format. Additionally, all full-time faculty teach both online and on campus. Many adjunct faculty teach in both formats. With all of these similarities, and the virtually identical overall grade point average in 100- and 200-level online and on campus courses — 2.82 for on campus classes and 2.79 for online classes, students are learning as effectively online as they do in an on campus environment.

C. Student Satisfaction

Student satisfaction with courses is an important consideration in evaluating student success in any course. Overall student satisfaction as measured on end-of-course surveys is slightly lower in online courses (88.1%) than it is for on campus courses (88.7%). The College attributes this similarity to the institutional focus on utilizing the same curricula, course descriptions, and professors and achieving the same learning outcomes.

D. Faculty Satisfaction

The College believes that faculty satisfaction is an important component to student success. The Office of Academic Operations and Faculty Support offers a variety of support services for faculty, including those who teach online courses. Upon hire, the Instructional Design Specialist provides a thorough orientation to the online platform for all new instructors in a one-on-one setting. This orientation may be conducted either in-person or online. Throughout their employment, faculty members have access to the Instructional Design Specialist for both instructional design and technical support. Faculty members have access to 24-hour a day technical support provided by the learning management system provider, eCollege. All course masters are developed by full-time faculty members who also act as academic mentors to adjunct faculty members. Faculty are made aware of the 24 hour response time expectation to students during the initial orientation upon hire. Faculty are also made aware that the Office of Academic Operations holds to that same standard in responding to faculty.

E. Scale

Online education is an integral part of the Peirce College community. Since its inception in 2000, Peirce Online has grown to the point where more than half of the credits attempted at the College are through online courses. Every service that Peirce provides to students from the time of application is available to all students, whether they take courses on campus, online, or both. The College provides the tools for students to identify obstacles and robust student support services to allow them to overcome those obstacles. The College is able to leverage technology to help identify students who are at risk of not successfully completing their online courses. The College provides strong support for faculty allowing

them to focus on the teaching and learning in their courses without having the technology be a barrier to communication. The success of our students is supported from admission, through their introductory courses, and beyond.

IV. AUTHOR BIO

As Associate Dean, **Jonathan Lenrow** serves as Peirce College's leader and manager for academic operations. He is responsible for developing, implementing, maintaining, and monitoring quality control systems for the academic program and operational procedures. Jon is the chair of the Academic Quality Assurance committee. He is also a member of the eCollege Product Advisory Board and serves as the primary liaison to Peirce College's academic technology providers. In 2007, eCollege honored Jon by presenting him with the Excellence in Academic Operations Award. He holds a bachelor's degree from State University of New York at Albany and a master's degree in education from Wake Forest University.

SETONWORLDWIDE: A CASE STUDY OF STUDENT SUCCESS

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ABSTRACT

This case study offers a strategic model of methods and services resulting in relatively high student success rates as defined by course completion of introductory first and second semester online courses. This strategic model is presented in the context of Sloan-C's **Five Pillars of Quality Online Education.**

KEYWORDS

Retention, Student Success, Course Completion, Strategies, Institutional Commitment, Sloan-C Five Pillars

I. INTRODUCTION

With unprecedented shifts in the higher education competitive landscape brought about by advances in technology mediated education that unfolded in the mid 1990s, Seton Hall University launched a strategic initiative around a centralized structure that would support, build and administer an online learning delivery infrastructure. In 1997, SetonWorldWide set in motion the development and delivery of online courses at Seton Hall University. This case study describes the SetonWorldWide strategic model of methods and services that has resulted in an average 96% student success rate as defined by course completion of introductory first and second semester courses. This strategic model is offered as a perspective to other institutions who aspire to similar results.

II. MISSION, CONTEXT AND DEMOGRAPHICS

The institutional mission of Seton Hall University is to prepare students to be leaders in their professional and community lives in an environment that fosters student service, leadership and excellence in a global society.

Recognizing the potential market for adult learners, the vision of a Seton Hall online campus was guided, in part, by the determination that SetonWorldWide would focus on online professional graduate courses where students would matriculate from graduate programs in two years or less. SetonWorldWide's online courses would support and extend the University's mission by delivering high-quality, career-enhancing education through a variety of online delivery methods that would capitalize upon a combination of technologies, instructional methods and services. SetonWorldWide currently offers eight online graduate degree programs and four online graduate certificate programs. Using a cohort approach with students beginning and ending the program together as a learning team, each program utilizes a sequential course curriculum with introductory foundation courses taken in the first two semesters. More than 1500 students have enrolled in SetonWorldWide online courses since its inception.

SetonWorldWide students are represented by broad geographic dispersion. The student body is represented by all fifty states as well as students represented from Canada, Puerto Rico, England, Ireland, Iraq, Dubai, Germany, Jamaica, and Saudi Arabia. The mean age of SetonWorldWide students is 35 years. The mean years of work experience of SetonWorldWide students is 11.3 years. The average class size of SetonWorldWide courses is eighteen students with most courses staffed by both a primary and a secondary instructor. The average length of SetonWorldWide online courses is seven to ten weeks.

III. STUDENT SUCCESS AS AN INSTITUTION-WIDE PRIORITY

The driving principle underlying the SetonWorldWide philosophy is the recognition that while there are unique learning challenges inherent in online delivery, the online learning experience must be commensurate with on-campus academic standards of quality. Geographic distance between the student and the instructor must not compromise the academic integrity of the educational process.

The institution's commitment to success is demonstrated by its support for specific methods and service strategies that are common to all SetonWorldWide online program courses. These methods and service strategies encompass aspects of:

- Student population
- Course design
- Course format
- Program administration
- Faculty deployment
- Academic oversight
- Student Grouping
- Non-academic student services

IV. SETON HALL UNIVERSITY'S DEFINITION OF "SUCCESS"

The distinctive challenges inherent in online course delivery make course completion a primary concern for student success. Physical separation poses a particular risk for full integration into the learning process. A student who is more integrated can be seen as more likely to persist and complete a course. For Seton Hall University, retention in individual courses resulting in a student fully completing the course and earning a grade is the primary indicator of success.

A study of SetonWorldWide 2004-2008 student enrollment data reveals a 96% completion rate for students enrolled in SetonWorldWide introductory first and second semester foundation courses. Personal or professional crises were the most common reasons cited for those students who did not complete the introductory first and second semester courses. Of the 4% who did not complete introductory first and second semester foundation courses, half of those rejoined subsequent learning team cohorts.

V. FRAMEWORK FOR SETONWORLDIDE STUDENT SUCCESS

The specific methods and service strategies common to all SetonWorldWide online courses can be presented in the context of Sloan-C's Five Pillars of Quality Online Education: learning effectiveness, scale, access, faculty satisfaction, and student satisfaction. The methods and services strategies inherent in the SetonWorldWide strategy can be tied to one or all of the Sloan Five Pillars. A matrix summarizing

these corresponding elements is seen in Appendix A.

A. Learning Effectiveness

SetonWorldWide leverages the unique characteristics of online environments to provide a distinctive learning experience for its students. A number of method and service elements are seen to enhance course completion within the context of learning effectiveness. Course design around an asynchronous model responds to the need for students being able to control the pace of their lives and the student grouping model around the cohort learning team approach provides ongoing peer and faculty support. Students identify with their cohort and a support structure quickly develops. The intensive interactivity incorporated into the course content and the on-campus residency that takes place prior to the introductory foundation courses result in bonding, collaboration and identification with the student's learning community. Students meet face-to-face with program administrators, faculty and cohort colleagues at the on-campus residency and a protocol of student advising is established.

The elements that lead to learning effectiveness include:

- Asynchronous "any-time any-place" learning
- Cohort learning team student grouping
- Course format provides intensive faculty-student and student-student interactivity
- On-campus residency requirement for cohort learning team students

Evidence of effectiveness is found in the feedback received from students. Students are administered online course feedback forms prior to the course beginning, a mid-course evaluation and an end-of-course survey. For cohort students a mid-program evaluation is administered during the cohort's mid-program on-campus residency. The feedback consistently demonstrates that the asynchronous learning model, the cohort learning team student grouping, and a course format that provides a high degree of interactivity and the on-campus residencies contribute substantially to course completion rates.

B. Scale

SetonWorldWide works toward offering an educational value through an institutional commitment to cost effectiveness with an expectation of return on investment of its online initiatives. As a stand-alone unit that must recover its costs through revenue, SetonWorldWide's budget model is driven by methods and service elements that control costs and provide a return on the investment. The elements that lead toward a commitment to cost-effectiveness include:

- Instructional compensation through an adjunct faculty model
- Majority of SetonWorldWide instructors from on-campus full-time faculty
- Institutional 24/7 Help Desk
- Institutional learning platform support
- Institutional Teaching and Learning Technology Center

A budget model that compensates faculty on an adjunct overload basis with the majority of instructors coming from the on-campus full-time faculty ranks allow for a cost effective instructional budget model while assuring high-level instructional quality. Leveraging key institutional educational resources such as the 24/7 Help Desk, using the institutional-wide learning platform with attendant support and access to the Seton Hall University Teaching and Learning Technology Center for course development support add

immeasurably to the cost effectiveness of SetonWorldWide online course delivery. This, in turn, guarantees ongoing sustainability and investment for future growth.

C. Access

SetonWorldWide provides access to all qualified, motivated students to complete courses and programs with access throughout the student's life cycle. Access starts with a search engine optimized dedicated SetonWorldWide web site that provides information on discipline and program online course options, dedicated program administrators that provide information and personally facilitate admission, and post-admission academic, administrative, and technological assistance. Learning resources such as academic advising, remote library access and learning platform tutorials provide students with support throughout their academic life-cycle. Access elements include:

- Search engine optimized web site
- Brand name
- Academic advising with program Academic Director and faculty
- Program administrator serving as admissions gateway and as liaison with bursar, financial aid and registration
- Technological Support though 24/7 Help Desk
- Remote library access and dedicated online learner reference librarian
- Learning Platform online tutorials

With the majority of inquiries coming through search engines, seamless access starts with a search engine optimized easily accessible and informative web site that describes programs, curricula, format, and other vital information so students can make an informed decision about learning need fit. Administrators assigned to each program convey students through the admission process and remain as a resource for the individual student throughout her/his student life cycle assisting them with administrative and academic matters. Institutional support by way of remote access to the library and an online learner reference librarian and technological support with a 24/7 Help Desk and learning platform tutorials provide students with access to learner support resources. Post course student surveys indicate that access to a full-time dedicated administrator, technological support and online information retrieval through remote access to the library contribute to student persistence in course completion.

D. Faculty Satisfaction

SetonWorldWide endeavors to provide instructors with an online teaching experience that is personally rewarding and professional beneficial. Most notable are opportunities to teach students who represent a broad geographic and professional spectrum. The SetonWorldWide student population is comprised of approximately 70% beyond the New Jersey/New York metropolitan area. Student profiles while showing a general homogeneity in age and career status (mid-career professionals), indicate backgrounds and experience that vary widely among programs and courses. Institutional factors that contribute to SetonWorldWide instructor satisfaction are technical, quality assurance, administrative and financial support in a collaborative environment. The established student/faculty ratio of 10:1 common to all SetonWorldWide courses provide an institutional acknowledgement that delivering high quality online education to adult professional learners is highly labor intensive. Faculty satisfaction elements include:

- Geographically dispersed student population
- Course authorship institutional assistance using the Quality Matters Rubric
- Day-to-day operational assistance by Program Administrator

- 10:1 student/faculty ratio in all courses
- Institutional financial support
    - Course authorship stipend
    - Royalty arrangement for new course development
    - Funding for Online Teaching Certification
    - Funding for conference attendance and paper presentations
- Academic Director from home department assigned to each online program
- University program review of online programs

Composition of the student population with the tendency toward relationship building in a cohort student grouping structure, an institutional commitment to quality assurance, technological, administrative and financial support and academic oversight by discipline and department contribute to faculty satisfaction. Combined with the emphasis on teaching presence and the established student/faculty ratio on all online courses is the recognition that online instruction matters at Seton Hall.

E. Student Satisfaction

SetonWorldWide views the effectiveness of the student's educational experience as a primary factor in student success. This educational experience includes aspects of course content and quality, teaching presence, and academic-student services-technology support delivered in a timely, responsive and personalized manner. An analysis of results from student and alumni surveys and of testimonials place levels of high satisfaction the responsive nature of instructors and administrators, a focus on interaction and team learning, and an academic environment that is supportive, rigorous, relevant and challenging. Those elements that lead to learning effectiveness, access, cost-effectiveness, and faculty satisfaction all apply to student satisfaction. Student satisfaction elements include:

- 10:1 student/faculty ratio
- SWW Teaching Presence Best Practices (Appendix B)
- SWW Teaching Presence Expectations (Appendix C)
- Full-time program administrators
- Academic Director and instructional teams comprised predominantly of full-time on-campus faculty
- 24-7 Help Desk
- Cohort student grouping and similar mid-career status

Given the importance of interaction and team learning in SetonWorldWide courses, student composition plays a key role in the group dynamics of SWW courses The target student market for SetonWorldWide programs are those individuals whose professional career stage reflects mid-career status rather than early-career or pre-career status.

The SetonWorldWide online learning environment is characterized by strong teaching presence. The stronger the teaching presence, the stronger students' sense of learning community – there is recognition that a close-knit learning community is an essential component in a high-quality online learning environment. There are a number of teaching presence expectations required of all instructors who teach in the SetonWorldWide online programs.

VI. CONCLUSION

This case study draws upon strategies used in the online campus of Seton Hall University that have led to a 93% course completion rates in its online courses. Presented in the context of the Sloan-C Pillars of learning effectiveness, access, cost-effectiveness, faculty satisfaction, and student satisfaction, certain conclusions regarding methods and services can be reached that help in student success.

VII. ABOUT THE AUTHOR

Philip DiSalvio serves as Assistant Provost and Director of SetonWorldWide, the online campus of Seton Hall University. He holds an Ed.D. from Harvard University Graduate School of Education in Administration, Planning and Social Policy.

Dr. DiSalvio serves on the Sloan Consortium (Sloan-C) Online and Blended Teaching Oversight Board and is a recipient of the *Excellence in Online Administration Award* in recognition by the Center for Internet Technology in Education and eCollege. This award is given to individuals who are seen as visionary in the development and management of successful online education.

VIII. APPENDIX A: SETONWORLDWIDE STRATEGIES AND THE SLOAN FIVE PILLARS

	LEARNING EFFECTIVE-NESS	SCALE	ACCESS	FACULTY SATISFACTION	STUDENT SATISFACTION
STUDENT POPULATION	Mid-career professionals		Search engine optimized web site Brand name	Geographically dispersed student population	Cohort learning team and mid-career status
COURSE DESIGN	Quality Matters Rubric	24/7 Help Desk Institutional platform support		Primary and secondary instructors 10:1 student /faculty ratio	Asynchronous “any-time any-place” learning
PROGRAM ADMINISTRA-TION SUPPORT	Advising support		Full-time program administrator as admissions gateway	Full-time program administrator for day-to-day operations	Full-time program administrators as liaison with bursar, registration, financial aide
FACULTY DEPLOYMENT		Compensation model Full-time faculty Commitment to student /faculty ratio		Authorship assistance Funding for: - authorship - royalties - certification - conferences	10:1 student /faculty ratio Full-time faculty from on-campus department
ACADEMIC	Primary-Secondary		Academic Director	Ongoing program reviews and	Academic

SUPPORT	Instructors		oversight and advising	continuous quality improvement	Director oversight and advising
STUDENT GROUPING	Cohort learning team On-campus residency		Cohort learning team collaboration and support	Student relationship building	Cohort learning team support On-campus residency bonding
COURSE FORMAT	Teaching presence Intense interaction Asynchronous/ Synchronous		Asynchronous Synchronous learning	Emphasis on teaching presence Asynchronous Synchronous	SWW Best Practices SWW Teaching Presence Expectations
NON-ACADEMIC STUDENT SUPPORT	Program Administrators liaisons with bursar, registration and financial aid		24-7 HelpDesk Online library access & reference librarian Online platform tutorials		24-7 Help Desk Online library access & reference librarian Online platform tutorials

IX. APPENDIX B: SETONWORLDWIDE TEACHING PRESENCE BEST PRACTICES

TEACHING RESPONSIBILITY	EXPECTATIONS OF PRESENCE
Strategies to maintain teaching presence in threaded discussions	See SetonWorldWide "Teaching Expectations for Threaded Discussions"
Instructional expectations to maintain teaching presence in threaded discussion	See SetonWorldWide "Teaching Expectations for Threaded Discussions"
Frequency of direct faculty presence in threaded discussion	At least daily and more if required
Feedback time-frame for student written assignments	Within 5 week-days *(e.g. if the assignment is due on Monday, faculty feedback should be provided no later than Friday of that week)*
Response time-frame for student email, telephone calls and student inquiries and questions	Within 24 hours. If unable to respond within this time period, a confirmation of the communication must be provided to the student as to when they may expect to hear from faculty
Student grading time-frame	Grades to be posted within one week of the assignment due date
Deadlines for assignments and consequences of late submissions	Deadlines for assignments and consequences of late submissions must be clearly stated in course

X. APPENDIX C: SETONWORLDWIDE TEACHING PRESENCE EXPECTATIONS FOR THREADED DISCUSSIONS*

The SetonWorldWide online learning environment is characterized by strong teaching presence. The stronger the teaching presence, the stronger students' sense of learning community—a close-knit learning community is an essential component in a high-quality online learning environment. There are a number of teaching presence expectations required of all instructors who teach in the SetonWorldWide online programs.

Teaching Presence Expectations in Threaded Discussions

1. **Identifying areas of agreement and disagreement**
   (*identify areas of agreement and disagreement in the threaded discussion*)

2. **Seeking to reach consensus and understanding**
   (*guide the class towards agreement/understanding in the threaded discussion*)

3. **Encouraging, acknowledging, and reinforcing student contributions**
   (acknowledge student participation in the threaded discussion – e.g. reply in a positive, encouraging manner to student submissions)

4. **Setting the climate for learning**
   (encourage students to explore concepts in the threaded discussion - e.g., encourage "thinking out loud" or the exploration of new ideas)

5. **Drawing in participants and prompting discussion**
   (keep students engaged and participating in productive dialog in the threaded discussion)

6. **Assessing the efficacy of the process**
   (*keep students on task in the threaded discussion*)

Instructor Responsibilities for Teaching Presence in Threaded Discussions

1. Presenting content and questions
2. Focusing the discussion on specific issues
3. Summarizing discussion
4. Confirming understanding
5. Diagnosing misperceptions
6. Injecting knowledge from diverse sources

*Adapted from:

"The Seven Principles of Good Practice in Undergraduate Education, "Chickering and Gamson, 1987

"Assessing Teaching Presence in a Computer Conferencing Context," Anderson, et al. JALN, 2001

"Follow-up Investigation of 'Teaching Presence' in SUNY Learning Network," Shea, Pickett, Pelz, JALN, 2003

ROCHESTER INSTITUTE OF TECHNOLOGY: ANALYZING STUDENT SUCCESS

Richard Fasse
Joeann Humbert
Raychel Rappold
RIT Online Learning

ABSTRACT

RIT Online Learning courses have an overall course completion rate of 94%. For lower-division courses the rate is 92%, undergraduate 93%, and graduate 96%. In this case study we will share additional measurements we have used to monitor student success and describe strategies we have used to promote online discussion as a key component of effective online courses. We will share results from a large survey of our online students that shows the most interactive courses receive the most positive responses from students. The demographics of our online students have shifted to where almost half our online students are campus-based now. We believe our historical emphasis on interaction in our online courses is serving these new online students equally well, which suggests an important opportunity exists to expand online discussion to more campus-based courses.

KEYWORDS

Interaction, Retention, Student Success, Course Completion

I. INTRODUCTION

RIT has an excellent program in online learning offering 51 online programs including 16 Master Degrees, 12 Graduate Certificates, 4 Bachelors of Science programs, and 17 Undergraduate Certificates. We have been involved with online learning for almost 30 years now and were pioneers in the development of effective asynchronous "anywhere, anytime" distance learning format courses. We have always believed our online programs were excellent and since 2002 when we launched the first campus-wide course management system we have been transferring our lessons learned in online to the campus classes with Blended Learning initiatives and widespread promotion of our course management system. Our course management system is integrated with the Registrar system so all courses have access to a course presence online, and we now have faculty in 57% of all courses voluntarily using at least one of the online features. In this report we share our insights aspects of our online program that we believe contribute most to our students' success.

II. INSTITUTIONAL MISSION, CONTEXT AND DEMOGRAPHICS

RIT has been offering online courses for almost 30 years, beginning with use of local cable TV to broadcast lectures in 1979 then adding online discussion in 1987, degree completion programs in 1991, and course management systems (CMS) in 1996.

RIT Online Learning Mission Statement

> Online Learning supports the academic mission of RIT by helping faculty find innovative and effective ways to use technology and by providing comprehensive support services for students in online courses and programs.
>
> Drawing on expertise in both technology and pedagogy, Online Learning staff assists faculty with all aspects of course design, helps colleges and departments in online program development, examines the effect of technology on teaching and learning, and shares information across the institute about effective practices.
>
> We believe instructional technology can contribute to RIT's academic excellence by fostering greater interaction and collaboration, encouraging active learning strategies, increasing student engagement with course materials, streamlining course administration, and developing students' skills for future learning and work.

RIT Online Learning is a service unit to the Academic Departments and as such is not directly involved with curriculum development or faculty hiring and evaluation. Our influence in course design is based on individual consultations with online faculty, offering a 3-week online course for new online faculty, and sharing our research and project results on effective practices through workshops, presentations, and online documentation.

The National Technical Institute for the Deaf (NTID) population has had a unique and substantial influence on the online program at RIT. There is a strong commitment from our institution to support deaf and hard-of-hearing (deaf/HH) students that goes beyond the ADA Compliance. A significant challenge for us has been to develop courses that are accessible to deaf/HH students. The cost and time constraints of captioning media production has perhaps disproportionately promoted asynchronous text based discussion and collaboration as a primary educational practice in our programs. Our research has shown that all students, but especially the deaf/HH, benefit from increases in this type of interaction. As a consequence, less than half of our courses have audio-based media associated with them. We believe this reflects an appropriate cost/benefit approach to our recommended course design activities.

The RIT Online Learning programs (http://www.rit.edu/emcs/ptgrad/online/) have broad appeal. We support courses in Croatia, Kosovo, Dubai, Dominic Republic, and several corporate affiliates, and in 2007/2008 we had students in our program from all but one of the 50 states. Last academic year 4,769 unique students (26% of all RIT students in 2007/08) enrolled in at least one of the 587 online course offerings and generated 9,121 total enrollments for our institute (5% of all RIT enrollments).

RIT STUDENT BODY	FALL 2008/09	ONLINE STUDENT BODY	AY 2007/08
Total Students	16,494	Total Students	4,769
Undergraduate	13,861	Undergraduate	3,366
Graduate	2,633	Graduate	1,161
Male	10,910	Male	2,832
Female	5,584	Female	1,851
NTID	1,310*	NTID	192
Total Enrollments		Total Enrollments	9,121
Lower Division		Lower Division	3,639
Undergraduate		Undergraduate	6,417
Graduate		Graduate	2,7,04

**451 are mainstreamed and taking RIT courses*

Figure 1 [1]

Although our online programs were originally restricted to students who could not otherwise come to campus, most of those restrictions were lifted after 1998 when part-time enrollments declined as a result of a local economic downturn. The excess capacity in online learning became more readily available to campus students and now 58% of our online students are campus based and represent 48% of all online enrollments.

III. STUDENT SUCCESS AS AN INSTITUTION-WIDE PRIORITY

Jeremy Haefner, Ph.D. Provost and Senior Vice President for Academic Affairs has redefined one of the Assistant Provosts positions as Assistant Provost for Student Success. This position is responsible for, among other responsibilities, researching and evaluating all retention efforts at the institute. Retention initiatives now have higher priority and visibility throughout the institute than ever before.

Online Learning, through our research in blended and fully online courses as well as information we glean from our course management system (CMS) actively contributes to the campus discussions on retention. In 2007/2008, while investigating the growing enrollments of campus students in online course we discovered a remarkable correlation in the campus-based subset of online students that now comprise 58% of our online students. We found a 24.5-point increase in graduation rates among the freshmen class of 2001 after 6 years if they took at least one online course during their stay at RIT. For the freshmen class of 2001, 756 students had 1 or more online courses and graduated at 79.2% rate, 1,289 of that same class had no online course and graduated at a 54.8% rate. Further investigation has confirmed this relationship with subsequent freshmen classes and year-to-year retention rates remain consistently better as well.

Although it may be a simple correlation that successful students are attracted to the novelty of an online course, it could also be that the added flexibility of online courses contributes to student success when they are as busy and overloaded as the faculty are. The 2008 NSSE report showed that online courses related positively to active and collaborative learning and suggested that online settings "may offer more opportunities for collaboration" than a campus course [2]. We also have some evidence that taking a blended or fully online course can have a transformative effect on students. Further research on the effect of online courses with campus students is in progress. This short video-clip describes how one of our deaf campus students found great success in a blended course that used asynchronous text discussion to support team projects [3].

For further information about how our asynchronous text discussion strategies benefit deaf/HH students, please take a moment to read this short article by our colleague Michael Starenko [4].

IV. RIT'S DEFINITION OF "SUCCESS"

The Institutional Research group at RIT does not report on course completion rates per se, nor does the Office of the Registrar. They do report on DFW (Grade D, Grade F, or Withdrawal) as a measure of course failure and hence success. Online Learning reports on course completion rates for our online courses and the metric is based simply on the student's enrollment status at the end of the course. Students that enrolled and did not withdraw are counted as completed although some of them will have received D and F grades.

For this report we have further analyzed our online learning enrollment data to provide 4 ways to view student success and completion rates. We have requested campus and online DWF rates from our Institutional Research group and will update this report if we are given permission to include those rates for publication.

Although it is not shown in this table, there has been an increase in course withdrawals across all courses since a 2007 change in the policy extended the deadline for withdrawal from week 6 to week 8 of our 10-week quarter. In Online Learning the number of withdrawals jumped from 5.2% to 8.6% of enrollments in the first year of the new policy. This reinforces the points made in the 2008 NSSE report about the risks of focusing on institutional differences. A simple policy change can have dramatic effects on the statistics while the underlying courses are unchanged.

RIT Online Learning Course Completion Rates
AY 2005/06 - AY 2007/08

ALL ONLINE COURSES (100-800 course levels)			**GRADUATE ONLINE COURSES** (700-800 course levels)		
Completion Rate:	No 'W'	94%	Completion Rate:	No 'W'	96%
Enrolled Completion Rate:	A - F	92%	Enrolled Completion Rate:	A - F	94%
Successful Completion Rate:	A - D	88%	Successful Completion Rate:	A - D	92%
More Successful Completion Rate:	A - C	85%	More Successful Completion Rate:	A - C	92%
UNDERGRADUATE ONLINE COURSES (100-600 course levels)			**LOWER DIVISION ONLINE COURSES** (100-300 course levels)		
Completion Rate:	No 'W'	93%	Completion Rate:	No 'W'	92%
Enrolled Completion Rate:	A - F	91%	Enrolled Completion Rate:	A - F	90%
Successful Completion Rate:	A - D	86%	Successful Completion Rate:	A - D	85%
More Successful Completion Rate:	A - C	83%	More Successful Completion Rate:	A - C	81%

Figure 2

V. RIT STRATEGIC FRAMEWORK FOR STUDENT SUCCESS

A. Learning Effectiveness

RIT has been part of the Sloan Consortium since its inception, and Online Learning staff have participated actively in many of their activities. Our staff have attended and presented at nearly every Sloan ALN and Online Learning conference. RIT Online Learning has always embraced asynchronous learning and asynchronous text discussion as primary strategies for providing the anywhere, anytime learning opportunities we believe are important to the majority of our online students. We do have programs that are now using synchronous delivery, primarily in a hybrid format of live lecture on campus that is webcast to distant online students, but they do not represent a significant number of enrollments yet. At our core, we have promoted asynchronous text discussion as our primary strategy for engaging students in the classroom, promoting reflective thinking, supporting collaborative learning projects, providing access to the instructor and other students. Our emphasis on interaction relates directly to the NSSE benchmark on Active and Collaborative Learning, Student-Faculty Interaction, and Enriching Educational Experiences. Our commitment to providing comparable services to online learners that their campus counterparts receive relates well to the NSSE benchmark on Supportive Campus Environment. Following are details on how our approach relates to these benchmarks.

RIT Online Learning has embraced online interaction as a cornerstone of course quality since the VAX Notes bulletin board system became available to our faculty in 1987. Fortunately, the early pioneering faculty in online learning instinctively understood the potential for greater interaction in their online courses and pursued the development of new online discussion strategies and online team projects. Their best practices informed us during the rapid development of new courses and programs throughout the 1990's and especially when we migrated to course management systems with even more powerful and easy to use asynchronous discussion tools.

Our second course management system, Prometheus, supported data mining information on the amount of page hits occurring in each course and we derived a metric from that to identify the "most active" courses in our suite of online courses. Those faculty associated with the most active courses were already recognized by our instructional designers as exemplars and pioneers in our program so we instituted a low-stakes faculty recognition program called the "Heavy Hitters" to announce the top faculty each quarter. Our current course management system, Desire2Learn, further allowed us to data mine information about our courses and the "Heavy Hitters" metric now includes all messages posted in the online discussion area, news announcements from the instructor, comments left in the grade book and drop box by the instructor, as well as calendar announcements by the instructor. The largest component of the metric is the online discussion. The metric doesn't include any data about synchronous interaction or email and that is a flaw we would like to address but capturing and measuring that additional data has been problematic. Each quarter we rank all courses at RIT with this metric and post the Top 50 faculty in a News announcement on the course management system and in our Newsletters and web site [5].

Although there is a concern about the "panopticon" effect of data mining and reporting this information at the course level, focusing on only the "Top 50" has proven to be surprisingly successful. Faculty report that they appreciate knowing where they stand on this metric and that their efforts are recognized. When we announce the "Heavy Hitters" each quarter we also take great care to point out that courses on the list are not necessarily excellent courses, but we do notice that most of the names are faculty we have trained, attend our workshops, and are considered among our best faculty by our instructional designers. A few of our presumed excellent faculty have criticized the metric for not recognizing courses that may be excellent but have very little quantity of interaction. One example of these non-listed courses is a very large enrollment online course delivered to Kosovo where our traditional strategies for engaging students in online interaction and working in teams online would be difficult to implement due to cultural differences. Nevertheless, the instructor is well prepared, the course is well designed, but the students spend most of their time interacting with the content individually.

As suggested by the 2008 NSSE report, in 2006/2007 we used the Heavy Hitters metric to investigate the variation within our own online courses. We used the metric to rank order all our online courses and then administered 4 separate but identical surveys to students in each quartile of the ranked courses. The survey included questions about perceptions of learning, perceptions of interaction, as compared to a typical campus course. We were pleasantly surprised to see a strong relationship showing higher levels of interaction related positively to higher levels of positive responses to the survey questions. In 2007/2008 we expanded the project to fall, winter, and spring quarters and made some adjustments in the questions. This data has not been published but has been presented at several conferences.

For fall, winter, and spring quarter of the academic year 2007/2008 the 450 course offerings in online learning were ranked by the interaction metric and then separated into 4 quartiles. This information was data mined from the CMS at mid-quarter so there would be sufficient time to administer a student survey by the end of the quarter. From this data we summarized the following statistics:

2007/08 Online Course Interaction Survey

Quartile	Weekly Average "Postings" per person	% Courses Using Groups	Average CMS Features Used
Q1	9.30	62%	7.17
Q2	4.21	38%	6.51
Q3	2.00	19%	5.89
Q4	0.40	10%	3.87

Figure 3

Obviously the top quartile, Q1, had more frequent "postings" than the other quartiles and the quantity amounted to slightly over 1 per day per person. The top quartile was also much more likely to use the "Groups" feature for small group online discussion and team projects in our CMS and used more of the features built into the course management system.

We then administered 4 versions of the same survey to students in each quartile and cross-tabulated the results to see how student perceptions varied by quartile and volume of interaction. We received a total of 1,237 student responses in the three quarterly surveys. The results were consistent with the previous year's first exploratory survey. Here are several of the questions with the percent of Agree and Strongly Agree responses:

2007/08 Online Course Interaction Survey

(Agree/Strongly Agree responses)

"I learned more from other students than I do in most courses."
Q1 = 59% Q2 = 51% Q3 = 36% Q4 = 22%

"The online interactions I had with other students helped me learn more about the course content."
Q1 = 70% Q2 = 66% Q3 = 54% Q4 = 31%

"My ability to communicate my ideas improved because of the online interaction in this course."
Q1 = 69% Q2 = 59% Q3 = 47% Q4 = 36%

"I was able to express my ideas more clearly because of the online interactions."
Q1 = 67% Q2 = 58% Q3 = 55% Q4 = 36%

Figure 4

The fact that some students responded favorably in even the least interactive courses suggests that in some cases the course management system metric misses other important types of interaction such as email, phone, and web conferencing. And the fact that in the most interactive courses there were some students who did not respond favorably suggests that quantity and type of interaction in some courses may interfere with learning.

This data is still being analyzed. A small proportion of these students are deaf/HH and we are working with NTID researchers to better understand the unique perspectives of these students to interaction in online courses. Although the numbers are small, the deaf/HH and students responses suggest they are even more favorable to higher levels of interaction than hearing students. The asynchronous text discussion levels their playing field and lets them participate more fully than typical interpreter supported classroom sessions.

In order to continuously improve our courses for learner effectiveness, the Online Learning Instructional Design/Technology staff regularly review and critique the online courses. This is also an important part of our Annual Awards process when the best courses are selected for recognition and the Online Learning staff assists the selection committees by screening and then touring the top courses. These investigations have led us to create a Model Course that faculty and their support staff can copy as a starting point for a well-designed online course. Boilerplate and placeholders guide new instructors through a series of effective practices as they prepare their courses. This project was also documented on the vendor's site and highlighted as an effective practice in their newsletter to all users.

B. Scale

There is a range of course designs across the online programs we have helped develop and support. The most expensive options involve any form of audio since that must be transcribed or captioned in addition to any of the other production costs. Since many of our courses are offered just once a year and the average class size is 14 in spring quarter 2008/2009, the course may need to be updated after 3 or 4 years when less than 100 students actually used the media. So we are cautious about production costs and wherever possible try to get faculty to rethink their online courses to include more reflective discussion and more team and group projects. One of our sayings is "The content is in the bookstore, the action is in the interaction." We have been very successful in promoting this format, nevertheless many faculty and possibly certain courses do require videotaped or webcast lectures and we accommodate them.

We developed an Essentials of Online Teaching course for new online faculty in anticipation of a surge in new faculty in one of our colleges. The surge did not materialize, but we have run the course 5 times now and about 50 faculty have experienced it so far. In the event there is a resurgence of interest in distance learning we can accommodate considerably more courses and faculty if the media demand is managed.

Our biggest growth potential, frankly, is in blended and web enhanced courses. About 10% of our campus-based courses are using online discussion and we believe every course could benefit from some outside of class interaction, especially in support of team and group work. Our experienced online faculty tend to incorporate these features more naturally into their campus courses. But there is a large majority of faculty who do not attend our workshops or other events that promote effective online practices and the challenge is how to engage those faculty more effectively. Right now we believe that anything that helps faculty be more productive (save time) is the best hook to grow interest in online learning. Unfortunately, the learning curve is just large enough to inhibit many faculty from incorporating online discussion and other online components to their campus courses.

C. Access

RIT Online Learning offers over 160 fully online courses each quarter in support of the over 50 graduate and undergraduate degrees and certificates we offer. In addition to the "traditional" fully online courses we offer, we have programs at international sites in Kosovo, Croatia, Santo Domingo, and Dubai that rely heavily on our online learning services for infrastructure support.

Some Online Learning courses at RIT have restrictions to students matriculated into an online program to ensure "seats" are available to those who need the online format most. This restriction, if it is used, is lifted just before the beginning of classes so unfilled "seats" are made available to campus students. We had a 13% growth in campus-based enrollments and unique students taking online courses in 2007/2008 over the previous year.

Once students are enrolled in an online course they are automatically enrolled in the Student Community course shell located in our course management system. This Student Community provides all the necessary information they need to prepare for and begin their online learning experience. This approach provides our online students with one place to access their courses and all the relevant support services. The approach of using the course management system as a vector for student orientation has proven successful for us and has been highlighted and presented at our vendor's annual users meeting.

Similarly, the Online Writing Lab is located within our course management system and provides convenient access for students to submit drafts of papers for review and tutoring. On campus students have a walk in center for this support but distant students cannot take advantage of that campus service. The same tutors that support the on-campus lab provide online support. More information about this service is available in an article our colleague Marybeth Koon had published in our vendor's newsletter where it was recently highlighted as an effective practice [6].

The RIT Library has partnered with Online Learning since the beginning to insure distant students could receive the same benefits as their campus counterparts. The library's online databases and electronic reserves have provided convenient access to students anywhere, anytime. Our interlibrary loan service is free to online students. One of the reference librarians is dedicated to supporting online learning faculty and students, as well as providing great support to Online Learning staff. The library technical staff collaborated with our technical staff to develop a link for the top of every course shell in the CMS that directly connects students with specific information about course reserves, discipline based online databases, and contact information or the reference librarian assigned to the discipline.

All media created for Online Learning is transcribed and captioned and that has proven to benefit all students. Hearing and deaf/HH students can use the searchable transcript feature built into our media to use keywords to jump through a lecture to specific points for review. Information and files to support this approach are available for free from our web site [7].

We promote collaborative learning as much or more than any other academic support unit and recognize it is sometimes hard for faculty manage the teams and groups effectively. As part of a senior student software engineering team project we developed an online peer evaluation system that is integrated into our course management system. The convenience of the tool permits faculty to use it for formative evaluations in the middle of a team project while they can still intervene and possibly correct any group dysfunction. It can also be used as a summative evaluation at the end of the project and since it uses the group structures the faculty have already built into the course management system for their class, it is much easier to administer than any other form of feedback [8].

The old style paper course evaluations were not effective in online learning courses. The response rates were typically less than 30% compared to almost 100% in campus classrooms. We developed our own Online Course Evaluation system so online students could more easily complete a course evaluation. The current overall response rate is 52%, but much higher in cases where the instructor promotes the completion of evaluations. The biggest advantage of online evaluations now is the quick summaries and turnaround back to the instructor. The old style paper course evaluations took weeks to summarize and return to faculty and department chairs. The tool has become so useful that it is now used by many on-campus departments and courses [9].

D. Faculty Satisfaction

The RIT Online Learning faculty still includes pioneers from the early days of the VAX Notes bulletin board system used for course interaction. These faculty and some of the newer faculty have been disproportionately more likely to be one of the campus outstanding teacher award winners. In order to recognize these achievements, all faculty who have won a campus or online outstanding teaching award have a banner placed in their course by our staff so their students are aware of the opportunity they have to participate in an outstanding class. The tone set by these outstanding faculty pervades through our workshops and web resources as we glean effective practices and disseminate them across campus.

In the spring of 2007 we administered a faculty satisfaction survey to all online faculty in order to better understand their motivations for teaching online. Peter Shea, from the University of Albany, State University of New York, helped with the study that was based on research he had done with several other schools that was funded by the Alfred P. Sloan Foundation. There were 116 responses from 300 faculty and the general results suggested strong satisfaction about teaching online. See figure 5 for some of the response summaries. A summary of the final report is available on our website. [11]

Faculty Satisfaction Survey: RIT Faculty

This factor increased their desire to teach online:

80% - Overall satisfaction in teaching their course

75% - Willingness to teach additional courses in the future

70% - Overall satisfaction with teaching online

This factor increased their desire to teach online:

Access

80% - Reaching students with varying learning experiences

74% - Reaching students from different geographical locations

70% - Reaching students with different cultural backgrounds

74% - Students' demand for online courses

72% - Online students' strong motivation to succeed

Flexibility

76% - Having more flexibility in work schedule

66% - Having flexibility to accommodate life needs

Faculty learning

79% - Opportunity to experiment w/ new pedagogical approaches

71% - Opportunity to try alternative means of assessment

72% - Opportunity to learn new technology

Figure 5

Another perspective on our online faculty comes from our annual 2007/08 Online Learning Student survey. It includes one question that directly asks about faculty:

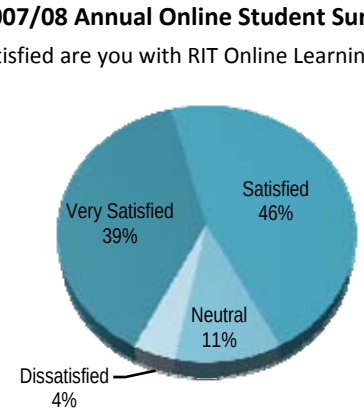

Figure 6

E. Student Satisfaction

Although the Online Learning department administers the Online Course Evaluation system, we do not have access to the student responses or aggregated summaries. Our perceptions of student satisfaction are informed by anecdotal comments we read in the Student Community areas, phone and email comments to our Support Services desk, and regular surveys of student satisfaction with our services (not directly about specific course experiences). Based on the anecdotal evidence we have long believed that our best courses are better than campus courses, and that most students reporting unsatisfactory course experiences would likely have unsatisfactory experiences in the same course with the same instructor on campus.

The worst student experiences relate to instructors who have minimal presence in the online classroom, followed by slow turnaround on questions and assignments. There is no mystery why teacher presence is an important component of online courses; the mystery is why some faculty are withdrawn online.
Our most recent research project should provide even more evidence how important teacher presence is for online courses. In spring quarter 2008/2009 we collaborated with Dr. Peter Shea at SUNY Albany to administer the Community of Inquiry survey to all our online learning students. The Community of Inquiry model provides a framework for analysis of online interaction as a key component of the educational experience. We administered the survey so that we can compare results between courses based on their quantitative levels of interaction. The survey is being analyzed now and the results will be available in fall 2009 [12].

There have also been in the past occasional complaints about courses that were not well organized, but the Model Course, Essentials Course, and other interventions by our instructional designers has reduced those complaints. The only other clue we have to student satisfaction with the course experience is the dramatic growth in demand from campus students for the fully online format.

With respect to the services we provide our students, we have regularly administered student satisfaction surveys since the early 1990's. These surveys were originally on paper so in 1996 we developed a web based survey system that greatly improved participation and provided very quick turnaround for analysis of trends and issues that could influence our operations the very next quarter. We now administer an annual student survey for all online students and a quarterly new student survey to capture the experiences of our first-time students. These surveys have consistently shown a high level of satisfaction with our services. Below are some questions from the last two surveys that summarize the overall student perception of our online learning programs. The improvements from 2006/07 to 2007/08 can be attributed to the change in demographics (more campus based students), the introduction of the Essentials

of Online Teaching for new online faculty, expanded use of the Model Course as a faculty time-saver that has effective practices embedded, and possibly to the continual emphasis on interaction through the Heavy Hitter low-stakes faculty recognition program. However, the low response rate (4%) and N of 138 in 2007/08 survey reduces our confidence in the survey results.

VI. CONCLUSION

RIT Online Learning tries to provide everything an online student needs to be successful. We have adapted to changing demographics and fast changing technology to give our students the best experiences we have control over. We look forward to even better tools to support online learning, but won't lose site of the important role simple asynchronous text messages plays in promoting and supporting student interactions which we believe are at the core of effective instruction.

VII. ABOUT THE AUTHORS

Dr. Richard Fasse collaborates on new technology initiatives, researches the role of interaction in online courses, and strives to continuously improve the quality in the 150+ online courses offered each quarter. His education includes a BS in Business and Computer Science (University of Kansas), an MBA in Information Systems (Penn State), and an Ed.D. in Curriculum and Instruction (University of Rochester).

Joeann Humbert is the Director of Online Learning at the Rochester Institute of Technology. She manages all facets of Online Learning: faculty development, course design and development, online student support and the investigation and application of emerging technologies for teaching. In 2008 her Online Learning group received the New Media Consortium's "Center of Excellence Award" recognizing demonstrated excellence and outstanding achievement in the application of technology to learning. In 2009, Joeann received the "Noflett Williams Service to the Field Award" from the National University Telecommunications Network (NUTN) in recognition of her service to the field. Joeann is a member of the Institute's Provost's Learning Innovations Grant Committee. Joeann holds a B.A. in English Literature from Villa Maria College and an M.S. in Instructional Technology from Rochester Institute of Technology.

Raychel Rappold is Online Learning's Information Control Analyst, at Rochester Institute of Technology. Raychel has over ten years of experience at Online Learning with student and faculty services. In her current position she oversees the collection and analysis of Online Learning data. She produces reports that assist management with diverse issues such as top-level strategy, planning, forecasting, and resource allocation. Raychel also creates and maintains print and web communications. Raychel graduated from RIT's College of Applied Science & Technology with a B.S., comprised of a dual concentration in Business Management and Social Welfare, and a minor in Psychology.

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UNIVERSITY OF CINCINNATI: CASE STUDY OF ONLINE STUDENT SUCCESS

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ABSTRACT

The University of Cincinnati (UC) is a premier, public, urban research university dedicated to undergraduate, graduate, and professional education, experience-based learning, and research. The University also maintains a deep commitment to accessible education. Distance learning is an integral part of the University's 21st century approach to meeting diverse educational needs of students - increasing access to high quality educational programs and offerings and meeting mounting workforce and student demands and expectations for customized curriculum, flexible delivery and use of 21st century technology.

UC has entire degree programs available online, as well as a variety of stand-alone distance learning courses, such as General Education courses. These courses are offered quarterly to serve students in distance learning programs, as well as students in on campus programs.

In a recent review UC students matriculated in online undergraduate degree programs (two associate and five baccalaureate degrees) taking 100 and 200 level courses during Autumn quarter 2008, it was noted that 85.15% of these learners successfully completed courses with a grade of C- or better for each course. The strategic framework of success is grounded in the University's academic strategic plan and commitment to provide quality learning experiences for all students. Noted are examples of strategies that align with Sloan-C Pillars of Success.

KEYWORDS

Student Success, Course Completion, Retention, Five Pillars

I. INTRODUCTION

The University of Cincinnati (UC) is a premier, public, urban research university dedicated to undergraduate, graduate, and professional education, experience-based learning, and research. Its strong commitment to excellence and diversity is seen in its students, faculty, staff, and all its activities. Within an inclusive environment, innovation and freedom of intellectual inquiry flourish. Through scholarship, service, partnerships, and leadership, the institution creates opportunity, develops educated and engaged citizens, enhances the economy and enriches the University, city, state and global community.

UC has achieved distinction through its nationally ranked programs, including the nation's top ten architecture, criminal justice, medicine, interior design, music and science programs. In addition to distinguished scholarship and research, the University maintains a deep commitment to accessible education.

The University's academic strategic plan, UC|21: Defining the new Urban Research University (http://www.uc.edu/uc21) reflects the University's role as a leader in the 21st Century. Distance learning is an integral part of the University's 21st century approach to meeting diverse educational needs of students - increasing access to high quality educational programs and offerings and meeting mounting workforce and student demands and expectations for customized curriculum, flexible delivery and use of 21st century technology.

II. INSTITUTIONAL COMMITMENT TO DISTANCE LEARNING

UC's first distance learning program began in 1984 with the Open Learning Fire Science program via correspondence format. Other early adopters of distance delivery formats included colleges serving non-traditional, adult learners via a range of telecourses that combined independent study, video broadcasts and videotape with periodic face-to-face meetings. In Spring 2000 the University offered its first complete online degree program, the Associate in Applied Science (AAS) in Early Childhood Education. Currently, UC offers 15 online degree programs spanning six UC colleges and includes two associate, five baccalaureate, seven master's, and one doctorate [PharmD].

Of the more than 37,000 students enrolled at the University of Cincinnati in autumn 2008, over 2,800 students were enrolled in online programs. The majority (87%) of these online students are part-time and female (78%) with an average age of 34.5. These students are from all 50 states and originate from more than 36 countries, with the highest number of international students reporting they are Canadian citizens.

In addition to these online degree programs, a variety of stand-alone online courses are offered on a quarterly basis, such as online General Education courses. These courses serve students in distance learning programs, as well as students in on campus programs.

III. ACADEMIC PERFORMANCE AND STUDENT SUCCESS

Many online programs at the University of Cincinnati boast high retention rates with some reporting higher rates than their on-campus counterparts. Students pursuing online degrees tend to perform well academically and successfully complete online courses at a high rate.

Data presented here were collected during autumn quarter 2008. Grades were evaluated from all students enrolled in 100-level and 200-level on campus and online courses to determine success rates for these undergraduate learners. To determine student success, only grades of C- or better were used. Students who withdrew without completing a course or received a grade of D, F, or Incomplete were not considered successful. For purposes of this report, data for students enrolled for Pass/Fail credit were not considered.

In a review of grade distribution in on-campus 100 and 200 level courses during autumn 2008 (83,155 grades), it was noted that 76.84% of learners successfully completed courses with a grade of C- or better. A higher level of success was noted among the 950 UC students matriculated in online undergraduate degree programs(two associate and five baccalaureate degrees) taking 100 and 200 level online courses during this same time period; 85.15% of these learners successfully completed courses.

There are various reasons for this high level of success among this group of online learners, including learner attributes and motivation. These students are often pursuing a degree which is related to their

current job and is necessary to retain their position, or move ahead on a pay scale. For example, the online associate's degree in Early Childhood Education serves Head Start teachers who are mandated by federal law to possess an associate's degree. In addition, the University's most recent student course evaluations as well as internal and external surveys reveal a number of educational practices that are contributing to student success. These are noted in the following discussion.

IV. STRATEGIC FRAMEWORK FOR SUCCESS

The design and implementation of all academic programs, distance learning and campus-based, is guided by UC|21, the University's strategic plan. Thus, students enrolled in online programs can expect a solid curriculum, faculty with expertise in the area of study, and services focused on providing the same level of support provided to students in campus-based programs, throughout their academic experience.

A number of strategies contribute to the success of UC's distance learning efforts. This includes a wide-ranging network, within and outside the University, that builds on institutional infrastructure—academic, technical, faculty and student support, and administrative. Notable are some examples of these strategies and their alignment with Sloan-C Pillars of Success.

A. Learning Effectiveness

The initiation of all distance learning courses and programs begin on the academic side of the institution. Faculty involved in each academic program give careful thought to curriculum and instructional design to ensure high quality learning experiences for students. This process includes an assessment of the instructional needs of learners and context (i.e., learner population, learner history, learning styles, and technical support and equipment.) Strategies support learning goals and objectives that are clear and performance-oriented and promote learner success through clearly communicated objectives, feedback, and assessment of learning. Design of materials is based on instructional strategy, content, media to support online education, and assessment for learner outcomes and evaluation of the instruction. Faculty members are involved in each academic program as the content and curriculum experts and, depending on their online experience, as instructional designers.

The Faculty Technology Resources Center (FTRC) http://ftrc.uc.edu provides expert instruction, support, and equipment access for the use of instructional technologies in teaching, including multimedia development tools and Blackboard training and support.

The Center for the Enhancement of Teaching and Learning (CET&L) http://www.uc.edu/cetl/ serves faculty and teaching assistants via a variety of programs to support effective teaching and learning. In collaboration with technology experts from FTRC and experienced UC educators, CET&L provides attendees with interactive (and often hands-on) experiences to learn new skills and ideas that can be implemented immediately in their course of instruction. Last year there were 1,293 registrants in 131 workshops pertaining to pedagogy (such as Inquiry-Guided Learning), and effective use of technology in education and distance learning (best practices for teaching online, Web 2.0 for educators, and others).

B. Scale

The University provides quality online programming where there are market opportunities that capitalize on the institution's academic/intellectual strengths, and efforts are congruent with enrollment management imperatives. Program planning includes various levels of review and/or endorsement

processes to ensure that offerings are consistent with the university's strategic plan and appropriately resourced. Thus, colleges and programs work collaboratively with university units to develop and offer high quality online learning opportunities, while at the same time ensuring program viability and cost efficiency. Strategies to maintain costs, while not affect quality, include leveraging internal and external resources and expertise.

- CET&L — workshops, peer consulting, pedagogy priorities, teaching/learning resources, etc.
- FTRC — teaching with technology, instructional resources, 24/7 Help Desk, Blackboard online course management
- University Libraries — teaching and learning resources
- Enrollment Management and Student Services — advising, orientation (technical and program), tutoring, registration, admission
- Faculty and distance learning administrative expertise — one-on-one consultations
- Ohio Learning Network — sponsored by the Ohio Board of Regents, this statewide initiative supports faculty, student, administrative resources; professional networks, professional development; funding opportunities

Online classes involve a significant amount of student-faculty interaction. Enrollment is limited according to the course content and support systems available to prevent faculty overload and ensure student success. Typically, a ratio of 1:20 up to 1:30 is used in online programs, with the addition of another course facilitator for each enrollment increment in a course (in general, one facilitator for each cohort of 20-30 students within a distance course).

C. Access

Consideration is given to every aspect of the distance learner's program—from initial admittance to graduation—working in an integrated way to maintain student engagement and successful academic progress. Student services and academic supports are designed to provide distance learners full access to a complete range of quality services and institutional resources. Placement tests for English and Math are online and online developmental coursework is available for undergraduates who need this additional support. Digital equity is a primary concern to programs serving older adults and every effort is made to ensure students still on dial-up have access to large files and videos via CD/DVDs. Blackboard and program orientation are often required before a student's first class, so every student has the tools for academic success. Other support systems take into consideration all aspects of the student's academic program, and reflect a team approach—involving stakeholders at the academic and institutional levels—to provide a level of consistency across programs, efficiencies within the institution, and to foster student success. Information regarding support services, access and contact information is conveyed through various venues, including in-person visits to potential cohorts, program information provided to new and prospective students via print materials and online via program, institutional websites, and virtual Open House webinars.

- Dedicated administrative and support staff (oversight, points of contact, etc.) for each online program
- Program information — print materials and online via program websites
- Institutional Information — in-person and online (www.uc.edu/distance)
- Admission & Registration — UC's OneStop online student services (www.onestop.uc.edu/) enables DLs to apply, register and pay online
- Tuition payment & Financial Aid — online

- Blackboard course management system resources http://blackboard.uc.edu/webapps/portal/frameset.jsp?tab_id=_86_1 – online help functions available 24/7 (i.e., guides, tutorials, instructions for activating accounts, FAQ's) Telephone and e-mail support hours: Monday – Friday, 8:00 am – 12:00 am (midnight); Saturday, 12:00 pm – 6:00 pm; Sunday, 2:00 pm – 12:00 am (midnight)
- IT Help Desk http://www.uc.edu/ucit/helpdesk/default.asp — online, e-mail and via telephone. Hours: M–F, 7:00 a.m.–9:00 p.m.; Saturday & Sunday, 8:00 a.m. – 9:00 p.m.
- Bookstore — online textbook services
- Academic support — e-tutoring; online access to UC's library system and databases/articles; advising and monitoring of student progress conducted at the academic unit/program level
- Student discounts — computer software; purchases facilitated online and via mail

D. Faculty Satisfaction

An academic administrator in each college oversees distance learning courses and online programs. This includes distance learning faculty development through a variety of venues: involvement of onsite experts within the college and University; fostering attendance at national and state conferences on technology in education; and workshops offered by specialty associations on distance learning. Faculty development is also available as needed on a one-to-one basis. Some colleges have further identified faculty leaders and staff liaisons for the support and expansion of technology infusion in pedagogy and instructional design and for the support and development of distance learning. Faculty often report the online teaching experience has improved or enhanced their face-to-face teaching.

The process for staffing online courses varies with the size of the program. Department and program heads assign faculty to all teaching assignments and include tenured faculty, tenure-track faculty, clinical faculty, and adjuncts. A faculty member's teaching load is determined in consultation with the head and can involve a split between traditional programs and online programs. Facilitators and teaching assistants with specific roles may also be assigned to courses. These individuals function under direction of the lead faculty member for the course, with greater emphasis placed on team-based instruction and online support services. This may involve serving as liaison to coordinate all aspects of online academic support services and personnel to maintain excellent student learning outcomes and program delivery quality.

Recruitment of faculty members, adjuncts, and teaching assistants includes an orientation to college and university resources and support; such as, the online course management system, technology expectations, online communication tools, pedagogy and online course development and centers/resources. Various resources contribute to supporting faculty and graduate teaching assistants in design, development and delivery of distance learning.

- Faculty leaders and staff liaisons in various colleges to promote and support expansion of technology infusion in pedagogy and instructional design
- Professional development opportunities and support via CET&L, FTRC University Libraries, and onsite experts within colleges
- Compensation (If not part of regular workload)
- Distance learning seed grant opportunities
- Faculty institutes via the Faculty Development Council

E. Student Satisfaction

"Place Students at the Center" is the first of five goals in the University's academic strategic plan, UC|21 (http://www.uc.edu/uc21/ataglance.html), and reflects the University's commitment to the academic success of each student. This student-centered philosophy emphasizes mechanisms that place priority on students' needs, a university-wide concept of one-stop service, creation of a 24/7 learning and social environment, and attract the highest-quality students while maintaining clear pathways for students who seek opportunity.

Although online students rarely meet program faculty and staff, they develop a rapport that is sustained from admission through graduation. Online students have access to a wide variety of online services and academic supports available to all UC students. Those students enrolled in online degree programs also benefit from supplemental program support. Based on feedback from undergraduate online learners via course evaluations and surveys, including the National Survey of Student Engagement (NSSE), students report high satisfaction with a variety of educational practices and entire educational experience at UC.

- Supportive institutional environment to help the student succeed academically
- Quality relationships with program faculty and staff
- Peer networking and support
- Prompt feedback from faculty on academic performance (in general, program policies indicate 24–48 hour turnaround time)
- Practices that challenge the student to do his/her best work
- Academic advising

V. CONCLUSION

Over 85 percent of students matriculated in online undergraduate degree programs successfully completed courses in Autumn Quarter 2008, with a grade of C- or higher. This high rate of success in online courses could be attributed to the variety of support available including University-wide services and program-specific student support as well as student motivation. In addition, the University of Cincinnati's strategic plan, UC|21, represents a commitment to distance education, now and in the future, and has focused attention on this growing population of students.

VI. ABOUT THE AUTHORS

Dr. Melody Clark, Ed.D., has over 30 years of experience in higher education, ranging from administrator, student and educator. She is Director of Distance Learning in the Provost Office at the University of Cincinnati and serves as institutional liaison on matters pertaining to distance learning. Her professional experience at the University has included coordinating and administering distance education programming and operations to support growth and development of distance learning. Melody earned her doctorate in Education from the University of Cincinnati in 2003. Her scholarly activity is grounded in the field of Educational Foundations and she teaches a graduate course geared to improving instructional effectiveness in the University's online Master's in Education program offered to cohorts of Health Professionals. She has presented at national conferences, including WCET E-Learning in Higher Education and Distance Learning Administration regarding distance learning and support services for academic success.

Dr. Lisa Holstrom, Ed.D., has presented on distance education at various conferences around the United States, including the National Head Start Association's national conference, NHSA's technology

conference, and National Association for the Education of Young Children's Professional Development Institute as an invited presenter with the Office of Head Start, on the topic of university/program partnerships. Lisa has written an article for *Children and Families* and *Educational Technology*, among other publications. After serving for 8 years as the director of the Early Childhood Learning Community (ECLC), one of the largest distance education degree programs at the University of Cincinnati, she is now supporting other distance education initiatives for the College of Education, Criminal Justice, and Human Services at the University of Cincinnati. She is Principal Investigator on several grants from the Office of Head Start which has funded the translation of the online associate and bachelor's degrees into Spanish for teachers serving in Migrant and Seasonal Worker programs.

Dr. Ann M. Millacci, Ed.D., earned her doctorate in Educational Administration from the University of Cincinnati in 1998. She received her M.S. and B.A. degrees from the State University of New York (SUNY) College at Buffalo. She has been a member of the Educational Leadership faculty since 2003. Dr. Millacci coordinates the distance learning master's degree program in Educational Leadership and teaches the two core Foundations of Educational Administration courses in the online program. She has over 20 years of experience in higher education administration having worked in the areas of admissions, research administration, finance, and evaluation and assessment. Dr. Millacci has presented at national conferences on distance education including the Annual Conference on Distance Teaching and Learning sponsored by the University of Wisconsin- Madison.

THE UIS MODEL FOR ONLINE SUCCESS

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ABSTRACT

This case study describes the philosophy underlying the delivery of online programs and courses at the University of Illinois – Springfield. The strategies used to implement the UIS model and the measures used to validate its success are outlined. These factors are reviewed in the context of the Sloan-C Five Pillars for quality learning environments.

KEYWORDS

Retention, Student Success, Course Completion, Strategies, Sloan-C Five Pillars, UIS Model, COLRS

I. INTRODUCTION

The University of Illinois–Springfield has been a national leader in the development of online baccalaureate degree completion and graduate programs. This case study describes the UIS model for the delivery of online courses and degrees. The measures that we have used to confirm programmatic success are briefly described, as are some of the techniques we have used to help students succeed. Course completion rates in online courses at UIS have consistently exceeded 90% and remain within 1–2% of those for traditional on campus offerings. Baccalaureate degree completion and graduate students continue to comprise the majority of online enrollments at UIS.

II. MISSION AND CONTEXT

Founded in the capital of Illinois as an upper division and graduate commuter institution in 1973, Sangamon State University joined the University of Illinois system as the University of Illinois–Springfield in 1995. The institution's original commitment to finding innovative ways to provide access to higher education for the "non-traditional" adult student made it natural for UIS to develop online programs. As the result of faculty initiatives, the first online courses appeared in 1998. The development of the first online programs followed shortly thereafter. With substantial support from the Alfred P. Sloan Foundation, UIS has been steadily developing additional online degree programs since then. Currently the campus offers 8 undergraduate and 8 graduate degrees completely online, as well as several certificates. Majors in these online programs make up about ¼ of UIS' total enrollment. In recent semesters roughly half of UIS' students have taken at least one online course.

In 2001, UIS became a full four year institution, admitting its first class of traditionally aged, full-time residential freshmen, under the name of the Capital Scholars program. The simultaneous continuing growth of the online programs and the Capital Scholars program make UIS one of the more interesting places in higher education at the moment. The vision statement adopted as part of the institution's 2007 Strategic Plan says:

> "UIS will be a premier small public university offering innovative, high-quality liberal arts education, public affairs activities, and professional programs dedicated to academic excellence, to enriching individual lives, and to making a difference in the world."

The plan reaffirms the commitment "to reach out to non-traditional students with … an increasing number of online programs." The plan states also: "UIS' approach to and experience with online undergraduate degree completion programs is an extension of our commitment to serving non-traditional students and is consistent with what would be expected at leading small public liberal arts universities." "We are well positioned to meet the lifelong learning needs of the non-traditional student nationally with our online presence and with our considerable experience on campus in working with non-traditional students."

III. DEMOGRAPHICS

In the fall of 2004, the University of Illinois launched a new enterprise-wide data system. The demographics of our online majors have been carefully followed since then. Even as additional online programs have been added and online enrollments have steadily grown, the fundamental characteristics of our online majors have been very stable. The average age of our online students is close to 35 years. Surprisingly this is true for both undergraduate and graduate students, whose average age rarely differs by as much as one year. By race and gender, UIS' online population is not significantly different from the traditional commuting population. As measured by their mailing addresses, 35–40% of the online students are outside the state of Illinois. UIS has adopted e-tuition for online majors that is the same for all students regardless of their state of residency. Of those online students who do reside in Illinois, roughly 85% are outside of Sangamon county (UIS' location). Many of these are located in the major population centers of the state which are well beyond typical commuting distance to campus. The online programs allow UIS to serve a population that would not normally commute to the physical campus.

IV. THE "UIS MODEL"

From the beginning, the UIS approach to online learning has been defined by fundamental commitments that have come to be described as the "UIS model for online education."

UIS' online programs are identical in all possible ways to the previously existing on-campus offerings, with the obvious difference of the instructional format. The courses are the same as those offered on campus. They have the same requirements, and are offered on the same academic calendar. The assignment of faculty to the online courses is done in the same way that on-campus teaching assignments are made. While UIS as a whole is using an increasing number of adjuncts, courses are usually taught by full-time tenure track faculty whether online or in traditional modes. The processes of faculty governance for the online programs are the same as those used for on campus programs from the department to the Campus Senate level.

Care has been taken to develop the online programs in a way that strengthens the existing on campus offerings without overwhelming them. The number of students admitted to the online programs each year is controlled. The infusion of this new group of majors typically enhances the regional diversity and quality of the student population. The addition of the online student population makes it possible to use existing faculty resources more efficiently. In most cases, the increase in enrollment has justified the addition of faculty lines, enhancing both the depth and breadth of curricular offerings and the range of faculty expertise in the department.

Significant differences for the online programs do exist in their admissions criteria. Because the online programs draw applicants nationally into programs that have limited capacity, the entrance criteria for the online programs are higher than those for the corresponding on campus program in almost all cases. It is also the case that online courses were initially capped at 20, recognizing the special demands of this instructional format. As programs have gained experience with online learning, some of those caps are being gradually increased, but they still remain lower, in many cases, than the caps for corresponding on campus offerings.

The continuing commitment to providing the same high quality program online that we deliver on the campus defines the UIS model for online education, which is the primary reason for our online retention success.

V. THE DEFINITION OF "SUCCESS"

Early measures of retention were derived from comparisons of census and end of term enrollment figures. Comparable data are tracked today. By that definition, a successful student is one who was registered at the time of the tenth day census and who remains registered at the end of the term. Internally, more detailed data is also collected. The students who remain registered are further classified according to whether they earned a transferable passing grade (B or better for graduate, C or better for undergraduate), a passing grade lower than that, an incomplete, or a failing grade).

For these purposes, our original definition of retention is used. Under that definition (continuing enrollment), retention is online courses has consistently been within one or two percent of that for on campus courses. In both cases the figure has remained in the 90–95% range. The comparability between online and on campus results is also seen in the more finely detailed categorization mentioned above.

VI. THE SLOAN-C FIVE PILLARS

The UIS online initiative has developed over the past decade with the generous financial support from the Alfred P. Sloan foundation. We measure our success in terms of the quality framework of the Sloan-C Five Pillars, allowing us to monitor and set goals for continuing improvement of the online initiative.

A. Learning Effectiveness

To assess the effectiveness of the UIS model, we have looked at all the grades earned over a three year period for both the online and traditional delivery methods. Factors such as the level of the course, the department of origin and the major of the student are well known to influence the grade distribution in a given course. Once a statistical model has been used to factor in those effects, the remaining effect of the online delivery format has been shown to be negligibly small. Within that analysis, though, it is clear that our online majors generally have higher GPA's than their on campus counterparts. The difference is attributed to the more selective admission criteria and the fact that the online students generally fit the label of "mid-career adults." It also appears that the performance of on campus majors who elect to take or are forced into online courses is slightly lower than expected.

Similarly, degree completion rates are also being monitored. In order to implement e-tuition, UIS began carefully identifying online majors by academic year 2005–06. For that reason, final degree completion rates for online programs will not be available for a while yet. Interim review of the baccalaureate degree completion programs indicates, though, that retention and graduation rates are trending at or above the

historical levels of the corresponding on campus programs in most cases.

Online coordinators, academic support staff assigned to the online programs, have been essential to the effectiveness of the online programs. These are half time appointments, at a minimum. The online coordinator is the face of the institution to students from point of application to graduation. They serve as marketers, advisors, troubleshooters, and coaches throughout the student's academic career. The use of online peer tutors has also proven to be very effective in particularly challenging courses. The Center for Teaching and Learning, which has traditionally provided support services for on campus students, now delivers online tutoring and other academic support to online and on campus students. Technical support is available to all students 24 x 7. Each of these measures resulted from continuing attempts to make the online programs more effective.

B. Scale

The UIS model is not the least expensive option for the implementation of online degree programs. To demonstrate cost effectiveness and assure continuing institutional commitment, proposals for online programs must include a long term budget plan that addresses the continuing viability of the proposed offerings. Using clear targets for the number of students admitted annually and conservative estimates of persistence and completion rates, the anticipated tuition and fees generated must exceed the program's operational costs. This is a standard that not all existing programs could meet. The specific budget expectations are recorded in a memo of understanding that is negotiated among the program, the Dean and the Provost. In almost all cases, the annual admissions targets have been met or exceeded. The realized persistence rates, combined with recent tuition increases have produced revenues that have exceeded original projections. Operational costs, primarily faculty and staff salaries, have not increased over original projections as rapidly. The UIS online programs are now an integral and effective part of the campus offerings.

C. Access

The demographics of the online student population, described above show clearly that UIS' online programs are attracting a student population that could not possibly commute to campus for traditional offerings. In recent academic years, UIS has provided access to higher education for students in almost all of the fifty states, most counties in Illinois, and a number of foreign countries. Articulation agreements with institutions across the nation have been critical to our ability to attract students.

D. Faculty Satisfaction

When it became apparent that online offerings were growing rapidly, the Campus Senate hosted a series of hearings to address various faculty concerns that inevitably were being voiced. No clearer evidence of faculty satisfaction is needed but to note that by the next year the focus of the Senate's concerns had shifted to making sure that all programs were being given an equal chance to develop online. The demonstrable success of the online offerings and the presence of a new, geographically diverse, and highly qualified student population were in part responsible for the rapid change in faculty attitudes. The infusion of new resources, in otherwise difficult budgetary times, also had an impact. Faculty satisfaction is evident as the number of online programs and their size continues to increase, as does the number of faculty who teach online. Certainly the flexibility afforded by online courses is appealing to many faculty. More than that, though, online teaching has actually helped the careers of faculty who need to be away from campus for an extended period of time or whose teaching is better suited to the online format for various reasons.

To assure continuing faculty success in the online classroom, the Office of Technology Enhanced Learning (OTEL) provides a variety of support and developmental services for online faculty. In addition to individual consultations, a series of regular faculty seminars and workshops is provided primarily by OTEL and Information Technology Services. The faculty themselves have organized a community of practice to enhance online teaching effectiveness. The Community of Practice for E-Learning (COPE-L) helps faculty from all corners of the campus network to share best practices for online teaching. The role of OTEL is being expanded to foster faculty research into the effectiveness of online teaching and learning. For that reason, the unit has recently been renamed the Center for Online Learning, Research and Service (COLRS) in accordance with the institutional strategic plan.

E. Student Satisfaction

Student satisfaction with online offerings is evident by many measures, not the least of which is the rapid and continuing growth in online enrollments, roughly half of which comes from on campus students. It is clear, from watching enrollment patterns, that online classes generally fill very quickly and routinely have many more students attempting to register for them than can be served. Examinations of end of term student course evaluations have also been conducted. Since the evaluations are, of course, anonymous, the analysis cannot be as detailed as that of grades earned. It is clear, though, the student's expected grade, the level of the course and the department of origin all influence the resulting evaluations. Once those effects have been accounted for, the effect of the online delivery mode is again negligible. In short, students are voting with their feet. End of course evaluations show that their high level of satisfaction with our courses is not diminished online.

VII. CONCLUSION

This case study described the philosophy underlying the delivery of online programs and courses at the University of Illinois – Springfield. The factors are reviewed in the context of the Sloan-C Five Pillars for quality learning environments, which have guided programmatic development at UIS. The measures validate the UIS Model for online education.

VIII. ABOUT THE AUTHOR

Bill Bloemer, Ph.D. is a chemist and Dean Emeritus of the College of Liberal Arts and Sciences at UIS. He is currently a research associate in the Center for Online Learning, Research and Service (COLRS) at UIS.

DOES STRONG FACULTY SUPPORT EQUAL CONSISTENT COURSE COMPLETION?: IT HAS FOR DALLAS BAPTIST UNIVERSITY

Kaye Shelton
Dallas Baptist University

I. INTRODUCTION TO DALLAS BAPTIST UNIVERSITY

Dallas Baptist University (DBU) is a private, Christian, liberal arts institution located in the DFW Metroplex. Just over 5,200 students, DBU provides both traditional undergraduate, adult and graduate degrees with the enrollment almost equally divided between the three student groups. Today, DBU offers 34 degree programs fully online maintains a course completion rate of 92–93% each semester with almost 2,000 students taking online classes. Because of its continued success and dedication to quality course development, the DBU online education department has become a model for several other higher education institutions.

II. INSTITUTIONAL COMMITMENT

Because DBU is a student-centered institution that tries to listen to the needs of its students, in 1998, DBU began offering online classes. Then, very few private Christian institutions had ventured into delivering online education. DBU had a small distance education program with a few audio and video courses and several off-site classrooms with corporations that included some video conferencing which was supplied by the corporation.

Because of its strong adult degree completion program, the university president, Dr. Gary Cook, recommended that the university begin developing and offering online classes and full degree programs. The university quickly shifted into planning and developing policies while many other institutions refused to see the relevance. It meant a strong paradigm shift for the university, but slowly and effectively, the program moved forward. Pretty quickly, the other methods of distance education faded away because the students liked the flexibility that online classes provided.

III. FACULTY DEVELOPMENT AND SUPPORT

Even though the campus culture is used to embracing change, this was still a huge paradigm shift for faculty as it is with most institutions. Recognizing that faculty involvement would be the strength of the program, a faculty support system was designed to encourage faculty buy-in and support for online classes. DBU's philosophy is that faculty are discipline experts and should not have to become web designers or technical gurus. They should be able to concentrate on teaching and engaging their students.

So from the very beginning, faculty received compensation for developing course materials and had access to technical and course design support. DBU compensates faculty course developers either one course overload or one course release for course development. Because we believe instructor involvement is critical, all online classes are limited to 22 enrollments as the research suggests a range of 12–25 students is the most any one online instructor can effectively engage. The initial training for faculty

developing online courses includes instructional design strategy, information on copyright for online materials (the TEACH Act) as well as an orientation to how the process works for course development. At this time, the faculty member is introduced to the Profhelp team, a team of course developers that will support the instructor throughout the course development process as well as teaching the class.

After receiving some information on how effectively to use Blackboard, the online courseware management system, the instructor works with the Profhelp team to design digital course content. The instructor can send a simple Word document with lecture material, assignment information and discussion questions, and a Profhelp team member applies instructionally design, adds graphical support and learning objects and places it within the appropriate course shell within Blackboard. Once the instructor approves the design, the Prohelp team then helps to facilitate the proofing process.

All course materials are proofed by at least one or two instructor(s) in the discipline, the college dean, a research analyst and the Provost. While rigorous, this provides a quality assurance process for the course materials as these course become master content courses for others instructors to use when teaching online. Each course is reviewed for quality content and student engagement strategy. Once the instructor approves suggested edits, the Profhelp team member makes the edits in the course material as well as loads the exam and quiz questions for each course.

Once the course is fully developed, the final training for the instructor is with the dean of online education for ePedagogy. Instructors that have not developed an online course but may be teaching online for the first time, also attend this important training. This training provides insight into the differences between teaching in the traditional classroom and online and also provides techniques for successfully creating an online learning community and engaging students. Tips and tricks for managing workload are also covered as well as explaining the ongoing quality assurance process for the course. Each semester, online courses have a team member assigned to make sure all links are working, dates are set correctly, and exams and quizzes are functioning.

IV. SCALE

Today, DBU's online education program has seven full time course developers and four part-time, who work from home on the quality assurance process. About 70% of the full time faculty teach online and 42.7% of the adjuncts. A benefit of wide faculty participation is that Dallas Baptist University will be in a good position to continue courses online should an event disrupt on-campus attendance.

In summer 2009, 51% of the students took online courses, constituting 39.5% of the total hours. .Last spring, the split was about 20% traditional and the rest adult and graduate. Up until the fall 2009 semester, traditional students were limited from taking online classes in the fall and spring semesters but could take unlimited in the summer and winter. It will be interesting to see how the new policy affects overall course completion rates in traditional courses. Appendix A is a history of online course completion rates from Fall 1998 through Spring 2009.

V. RECOGNITION

The excellent faculty support provided by this department has resulted in two exemplary course awards and being part of a benchmarking project. In 2006, the DBU Online Education program entered into a self-audit to benchmark against other quality online programs. This opportunity was requested by the AHEC—Alliance for Higher Education Competitiveness. The graphic below demonstrates the six key

factors audited in the process. DBU Online Education was ranked as a Best Practice Leader as demonstrated by the following graphic.

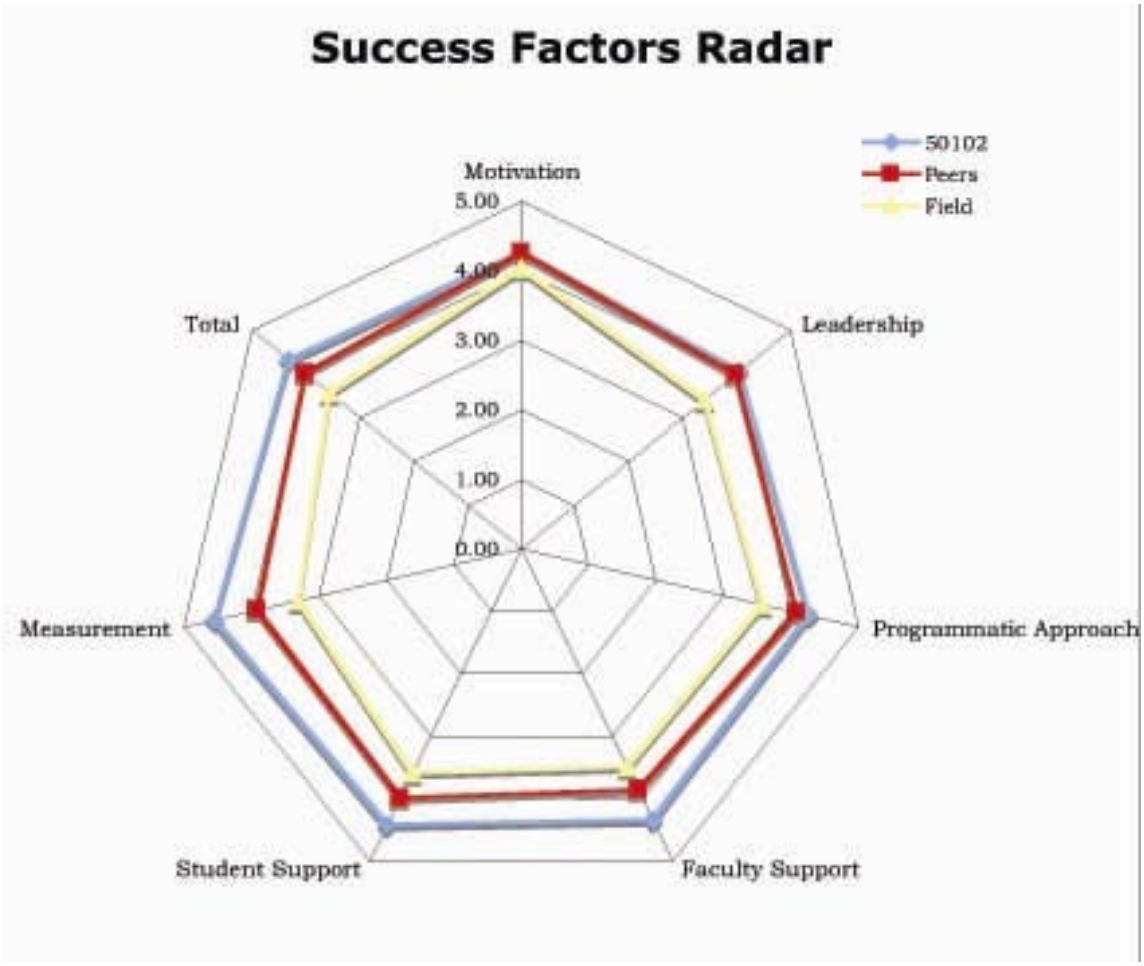

Figure 1. Success Factors: Motivation, Leadership, Programmatic Approach, Student Support and Measurement

Additionally, DBU was awarded the Blackboard Exemplary Course award in 2005 and the Instructional Technology Council's eLearning course award in 2006. However, the greatest measure of faculty support is the consistent course completion rate that DBU maintains. The table below shows both individual semester and cumulative rates. This strong completion rate can be attributed to the amount of support faculty receive and their ability to engage students in the online classroom.

VI. ABOUT THE AUTHOR

Kaye Shelton is the dean of online education at Dallas Baptist University, whose online program now offers 34 degrees fully online and maintains a 92% student course completion rate. Under her leadership, the DBU Online Ed program has won multiple awards in exemplary online course development. She is a certified online instructor and also practices as an online education consultant and has served as an advisor regarding online education programs for many peer institutions. Research interests include faculty support for online teaching and quality in online programs.

VII. APPENDIX A

	Total Completion Rate %-age	Cumulative Completion Rate %-age
Fall 1998	100.00%	100.00%
Spring 1999	96.55%	97.10%
Summer 1999	89.81%	92.66%
Fall 1999	96.64%	94.94%
Spring 2000	97.14%	95.95%
Summer 2000	90.69%	94.22%
Fall 2000	93.39%	93.93%
Spring 2001	92.35%	93.49%
Summer 2001	92.82%	93.36%
Fall 2001	91.85%	92.98%
Winter 2002	97.50%	93.24%
Spring 2002	91.97%	92.98%
Summer 2002	93.05%	92.99%
Fall 2002	92.60%	92.93%
Winter 2003	94.39%	93.00%
Spring 2003	92.31%	92.91%
Summer 2003	93.82%	92.41%
Fall 2003	92.51%	92.43%
Winter 2004	94.52%	92.49%
Spring 2004	93.35%	92.59%
Summer 2004	96.00%	92.86%
Fall 2004	91.54%	92.72%
Winter 2005	97.72%	92.85%
Spring 2005	94.39%	92.98%
Summer 2005	94.28%	93.07%
Fall 2005	92.52%	93.02%
Winter 2006	95.96%	93.08%
Spring 2006	92.82%	93.06%
Summer 2006	91.72%	92.98%
Fall 2006	93.99%	93.06%
Winter 2007	96.00%	93.11%
Spring 2007	91.76%	93.01%
Summer 2007	94.00%	93.05%
Fall 2007	91.39%	92.92%
Winter 2008	93.53%	92.92%
Spring 2008	92.68%	92.90%
Summer 2008	91.95%	92.86%
Fall 2008	93.09%	92.88%
Winter 2009	95.27%	92.92%
Spring 2009	93.49%	92.96%

AN EXPLORATION OF THE RELATIONSHIP BETWEEN INDICATORS OF THE COMMUNITY OF INQUIRY FRAMEWORK AND RETENTION IN ONLINE PROGRAMS

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ABSTRACT

As the growth of online programs continues to rapidly accelerate, concern over retention is increasing. Models for understanding student persistence in the face-to-face environment are well established, however, the many of the variables in these constructs are not present in the online environment or they manifest in significantly different ways. With attrition rates significantly higher than in face-to-face programs, the development of models to explain online retention is considered imperative. This study moves in that direction by exploring the relationship between indicators of the Community of Inquiry Framework and student persistence. Analysis of over 28,000 student records and survey data demonstrates a significant amount of variance in re-enrollment can be accounted for by indicators of Social Presence.

KEYWORDS

Community of Inquiry, Retention, Online Programs

I. INTRODUCTION

With almost four million students enrolled in online courses in the United States alone, and a 12.9% growth rate in online enrollments, program growth is considered a priority at over 80% of major US institutions of higher education [1]. While compelling, this accelerated growth has raised significant questions related to the quality of online instruction in terms of outcomes. One measure of outcomes is student learning and perceived efficacy. In their 2009 study, the US Department of education isolated 51 common factors across thousands of studies and concluded that, in general, online learning is more effective than face-to-face learning [2]. However, despite this highly positive finding, the question of retention remains problematic for online programs, with several studies and anecdotal evidence indicating attrition rates for online courses frequently being much higher than for their campus-based counterparts

[3, 4, 5, 6]. In more recent work, Patterson and McFadden [7] found dropout rates to be six to seven times higher in online programs.

In the traditional campus setting, student persistence and retention have been a documented issue in higher education in the United States since the late 1800's [8]. Formal research studies on the topic of retention began as early as 1926 [9] but publications of research on retention escalated in the 1970's with academics such as Spady [10], Astin [11], Tinto [12, 13], Pascarella [14], and Braxton [15] publishing influential research on the topic of student retention.

A number of researchers have found that the higher the high school GPA and the higher the SAT or ACT score of a college student, the stronger the chance that the student will persist in college and graduate [11]. However, this is only one set of positive indicators of retention. Researchers have also identified the importance of social integration in the student retention rates of colleges [10, 12, 11]. Tinto's model of student persistence theorized that the greater the level of academic and social integration, the greater the student's chances at persisting until graduation [12].

While the social integration process is well documented in traditional higher education settings, similar research in the online environment is in its infancy. However, the Community of Inquiry Framework provides a widely recognized model for understanding interactions in the online environment and insight into how social integration may occur in online environments.

Developed by Garrison, Anderson, and Archer [16], the Community of Inquiry (CoI) model is a theoretical framework that explains the online learning experience in terms of interactions between three overlapping presences: Teaching, Social and Cognitive. Since its inception, the CoI framework has been the most frequently cited model for explaining the online learning experience, with extensive research undertaken on each of the individual presences [17, 18]. In 2007, the framework was operationalized as survey instrument and validated through multi-institutional data collection and analysis [19].

The first of the three presences, social presence, is the basis of collaborative learning and the foundation for meaningful, constructivist learning online [20]. In the context of online learning, social presence is described as the ability of learners to project themselves socially and emotionally as well as their ability to perceive other learners as "real people" [21]. The three main factors that allow for the effective projection and establishment of social presence are affective expression, open communication and group cohesion [22, 21].

Affective expression is the ability of online learners to project themselves through such text-based verbal behaviors as the use of para-language, self-disclosure, humor, and other expressions of emotion and values. Open communication refers to the provision of a risk-free learning climate in which participants trust one another enough to reveal themselves. Group cohesion refers to the development of a group identity and the ability of participants in the learning community to collaborate meaningfully. Research has shown a link between perceived social presence and perceived learning and satisfaction in online courses [22, 21]. There is also some indication that social presence has a direct [23] and/or mediating [24] effect on learning and learning processes. However, it has also been shown that there are differences in the effects of the social presence of instructors and peers on learning and interactions online [21] and it may be that it is hard to tease apart the social presence of instructors from teaching presence.

Cognitive presence is the extent to which learners are able to construct and confirm meaning through reflection and discourse and is defined as a four stage process of practical inquiry. First is a triggering event, where an issue or problem is identified for further inquiry. Next is exploration, where students explore the issue both individually and as a community, through reflection and discourse. The third stage is integration, where learners construct meaning from ideas developed during exploration. Finally, the process culminates in resolution, where learners apply the new knowledge [16, 18].

Teaching presence, the third component of the CoI framework, is described by Garrison and colleagues (2001) as having a three-part structure consisting of: instructional design and organization, facilitation of discourse, and direct instruction.

Instructional design and organization involves the planning and design of the structure, processes, interaction and evaluation aspects of an online course [16]. Some activities within this category might include building curriculum materials, such as creating presentations and lecture notes on the course site, and providing audio/video mini-lectures, offering a mix of individual and group activities along with a clear schedule for their completion, and providing guidelines on how to use the medium effectively, including netiquette [16, 18].

Facilitation of discourse is described as the means by which students engage in interacting about and building upon the information provided in the instructional materials [16]. In order to facilitate discourse, the instructor may review and comment upon student posts, raise questions and make observations to direct discussions as desired, keep discussions moving efficiently, draw out inactive students and limit the activities of dominant students if detrimental to the group [25, 26].

Direct instruction is described as providing intellectual and scholarly leadership from a subject matter expert in order to diagnose comments for accurate understanding, inject sources of information, direct useful discussions, and scaffold learner knowledge to a higher level [27]. Within this role, the instructor uses various means of assessment and feedback that should be delivered in a timely fashion.

II. METHOD

The problem addressed in this study is whether CoI survey indicators can be used to predict students' likelihood to remain enrolled in an online educational program of study. The following research question is used to examine this problem:

- RQ 1: Is there a statistically significant predictive relationship between CoI survey indicators and a students' likelihood to remain enrolled in an online educational program of study?

Linear regression was utilized to analyze the relationship between a linear combination of the 34 independent variables (i.e. Likert scale responses to each of the 34 CoI survey items) and the binary dependent variable measuring whether or not a student enrolled in the subsequent semester. A binary dependent variable typically demands logistic, as opposed to linear regression. This study's use of a binary dependent variable with linear regression is supported in the literature even though it compromises the assumption that residuals are normally distributed about the predicted DV scores (Cohen, Cohen, West & Aiken, 2002). The number of subjects included in this study (n = 28,877) ensures adequate statistical power by far exceeding the minimally adequate sample sizes suggested by Green (1991). Multicollinearity is a limitation inherent in this study given the instances of high correlations among the predictor variables.

A. Instructional Setting

American Public University System (APUS) is an online, for-profit university. Founded in 1991, it was originally known as American Military University (AMU) and offered graduate degrees for officers in the United States Armed Forces. In 2002, AMU reorganized as APUS and created two virtual universities operating under APUS' accreditation, American Military University and American Public University. Shortly after reorganizing, APUS applied for accreditation with the Higher Learning Commission of the North Central Association and achieved candidacy status in 2004 and initial accreditation in 2006.

Founded as an institution devoted to serving the needs of military students, APUS' top priority has always been engaging dispersed learners in high quality, collaborative learning experiences; a philosophy that extends to the civilian market served by APU. Since 2000, APUS has experienced a compound annual growth rate in student enrollment of 66.9% and expanded to 51 certificates, 19 Associates degrees, 32 Bachelor degrees and 23 Masters degrees. As of June 30, 2009, APUS served 53,600 students in all 50 states and 109 countries. Courses are offered every month, with a semester being either eight or 16 weeks in duration. Over 90% of courses are currently offered in the eight week semester format.

B. Participants

Students (n = 28,877) who completed the CoI survey were all enrolled in bachelors or associates level courses. The survey was administered to all students, taking classes, at the end of each semester; this sample constitutes a response rate of 38.91%. Age of participants ranged from 18 to 62 years old, with a mean of 28.2 years. Males comprised 68% of the sample and females comprised 32%.

C. Design

CoI survey (Appendix A) is administered to students at APUS at the end of every semester as part of a large-scale institutional, continuous quality improvement initiative [28]. Data used in this study were collected over a period of six semesters. Descriptive statistics were used to assess the means and standard deviations for each item. Principal axis factor analysis, with direct oblimin rotation, was used to insure the conceptual integrity of the data by inspection of alignment with the findings of Swan et al. [27].

Following confirmation of the expected factor pattern, linear regression was applied to the data. The dependent variable was established as students' enrollment status in the semester following the completion of the CoI survey. As enrollment status is a categorical variable, a dummy variable was created to represent the criterion variable using suggestions by Cohen, Cohen, West and Aiken [29]. The predictor variables were student responses to each of the 34 CoI survey items, measured on a 5 point Likert scale, with *Strongly Disagree* = 1 and *Strongly Disagree* = 5. For this linear regression, the *Forward* method was used in the SPSS version 17. This means that the order in which variables are listed in this table indicates their relative statistical significance in the predictive model.

III. RESULTS OF THE STUDY AND DISCUSSION

The following table depicts the means and standard deviations for each the 34 indicators:

	Mean	Standard Deviation	N
1.The instructor clearly communicated important course topics.	4.46	0.806	28877
2. The instructor clearly communicated important course goals.	4.48	0.785	28877

3. The instructor provided clear instructions on how to participate in course learning activities.	4.45	0.830	28877
4. The instructor clearly communicated important due dates/time frames for learning activities.	4.54	0.749	28877
5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	4.30	0.927	28877
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	4.31	0.941	28877
7. The instructor helped to keep course participants engaged and participating in productive dialogue.	4.30	0.952	28877
8. The instructor helped keep the course participants on task in a way that helped me to learn.	4.30	0.931	28877
9. The instructor encouraged course participants to explore new concepts in this course.	4.36	0.888	28877
10. Instructor actions reinforced the development of a sense of community among course participants.	4.27	0.955	28877
11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	4.32	0.921	28877
12. The instructor provided feedback that helped me understand my strengths and weaknesses.	4.27	1.036	28877
13. The instructor provided feedback in a timely fashion.	4.30	1.032	28877
14. Getting to know other course participants gave me a sense of belonging in the course.	3.94	0.958	28877
15. I was able to form distinct impressions of some course participants.	4.01	0.934	28877
16. Online or web-based communication is an excellent medium for social interaction.	4.03	0.942	28877
17. I felt comfortable conversing through the online medium.	4.37	0.741	28877
18. I felt comfortable participating in the course discussions.	4.40	0.743	28877
19. I felt comfortable interacting with other course participants.	4.37	0.755	28877
20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	4.30	0.786	28877
21. I felt that my point of view was acknowledged by other course participants.	4.30	0.793	28877
22. Online discussions help me to develop a sense of collaboration.	4.18	0.887	28877
23. Problems posed increased my interest in course issues.	4.13	0.911	28877
24. Course activities piqued my curiosity.	4.21	0.903	28877
25. I felt motivated to explore content related questions.	4.25	0.905	28877
26. I utilized a variety of information sources to explore problems posed in this course.	4.37	0.768	28877
27. Brainstorming and finding relevant information helped me resolve content related questions.	4.28	0.803	28877
28. Discussing course content with my classmates was valuable in helping me appreciate different perspectives.	4.11	0.927	28877
29. Combining new information helped me answer questions raised in course activities.	4.28	0.785	28877
30. Learning activities helped me construct explanations/solutions.	4.27	0.815	28877
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.	4.30	0.815	28877

32. I can describe ways to test and apply the knowledge created in this course.	4.30	0.806	28877
33. I have developed solutions to course problems that can be applied in practice.	4.26	0.824	28877
34. I can apply the knowledge created in this course to my work or other non-class related activities.	4.33	0.820	28877

Table 1. Descriptive Statistics

The means show a generally high level of satisfaction, with relatively large standard deviations indicating a significant clustering of replies around the mean. The three lowest means are clustered on the indicators of affective expression (questions 14, 15, and 16).

The following table depicts the results of the principal axis factor analysis:

	Factor 1 Teaching Presence	Factor 2 Social Presence	Factor 3 Cognitive Presence	Eignevalue	% Variance
1. The instructor clearly communicated important course topics.	0.881	-0.019	-0.016		
2. The instructor clearly communicated important course goals.	0.877	-0.008	-0.003		
3. The instructor provided clear instructions on how to participate in course learning activities.	0.867	0.015	0.034		
4. The instructor clearly communicated important due dates/time frames for learning activities.	0.767	0.038	0.021		
5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	0.900	-0.012	-0.018		
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	0.926	-0.021	-0.020		
7. The instructor helped to keep course participants engaged and participating in productive dialogue.	0.904	0.044	0.031		
8. The instructor helped keep the course participants on task in a way that helped me to learn.	0.904	0.015	-0.020	20.920	61.530
9. The instructor encouraged course participants to explore new concepts in this course.	0.843	0.006	-0.058		
10. Instructor actions reinforced the development of a sense of community among course participants.	0.871	0.084	0.023		
11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	0.833	0.004	-0.094		

12. The instructor provided feedback that helped me understand my strengths and weaknesses.	0.844	-0.039	-0.052		
13. The instructor provided feedback in a timely fashion.	0.831	-0.022	0.032		
14. Getting to know other course participants gave me a sense of belonging in the course.	0.043	0.626	-0.154		
15. I was able to form distinct impressions of some course participants.	0.029	0.593	-0.169		
16. Online or web-based communication is an excellent medium for social interaction.	-0.063	0.678	-0.128		
17. I felt comfortable conversing through the online medium.	0.039	0.846	0.013		
18. I felt comfortable participating in the course discussions.	0.084	0.870	0.051		
19. I felt comfortable interacting with other course participants.	0.027	0.974	0.107		
20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	0.010	0.895	0.049	3.277	9.638
21. I felt that my point of view was acknowledged by other course participants.	0.047	0.859	0.022		
22. Online discussions help me to develop a sense of collaboration.	-0.026	0.827	-0.077		
23. Problems posed increased my interest in course issues.	0.041	0.052	-0.736		
24. Course activities piqued my curiosity.	0.079	-0.019	-0.801		
25. I felt motivated to explore content related questions.	0.069	-0.024	-0.821		
26. I utilized a variety of information sources to explore problems posed in this course.	-0.027	0.048	-0.770		
27. Brainstorming and finding relevant information helped me resolve content related questions.	-0.044	0.047	-0.822		
28. Discussing course content with my classmates was valuable in helping me appreciate different perspectives.	-0.043	0.406	-0.483	1.649	4.849
29. Combining new information helped me answer questions raised in course activities.	-0.031	0.097	-0.833		
30. Learning activities helped me construct explanations/solutions.	0.078	0.002	-0.834		
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.	0.089	0.026	-0.804		

32. I can describe ways to test and apply the knowledge created in this course.	0.026	-0.035	-0.889		
33. I have developed solutions to course problems that can be applied in practice.	-0.014	-0.033	-0.914		
34. I can apply the knowledge created in this course to my work or other non-class related activities.	0.032	-0.048	-0.867		
					Cumulative Variance Accounted for = 76.017

Table 2. Principal Axis Factor Analysis

Visual inspection confirms the expected three factor solution, with 76% of the cumulative variance accounted for. These findings validated the conceptual alignment of the survey data, allowing for linear regression analysis to proceed with a high degree of confidence in the validity of the construct measured by predictor variables.

Forward method linear regression, illustrated in the following table, resulted in 21 of the 34 CoI items serving as statistically significant predictors. In addition to denoting the particular item number (Q1 = Item 1 of the CoI), the table indicates the respective type of presence the item measures.

	Unstandardized Coefficients		**Standardized Coefficients**			
	B	**Std. Error**	**Beta**	***t***	**Sig.**	**Type of Presence**
(Constant)	.509	.008		67.040	.000	n/a
Q16: Online or web-based communication is an excellent medium for social interaction.	.064	.002	.290	35.518	.000	Social
Q15: I was able to form distinct impressions of some course participants.	.049	.002	.223	23.993	.000	Social
Q28: Online discussions were valuable in helping me appreciate different perspectives.	.011	.002	.051	5.581	.000	Cognitive
Q14: Getting to know other course participants gave me a sense of belonging in the course.	-.019	.002	-.089	-8.710	.000	Social
Q22: Online discussions help me to develop a sense of collaboration.	.014	.002	.061	5.810	.000	Social
Q21: I felt that my point of view was acknowledged by other course participants.	-.013	.003	-.049	-4.685	.000	Social
Q19: I felt comfortable interacting with other course participants.	.020	.004	.074	5.411	.000	Social
Q20: I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	-.009	.003	-.035	-3.317	.001	Social

Q23: Problems posed increased my interest in course issues.	-.012	.002	-.053	-5.708	.000	Cognitive
Q25: I felt motivated to explore content related questions.	.009	.002	.040	3.918	.000	Cognitive
Q7: The instructor helped to keep course participants engaged and participating in productive dialogue.	.011	.002	.052	4.535	.000	Teaching
Q13: The instructor provided feedback in a timely fashion.	-.008	.002	-.041	-5.151	.000	Teaching
Q32: I can describe ways to test and apply the knowledge created in this course.	-.013	.003	-.049	-4.135	.000	Cognitive
Q34: I can apply the knowledge created in this course to my work or other non-class related activities.	.012	.003	.049	4.586	.000	Cognitive
Q33: I have developed solutions to course problems that can be applied in practice.	-.009	.003	-.038	-3.135	.002	Cognitive
Q31: Reflection on course content and discussions helped me understand fundamental concepts in this class.	.008	.003	.033	2.993	.003	Cognitive
Q26: I utilized a variety of information sources to explore problems posed in this course	.007	.002	.026	3.150	.002	Cognitive
Q18: I felt comfortable participating in the course discussions.	-.008	.003	-.029	-2.342	.019	Social
Q9: The instructor encouraged course participants to explore new concepts in this course.	-.007	.003	-.032	-2.903	.004	Teaching
Q11: The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	.008	.003	.034	2.925	.003	Teaching
Q29: Combining new information helped me answer questions raised in course activities.	-.006	.003	-.023	-2.150	.032	Cognitive

Table 3. Forward Regression Results

The following table illustrates the relative contributions of each of the predictor variables to the significant predictive model. The *Forward* method in SPSS enters predictor variables one by one in order of decreasing significance. This table, therefore, illustrates the changes in Adjusted R^2 as each variable is entered:

Model	R	R Square	Adjusted R Square	R Square Change	Std. Error of the Estimate
1	.424[a]	0.180	0.180	0.180	0.187
2	.450[b]	0.202	0.202	0.022	0.185
3	.451[c]	0.203	0.203	0.001	0.185
4	.453[d]	0.205	0.205	0.002	0.184

5	.453[e]	0.205	0.205	0.001	0.184
6	.454[f]	0.206	0.206	0.001	0.184
7	.454[g]	0.206	0.206	0.000	0.184
8	.455[h]	0.207	0.207	0.000	0.184
9	.455[i]	0.207	0.207	0.000	0.184
10	.456[j]	0.208	0.208	0.001	0.184
11	.456[k]	0.208	0.208	0.000	0.184
12	.457[l]	0.209	0.209	0.001	0.184
13	.458[m]	0.209	0.209	0.000	0.184
14	.458[n]	0.210	0.210	0.000	0.184
15	.458[o]	0.210	0.210	0.000	0.184
16	.459[p]	0.210	0.210	0.000	0.184
17	.459[q]	0.210	0.210	0.000	0.184
18	.459[r]	0.211	0.210	0.000	0.184
19	.459[s]	0.211	0.210	0.000	0.184
20	.459[t]	0.211	0.210	0.000	0.184
21	.460[u]	0.211	0.211	0.000	0.184

Table 4 Relative Contributions to the Predictor Variables

The analysis shows that a total of 21.1% of the variance in student re-enrollment is accounted for by 19 of the CoI indicators. However, all but 0.9% of that variance can be accounted for by two indicators:

SP 16. Online or web-based communication is an excellent medium for social interaction.

And

SP 15. I was able to form distinct impressions of some course participants.

These two items are two of the three affective expression indicators. The former item accounts for 18% (i.e. almost all) of the total variance and the latter accounts for 2.2%. This suggests that projections of social presence in general and affective expression in particular are important determinants for persistence in online education. Social presence, the degree to which a person is perceived as a 'real person' in mediated communication" [30] has been found in research studies to have an impact on students' satisfaction with a course [30, 31, 32, 22, 33, 21] perceived learning [22, 34] and actual learning [23, 33].

In addition, a recent study by Liu, Gomez, and Yen [35] suggests that social presence as a construct is a significant predictor of course retention and final grade in the community college online environment. Perhaps more to the point for these findings, Tu & McIssac found that "students who feel more like insiders in the learning community were more likely to achieve success. In a computer-mediated environment, feelings of community and social presence may be considered to be strongly connected to each other and to online interaction" [32].

Rodriguez, Plax, and Kearney (1996) claimed that teacher immediacy behaviors influenced students' affective learning, which in turn influenced students' cognitive learning and similarly, the CoI "posits that the ability to construct knowledge in online environments is contingent on the capacity of teachers and learners to move beyond direct instruction to establish forms of ''presence". The implication is that

teaching and social presence represent the processes needed to create paths to and cognitive presence for online learners" [24]. In other words, students who positively perceive online learning environments, which is potentially increased by their perception that they are part of a larger (social) learning community are more likely to have increased retention.

Of the remaining 17 significant indicators, it is notable that six are from the social presence category. As such, all but one of the social presence indicators was a significant predictor of re-enrollment; or 88% of all social presence indicators were significant predictors of student re-enrollment. Of the remaining significant indicators, four were from teaching presence (33% of all teaching presence indicators) and nine were from cognitive presence (75% of all cognitive presence indicators).

IV. CONCLUSIONS

Although statistical results in social science should never be deemed definitively causal, the sample size in this study warrants further and closer inspection of the impact of two Social Presence items on retention. Responses to CoI item # 16 (*Online or web-based communication is an excellent medium for social interaction.*) account for over 18% of the variance associated with whether a student returned to studies in the semester subsequent to completing the survey. This is, simply stated, a remarkable finding, especially in light of the sample size obtained.

One may reason that students attending fully online universities seek social interaction primarily online. However, future research can also examine whether similar results would be obtained in a blended setting. The extent to which students at any university seek social interaction via the Web has profound implications for both academic and student affairs. In the academic realm, faculty may need to redesign their curriculum to allow students opportunities to engage with one another online, even in traditional face-to-face courses. In the student affairs realm, programming designed to enhance student engagement (and in turn retention) may need to provide today's students opportunities for such interaction online. Although residential campuses are designed to promote face-to-face interaction, students on these campuses are often seen texting friends while walking to and from class, and their participation on social networking sites such as Facebook continues to grow.

Caution is needed when attempting to generalize the results of this study, conducted at a fully online university, to more conventional postsecondary settings. Regardless, the results of this study may help explain why the retention models of Astin [11] and others, developed almost 20 years ago, do not fill well with current enrollment trends. Social interaction remains a crucial factor for student retention. *How* college students interact with one another, has changed dramatically in a relatively short time. As educators continue to develop interventions to promote retention, they should pay particular attention to how the institution encourages interaction among its students. In our current wired world, traditional residential postsecondary institutions may need to look to the online institution to better understand how to promote student interaction and increase college retention.

V. LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

As with all research conducted at a single institution, the results may not be generalizable to other institutions. As such, this study should be duplicated to assess potential difference between various student populations. Similarly, this study only examined the relationship between the CoI indicators and retention patterns for undergraduate students. In a student of the value students place on the importance of teaching presence indicators, Kupczynski, Ice, Weisenmayer and McCluskey [30], found significant

differences between learners at the associates, undergraduate and graduate levels. It is possible that similar differences could apply to social presence indicators and, in turn, impact retention in a fashion other than was detected in this study.

Though this study demonstrates the significance of social presence indicators on retention, other studies [37, 24] demonstrate the importance of the teaching presence construct on student success, vis-à-vis the establishment of both social and cognitive presence. Research exploring potential indirect influences of teaching presence on retention should be considered to form a better understanding these complex interactions.

In work exploring the impact of technology on student satisfaction, the impact of rich media on student perceptions of increased social presence have been noted [38, 39]. Future research should also explore the influence of media rich programs on retention. From a methodological perspective, there are three limitations that should be considered when reviewing this study. First, though high for online surveys, the response rate for this study (38.91%) may not be representative of all students. Future research should examine whether any inherent self-selection bias occurs based on the type of student who chooses to complete the CoI survey.

Second, this study only examined the influence of CoI indicators on retention. Future studies that include other variables such as age, gender, ethnicity, economic indicators, etc. should be conducted to create more exhaustive models, such as those that exist for face-to-face courses. As the use of dummy variables in regression analysis can produce an exaggerated effect, such research would be important in reinforcing or contextualizing the findings of this study.

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VII. AUTHOR BIOGRAPHIES

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Phil Ice, Ed.D. is the Director of Course Design, Research and Development at American Public University System. His research is focused on the impact of new and emerging technologies on cognition in online learning environments. Work in this area has brought Dr. Ice international recognition in the form of two Sloan-C effective practices, a Sloan-C Effective Practice of the Year Award – 2007, application of his work at over 50 institutions of higher education in 5 countries, membership in Adobe's Higher Education Leader's Advisory Committee and multiple invited presentations, workshops and book chapters related to the integration of emerging technologies in online courses and the impact on teaching, social and cognitive presence. Examples of his research include the use of embedded asynchronous audio feedback mechanisms, using web 2.0 tools for collaborative construction of knowledge through integration of RIA's and remote observation of student teaching experiences using asynchronous, flash-based environments.

Jennifer Richardson, Ph.D. is an Associate Professor in the College of Education at Purdue University. Jennifer's research, which focuses on distance learning, includes social presence, developing a professional development framework for mentoring graduate students to teach online, instructional strategies, and the Community of Inquiry. She has been teaching and doing research in distance education for the past nine years and was a recipient of the Excellence in Distance Teaching Award at Purdue University. Jennifer is the past Chair for the AERA SIG Instructional Technology and past Program Chair for the SIG Media, Culture & Curriculum. Dr. Richardson is currently the PI on a USDOE FIPSE grant that is examining how peer feedback can be utilized to maintain quality online discussions while increasing students' higher-order thinking.

Karen Swan, Ed.D. is the Stukel Distinguished Professor of Educational Leadership at the University of Illinois Springfield. Her research is in the area of media and learning on which she has published and presented extensively. She has authored over 100 publications as well as several hypermedia programs, and co-edited two books on educational technology topics. Her current interests include online learning, ubiquitous computing and data literacy. Dr. Swan has been involved with online teaching and learning for over a decade, both as an instructor and as a researcher. She helped develop one of the first fully online Masters degrees while she was at the University of Albany, is active in the online learning community, and is well known for her research on learning effectiveness in online environments. In 2006, Dr. Swan received the Sloan-C award for Outstanding Achievement in Online Learning by an Individual for her work in this area.

VIII. APPENDIX A

Community of Inquiry Survey Instrument (draft v15)

Developed by Ben Arbaugh, Marti Cleveland-Innes, Sebastian Diaz, Randy Garrison, Phil Ice, Jennifer Richardson, Peter Shea & Karen Swan

Teaching Presence

Design & Organization

1. The instructor clearly communicated important course topics.

2. The instructor clearly communicated important course goals.
3. The instructor provided clear instructions on how to participate in course learning activities.
4. The instructor clearly communicated important due dates/time frames for learning activities.

Facilitation

5. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.
6. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.
7. The instructor helped to keep course participants engaged and participating in productive dialogue.
8. The instructor helped keep the course participants on task in a way that helped me to learn.
9. The instructor encouraged course participants to explore new concepts in this course.
10. Instructor actions reinforced the development of a sense of community among course participants.

Direct Instruction

11. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.
12. The instructor provided feedback that helped me understand my strengths and weaknesses.
13. The instructor provided feedback in a timely fashion.

Social Presence

Affective expression

14. Getting to know other course participants gave me a sense of belonging in the course.
15. I was able to form distinct impressions of some course participants.
16. Online or web-based communication is an excellent medium for social interaction.

Open communication

17. I felt comfortable conversing through the online medium.
18. I felt comfortable participating in the course discussions.
19. I felt comfortable interacting with other course participants.

Group cohesion

20. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.
21. I felt that my point of view was acknowledged by other course participants.
22. Online discussions help me to develop a sense of collaboration.

Cognitive Presence

Triggering event

23. Problems posed increased my interest in course issues.
24. Course activities piqued my curiosity.
25. I felt motivated to explore content related questions.

Exploration

26. I utilized a variety of information sources to explore problems posed in this course.
27. Brainstorming and finding relevant information helped me resolve content related questions.
28. Discussing course content with my classmates was valuable in helping me appreciate different perspectives.

Integration

29. Combining new information helped me answer questions raised in course activities.

30. Learning activities helped me construct explanations/solutions.
31. Reflection on course content and discussions helped me understand fundamental concepts in this class.

Resolution

32. I can describe ways to test and apply the knowledge created in this course.
33. I have developed solutions to course problems that can be applied in practice.
34. I can apply the knowledge created in this course to my work or other non-class related activities.

5 point Likert-type scale

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

GETTING BETTER: ALN AND STUDENT SUCCESS

I used to get mad at my school, the teachers that taught me weren't cool, they are holding me down, turning me round, filling me up with your rules.
The Beatles, Getting Better
Sergeant Pepper's Lonely Hearts Club Band, 1967

Janet C. Moore and John Sener
The Sloan Consortium

Marie Fetzner
Montgomery College

ABSTRACT
In the U.S., only 38 of every 100 ninth graders enroll in college; of these 38, only 18 complete bachelors' degrees within six years. Asynchronous learning networks (ALN)—asynchronous, highly interactive, instructor-led, resource-rich, cohort-based learning—can yield high success rates. Growing demand for online education and the expectation among higher education leaders that ALN learning outcomes will exceed face to face outcomes reflect belief in ALN's power to engage learners. Sloan-C's body of research confirms that ALN is especially suited for the anytime, anywhere, affordable access that is responsive to learners in a knowledge society. In fact, the original principles of ALN are the same principles that characterize ALN programs that have high student success rates. This paper includes vignettes from two and four-year ALN programs that have used these principles to achieve high success rates.

KEYWORDS
ALN, Interaction, Engagement, Student Success, Retention, Completion

I. INTRODUCTION

Affordable access to quality learning with comprehensive breadth of choice is the goal of the Sloan Consortium. Within the next ten years, asynchronous learning networks (ALN) have the potential of increasing the accessibility and effectiveness of higher education so that it becomes "an ordinary part of everyday life" [1]. By improving access, affordability, and success, ALN can recreate higher education as a right, rather than the privilege it is today.

Higher education offers benefits to the national quality of life—"decreased reliance on public assistance, higher voting rates, and increased volunteering"—and to individual quality of life—"higher income, lower unemployment, and better health" [2]. According to the Community College Survey of Student Engagement:

> For every year that you add to the average educational attainment level of the population, you add 5 to 15 percent in economic growth. So the connections between education and the economy are

> very, very clear. Educational attainment level is also powerfully and positively correlated with every single other thing we care about as a society [3].

Yet, with only 27% of the eligible population achieving bachelor or graduate degrees [4], the U.S. lags in making higher education accessible and affordable [5], ranking only fifth in the world in graduation rates [6]. According to the National Governor's Association (NGA), "if current economic and demographic trends continue, by 2020 the nation will need as many as 14 million more workers with some college education than its education systems will have produced" [7]. Unless education becomes more accessible and affordable, in key fields such as science and engineering, work that requires education will not necessarily be led by US citizens [8]. Global redistribution of market power means greater international competition and motivation for education and for jobs; thus Thomas Friedman asserts in *The World Is Flat: A Brief History of the Twenty-first Century* that the U.S. has all the resources, but if it is not attending to education, it is not attending to the secrets of its soul [9].

U.S. college tuition costs are estimated to be 26% of the average annual income [5]; and as tuition increases, "too many financially needy and minority students drop out" [10].

Twenty-one percent of people who attempt college abandon that dream [2]; and "60% of students at public institutions fail to complete degrees within five years, and half of these students leave during the freshman year" [11]. Students who drop out are "twice as likely to be unemployed as borrowers who graduated from college, and 10 times as likely to default on their loans" [12]. Thomas G. Mortenson of the Pell Institute for the Study of Opportunity in Higher Education observes that "those with the highest family incomes are '10 times more likely' to have a bachelor's degree by age 24 than those with the lowest. Twenty-nine percent of African-American students and 31% of Hispanic students who enroll in college leave before completing their first year. Our goals must now include improving completion rates for all students, especially those from disadvantaged backgrounds" [13]. In some states, an expected tidal wave of enrollments in the next decade threatens an infrastructure dependent on state budgets that are inadequate for shifting demographics, for under-prepared high school graduates and returning adults, and for workforce education [14]. For every 100 ninth graders, 67 graduate from high school four years later; of these 67 graduates, 38 enroll in college; of the 38 who enter college, 26 are still enrolled in the sophomore year; and of these 26, 18 graduate within six years [15]. Some estimate that the rate of high school dropout is even higher; a 30% high school dropout rate is a 'silent epidemic' [16].The annual National Report Card on Higher Education's 2004 report card on the states concludes that despite gains in high school courses that prepare students for college, neither college participation nor completion rates have improved in the last decade: "the fundamental finding is that the nation has stalled in the development of human talent through college opportunity" [17].

Although the number of people attending postsecondary education has quadrupled since 1960, and any increased success rate is a net plus, developing human talent calls for new social ideals:

> It used to be possible to educate an elite, a small number of people who would be the leaders, and essentially would tell the rest of us what to do. That is no longer the case. We need to educate all of our people to a higher level. And we simply cannot afford to waste any person...When in America did we come to the point of saying that the mark of a college's quality is the proportion of prospective students that it refuses to serve? [18]

To improve access and attainment for prospective students, the NGA recommends setting statewide benchmarks for postsecondary attainment, creating and supporting integrated K–16 data systems, better aligning K–12 and higher education expectations and incentives, promoting more learning options and focusing on low-performing schools [7]. While these strategies are promising, it is important to keep in

mind that tracking individual performance is complicated by the fact that most students—59% in the 1999–2000 academic year—attend more than one college, or simultaneously enroll in two or more institutions [19]. Today's students are older, spend more time working and less time studying, and aremore likely to incur debt:

- Among the more than 14 million undergraduates enrolled in U.S. colleges and universities, about 47% are of "traditional" age (19–23 years old), but another 43% are 24 or older, and the average age is 26;
- 68% of undergraduates work 16 or more hours per week, 36% work 36 or more hours per week;
- About 35% of college students report they study less than 10 hours a week; nearly 60% report that they study less than 15 hours a week.
- About 65% of students graduate with student loan debt; the average debt has nearly doubled over the past eight years to $16,928.
- 53% of first-year college students need remediation in writing or math [20].

Considering the changing characteristics of today's students, the American Council on Education (ACE) recommends that "persistence measures should consider the full student experience across institutions" [21]. The Integrated Postsecondary Education Data System (IPEDS) hopes to redesign five current IPEDS surveys to design a record system that would track the progress of individual students across institutions [22]. The design will include guidelines so that the diversity of tracking techniques can use a common language and report meaningful data. Meanwhile, organizations such as the Lumina Foundation [23], the Gates Foundation [16], University of Oklahoma's Consortium for the Student Retention Data Exchange (CSRDE) [24], the National Center for Higher Education Management Systems (NCHEMS) Information for State Higher Education Policymaking and Analysis [25] the National Center for Academic Transformation [26], the National Survey of Student Engagement [27] and the National Survey of Student Engagement in the Community College [28], and the Educational Policy Institute's National Student Retention Clearinghouse (NSRC) [29] provide guidelines and exemplars for improving retention.

In terms of student success rates, it is clear that some institutions consistently outperform other similar institutions, according to College Results Online [30], which assesses graduation rates according to eleven factors including "student preparation, size, selectivity, percent low-income students, and institutional support" [31]. Schools that continuously improve retention, persistence and success, "make student success an unambiguous, institution-wide priority, driven from the top and pursued over the long term" [32].

The growth of enrollment in online education and the expectation among higher education senior administrators that outcomes from ALN will exceed face to face outcomes within the next three years [33] indicate growing belief in ALN's power to engage learners and help them succeed. Sloan-C's body of research confirms that ALN is especially suited for the anytime, anywhere, affordable access that is responsive to life in a knowledge society.

II. II. BARRIERS TO ONLINE SUCCESS

The effectiveness of online learning environments varies. Learners can be demotivated by online courses that are impersonal, irrelevant, boring, one-size-fits-all page-turners. Just as learners in face to face courses can be, online earners can be under-prepared, under-motivated and discouraged by a lack of immediate payoff.

A few empirical studies have identified barriers to online success. The most frequent reasons for dropouts

in corporate eLearning are, according to Berge [34] citing Frankola [35]: lack of time, lack of preferences; poorly designed course; and substandard or inexperienced instructor. In a study of 400 corporate e-learners and academic online students, the e-Learning Consortium cited these factors influencing drop-out:

- Lack of motivation (36%);
- Instructional design-related factors and learning style mismatch (36%);
- Time conflicts with work and family commitment (33.1%);
- Learning what one needed to know…before the end of the course (25%);
- Lack of organizational support [36].

In an academic setting, Tello's study of persistence (defined as students who completed the course and/or planned to continue online in the subsequent semester) surveyed 714 online students and found reasons for non-persistence were primarily situational barriers: work, family and time commitments. Institutional barriers accounted for slightly more than one third of the reasons non-persisters said they withdrew from their online courses: the course was not offered the subsequent semester, the course content did not meet their expectations, or the instructor contact was not what the student expected [37].

At Monroe Community College, telephone surveys of 201 online non-retained students identified these top reasons for non-completion: lack of motivation; the course took too much time; instructor's teaching style; too many technical difficulties; fell behind and couldn't catch up; too much reading; signed up for too many courses; course too unstructured; not interested in subject; couldn't handle study plus other activities [38].

In an analysis of 47 barriers, Muilenburg and Berge collected 1067 survey responses from students, and found that the most important barrier for online students was a lack of social interaction. The next most severe barriers were administrative/instructor issues, time and support for studies, and learner motivation. Learners rated technical problems and cost/access to the Internet lower, and rated lack of technical and academic skills as the lowest obstacles to learning online [39].

By some early estimates, online course completion may have been consistently lower—from 10% to 50%—in comparison to course completion in face-to-face classes [40]. Ongoing studies at the University of Central Florida show that on average, "fully online courses have slightly lower success rates and higher withdrawal rates than either their face-to-face or Web-enhanced counterparts" [41]. For most schools, Ingle explains that specifically online retention data are difficult to disaggregate from overall retention data for a multitude of reasons, including the fluidity of enrollment in various delivery modes when sequential and full programs are not available or do not align with individual schedules; traditional definitions of retention do not account for "high achievers, intermittent students, or students who have no interest in moving toward a terminal degree, certificate, or license" [42].

Completion rates improve for students who gain experience in online education and pursue higher degree levels, so that online success rates are higher in advanced degrees than in beginning courses and programs. In her study of the issues surrounding online completion, Ingle found these course completion results for regionally and nationally accredited schools that offer fully online programs:

Categories	Number	Enrolled	Completed	Dropped	Rate
Number Programs in Sample	358				
Number Responding Programs	101				
Programs, Non-tracking*	24				
Programs, Tracking	76				
Undergraduate Institutions	69	192,896	116,096	76,800	60.19%
Two-year schools	58	169,794	96,566	73,228	56.87%
Four-year schools	5	14,616	12,322	2,294	84.31%
Upper division reported only	6	8,486	7,208	1,278	84.94%
Graduate schools	7	8,315	7,112	1,233	85.53%
Totals for Responding Programs		201,211	123,208	78,003	61.23%

* Non-tracking programs: unable to track or separate online course completion statistics

Table 1: Online Enrollment and Course Completion Rates for 2002–2003, Ingle [42]

A caveat regarding these empirical studies is that "elements of self-deception and impression management" may characterize students' overt explanations for dropping out; socially acceptable reasons like lack of time may mask 'unacceptable' reasons such as:

> Problems with a lack of prerequisite knowledge, with the course content itself in terms of both understanding and relevance, lack of support from peers and family, stress, poor marks, procrastination, a need for face-to-face interaction, adult pride, poor tutor feedback, weak goal commitment, a fear of failure, and other explanations for a dropout decision…[43].

Some institutions may settle for identifying the factors that are beyond their control and accept that they can't do much about them. Others, however, treat such factors as starting points.

III. III. FACTORS IN ONLINE SUCCESS

As demand for ALN grows [33], it is useful to understand the practices that improve online learning, cost effectiveness and institutional commitment, access, and student and faculty satisfaction. ALN offers new ways for encouraging and tracking the kind of connected participation that spells success for learners. Indeed, asynchronous learning networks—technological and people networks—have enabled organizations and institutions to share their knowledge internally and externally much more rapidly and accurately than ever before. Yet improving course completion, persistence, and success means attending to a multitude of variables. Berge and Yi-Huang illustrate some relationships in "A Model for Sustainable Student Retention: A Holistic Perspective on the Student Dropout Problem with Special Attention to e-Learning," in Table 2 [34].

Demographic Variables	Bureaucratic Variables	Institutional Interactions
Age, Gender, Ethnicity, Residence	Mission & Policy	Bureaucratic Interactions
Family Income/Socioeconomic Status, Parental Educational Level and Parental Expectation	Budgeting & Funding	Academic Interactions
	Institutional Awareness & Participation	Social Interactions
Individual Variables	Academic Variables	
Academic Skills and Abilities	Structural System	Interactions External to Institution
Motivation, Goals & Commitment	Normative System	Life Circumstances
Prior Educational Experiences	Social Variables	Work Circumstances
Record of Academic Achievements	Social System	Family/Socio-Economic Circumstances
Prior Schooling Experiences	Mechanisms for Social Integration	
Academic Outcomes + Psychological Outcomes		
Voluntary/Involuntary Decision on Persistence/Drop-out		

Table 2: Retention Variables, from Berge and Huang [34]

At the institutional level, Schreck explains that "strengthening the relationship between variables…is more important than improving variables in isolation….online course retention is a direct reflection of how well an institution establishes an inquiry process (i.e., how well they research, build understanding, and implement that understanding) into four major areas: courses, teachers, students, and administrative" [44].

Schools "need to design more flexible schedules for working adult students, create a greater sense of community or engagement…, address the special needs of English-as-second-language students, and serve at-risk students more effectively" summarizes Twigg [11]. The National Center for Academic Transformation (NCAT) Program in Course Redesign has demonstrated that it is possible to increase student success while reducing instructional costs in first-year courses that including significant ratios of underserved students—adults, students of color, and low-income students. NCAT projects document strategies that improve quality and reduce costs in face to face, blended and ALN courses:

- Redesign the whole course;
- Encourage active learning;
- Provide students with individualized assistance;
- Build in ongoing assessment and prompt (automated) feedback;
- Ensure sufficient time on task and monitor student progress [45].

Applying these strategies yields measurable improvements in learning outcomes, costs, and success rates [46].

IV. THIRTEEN WAYS OF LOOKING AT SUCCESS: TWO AND FOUR YEAR PROGRAMS WITH HIGH COURSE COMPLETION RATES

It is not unusual for online completion rates at the graduate level to be 90% or higher, rates that are commensurate with face to face graduate programs. However, non-completions at the 2- and 4-year levels can be as low as 57–60% as Ingle shows in results from 76 schools [42].

To discover what schools are doing to achieve better course completions in the first two years, we sent an informal query to the directors of programs that are listed in the Sloan-C Catalog [47], asking them to summarize the factors that might account for their course completion rates of 80% or more in the first two years of their programs. Twelve schools and the University of Texas Telecampus (for 15 University of Texas campuses) responded to our query, and their responses are in Appendix A.

Schools that responded are regionally accredited not-for-profits; they represent an array of Carnegie classes:

Name	**Public/Private** **Carnegie Class**	**Total Enrollment**
AIB College of Business Des Moines, IA	Private NFP Associates Colleges	902
Dallas Baptist University Dallas TX	Private NFP Masters Colleges and Universities I	4714
Drexel University Philadelphia, PA	Private NFP Doctoral/Research Universities--Intensive	17656
Herkimer County Community College Herkimer, New York	Public Associates Colleges	3472
Marylhurst University Marylhurst, OR	Private NFP Masters Colleges and Universities I	1245
Pace University New York, NY	Private NFP Doctoral/Research Universities--Intensive	13670
Park University Parkville, MO	Private NFP Masters Colleges and Universities I	12548
Peirce College Philadelphia, PA	Private NFP Associates Colleges	1892
Rochester Institute of Technology Rochester, NY	Private NFP Masters Colleges and Universities I	14552
Seton Hall University's SetonWorldWide South Orange, NJ	Private NFP Doctoral/Research Universities--Intensive	9824
University of Illinois at Springfield Springfield, IL	Public Masters Colleges and Universities I	4396
University of Cincinnati Cincinnati, Ohio	Public Doctoral/Research Universities--Extensive	27718
University of Texas TeleCampus (15 campuses), TX	Public	

Table 3: Schools with at Least 80% Online Course Completion Rates in the First Two Years

V. RECOMMENDATIONS FOR BETTER ALNS

The original principles of ALN—asynchronously interactive, instructor-led, resource-rich, cohort-based learning—hold true as practices that support learner success online. Many such practices, supported by data, are detailed in the Sloan-C effective practices collection at http://www.sloan-c.org. Below are some recommendations for better ALNs that are drawn from Sloan-C research and exemplified in the schools listed in Table 3 above.

A. Cost Effectiveness and Institutional Commitment

Improving online course completions so that the quality of online education is at least equivalent to the institution's quality in traditional modes calls for the commitment of senior leadership and leadership throughout the institution.

Schools that are truly learner-centered [48] are more likely to thrive and to inspire lifelong loyalty and support. As ALN becomes part of the fabric of higher education, whether in fully online or blended courses, one of the best things institutions can do is to articulate their distinctive missions, supporting rhetoric with data, so that learners can find the best fit for their personal and professional goals. Recognizing that "retention initiatives…are estimated to be 3–5 times more cost-effective than recruitment efforts, i.e., the cost of recruiting one new student to college approximates the cost of retaining 3–5 already enrolled students" [49], institutions that focus on student success, seeking to involve all members of the community in cross-functional teams, benchmarking efforts internally and externally, and publishing success strategies are more likely to ensure ongoing commitment. Integrating administrative systems and support services for online, blended, and face to face populations benefits faculty, students, advisors and prospective constituencies so that people are able to track their own progress and institutional progress towards goals [50].

Many schools emphasize advising and proactive outreach to encourage student progress. For example, eArmyU does proactive counseling and intervention through its customer relationship management system, tracking students from admission through graduation, using email and phone reminders to keep in touch and make sure that students stay on pace towards their degrees. Especially for learners who incur financial aid debt and then drop out without degrees that would help them to repay loans, the consequences of non-completion are severe. Retention efforts pay off, helping make education more affordable for learners as well as for institutions.

Sharing resources with others to provide curricula specifically designed and continuously refined for community populations, such as Pace University's National Coalition for Telecommunications Education and Learning (NACTEL) programs for the telecommunications industry [51]and Bismarck State College's programs for the utilities industry [52] has produced high retention and completion rates. Moreover, freely shared courses such as Carnegie Mellon's Online Learning Initiative [53] and learning resources such as Merlot [54] and Connexions [55] can reduce development costs and improve quality. As increased demand collides with diminishing resources and increased calls for accountability [56], ALNs offer cost effective [57], learning effective, scalable solutions.

B. Learning Effectiveness

The characteristics of ALN programs—instructor-led, cohort based, less than 20% physical presence, resource rich, with emphasis on interaction—are the ingredients for engaged learning, a key to learning success. ALN has the capacity to draw on the diversity of learners' experience, abilities and aspirations to make course content and activities personally relevant to learners' everyday lives. Interaction through

reflection and with content, interface, teachers and with peers helps learners stay engaged [58]. Courses designed for active learning—using the principles of effective online learning [59, 60], challenge- and legacy-based learning that is learner-, knowledge-, and assessment-centered [60, 61], foregrounding teaching, cognitive and social presence [60, 62] to create learning environments that model "solidarity, congeniality, and affiliation"[63]—enable personalized assignments and scaffolding for metacognition. Cohorts are especially effective at engaging students:

> Surveys of graduating students consistently point to the cohort-based design of the program as critical to their success. Students take each course with the same group of 30 students during the two-year program. They develop extremely close relationships, which they lean on for encouragement and support [64].

A comparison of reasons for drop-out among traditional and non-traditional students finds that strong social networks are critically important for students:

> When you doubt yourself, your intelligence, everything ... you feel as though you can't make it, you're not going to make it, it's a horrible feeling. ... When you find a student who says, 'Yes, I know what you're talking about. Yes, I have that same problem'—even if she's never solved it and you're still experiencing it, you're not alone anymore [65].

Establishing a learner centered environment is a collective endeavor, as one faculty member noted: "We're not through here until everyone in this class has learned this material. Everybody's learning is everybody's responsibility" [48]. Interactive learning using the special affordances of ALN—reflection, collaboration, team teaching and teamwork, student-led groups and discussions, automations, simulations, reusable learning objects, shared course resources, games, blogs, wikis and participation tracking—give students options for control, choice and pace so that they can review content as needed, gain technological expertise, and negotiate multiple perspectives. Thus, NCAT and others recommend adapting whole course redesign [11], using design teams and peer review to create engaging courses that emphasize interaction rather than didacticism. To share knowledge about learning effectiveness, some institutions publish standards, guidelines and examples for developing and refining courses online [66, 67]. Going beyond attention to individual courses, some institutions have developed coherent pedagogical guidelines and outcomes for mastery learning across the entire curriculum so that learners understand the big picture and where they are in it. For example, Babson College's Model Driven Design (MDD) fosters knowledge building among the faculty and student community through interdisciplinary design and continuous refinement of entire programs [68]. National initiatives and other interest groups publish rubrics for excellence in teaching that are useful for building knowledge about how we learn. ALN enables providers to use resources like these to focus on learners' experiences, establish standards, and demonstrate and improve learning outcomes.

C. Access

Sloan-C's vision for access through ALN is that all learners who are qualified and motivated will be enabled to succeed and complete courses, programs and degrees through online access to learning in any discipline, continually enlarging the pool of learners [69]. In some contexts, 100% retention is not the goal and some learners accomplish their goals without seeking degrees; for example, Middlesex Community College reports that "91 percent of the students who left …in good academic standing prior to earning a degree or certificate reported they had completely or partially satisfied their primary educational goal" [70].

Nevertheless, "the most pressing problem facing us today isn't making education more effective, it is making education more available" [71]. Innovative, comprehensive support services are a critically

important measure of access, as WCET [72] and as Sloan-C effective practices [73] have demonstrated. As Scarafiotti and Cleveland-Innes point out (*The Times They Are A-Changing,* in this volume), moving from access to choice calls for mobilizing communities to discover new ways to motivate and engage learners. For example, corporate/academic collaborations are huge, largely unexplored channels for on the-job access to general education, to firm- and industry-specific education and to training programs, all of mutual benefit to learners, employers and institutions.

Accessibility includes individual role adjustment for learning online in a mode that demands considerably "greater individual responsibility" that is more internally than externally motivated [74]. Managing student expectations about learning online, orientations, proactive advising, and intervening with automated and human aid improve success rates. Especially notable are the positive effects of peer-topeer support [75], which have reduced attrition by 50%.

ALN provides ample evidence of greater accessibility for a greater diversity of learners. With special attention to underserved populations at schools selected because of their high percentages of targeted groups—recent high school graduates in need of remediation, first generation college learners, returning or first time adult learners with competing priorities, low-income students, and African-American and Hispanic students—NCAT demonstrates improved learning outcomes, success rates, and costs through redesigned courses that take advantage of ALN technology. Providing on-demand tutorials, remediation, online resources and 24/7 support services; organizing large groups into smaller cohorts of peers whom course design motivates to help each other; increasing time on task with required (and monitored) participation; replacing duplicated instructional effort with self-directed, computer-assisted skills development, quizzing, testing and automated feedback—these good pedagogical practices improved success for "*very large numbers of students*—a task that would have been impossible without technology" [46].

D. Faculty Satisfaction

Faculty want to improve teaching, learning and student success. Ironically, in too many environments, institutions do not recognize or reward excellence in teaching, let alone reward excellence in completion results. Thus, the State Higher Education Executive Officers (SHEEO) 2005 report, *Accountability for Better Results: A National Imperative for Higher Education,* recommends that:

> Faculty members must lead the way in devising more coherent programs of general education, more effective and efficient teaching techniques, and useful, authentic assessments of student learning. And institutional reward systems must provide more incentives and recognition for faculty contributions that increase student learning, retention, and success [76].

Without reward and support systems, faculty, like students, may withdraw from engagement:

> Instructor burn-out and alienation leads to a… form of desensitization. As instructors begin to take necessary shortcuts they find themselves efficiently performing routine operations upon students whose learning styles and needs are actually quite heterogeneous. These students, in turn, become desensitized as their instructors begin to appear almost robotic in their provocations and responses (or even to disappear altogether, becoming, as a matter of fact and not just as a figure of speech, ghosts in the machine) [77].

Material incentives for faculty include additional funding and/or release time for developing, teaching, researching and publishing research about online courses [78]. ALN also offers the incentives of more effective teaching for faculty who use strategies that are not available face to face [79], who reduce cost and save time [80], who help achieve institutional and program missions, and who build new

communities for sharing, organizing and teaching [81]. Faculty who participate in development programs for online teaching enjoy renewed interest sparked by rethinking their teaching, including "responding more to student needs, changing their course development and delivery, incorporating technology into teaching, modifying their time management, and [using more] resources in their courses" [41]. Faculty also enjoy collegial processes of innovating and renovating and appreciate students' perceptions of higher learning and satisfaction [60]. Many more examples of faculty satisfaction related to student success are detailed in Sloan-C's effective practices [82].

E. Student Satisfaction

Back in 1967, when The Beatles' working class heroes found school inhospitable, less attention was paid to student satisfaction. Today we are realizing that satisfaction with all aspects of the learning experience—academic challenge, fairness, and relevance; substantive, constructive interaction; support services and resources—motivates people to continue studies. Improving success rates in the still young field of ALN depends on understanding and rewarding learners' perspectives.

Figure 1: Students' Views on ALN [83]

An analysis of thousands of student testimonials about the value of ALN, figure 2 shows that learners choose ALN for many reasons; the most frequently cited themes cluster towards the center of the figure. Growing understanding and continuous assessment of ALN enables more and more providers to take these themes into account, developing the still young field of ALN to make higher education better through learning environments more and more responsive to the dimensions of everyday life.

VI. CONCLUSION

"Rigor, relevance, and relationships" [16] are critical for student success online and face to face. Despite the barriers we face as technology makes a culture of learning possible, ALNs offer affordable and increasingly effective alternatives access for students to engage with one another, with content, and teachers. As unprecedented innovation widens connectivity, educators who are shaping the environments of the future are re-examining tradition to discover how ALNs can transform learning. The vignettes below from schools that focus on student success demonstrate that "it's getting better, a little better all the time" [84].

VII. VII. APPENDIX A

Here are vignettes from twelve two- and four-year colleges and a state university system that have achieved high online course completion rates. Responses to our request for the reasons students complete online courses at rates of 80% or more are the perceptions of administrators. Although we did not seek to establish common metrics and terminology, and did not ask for comparison with face to face course completion rates, a more scientific study would be beneficial. Nevertheless, it is significant that the schools all emphasize strategic planning for growth, continuous assessment, training and support for faculty and students, and instructional design that promotes interaction.

1. AIB College of Business, Des Moines, IA

AIB College of Business is an independent, nonprofit, coeducational two-year business college founded in 1921. AIB College of Business states its mission as being "dedicated to providing quality educational opportunities that prepare students to pursue careers in business." To fulfill this mission, AIB offers associate degree and diploma courses of study, and the College administration directs its efforts toward "creating an educational environment by providing a variety of learning experiences, quality educational programs, and business and social activities."

After an evaluation review, AIB has obtained blanket approval from its regional accrediting agency (Higher Learning Commission of the North Central Association of Colleges and Universities) to offer all of its associates degrees online. The evaluation team cited AIB's online programs as exemplary and stated that other institutions could learn from AIB's standards of excellence in online delivery.

Growing college-wide enrollment is one of AIB's 12 principal strategic goals over the next five years. AIB plans to increase its total enrollment to 1,000 students and sees continued expansion of the online degree program as "paramount," particularly for growing the population of adult learners served. Over the last academic year, AIB reports achieving a course completion rate of at least 80% each term. Below are some of the practices that AIB believes contribute to its high retention rates:

- *Training for students*—students taking online courses have the option of attending an in-person orientation session where they training on how to use Blackboard and how to be successful in online courses. Students enrolled in online majors take a "College Foundations" course during their first term where they receive detailed training on the necessary technical skills, as well as study skills and time management. Documentation is also available to students online, such as a Blackboard manual and troubleshooting guide.

- *Training for instructors*—all new online instructors go through an extensive 20-hour training covering technical and pedagogical issues related to teaching in the online environment.

- Personal contact with faculty and staff members—AIB keeps class sizes small (15 students or less) so that each student has personal contact with the instructor. AIB also encourages instructors to develop highly interactive courses to facilitate getting to know students on an individual basis. The relatively small size of the online program (less than 300 students taking online courses) facilitates personal contact between students and staff members.
- *Technical support*—AIB provides free 24/7 technical support to students.

Stacy Crawford
Online Education Coordinator
AIB College of Business

2. Dallas Baptist University, Dallas, TX

The purpose of the Online Education Department at Dallas Baptist University is to provide Christ-centered, quality higher education to traditional age and adult students at both the undergraduate and graduate levels in the United States and abroad using Internet-based instructional techniques and methods of communication in order to integrate faith and learning in meeting the educational needs of the expanding global virtual community.

Since 1998, Dallas Baptist University has offered fully accredited degree programs via the Internet, creating a rich online environment where students and faculty members can collaborate and interact. DBU's online campus features a dynamic combination of the newest Internet technologies from streaming media to threaded discussions.

The online completion rate at DBU has remained constant between 92% and 93% each semester. Several factors account for this high rate. First and foremost, all faculty members are required to attend training, both those developing online courses and those taking over courses that have already been developed. Faculty are trained in online pedagogy, course facilitation and building online learning community.

Class sizes are kept to 22 students so that faculty can do what they do best, interact with the students. Upon admission to the University, approval from the Online Student Coordinator and the student's advisor must be obtained before a student may enroll in an online course.

Secondly, DBU has excellent online course content. Each master course is designed by a qualified instructor in that discipline, and the content is approved in that college and in the provost office. DBU has a team of instructional course developers who apply graphics, add learning objects, load quizzes and exams and custom create the content in Blackboard.

DBU won Blackboard's Bbionic Course of the Year, one of only five courses chosen. Because of strong faculty support, instructors can be the content experts and do not have to become technology experts. DBU uses a consistent navigation path for all courses so that students know where to go and how to interact with whatever course they take. Each course is required to have student-student and student instructor activity.

Third, DBU screens students with a skills inventory. Students must know how to send an email attachment and notify DBU with the name of their Internet provider before they can take an online course at DBU. For computer users, DBU recommends that students take a basic computer class before taking online courses. Finally, all DBU support services are online: library, bookstore, writing center, registration, and a 24x7 technical help desk that supports DBU online students anytime, anywhere.

Kaye Shelton
Director, Online Education
Assistant Professor of Adult Education
Dallas Baptist University

3. Drexel University (Drexel eLearning), Philadelphia, PA

At Drexel University, course completion rates in distance learning courses are between 85% and 95%, depending on the academic program. Undergraduate degrees are available in both business and nursing. Drexel eLearning, a wholly owned subsidiary of Drexel University, works with the faculty and administrators within each college offering an online undergraduate degree to plan and implement an online program resulting in high retention rates. Specific activities within our undergraduate asynchronous online degree program include:

- The use of three full-time instructional designers, each with terminal degrees in their field, to design online courses which meet the highest pedagogical standards.
- The annual administration of a New Online Student Survey to acquire up-to-date information on how online students perceive their online program.
- The employment of full-time academic advisors for online students.
- The establishment of a Wednesday to Tuesday (midnight) course schedule to afford online students the convenience of the weekend to complete assignments (Goodwin College, only).
- The active use of online discussion boards to give online students the feeling of connectedness with other students.
- The use of 24/7 technical support service to assists students from all over the world with technical issues.
- The utilization of state-of-the-art systems, such as Blackboard, to enhance student's ability to coalesce through our Orientation to Online Learning Session, our Online Student Community Center, and our Peer Mentoring Program
- The use of online Podcast, called the Drexel eLearning Minute, to provide expert advice on succeeding in an online course.

Dr. Kenneth E. Hartman
Director of Academic Affairs
Drexel eLearning, Inc.
Drexel University

4. Herkimer County Community College, Herkimer NY

The College is officially designated by the State University of New York as a "Full Opportunity College," and operates with a policy of open admissions, but some programs are competitive and enrollment may be limited.

The mission of Herkimer County Community College is to:

- Provide a wide range of students with access to quality, affordable lifelong learning opportunities;
- Foster diversity by attracting students from other countries, states, and counties as well as from the local area;
- Offer quality associate degree and certificate programs in response to local and regional needs;
- Facilitate student achievement by offering arts and science degree transfer programs that provide a strong liberal arts and science foundation and applied science degree and certificate programs that focus on specific career interests;

- Offer a variety of innovative and technical programs and services to students and the community; and
- Provide business and industry training thereby strengthening the economic development of the region and enhancing its position in the global marketplace.

The College operates under the authority of the State University of New York and the College Board of Trustees and is sponsored by Herkimer County.

HCCC Vision Statement
Herkimer County Community College will become an institution of national, and in some areas, international reputation, recognized for its quality academic and athletic programs and services; a supportive environment that fosters diversity; and successful performance of its graduates. Recognition of this quality will extend to the expertise and performance of its teaching faculty; the personal service provided by its staff; the support offered by its administration and board of trustees; and the excellence of its campus life. In Herkimer County, HCCC will become the college of choice for the majority of college-bound residents and the trainer of choice for businesses and non-profit organizations. This challenge will be considered successful when the College is ranked in the top quartile among its peer institutions in each of the areas defined in its Performance Indicators.

Quality Policy Statement
It is the policy of Herkimer County Community College to achieve total performance in satisfying the requirements of our students and customers (both internal and external to the College). Quality performance means understanding who those students and customers are; understanding what requirements they have of us; and meeting each requirement without error, on time, every time. Teamwork and continuous process improvement are inherent in achieving these goals.

Retention initiatives for a coordinated first year include: block scheduling, probation program for first-year students, peer mentoring program, early warning system, website for first-year success, newsletter for faculty of first-year students, marketing of first-year program, and measurement and prediction regarding the online cohort. HCCC strives for online students to have equivalent services to those offered to campus students.

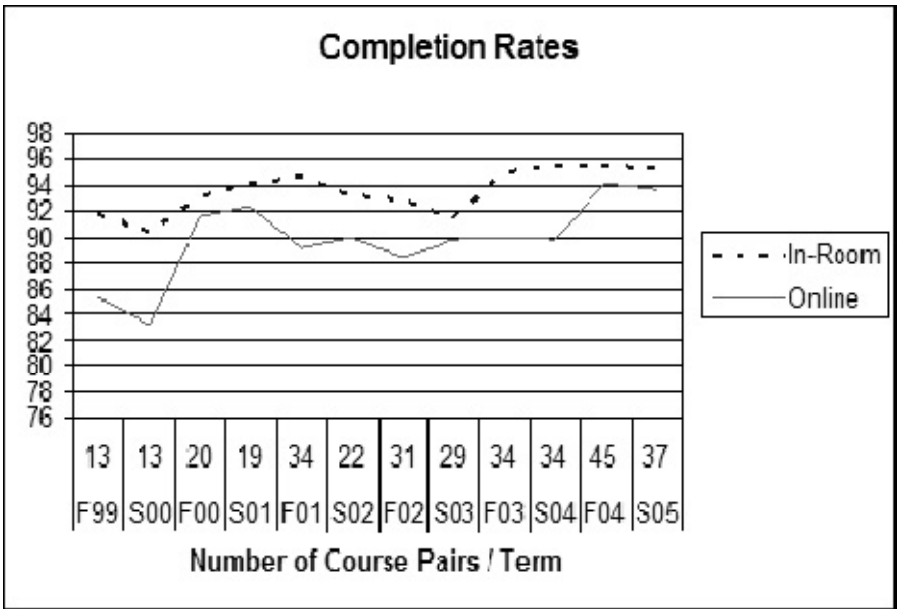

Figure 2: HCCC Online and In-Room Student Completion/Retention Rates, Fall 1999 to Spring 2005

William Pelz
Herkimer County Community College
http://www.suny.edu/SUNYNews/txt/2004-01-27BestPractices.txt

5. Marylhurst University, Marylhurst, OR

Marylhurst University is a private institution of higher learning open to men and women of any race or religion. It is dedicated to making innovative post-secondary education accessible to self-directed students of any age. Marylhurst offers coursework leading to bachelor's and master's degrees, and to other goals such as career transition, professional development, and personal enrichment.

Animated by its Catholic and liberal arts heritage, Marylhurst emphasizes the uniqueness and dignity of each person, and is committed to the examination of values, as well as to quality academic and professional training. Marylhurst University seeks to aid students in advancing their goals for responsible participation in a rapidly changing world by pursuing, and encouraging its students to pursue, the ideals of competence, leadership, and service.

The 91% online course retention at Marylhurst University is a result of the interplay of 4 major areas or themes: 1) Course; 2) Teacher; 3) Student; 4) Administrative.

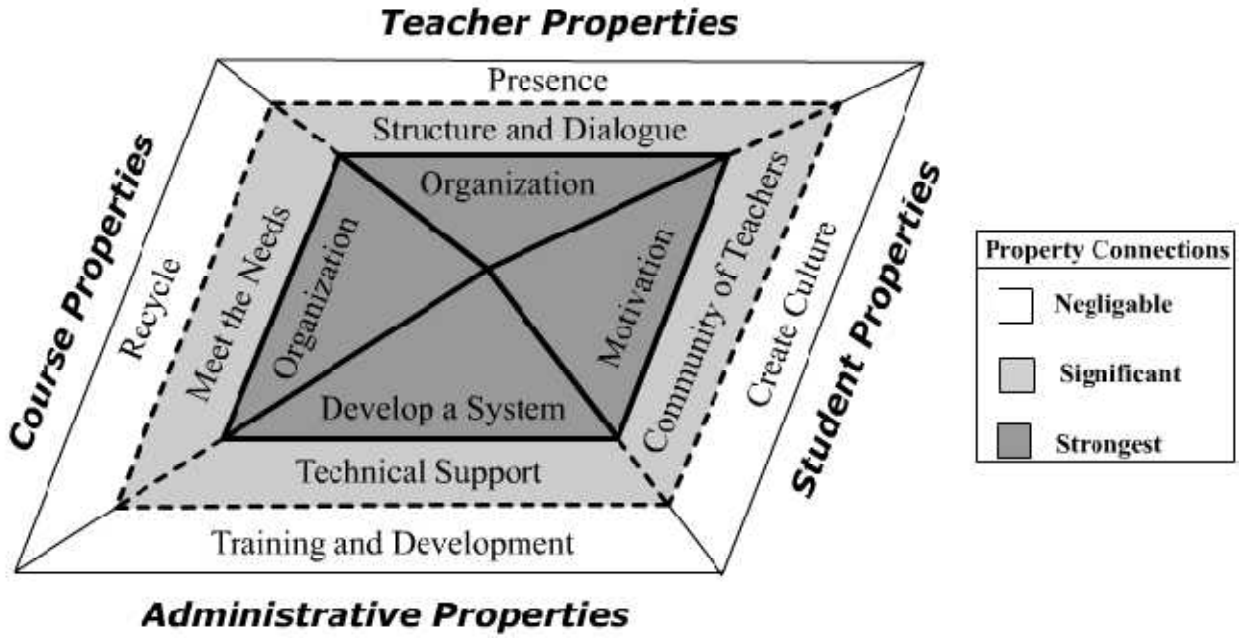

Figure 3: Analysis of Factors in Course Retention at Marylhurst [44]

The interplay of themes is within their respective properties with the "1's" having the weakest connections, the "2's" having stronger connections, and the "3's" having the strongest connections.

Course Properties:
Recycling Courses (less important)
Course that "Meet the Needs" (more important)
Organized Courses (most important)

Teacher Properties:
Presence (less important)
Structure and Dialogue (more important)
Organized Teachers (most important)

Student Properties:
Creating Culture (less important)
Community of Teachers (more important)
Motivation (most important)

Administrative Properties:
Training and Development (less important)
Technical Support (more important)
Developing a Systematic Approach

Propositions
Online course retention is a direct reflection of how well an institution establishes an inquiry process (i.e., how well they research, build understanding, and implement that understanding) into four major areas: courses, teachers, students, and administrative.

If one of the four major areas (courses, teachers, students, and administrative) is missing, the strength of

the model diminishes. Therefore, all four areas should be considered when trying to improve online course retention.

Strengthening the relationship between variables in the model is more important than improving variables in isolation.

Highly organized courses and teachers (defined in the following propositions), and knowledge of what motivates online students improve the administrative system for delivery.

Highly organized courses feature routines, clear writing, and a templated, weekly layout for discussions.

Highly organized teachers focus on establishing a pattern of expectations, offer clear and frequent communication, and engage the students in the learning process.

Meeting the needs of students requires strong technical support and training faculty to create a balance between structure and dialogue. This will lead to a community of teachers—students helping students [44].

Vincent Schreck
Senior Instructional Designer
Portland State University
(formerly of Marylhurst University)

6. Pace University, New York, NY

Pace University's School of Computer Science and Information Systems has been providing an AS in Telecommunications in an ALN format since 1999. More recently, the University has offered an AS in Networking Technologies and an accelerated BS in Telecommunications completion degree. (See http://csis.pace.edu/nactel for additional information). Students in the NACTEL program regularly complete their courses with a 95% success rate with completion being defined as attaining a grade of C or better. There are five factors that have contributed to this success:

1. Pace University faculty members
2. Online advisors
3. Course development
4. NACTEL staff
5. Constant communication

Faculty

Pace University faculty members who teach in the NACTEL program regularly receive commendations from our students for their supportive, caring and effective teaching. Faculty members respond quickly to the needs of their students, and work hard to reply clearly and caringly to their requests. Faculty members strive to provide helpful and instructive responses to student questions, and work hard to continuously improve the courses that they are teaching.

Online Advisors

The NACTEL program has a number of individuals who serve as online advisors to our students. These individuals are available by phone or by email to help students with their course selections. Students often comment on the importance of these advisors who will help them to carefully select the right course or

courses for each semester. Students have worksheets that provide them with a road map of which courses to take, but the advisors are able to work with them to help them to select the right courses at the right times to ensure their success.

Course Development

All courses within the NACTEL program are developed carefully, with much attention being paid to instructional design factors that contribute to students' success. Students have access to a wide array of ways to learn a given set of concepts (textbooks, voice over PowerPoint lectures, practice quizzes, "real" quizzes, Web links, discussion forums, interactive exercises, simulation software, etc.). Built into all of these is a steady stream of feedback so that students know that they are learning what they are supposed to learn, in a timely fashion. Early and often feedback to students is built into each course, so that students know where they stand, and what else they need to learn. Courses are continually under review, and improvements are made on an ongoing basis.

NACTEL Staff

NACTEL staff members meet regularly and communicate frequently about students in the program. NACTEL staff members swing quickly into effect to provide students with extra help and support when necessary. Adult students who are working full-time and who are frequently raising families and who are actively involved in a wide array of other activities, sometimes need extra time or support In order to succeed in their classes. Occasionally our students need to "step out" of a given class for a period of time, due to some sort of emergency event in their lives (either personal or professional). Should that happen, NACTEL staff members work closely with the students to set up a "roll over" agreement which enables the student to complete the current course as soon as things calm down in their lives. These requests do not happen often, but NACTEL staff members are empowered to respond to them quickly and effectively when they do.

Constant Communication

The NACTEL program provides many ways for students to communicate with each other and with NACTEL staff and faculty members and administrators on a regular, frequent and easy basis. All students know how to reach all NACTEL staff members by email or by phone. All students know how to reach NACTEL faculty members by email and by phone when necessary. All students know how to reach NACTEL administrators by email and by phone when necessary. The flow of communication is intended to be two-way. Students receive frequent communications from NACTEL administrators. In addition, students are surveyed three times each semester about their courses, and are strongly encouraged to respond to these anonymous surveys. Faculty members solicit feedback about their courses, and the NACTEL administrators regularly review all course feedback. When students encounter problems, the goal is to fix them in a timely and caring fashion.

The NACTEL program regularly has a completion rate for its courses that is quite high. All five of the above mentioned factors play a key role in this. Students frequently comment on the help and support that they are able to receive while attending to their studies. We are convinced that all five of these factors contribute highly to the success of NACTEL students.

Dr. David Sachs
Associate Dean and NACTEL Co-Director
Pace University
School of Computer Science & Information Systems

7. Park University, Parkville, MO

The mission of Park University, an entrepreneurial institution of learning, is to provide access to academic excellence which will prepare learners to think critically, communicate effectively and engage in lifelong learning while serving a global community.

Park defines a student as having been retained if he/she is in the course at the end of the traditional add/drop-enrollment adjustment period (after 6 academic days in an 8-week term) and receives a grade (passing or failing) at the end of the term. Over the period of more than five years the retention rates ran from 93% to 97% each year. While the numbers are "hard," the reasons suggested for this success are anecdotal and are not the result of scientific research. As a best practice, Park has focused on quality of instruction by requiring faculty teaching online to go through a 6–8 week training program in which they are the student in the course they will be teaching, thus understanding the student perspective. This is a rigorous process in which the attrition rate is purposefully high. In most cases, faculty are also required to have taught the course in a face-to-face format before teaching it online. The net result has been an achievement of 94–96% retention of students, despite the obvious uncertainties associated with military life.

Park online instruction is web based, asynchronous, instructor led, and generally in eight-week terms. Qualified, experienced, trained faculty are sensitive to student needs and are assisted by trained course developers. Students are non-traditional, mature, and highly motivated. Services are online, including the Catalog, application forms, advising, registration and registration confirmation, book purchasing, assessment, library services, tutoring. Courses are convenient, flexible, asynchronous, interactive, and encourage peer support with high levels of interaction with instructors and among students. The platform is easily accessible with a consistent look and feel to all courses; it permits various activities and reporting and tracking. Policies are friendly to non-traditional students, including small classes and course loads in eight-week terms. Park students want academic excellence, support services, interaction, flexibility and convenience, attention and fair pricing. Student feedback based on 79,000 responses from 120,000 students over five years is positive:

- 90% indicated their online course required as much or more time than traditional face-to-face classes;
- 90% indicated they learned as much or more in their online course when compared to face-to-face courses;
- 90% indicated that their online course prepared them for future courses or to apply their learning.

Thomas W. Peterman, PhD. Vice President for Distance Learning
Park University

8. Peirce College, Philadelphia, PA

Peirce College is a four-year specialized institution offering accredited business administration, information technology and paralegal studies degree programs to address economic and workforce development needs. Founded as Union Business College in 1865 to provide educational opportunities to Civil War veterans transitioning to the civilian workforce, Peirce College was at the forefront in providing career-oriented education for women in the 19th century and remains the leading provider of part-time business education for women in the Commonwealth of Pennsylvania. Peirce College created Peirce Online in 2000 as part of its mission to offer practical, leading edge education primarily to working adult learners and in keeping with its legacy of utilizing innovative instructional technology in support of its mission. With its online business and information technology management degrees, Peirce is one of the

oldest accredited colleges offering a complete online degree program in the United States and is one of the fastest growing online Bachelor's degree programs according to eCollege.com.

One of the college's most notable strategic accomplishments with respect to e-Learning has been its expansion from a strong regional brand to a national scope and international reach, serving degree seeking students from 43 of the 50 states and seven foreign countries. Fifty percent of Peirce's tuition revenue is derived from its online program. Face-to-face instruction and online delivery utilize the same curricula, course description, and professors and achieve the same learning outcomes. These interchangeable formats are included under institutional accreditation through the Middle States Association (MSA) as well as program specific endorsements by the American Bar Association (ABA) and the Association of Collegiate Business Schools and Programs (ACBSP).

Peirce has recently incorporated streaming audio into its online course delivery; administratively, Peirce recently upgraded to Voice-Over-IP telephony that enhances communication among students, faculty and advisors. A new Customer Relationship Management (CRM) system has been installed which can focus communication between the College and targeted audiences of prospects and students.

Currently, Peirce has an 84% retention rate in the online experience. The College defines students as retained if they took classes in the fall and then again in the following spring or summer sessions. Peirce attributes retention success to the College's responsiveness to student needs. Accelerated classes and asynchronous delivery allow adult students to complete courses quickly and conveniently with no residency requirement. Peirce provides outstanding service with an institutional culture of being student-centered.

To this end, the College has established a program advisor model that essentially is higher education's version of a relationship manager, making sure students have a "single touch point" for all their needs. Support services, available online or in person, include tutoring, workshops, career advising, student organizations, an extensive virtual library, and a 24x7x365 help desk.

Jon Lenrow
Assistant Dean, Online Programs
Peirce College

9. Rochester Institute of Technology, Rochester, NY

At RIT, course completion rates in distance learning courses average 94.5%, for the past nine years. It is clear that online learning students are driven to complete their degrees, according to marketing and student satisfaction surveys. When asked why they are attending RIT Online, students respond overwhelmingly that they are here to complete a degree. The rates of completion seem to be staying constant, for many reasons. Student satisfaction with distance learning at RIT has remained constant and high. Academic programs in which most online students are enrolled are ones in which students see a financial reward that is compelling enough to make them stay with the program. In addition, tuition investment costs to attend RIT are high. Between 60 and 80% of non-traditional students receive employer support, but even those who don't receive employer reimbursement simply recognize the value of getting a degree.

From a list of ten exclusive options, the consistent reason (70%) students enroll in online courses is for convenience and flexibility. The second most frequently chosen reason is because the course was not offered any other way. To help ensure success, RIT's Online Learning has a policy of simply asking

students if they believe they have the time-management skills for the asynchronous online classroom. RIT recognizes that different students prefer different learning styles, but that older students are often encumbered by more responsibilities—professional and personal obligations which make them choose online classes more than do the traditional aged students who have more choices because their outside obligations are often less.

Courses taught at RIT use asynchronous learning environments. For RIT this is an acknowledgement that faculty do listen and understand that using flexible online learning technologies will add to student satisfaction and lead to student success. Faculty typically follow the seven principles of good practice when setting up their online courses. The faculty have also adopted standard practices to assure students get the highest quality educational experience.

New students are overwhelming satisfied and comfortable with the online process. RIT runs first time student surveys every quarter. These surveys indicate that first time students are indeed comfortable and satisfied with initial experiences. The review of their course completion rates complements this data. These students are given access to both customized online pages that prepare them for the online classroom experience, a CD-ROM to orient them to the online learning, and toll-free access to customer and technical support. In addition, these surveys indicate that physical contact with RIT is not a barrier. Students in the survey report they know whom to contact and using either the phone or email for customer service with a no difficulties. As a result the RIT Online Learning Department, feels that new and nonmatriculated students at RIT are comfortable.

Karen Vignare (formerly of RIT)
Director
MSU Global Ventures
Michigan State University

10. Seton Hall University's SetonWorldWide, South Orange NJ

Seton Hall University, *Where Leaders Learn*, is a major Catholic university. In a diverse and a collaborative environment it focuses on academic excellence and ethical development. Seton Hall students are prepared to be leaders in their professional and community lives in a global society and are challenged by outstanding faculty, an evolving technologically advanced setting and values-centered curricula.

The completion rates for all seven of Seton Hall online degree programs are on average 85–89% among approximately 400 students (exceeding the f2f rate of 75%). The primary reasons are: (1) a relevant, hands-on curriculum; (2) a learning team cohort program design with its inherent tendency to create an intimate learning community in which students enroll together in a pre-defined sequence of courses; (3) residency weekends where students bond with their colleagues, the faculty, the staff, and often, other learning team members from other cohorts; (4) faculty (most are full-time Seton Hall faculty) who understand the importance of interaction, rapid response time and constant feedback in cohorts in which two faculty interact with 15 students; (5) one-on-one student advisement; (6) full-time program administrators for each online degree program who provide continuous personalized non-academic student support; students are also provided with online mentoring, career counseling and open forum chat rooms to discuss academic issues; (7) every course is designed with interaction as the focus; using kept engaged throughout the course; and (8) the flexibility for students to move between learning teams if for any reason they are unable to continue with the original team; thus many students who drop from one term, return and continue in the next.

Finally, the most important reason for student success is the corporate culture of the SetonWorldWide and Seton Hall that support the values of commitment and student service.

Philip DiSalvio, Ed.D., Director, SetonWorldWide
http://www.setonworldwide.net
Assistant Provost

11. University of Illinois at Springfield, Springfield, IL

The University of Illinois' mission statement articulates the campus' various educational activities and emphasizes its commitment to students. The current mission statement was developed during UIS' strategic planning in 1991–92 and appears in Toward 2000: A Strategic Plan for Sangamon State University, Phase One.

The University of Illinois at Springfield has as its primary mission providing excellence in teaching. UIS strives to produce an educational environment where students can acquire:

1. a solid foundation for lifelong learning,
2. a keen appreciation of intellectual and aesthetic achievements,
3. an enhanced capacity for critical thinking and oral as well as written communication,
4. a practical preparation for pursuing fulfilling careers,
5. a sound basis for informed and concerned citizenship, and
6. a productive commitment to improving their world.

UIS emphasizes public affairs instruction, research, and service carried out through community partnerships that contribute to social progress, governmental effectiveness, educational excellence, and economic development. UIS is committed to addressing the needs of both traditional and nontraditional learners and reflecting cultural diversity in both the curriculum and the university community. UIS encourages innovative approaches appropriate to fulfilling these institutional aims.

Course completion rates in online classes at the University of Illinois at Springfield rates hover in the 90% range, within one or two percent of the on campus rates. The percentages are those who are enrolled in the class on "census" date—day ten of the semester—and are still there when grades are submitted. Undergrads need a D to pass; Grads need a C to pass; they can withdraw until the final couple of weeks of class. UIS charges "e-tuition" so out of state students enrolled in wholly online degree programs pay instate tuition. Finally, UIS does not admit students with fewer than 30 credit hours (except in a very small honors program).

A number of factors contribute to consistently maintaining this high rate including faculty responsiveness, student support and technical stability/support. Each of these three aspects is critical in assuring that students thrive in an online program.

At UIS, online classes are offered through the mainstream academic structure with, for the most part, the very same faculty members teaching the classes both on campus and online. They are experienced at teaching our non-traditional commuting-to-campus students—many of whom are full time professionals in administrative, legislative and executive offices of Illinois state government. Our faculty members participate in pedagogical workshops and one-on-one training from the Office of Technology-Enhanced Learning (OTEL) that stress a constructivist, engaged approach to teaching online. Student-centered learning is the norm. Faculty members, for the most part, respond to all email and online postings from students within 24 hours. OTEL supports the hiring and training of online peer tutors who serve as an

additional supportive resource for students in many of our online classes.

Each online degree program at UIS has a program coordinator who provides on-going support to distant students from their first inquiry through to the completion of their degree program. One cannot underestimate the value of having a single contact person who is consistently supportive and responsive, semester-by-semester, throughout the degree program. Students come to rely upon, and deeply appreciate, their program coordinator.

Providing stable web-based platforms for delivery of the curriculum is also important. The Educational Technology unit supports Blackboard at UIS, providing better than 99.9% "up" time. The Campus Technology Services unit assures that online learning applications get the highest priority for bandwidth to and from campus. A technology support desk is accessible six days a week during the semester (seven days a week during the first weeks of the term) via phone or email.

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12. University of Cincinnati, Cincinnati, OH

The University of Cincinnati is a public comprehensive learning and research university. UC currently offers two associate, five bachelor, four master, and one doctoral degree programs available largely (or wholly) through distance learning classes in a variety of areas.

UC cites several factors driving its development of online programs, including a desire to increase access, a strong market need for certain offerings such as their highly-ranked criminal justice program, institution-wide deployment of a course management system, and a new initiative for "revenue-based" programs. In the few years that UC has offered online programs, enrollments have now reached 1,200 students. The University sees its ability to enable students to take a top-ranked program online which is equal in quality to the traditional program as its most significant accomplishment in this area. The University of Cincinnati defines students as having been retained if after entry and completion of a given quarter, they return to the program (enrolled in courses) the next quarter.

Online courses typically maintain a faculty-student ratio of 15–25 students, and a tenure track faculty member leads most courses. Student feedback from annual and course surveys indicate at least equal, if not higher, satisfaction levels in the online programs relative to campus-based programs. One possible contributing factor is UC's strong focus on pedagogical approaches which meet the needs of working adults. For instance, some UC programs are delivered via single intensive, shorter-length courses which enable students to take two, separately scheduled, courses within a 10-week quarter to help working adults balance educational and other life demands. Faculty-student ratio and student support are also factors cited as contributing to UC's ability to attain high retention rates in its programs. UC also uses other quality indicators besides student retention, including also student learning, student satisfaction, and appropriate time to degree.

Retention in online programs is as high as 100% in the education administration program. The BS in Clinical Laboratory Science program began in Summer 2004) and reports a 95% (and above) retention rate. The Health Information Management program is its early stages and completions are also expected to be high. In the AAS in Early Childhood Education, course completion rates range from 85% to 93%.

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Academic Director, Distance Learning
University of Cincinnati
Provost Office

13. University of Texas TeleCampus

The UT TeleCampus is a support center for distance education and online degrees from the University of Texas System and its fifteen member institutions. The mission of the University of Texas TeleCampus is "to extend the reach of the UT System through the application of high-quality, student-centered Internet delivery to degree programs, academic courses, training, professional development, and college preparation." The UT TeleCampus also assists UT System institutions in capacity building, faculty professional development, and dissemination of "innovative and solution-based models and best practices for effective distance teaching and learning." The UT TeleCampus aims to "be the recognized leader and model for innovative multi-campus online learning in the nation." For academic courses, the amount of tuition and fees charged by each UT System campus varies and is based on residency status. As a result, the cost of taking a course will vary depending on which campus offers that course.

In Fall 2004, UTTC offered approximately 120 courses (138 course sections) and has consistently reported high course completion rates since 2002 (85% undergraduate; 97% graduate). UTTC attributes this level of success to three factors:

- UTTC and the UT universities produce quality courses that utilize best practices in course designand follow the Principles of Good Practice. Providing in-depth training for faculty and productionstaff enables them to produce interesting, highly interactive courses.
- UTTC and the UT universities have made a number of improvements to the "participation process" for students in the areas of registration, fee bill payment, initial course login, and technical problem resolution. Campus student business offices have designated contacts who are specifically trained to help distance education students. To reduce student confusion and frustration, UTTC provides students with course login information, technical requirements and skills training, and course management system navigation prior to the start of the semester.
- UTTC provides quality academic student services to aid successful course completion such as free online tutoring in many subject areas provided through Smarthinking, and a Digital Library which provides and coordinates a variety of library resources and services, including remote access to electronic resources, borrowing privileges at numerous academic and public libraries, reference and technical assistance.

Rob Robinson
Associate Director for the UT TeleCampus

VIII. ABOUT THE AUTHORS

Janet C. Moore is the Chief Learning Officer for Sloan-C. Dr. Moore edits and writes Sloan-C's newsletter, the *Sloan-C View*; edits the annual volumes in the Sloan-C quality and wisdom series; and is associate editor for the *Journal of Asynchronous Learning Networks*. She is the Sloan project manager for the Council of Academic Management for eArmyU. She wrote *Elements of Quality: The Sloan-C Quality Framework* and assists in the framework's development. She has reviewed more than 700 online programs for the Sloan-C Catalog. She participates in Sloan-C online workshops and special interest groups, and responds to queries about Sloan-C, requests for research, software reviews, surveys, website

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John Sener is Founder and Chief Learner for Sener Learning Services, a consulting practice focused on supporting the evolution of online and other technology-enabled learning environments, and Director of Special Initiatives for the Sloan Consortium. Current projects include Maryland Online's FIPSE-funded Quality Matters project (http://www.qualitymatters.org), the Maryland Students Online Consortium, and various Sloan Consortium activities. Sener is a contributing editor for the monthly newsletter Educational Pathways and has served on the Journal of Asynchronous Learning Networks editorial board since its inception. Sener's 25+ year career in education and training encompasses a unique mélange of learning experiences. He holds degrees from Johns Hopkins University and Oberlin College.

Marie J. Fetzner is the Director of Online Information and Distance Learning for Montgomery College in Germantown, Maryland. Formerly, she was the Assistant to the Vice President, Educational Technology Services/Banner Project Manager at Monroe Community College (MCC) in Rochester, New York. She was a founding member of MCC's online learning support team (The "Monroe Model"). She has extensive experience with online learning, online faculty development, planning, budgeting, report writing, grant writing and compliance, and technology plan development. Marie is enrolled in the Ph.D. in Education program at the Margaret Warner Graduate School of Education and Human Development at the University of Rochester where her research focuses on online student retention. She earned her Masters in Public Administration (MPA) degree from the State University of New York (SUNY) at Brockport, and her Bachelor of Music Education degree from the University of Rochester's Eastman School of Music. Marie is on the editorial board of the Journal of Asynchronous Learning Networks (JALN), has been a national board member and Region II director for the American Association of Women in Community Colleges (AAWCC) since 2002, and she is a graduate of the National Institute for Leadership Development (NILD).

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FACTORS THAT INFLUENCE STUDENTS' DECISION TO DROPOUT OF ONLINE COURSES

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ABSTRACT

Although there are many reasons why students dropout of college courses, those reasons may be unique for students who are enrolled in an online program. Issues of isolation, disconnectedness, and technological problems may be factors that influence a student to leave a course. To understand these factors, an online survey was developed to collect data from students who dropped out of an online program. Logistic regression analysis was used to compare various factors between those who persist in the program and those who dropout. The results, based on the dropouts from three cohorts in an online graduate program, show that demographic variables do not predict likelihood of dropping from a program. Instead, the students' reasons for dropping out of an online program are varied and unique to each individual. Recommendations for further study are incorporated in the conclusions.

I. INTRODUCTION

The landscape of education is changing with the increasing popularity of online instruction. Developments in educational use of computers, software, and distributed networks have led to questions about the effectiveness of this new method of educational delivery and the conditions that make it a successful experience for learners [1, 2]. Dropout rate is one measure of the effectiveness of an online program. Program quality can be determined, in part, by calculating student completion rates [3], and these rates tend to be lower for online classes [4]. This suggests that online programs may be less desirable for certain students than the more traditional face-to-face type of instruction.

"While there is now some statistical information available on distance education at higher education institutions in the United States, very few, if any, research surveys have focused on online education" [5]. National estimates on attrition in graduate programs in higher education are not available, in part due to the diversity of the programs and in the difficulty in establishing common metrics that allow valid cross-program comparisons of program completion and dropout rates [6]. Moreover, since high dropout rates reflect poorly on a program, which can impact program promotion and recruitment efforts, some institutions have registration procedures that mask attrition. For example, at the British Open University, beginning students register on a temporary basis, and, if they withdraw within three months of starting theprogram, their official registration will not show up on the University records [7].

Mostly from anecdotal information, it is estimated that dropout rates for distance education are higher than those for on-campus programs and courses. Some studies roughly estimate that students enrolled in

distance education are twice as likely to drop out than on-campus students. For example, Dutton, Dutton, and Perry [8] studied two class sections of an introduction to computer programming course; one was taught on-campus and the other in an online version of the course. Their results revealed substantial differences in the likelihood of students to complete the course. The online students had a 72.2% completion rate, while 90.3% of the undergraduates completed their face-to-face course. A study of enrollment and attrition rates for the online MBA program at West Texas A&M University found that online courses enroll more students than traditional campus courses but they also suffer from higher attrition rates [9]. That study was conducted by analyzing 15 graduate business courses offered during the past three years where the same professor taught both the campus and the Internet courses.

II. LITERATURE REVIEW

Two theories provide a comprehensive theoretical framework that might explain why students leave a course. One of these theories is Tinto's *Student Integration Model*, in which persistence is hypothesized to be related to how well the individual's motivation and academic ability match the institution's academic and social characteristics. This match shapes a person's commitment to completing college and commitment to the institution [10]. The second theory, Bean's *Model of Student Departure*, predicts persistence based on behavioral intention. These behavioral intentions are shaped by beliefs and attitudes. Student's experiences within the institution, but also factors external to the institution, can affect beliefs, attitudes, and decisions [11]. Noting some gaps in Tinto's theory, a convergence model has been suggested that combines the major propositions embedded in these two theories [12].

The American College Testing (ACT) program collects data about collegiate dropout rates in general. Table 1 shows dropout rate means and standard deviations for freshmen to sophomore year by type of institution. More than 2,500 institutions are included in the compiled data for these 2003 estimates [13].

Tale 1. Freshman to Sophomore Year by Type of Institution

Degree Level	N	Dropout Rate Mean (%)	Standard Deviation
Two-year Public	729	47.2	14.6
Two-year Private	122	33.0	18.4
BA/BS Public	84	31.8	13.4
BA/BS Private	464	29.6	16.6
MA Public	227	30.2	10.7
MA Private	506	25.7	12.0
PhD Public	214	22.7	9.4
PhD Private	184	17.7	12.1

Source: The American College Testing Program (2003).

The largest study of persistence and dropout rates undertaken in the UK involved more than 500 college staff, 8,500 students, and 33 colleges [14]. This study confirms that students are more likely to dropout if they:

- Do not feel they have been placed in the most appropriate course
- Applied to college late
- Find it difficult to make friends
- Find it difficult to settle in at the beginning of their course
- Are less satisfied than current students with the quality of teaching
- Are less satisfied than current students with their course timetable

- Are less satisfied than current students with help either to get a job or to go to university
- Are male
- Have difficult financial circumstances (older students) or family circumstances (younger students).
- Have their fees waived or reduced

A study of external students enrolled in the fourth year of the Bachelor of Education program at Edith Cowan University [15] examined demographic, academic, and administrative variables to determine the extent to which these variables were related to attrition and persistence. The students reported that work, family, study commitments, insufficient time, ill health, and study load were reasons why they withdrew from the program. Gender and geographic location of the student were not found to be significant predictors of attrition between continuing and withdrawn students. The relationship between the student and the instructor, in terms of the students' satisfaction with their communication with the teacher, is one of the factors that distinguish students who choose to continue or dropout. Along these lines, a recent review of dropouts in web-based distance education concluded that communication or social interaction between students and between the teacher and the students represent a major factor in the decision to withdraw from a web-based course [16].

Li and Killian [17] examined patterns of attrition at a Midwestern research university and found that students' financial status is an important factor in persistence in higher education. Li and Killian's results also revealed a variety of reasons why students leave college, and that they usually had more than one reason for leaving. The most often endorsed reasons for leaving were grouped as academic factors, personal factors, and financial factors. The financial factor is of special concern when considering online programs, because these programs usually lack federal financial aid despite the recent moves toward the amendment of current regulation [18].

Interviews with students of a distance master's program offered at Boise State University were conducted to determine why students drop out of a program. The students who dropped out of the distance program, as well as those who continued in the program between 1989 and 1996, were interviewed. The main factor that influenced their decision to continue or to drop out of the program was their level of satisfaction with the first or second course in the program. Specific reasons for dropping out included dissatisfaction with the learning environment, discrepancies between professional or personal interests and the course structure, low confidence levels in distance learning, doubts about successful online communication, incompetence in using the distance education software as an effective learning tool, feeling overwhelmed by the advanced knowledge and information overload, and the de-personalized learning environment [19].

While the above studies are examples of the considerable investigation that has focused on the dropout problem in traditional distance education [15], there has been very little research on dropouts in online education. Frankola [21] says that there are "no national statistics, but a recent report in the Chronicle for Higher Education found that institutions report dropout rates ranging from 20 to 50 percent for distance learners." O'Connor, Sceiford, Wang, Foucar-Szocki, and Griffin [22] claimed that the dropout rate for e-learning is approximately 26 percent after surveying e-learners and e-learning managers from various organizations and industries. Giles affirms that "very little is known about the reasons for dropout or completion in online, computer-conferenced classes, probably because offering courses totally online is a relatively new concept" [20]. She adds "To date, no one has researched and published online student persistence rates and reasons for dropout in computer-conferenced classes, most probably because the computer-conferencing format is so new" [20]. In addition, information about dropout rate in online programs is often anecdotal and vague.

Carr [23] says that almost every distance-education instructor and student has a different explanation for why students drop out of online courses. Nevertheless, all these explanations can be separated into two camps:

a) belief that students dropout of distance courses for essentially the same reasons they dropout of traditional courses, and
b) belief that the reasons for dropping out are connected to the fundamental differences between the two modes of instruction.

In summary, research has shown that the reasons for dropping out of a distance education course or program are complex, multiple, and inter-related. By gaining insights into the reasons why students dropout of online programs, institutions that provide such programs can begin to develop strategies to decrease attrition and maintain enrollment rates in their programs.

III. RESEARCH QUESTIONS AND DESIGN

The purpose of this study was to determine why students drop out of an online program. In particular, this study focused exclusively on an online master's degree program offered by the Department of Human Resource Education (HRE) at the University of Illinois at Urbana-Champaign. This program, called *HRE Online*, awards a master's degree upon completion of 9 graduate courses. The specific questions addressed in this study included:

Why did students dropout of the online program?

When did they dropout in the online program?

Are there factors that can predict the likelihood of a student dropping out of an online program?

Dropout rates in online programs are known to be significant. The cost of losing a student is very high in terms of wasted time, effort, and money on the part of the student, the faculty, and the institution. As soon as an online student leaves the program, almost all connection with this student is lost, and institutions usually do nothing to determine why the student left. By knowing the reasons that lead a student to leave an online program, institutions can implement strategies to anticipate and reduce the number of program dropouts. Although online programs are growing and enrolling more students than ever before, at this time there is a lack of research focused on persistence and attrition in those programs. The present study helps build a foundation for future research in this area.

A. Method

This study utilized an electronic survey method to investigate the research questions. The electronic approach allowed data to be collected at low cost and relatively low response burden on the part of the participants. This was important for two reasons. First, the relatively high mobility of the dropout population was a big constraint, especially when trying to contact dropout students who left the program more than a year ago. Second, because the potential participants had made a decision to leave the educational program, they were unlikely to feel an allegiance to the program and may be more likely to refuse to respond.

B. Participants

Students who dropped out of the HRE Online master's degree program at the University of Illinois at Urbana-Champaign were the focus of this study. Students were admitted to the HRE Online degree

program in cohorts of approximately 30 students. Data were collected from the first three cohorts of students. Each cohort of students started the program as a group and enrolled in the same sequence of courses throughout the three-year program of study. The first and second cohorts had completed the program and the third cohort was over half way through the program.

The participants in this study were defined as those students who dropped out of the degree program after starting their first course. A total of 83 students were accepted into the online program and started the first course. At the time of the study, 28 of these students had left the program. The overall dropout rate for the HRE Online program was 34%. The cohort with the highest dropout rate was HRE #2, with 44%, followed by HRE #1 and HRE #3, with 27% and 26% respectively. A summary of the enrollment dropout data for each cohort is shown in Table 2 and a comparison of demographic data for program persisters and dropouts is shown in Table 3.

Table 2: Summary of Enrollments and Dropouts

Students	Cohort #1	Cohort #2	Cohort #3	Total
Started First Course	22	34	27	83
Left Program	6	15	7	28
Dropout Percentage	27.3%	44.1%	25.9%	33.7%

Table 3: Comparison of Persisters and Dropouts for HRE Online

	Persisters	Dropouts	Total	Dropout %
Gender				
Male	16 (29.1%)	12 (42.9%)	28 (33.7%)	42.9%
Female	39 (70.9%)	16 (57.1%)	55 (66.3%)	29.1%
Average Age (SD)	41 (9.10)	42 (9.28)	42 (9.09)	
Ethnicity				
White	45 (81.8%)	19 (67.9%)	64	29.7%
Black	9 (16.4%)	4 (14.3%)	13	30.8%
Hispanic	0 (0%)	1 (3.6%)	1	100%
Asian/Pacific Islander	1 (1.8%)	3 (10.7%)	4	75%
American Indian	0 (0%)	1 (3.6%)	1	100%
Average GPA (SD)	3.16 (.428)	3.34 (.495)	3.22 (.460)	
Location				
Illinois Resident	38 (69.1%)	17 (60.1%)	55	30.9%
Non-Illinois Resident (U.S.)	16 (29.1%)	9 (32.1%)	25	36.0%
International	1 (1.8%)	2 (7.1%)	3	66.7%
Occupation				
Trainer/Instructor	14 (25.5%)	7 (25.0%)	21	33.3%
Director/Manager	23 (41.8%)	8 (28.6%)	31	25.8%
HR/OD Consultant	6 (10.9%)	5 (17.9%)	11	45.5%
Administrator/Technician	8 (14.5%)	6 (21.4%)	14	42.9%
Other	4 (7.3%)	2 (7.1%)	6	33.3%

C. Online Program Description

The University of Illinois offers an online master's degree in Global Human Resource Development (HRD), an innovative instructional program that uses the Internet and a variety of web-based technologies to provide a collaborative learning environment. The program is taught entirely online, and students are

not required to ever visit campus in person. The program was designed to provide both individual and group interaction with the instructor and places a strong emphasis on self-directed learning and virtual teams. The nine-course sequence is designed for individuals currently working in, or aspiring to, HRD positions in either the private or public sector. Course topics focus on employee training and development, organization development, and the use of information and technology to improve individual and organizational performance. Emphasis is placed on HRD leadership in both domestic and international settings. A Master's of Education (Ed. M.) degree is awarded upon completion of the program.

Students begin the program in a cohort of approximately thirty students. They complete one twelve-week course each semester over a three-year period. Each online course is divided into modules that serve as the organizing structure for the course. On average, one module is covered each week. Each module begins with an overview of the topic followed by an assignment related to the application of the content. Course content is delivered through pre-recorded streamed audio lectures, PowerPoint presentations that are synchronized with the streamed lecture, online readings, and traditional textbooks. After the students have reviewed the content in a module, they typically complete one or more "application" assignments. These application assignments require the students to apply what they have learned by posting information on a discussion board, interacting with the instructor and students in chat sessions, and completing course projects. About half of the assignments require students to work with their "virtual team" to complete group assignments. At the start of each class, the students are assigned to a virtual team of 4 to 5 members and they interact using various communication technologies.

The Internet-based technologies used in the online program were specifically selected to support communication and collaboration of the virtual teams. The online course supported the direct use of e-mail, a collaborative web forum (WebBoard™), synchronous text chat, and Internet pagers (e.g., Instant Messenger™). The instructor facilitates the discussion on WebBoard™ where the students post questions, issues, comments, and concerns that will help them better understand the topics.

A unique aspect of the online courses is the requirement that all students participate in a weekly synchronous class session. These one-hour synchronous sessions consist of a live streaming audio broadcast from the instructor accompanied by real time text chat among the students. During each livesession, the students gather virtually in the chat room using mIRC and listen to a live audio broadcast from the instructor. The students use mIRC to ask questions, respond to the instructor's questions, and participate in discussion with the class, since the entire class is in the same chat room. The students also use separate chat rooms for small group work during breakout sessions. The live broadcast and text chat messages are archived for later use by the students.

D. Instrumentation

A web site was developed that contained a general explanation of the purpose of the study, a set of questions, and explicit directions for completing the online questionnaire. The questionnaire was developed based on a review of the literature, with particular attention to other questionnaires that examined factors related to attrition. The survey contained the following nine questions: four with open-ended responses, three with yes-no responses, and two with multiple choice/section responses:

1. Why did you choose to enroll in the HRE Online program?
2. I left because… (Here, a scroll down menu with 23 options was presented)
3. Of the above reasons, please describe your main reason for leaving the HRE Online program
4. During the program, did you feel "information overload"? If YES, please explain the problem you had with information overload

5. Did you have a regular time set aside to work on the courses? If YES, when?
6. Where did you complete most of the assignments while you were enrolled?
7. Why did you do most of your work at that location?
8. Did you get behind in your assignments? And if so, did you receive encouragement from the instructor/teaching assistant to catch up with the class?
9. Please, provide us with comments, suggestions, or thoughts you may have regarding the questions you just answered.

E. Data Collection

Information was collected primarily from the program dropouts, although additional information was collected from the online coordinator, program director, and the department secretaries. Demographic data for all online program participants (i.e., both those who persisted in the program and those who dropped out) was collected as the first step in the data collection process. Student records were reviewed to obtain e-mail and mailing address, age, gender, ethnic background, cumulative GPA from previous undergraduate and graduate courses, location of residence, and current occupation. These data were entered into a spreadsheet for later analysis. The data were also coded to classify each student as a program persister or dropout.

Attempts were made to contact each of the students who dropped out of the program to solicit their willingness to participate in the survey. Each of the students was sent an e-mail message that informed them of the purpose of the study and displayed a URL where the questionnaire was located. They were asked to complete the questionnaire and submit the answers electronically. If an e-mail address did not work (e.g., message was bounced back), a letter was sent to the student using their most recent mailing address. Based on the initial low response rate, it was determined that much of the contact information provided by the university was out-of-date.

Attempts were then made to contact those students who had not responded by phone in order to confirm their e-mail and mailing address. Attempts were also made to verify the students' phone numbers andaddresses using online phone guides and search tools such as Switchboard's Yellow Pages or Yahoo's People Search. Once an updated list of contact information was obtained, the students who had not responded were sent another e-mail message about the study. Two follow-up e-mail messages were sent to the non-respondents with an interval of one week between them. Two letters were also mailed to the non-respondents; the second one contained a reminder and the survey URL and was sent two weeks after the first letter. Telephone calls were also made to contact the students who did not respond to the e-mail request. These participants were given the option to answer the survey by phone. Once contact was made with a student and they were asked to complete the survey, they were not contacted again.

IV. RESULTS

A. When Online Students Dropout

Figure 1 summarizes the data showing the number of courses completed by students in each cohort before they dropped out of the program. The data show that students are most likely to leave an online program after completing the first few courses. Few students decide to leave the online program after they have completed several courses. This is to be expected for several reasons. First, the students who persist in the early stages of the program could be viewed as successful students who are possibly satisfied with their learning experience in the program. Second, students who have trouble adapting to the online experience or to the technology are likely to become frustrated in their first few courses. Third, students who have completed several courses in a program would be less likely to give up on their pursuit of the degree after

making a significant time and effort investment in the program.

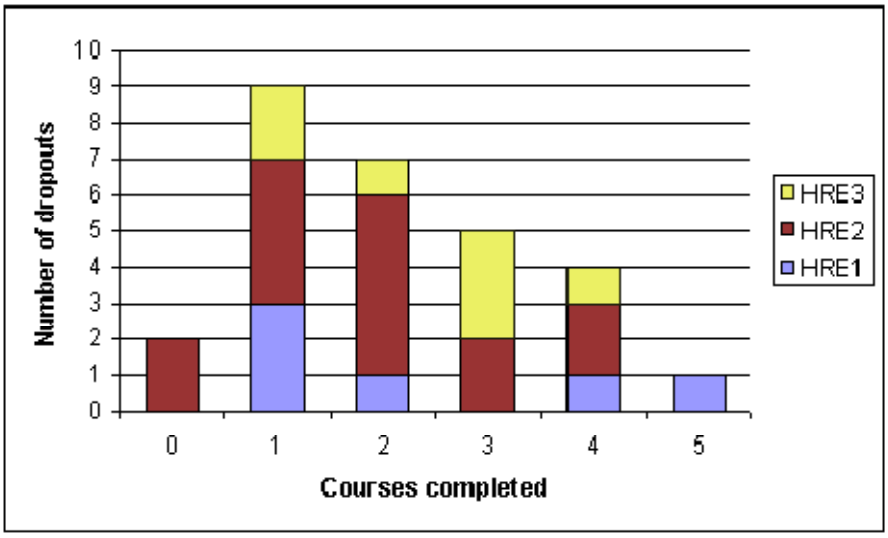

Figure 1: When do they dropout?

B. Logistic Regression Analysis

A logistic regression analysis was conducted to determine which variables predict persistence/dropout. The *Statistical Package for the Social Sciences* (SPSS) was used to determine the significance rating of each set of variables. For this study, there were seven independent variables (i.e., age, gender, cohort, ethnicity, occupation, location, and GPA); most of which were categorical variables.

The first part of the analysis involved the calculation of Pearson correlations to check for independence among the demographic variables. As shown in Table 4, even though significant correlations were found, the relationships between the variables were not highly correlated. Therefore, all variables were sufficiently interdependent to be used in the logistic regression analysis. The results for the logistic regression using all the variables are shown in Table 5 and Table 6 shows the Classification Table that indicates that the model fails to predict instances of dropouts (39%).

Table 4: Pearson Correlation Results

	Cohort	Gender	Age	GPA	Ethnicity	Location	Occupation	*Y*
Cohort	1	-.180	-.057	.162	.0536	.260	.291*	-.024
Gender	-.180	1	-.015	-.082	-.230	-.364*	-.045	-.152
Age	-.057	-.015	1	.116	-.314*	-.180	-.200	.027
GPA	.162	-.082	.116	1	-.011	.169	.005	.185
Ethnicity	.0536	-.230	-.314*	-.011	1	.258	.185	.288*
Location	.260	-.364*	-.180	.169	.258	1	.131	.112
Occupation	.291*	-.045	-.200	.005	.185	.131	1	.077
Y	-.024	-.152	.027	.185	.288*	.112	.077	1

* Correlation is significant at the 0.01 level (2-tailed).

Table 5: Logistic Regression Results

Variable	B	S.E.	*df*	Sig.
Gender	.655	.633	1	.301
Age	.036	.033	1	.272
GPA	.990	.647	1	.126
Ethnicity				
White	-7.963	36.676	1	.828
Black	-7.914	36.678	1	.829
Hispanic	-7.598	36.703	1	.836
Asian	1.428	51.859	1	.978
American Indian	.628	51.859	1	.990
Location	.162	.668	1	.808
Occupation				
Trainer/Instructor	-.400	1.097	1	.716
Director/Manager	-.265	1.038	1	.798
HRD/OD Consultant	.828	1.242	1	.505
Administrator/Technician	.220	1.157	1	.849
Cohort (1)	.466	.814	1	.567
Cohort (2)	1.020	.642	1	.112

Table 6: Classification Table (cut value was .50)

			Predicted		
			Y		Percentage Correct
Observed			.00	1.00	
Y	.00		48	6	88.9
		1.00	17	11	39.3
Overall Percentage					72.0

C. Survey Results

The online survey was used to collect specific information from the dropout students regarding their experience in the online program. The goals of this survey were to supplement the quantitative analysis of the demographic variables and to identify patterns that might reveal the factors that influence the decision to leave an online program. Ten of the 28 students who left the program completed the online survey (36%). This response rate highlights the difficulty in contacting and gathering information from students who have left an academic program. The results of their responses are summarized below.

1. Reasons for Enrolling in an Online Program

Students enrolled in the HRE Online program because of the flexibility of schedule, the convenience and effectiveness of taking online classes, the good fit with their goals, for professional development, to obtain an advanced degree in the field, and also because of the strong reputation of the University of Illinois.

2. Reasons for Leaving an Online Program

Students reported leaving the online program for a variety of reasons. There did not appear to be a dominant reason for dropping out of the program. Their reasons for leaving the program were organized into personal, job-related, and program-related reasons:

a. Personal Reasons

Financial difficulties or the long-term financial investment not worth the benefit

Lack of time to complete the assignments, which took more time compared to traditional courses

Schedule conflicts

Family problems

b. Job-related Reasons

Job responsibilities changed during the program

Their company didn't support the program

Too hard to work full-time and be a student in an online course

c. Program-related Reasons

Too many low level assignments

Too difficult working on the group assignments

Lack of one-to-one interaction with the instructors and students

The academic program was too difficult/demanding

Lack of interest in the material or the program didn't meet expectations

d. Technology-related Reasons

The learning environment was too de-personalized

Not enough support from the technical staff

The technology overwhelmed the content

Lack of technical preparation for the program

The students were then asked to provide the single main reason why they left the online program. The most common responses were that it was too hard to work full-time and be a graduate student (3 responses), the program was no longer applicable to them because of a change in job responsibilities (3 responses), and technology problems or limitations (2 responses). Other reasons included the program was too demanding (in terms of hours needed to complete the assignments) (2 responses), lack of interaction with students and instructors (1 responses), family problems (1 responses), and the chat room discussions were not meaningful (1 responses). (*Note:* Some students provided two instead of one main reason for dropping out).

3. Study Habits of Online Students Who Dropout

The dropout students were asked a few questions about their study habits while enrolled in the online program.

a. Study Times and Locations

Six of the dropout students had a regular time set aside to do their course work while four reported that they did not have a work schedule. The most common times to work were weekends (2), every evening (2), selected evenings and flexible weekend hours (1), a few hours each night plus any time that could be "squeezed" in at work (1). Nine of the students who dropped out completed their course work at home and one completed assignments at work.

The reasons provided for working at home were primarily because of convenience and privacy. They reported having fewer interruptions at home, which allowed them to better concentrate there. The home is also more comfortable, allows convenient access to their course materials (e.g., texts, computers, etc.), and it is where they had time to spend on their assignments. The students mentioned that they were not allowed to do school work at their place of employment. They also mentioned that it was difficult to work in hotels because of slow Internet connections.

b. Assignment Scheduling

About half of the students who dropped out (4) reported falling behind on their assignments while the other half (6) was able to keep up with their schoolwork. Overall, the dropouts found the professors and the online staff to be helpful, understanding, and encouraging.

c. Information Overload

Three of the dropout students reported that information overload was a problem for them. They reported that there was too much reading (2), too many modules, and a lot of information per module (1). Seven of the students reported that information overload was not a problem for them.

V. SUMMARY AND CONCLUSIONS

Because the focus of this study was on a single program with a small number of dropout students, the generalizability of the results of this study is greatly limited. However, the following summary of the findings provides a baseline for future quantitative analyses of factors that influence students' decisions to leave an online program.

Based on the findings of this study, several tendencies affecting dropout rates were identified. First, the data show that males are more likely to drop out than females; however, no explanation for this finding emerged in this study. Second, age does not appear to be a factor in the decision to drop out of an online program. Third, minorities other than black students are more likely to drop out than white students while white and black students have about the same dropout rate. Fourth, dropouts tend to have a higher GPA average than those who chose to persist in the program. Fifth, the students who were least likely to dropout were employed as directors, managers, and coordinators. Sixth, the only significant variable identified by the logistic regression analysis that might predict likelihood of dropping out was GPA, but the analysis of the Classification Table for this variable indicates that GPA is not a strong predictor. The international students in this study were likely to drop out, and there was no difference in the dropout rate of in-state and out-of-state students, but the sample is too small to generalize.

The reasons given by the online students for dropping out of the program were not very different from those typically given by dropouts from traditional face-to-face programs. Although specific reasons such as technology issues, the lack of human interaction, and communication problems are clearly unique to the online learning environment, there was no evidence to suggest that they were the primary reasons the

online students left the program. For the dropout students, the much proclaimed adage of "learning anytime, anywhere" does not seem to apply.

This research confirms that the decision to persist or dropout from an online program is a complex phenomenon that cannot be easily described with quantitative variables, at least not with the demographic variables selected for analysis in this study. Students tend to dropout after completing only a few of the courses in a program. In this study, the highest number of dropouts left after completing the first course.

This study also revealed that tracking dropout students is a very difficult task. There was no systematic procedure in place to locate and contact the dropouts. Information about the registration status of the online students is not as easily available as a stroke of the keyboard. Keeping updated information on students and their registration status could help to red flag possible dropouts, take steps to avoid it, or if that's not possible, gather information about the reasons for leaving. Having a survey ready to complete by recent dropouts can help to get valuable data that can be used to improve retention.

Caution needs to be taken when generalizing the results of this study. Each online program is unique and the reasons given for leaving a program may be specific to the nature and uniqueness of the program. Further, the reasons given by the students for leaving the program may be masked, due to personal issues, by an attempt to place the burden of their leaving on external factors beyond their control. Analysis of the perceptions and experiences of the instructors regarding the reasons their students left the program could help to create a more complete description of the dropout phenomenon. It would also be beneficial to include a survey of the persisters' reasons for staying in the program. The contrast between dropouts and persisters could provide further insight into the dropout problem.

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VII. ABOUT THE AUTHORS

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WHY THEY STAYED: NEAR-PERFECT RETENTION IN AN ONLINE CERTIFICATION PROGRAM IN LIBRARY MEDIA

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ABSTRACT

This paper focuses on an assessment of an online certification program in K–12 library media which has a near-perfect record of retaining students. Students and graduates of the program were asked to identify reasons for enrolling (and staying enrolled) in the program as well as functions that faculty performed well. These reasons were drawn upon three theoretical models of student retention: Tinto [6], Bean and Metzner [7], the Community of Inquiry Model [8, 23, 24, 25], plus advantages of online programs. Open-ended questions and Likert-style items provide some support for the academic integration portion of Tinto's retention model, Bean and Metzner's retention model for adult non-traditional students, and the importance of the program being available online in explaining why students stayed. Open-ended questions and Likert-style items also support the use of the Community of Inquiry model as a way of identifying what faculty did well in the program and perhaps contributed to the students' willingness to stay enrolled in the program.

KEYWORDS

Retention, Attrition, Tinto, Bean and Metzner, Community of Inquiry, Online Learning, Teaching Presence, Social Presence, Certificate Programs

I. INTRODUCTION

A. Purpose

This paper will explore why 60 of 62 students enrolled in and either completed or remain enrolled in a 21-credit or seven-course online certification program in library media offered by Montana State University-Bozeman (MSU). The program, originally developed as part of a Learning Anytime, Anywhere Partnership (LAAP) grant, offered its first course in Fall term, 2001 and since that time, only two students have dropped out of the certification program due to job changes and family financial concerns. This success was intriguing to the funding agency as well as the program personnel, and thus an in-depth evaluation of the reasons for this near-perfect record of retaining students was undertaken.

One of the early criticisms of distance education was its poor record with retaining students. As practices improved and greater use was made of the Internet as well as more advanced instructional design,

retention has improved. Some attrition is normal, of course, but how much? Brigham [1] found 66% of distance-learning institutions had an 80% or better completion rate for their distance-learning courses; 87% of these institutions had a 70% or better completion rate. Carr [2] found great variation in course-completion rates of distance education students, ranging from 80% down to 50% in some instances. In contrast, Jung and Leem (in [3]) found that an online course had a higher completion rate (93.1%) than a traditional, text-and-television, distance education course (55.25%) and Roach [4] also found higher retention rates in online programs. Twigg's [5] projects on course redesign focused on improving course retention over traditional versions of the same course. These projects improved "drop-failure-withdrawal" (DFW) rates from 28% to 19% in an introductory psychology course at the University of Southern Maine, from 49% to 38% in a computer programming course at Drexel University, from 45% to 11% in a fine arts course at Florida Gulf Coast University, from 39% to 25% in an introductory sociology course at Indiana University-Purdue University Indianapolis. Given such variation in experience with retention rates, it remains important to ask what keeps online students enrolled?

This study will not be able to compare findings from an online program to a traditionally delivered program, nor can one compare the results to reasons why students may drop out of an online program. But it does assess the extent to which various theories of retention can be applied to this special group of adult students with near-perfect retention in an online certification program.

II. LITERATURE

A. Introduction

Three theories of student retention are pertinent to this research. And while there are additional theories, these three were chosen because Tinto has specifically focused on reasons for student attrition [6], Bean and Metzner focused on adult learners [7], and the Community of Inquiry [8, 23, 24, 25] focused on online learning. This last theory has not, to the authors' knowledge, been applied to retention, but makes sense that it could be pertinent to retention for reasons to be discussed later. The final section will review the extant research on retention in online courses.

B. Tinto's Model

Tinto [6, 9] developed and tested a theory of student departure that has been studied, affirmed, and adjusted by numerous researchers [e. g. 10, 11, 12, 13]. It is based on "student-institution 'fit'" [14, p. 3] and focuses on two processes of integration into the college or university: academic integration and social integration. Academic integration is affected by the student's academic performance and his/her interactions with faculty and staff, and social integration is affected by the student's involvement with extracurricular activities and peer-group interactions. Certainly, other variables are important for adolescents, such as "pre-entry attributes" (family background, skills and abilities, and prior schooling) and "goals and commitments" (intentions), and the latter do change during college. However, it is not clear whether and to what extent these same variables may be influential in encouraging adults to stay in their educational programs. The model is reproduced in Figure 1.

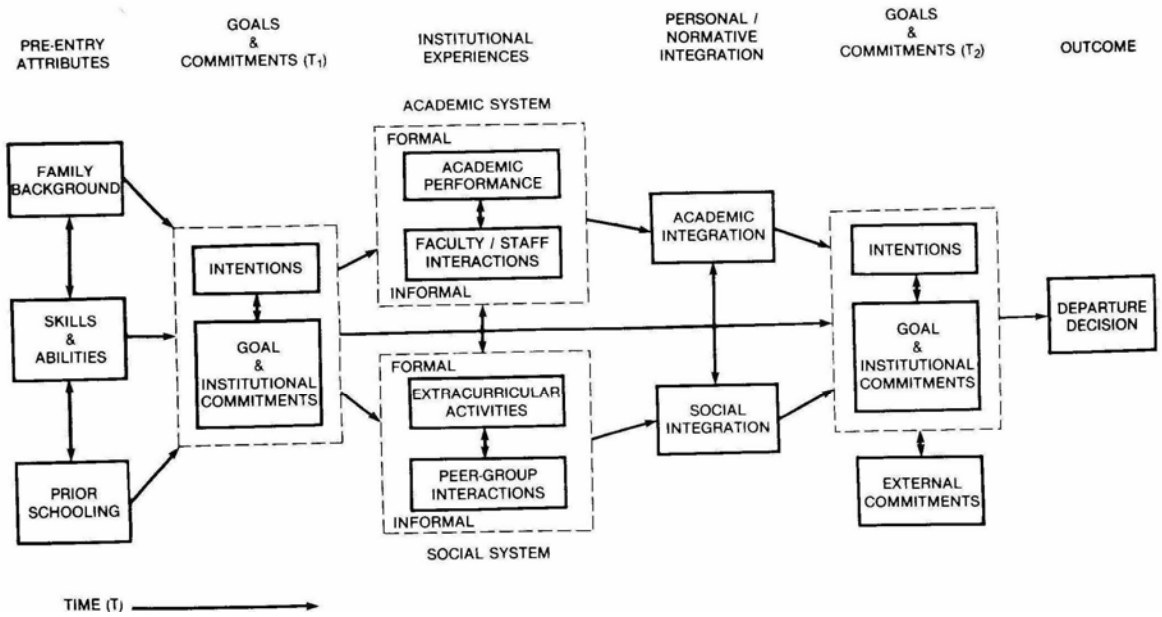

Figure 1. Tinto's (1987) Model of Institutional Departure [6, p. 114]

As a result of research on this model, Tinto [9] concludes that "involvement matters" (p. 167). The more involved students are in the academic and social realms, the more likely they are to persist. And the more they see "those interactions as positive and themselves as integrated into the institution" [9, p. 167], the more likely they will persist. However, integration is less important for students at two-year colleges, who—perhaps because these are more likely to be adults and/or working—may find their validation and social lives elsewhere [17, 18]. While adults still may value integration and interacting with peers and faculty, but the extent to which this factor may influence retention may be less than it is for adolescents. Thus, the Tinto Model has been found to be especially helpful in explaining departure of traditional-age students and especially those at four-year colleges, but has been less effective in explaining the departure of adult students or those at two-year colleges. One advantage of the Tinto model, however, is the importance placed on ways institutions can actively affect student integration. Its success has been partially responsible for the creation of learning communities and Freshman Interest Groups (FIGs) at colleges and universities [14].

The Tinto model may not be completely appropriate for explaining the retention of the adult students in the online certification program that is the focus of this study. However, given that this model can be characterized as the original if not most widely accepted model for attrition, it is necessary to begin our examination of student retention with it.

C. Bean and Metzner

The second theory of attrition is identified with the work of Bean and Metzner [7, 19]. Bean and Metzner studied nontraditional student attrition, more specifically adults over the age of 24 who may be working full-time and other nontraditional students. Their findings are in contrast to Tinto's and describe a student that is less influenced by social integration, places greater influence on the utility of the education being received, as well as greater influence on encouragement from friends, employers, and family. Academic integration—success in learning and interaction with faculty and staff—is also influential, as is finding enough time and finances to support the student's educational pursuits [14]. In fact, even if academic

integration is positive but environmental factors (such as insufficient time or money) are negative, the positive effects of academic integration are "suppressed or attenuated" [20, p. 29].

These modifications to Tinto's theory make imminent sense: adults are more likely to be pursuing post-secondary education to train for a new job or to gain sufficient skills for professional advancement. They are perhaps more focused on achieving their goals (e.g., finishing the program, gaining the skills needed), and learning is therefore more important than the social aspects of college. For example, when classes are professional and more homogeneous, the experience is more socially integrated with like-minded students studying and supporting each other in the same field [21]. In fact, many of their social friendships are already in place through their jobs, neighborhoods, and families, and these friendships matter in terms of providing encouragement for enrolling and sticking with their college coursework. These insights were confirmed by Grosset [22], whose study of community college students found that integration was more important to younger students (17–24) than older students (25+), study skills (essential to academic success) were the most important predictor of attrition for older students, and cognitive and personal development as well as goal commitment was important for persistence for all groups.

One might expect that the Bean and Metzner model would be more influential in explaining the behavior of the students in our online certification program. These students are adults, and they were pursuing certification in an area that would lead to (or retain) employment as library media specialists in K–12 schools.

D. Community of Inquiry

This theory has been developed by Garrison, Anderson, and Archer [8] and it combines three constructs – "social presence," "teaching presence," and "cognitive presence"—into a Community of Inquiry model of online learning (see Figure B). Be aware that it is not a retention model *per se*, but a learning model that has been specifically developed with computer conferencing or online learning in mind. In fact, its concepts of cognitive and social presence may be useful analogs for social and academic integration (terms used by Tinto), although this bears further testing and analysis.

Social presence is the ability of students and faculty to "project themselves socially and emotionally" [8, p. 94]. Teaching presence is the "binding element" [8, p. 96] to creating the Community of Inquiry, and includes developing, managing, and facilitating higher-order learning. "Cognitive presence" is the process of knowledge construction or critical thinking, and moves from perceiving through exploration to integration to resolution. This study will focus specifically on teaching and social presence; the components of each will be detailed in the section on Instrument Development.

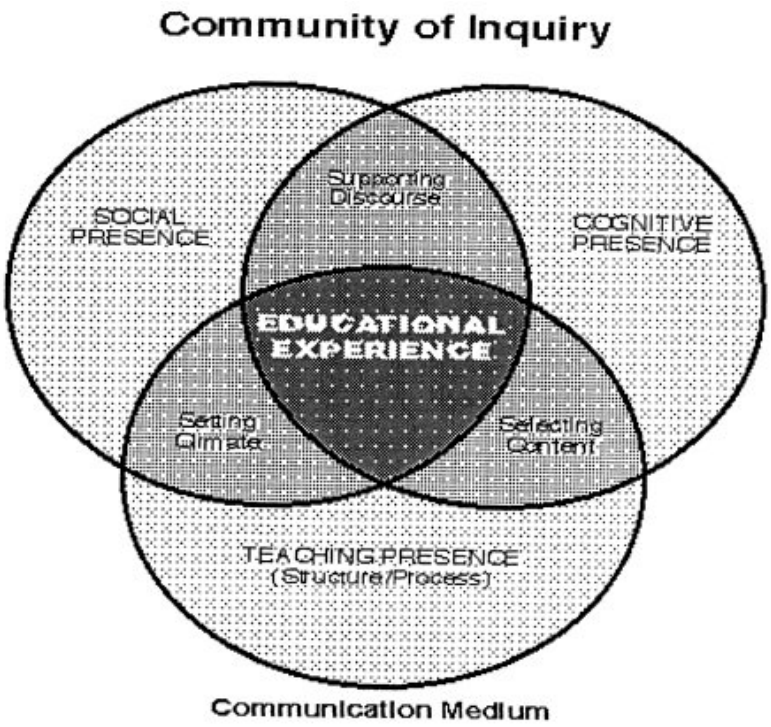

Figure 2: Community of Inquiry Model [24, p. 2]

This model has been researched by a number of authors [23, 24, 25, 26, 27, 28, 29, and 30] who have found support for its various concepts of "presence." But perhaps its greatest advantage for the present study is its development and use for online education. Perhaps its unique contribution is a specific construct capturing the teachers' specific role—or "teaching presence"—especially in the online setting. This research will focus on two elements of this model, teaching and social presence.

E. Research on Online Retention

Initially, the attraction of online learning has been its convenience to students who do not have access to desired educational programs in their community. And while the fact that a program is online may be necessary to draw students to it, is it sufficient to keep them enrolled in the program and complete it?

Several studies have focused on students who drop out of online programs. Willging and Johnson [31] specifically looked at dropouts from an online master's program, but found there was not a significant or dominant reason for dropping out and the reasons given were much like the reasons for dropping out of face-to-face programs. In fact, because most reasons given for dropping out were personal (e.g., family problems, job changed), the authors conclude that programs with technology, lack of human interaction, and other problems unique to the online learning environment were not the primary reasons the students left the program. Terry [32] performed similar research on an online MBA and found that while online courses garnered higher enrollments, several topics (e.g., accounting, business statistics) also had higher attrition than on-campus courses. Jones et al. [33] like [30] found that dropping out was caused by technical problems as well as time demands caused by work and other obligations. Diaz [34] concludes that many online students "who drop a class may do so because it is the 'right thing' to do. In other words, because of the requirements of school, work, and/or family life in general, students can benefit more from a class if they take it when they have enough time to apply themselves to the classwork . . . they may be making a mature, well-informed decision."

Workman and Stenard [35] identified five needs specific to online students that would help them stay enrolled. Two of these are pertinent to this study: immediate response from faculty or program representatives when prospective students inquire by email about the program and ready access to student services. While addressing these needs are clearly important, so is building an instructional environment that provides self-direction, negotiated work assignments, and interaction through discussion boards with other students in the online class [14]. Informal interactions among students can also be facilitated by online coursework and lessen isolation and increase interaction among students [15]; in fact, frequency of participation in online coursework was a significant predictor of whether students would withdraw or complete the course, as well as their final grade [16]. Therefore, quick response from faculty, student services, opportunities to interact informally and frequently should be course design decisions that are important to include in the study.

So far, these studies do not make a conclusive case that retention is an entirely different phenomenon in the online setting. While online students clearly need computer skills and be able to write and read capably in the online setting, these are increasingly skills that all college students need to be successful in the current higher education setting. Therefore, perhaps the factors that lead to retention are nearly the same for both settings. While this is not a research question for the present study, it is a worthwhile question for other researchers.

III. METHODOLOGY

A. The Program

The online certification program in library media offered by Montana State University (MSU) prepares library media personnel for K–12 schools. By September 2005, the program had enrolled a total of 62 students, 22 of whom had graduated and secured the endorsement or certification credential. The certificate is not a cohort program, and students can begin taking classes in any sequence they wish. Because the program is online and totally asynchronous, it is not surprising to find that this population of students came from 15 states and five nations. Interest in the program can be partially explained by requirements by states and No Child Left Behind legislation for individuals working in K–12 schools to be certified and/or "highly-qualified." Also, due in part to budget cuts in higher education over the past several years, several library science programs had been eliminated at higher education institutions in the western United States.

At the time the planning for this online certification program began (Fall 2000), individuals desiring training in library media could attend a number of graduate programs in library media science. However, these programs required that students come to campus or other sites. In addition, these programs usually required students to earn an entire degree when K–12 teachers (the likeliest audience for this type of training) already had a bachelor's degree and many had a master's degree as well. Several state departments of education were consulted because they govern certification requirements for K–12 personnel; these departments indicated a preference for the program to be at the graduate level due to NCLB and salary schedules. In response to these needs, MSU developed a graduate-level certification program in library media targeted to an audience of (a) certified teachers who wanted to acquire library media certification and (b) practicing school library media specialists who needed to complete their certification.

The program began operation in Summer 2001; one or two courses are offered in fall and spring semesters, with three or four courses offered summer semester. Students are expected to enroll in one or two courses per term and can therefore finish in 1½ years if they maintain continuous enrollment. While a

few students have taken a break due to financial, family, or work factors, they return in a semester or two. Only two students have indicated they will not return to the program.

B. Instrument Development

The instrument used for this study was developed to answer some specific questions of the funding agency and Montana State University. Five questions collected basic demographic data from the respondents, including gender, age, state/country of residence, and current job description. The literature does not indicate whether these variables are crucial to retention, but the information was gathered in order to ascertain if the sample of respondents was in any way different from the population of all current and former students. Two questions were open-ended and requested respondents to provide their top five reasons for a) enrolling in the program (to ascertain motivation) and b) staying enrolled in the program (to ascertain reasons for retention); open-ended questions were used because they would tap into the respondents' personal reasons for enrolling and staying enrolled, rather than artificially narrowing their responses as they selected from those supplied by an instrument.

Sixteen questions were Likert-style items and asked respondents how important a particular factor was in the decision to stay enrolled in the program, where 1=not important, 2=somewhat important, 3=moderately important, 4=more important, and 5= very important. The list of items included issues of interest to MSU ("The program was offered by MSU" and "Program cost"), issues of interest to online educators ("The program was online" and "Registration and library support was online"). Also included were questions intended to assess Tinto's social integration ("I enjoyed the other students" and "These students are my peers") and academic integration ("I'm fascinated by library media" and "Advising was helpful"). Several questions were intended to capture needs of adult learners from Bean and Metzner's model (e.g., "I didn't have to commute to campus" and "I was treated like an adult"). Several of these questions assessed motivation for enrolling in the program and could be used to triangulate responses to the open-ended question on motivation mentioned earlier.

In the second half of the survey, respondents were asked to assess the faculty in the program. An open-ended question asked the respondents to provide five examples of what faculty did well. Respondents were asked to assess how well the instructor performed 27 functions in a Likert scale where 1=poorly, 2=below average, 3=average, 4=above average, and 5=very well. These Likert-style items were designed to assess social and teaching presence and were drawn directly from Anderson, Rourke, Garrison, and Archer [18] for teaching presence and Rourke et al. [17] for social presence, with only modest changes to make verb tense consistent. Table 1 identifies which questions assessed which construct within the Community of Inquiry Model.

Question	Presence	Construct
3. Designing activities 4. Establishing time parameters 5. Using media effectively 6. Establishing netiquette	Teaching	Instructional Design and Organization
7. Identifying areas of agreement or disagreement 8. Seeking to reach consensus or understanding 9. Encouraging and acknowledging student contributions 10. Setting a climate for learning 11. Drawing in participants, prompting discussion 12. Assessing efficacy of discussion	Teaching	Facilitate Discourse

13. Presenting content and/or questions 14. Focusing discussion on specific issues 15. Summarizing discussion 16. Confirming understanding through assessments or feedback 17. Diagnosing misconceptions 18. Injecting knowledge from other sources 19. Responding to technical concerns	Teaching	Direct Instruction
20. Responding to questions quickly 21. Using humor 22. Expressing emotion 23. Giving me a sense of a real person behind the title 24. Expressing interest in me as a person 25. Was friendly and concerned about me.	Social	Affective

Table 1. Survey Questions Linked to Community of Inquiry Model [24, 25]

Please note that this instrument made two changes to the teaching and social presence constructs. Because the instrument needed to be completed within 30 minutes or so, some duplicative items were eliminated and the assessment of social presence focused primarily on the affective dimension, rather than all three dimensions (which includes items assessing interactivity and cohesiveness). This should not diminish the usefulness of these results, especially if by selecting fewer constructs to focus on (and fewer questions to answer), the rate of response was increased.

C. Procedure and Analysis

All currently enrolled and graduated students were contacted in early October 2005 by email and their participation in the study requested. Students were directed to a web-based survey instrument hosted by the Western Cooperative for Educational Telecommunications (WCET). The students were given two weeks to complete the instrument, and by October 30, 50% of the targeted students had completed the survey instrument.

Open-ended questions were analyzed by content analysis, looking for consistent and/or inconsistent themes. Once analyzed, answers to the open-ended questions were placed into sensible, consistent groupings and are reported in Tables 3 and 6 by group, with illustrative codings to provide detail and context to reader. Mean responses for each Likert-style item were calculated. Then, questions were grouped as outlined earlier to provide a mean answer for questions based on Tinto's or Bean and Metzner's models; these means were recalculated into a group mean for the various models.

Table 2 provides the demographic data and basic information about the respondents. After a careful comparison to the population of all students and graduates of the program, the sample was deemed representative. Tables 3 through 5 attempt to assess the usefulness of Tinto's and Bean and Metzner's models. To be specific, Table 3 provides a listing of consistent and divergent themes from the open-ended questions on motivation to enroll and stay enrolled; Table 4 provides the mean on each Likert item; and Table 5 presents the group mean for items related to a model.

Tables 6 through 8 attempt to assess the usefulness of the Community of Inquiry model. To be specific, Table 6 provides a listing of consistent and divergent themes to the open-ended question on what the faculty did well; Table 7 provides the mean on each Likert item; and Table 8 presents the group mean for items related to a Community of Inquiry construct.

IV. FINDINGS

Table 2 presents demographic information about the sample of respondents to the survey. From this information, we can conclude that the majority of respondents are mid-career, in their 30s and 40s, female, from the west, and already a librarian or media specialist. The majority of respondents had taken several courses in the program. It is interesting, however, how the program was found by individuals as far away as Lithuania and Malaysia without advertising. Note that the individual enrolled from Louisiana had her school severely damaged by Hurricane Katrina.

Sample	Distribution
Age (in Years)	
20–29	--
30–39	12
40–49	13
50–59	5
Gender	
Male	2
Female	28
State/Country of Residence	
Alaska	7
Connecticut	1
Idaho	1
Louisiana	1
Montana	8
New Hampshire	1
South Dakota	4
Tennessee	2
Washington State	1
Czechoslovakia	1
Germany	1
Lithuania	1
Malaysia	1
Current Occupation	
Teacher	9
Librarian/media specialist	18
Other (counselor, psychologist, etc.)	3

Table 2. Student Demographic Data (n=30)

Table 3 presents the groupings of coded responses to the open-ended questions on what motivated the students to enroll and to stay enrolled. These results provide some support for the assertion that online programs are attractive due to their flexibility and convenience as a result of their being accessible online. Another attraction to this population was specific training in library and media, which provides some support for the assertion that working adults are looking for and attracted to opportunities that will help them in their jobs. Affordability, early interactions with the faculty responsible for recruitment and answering inquiries by potential students, acceptability of the program to local credentialing agencies such as departments of education, and the reputation of MSU were also frequent mentions.

What is interesting, however, is how the reasons for enrolling change somewhat when the question is what keeps the student enrolled. Flexibility and convenience and job-related training remain important, although these receive fewer mentions. What keeps these students enrolled are various qualities of the faculty, the quality of the coursework, and personal reasons. Perhaps one can tentatively conclude that while it is the online nature of the program that lures a student to enroll (and allows them to stay enrolled), it is the nature of the relationships with faculty, the quality of the educational experience, and their own personal and individual reasons and motivations that keep them enrolled. This is perhaps partial support for the academic integration portion of Tinto's model.

Theme	Motivation to Enroll	Remain Enrolled
Flexibility/convenience (e.g., online, no commuting, flexible start, ease of enrollment, can finish in 1 ½ years, technology easy)	46	26
Job-related training (e.g., needed certification or endorsement, required to prepare for job, professional growth)	26	18
Affordability (e.g., tuition, cost)	11	7
Faculty (e.g., helpful, responsive to questions)	11	19
Acceptability of program (e.g., accredited by ALA, state's education dept. accepts credits)	8	2
Reputation of Montana State	7	--
Quality of program (e.g., challenging, well-organized, up-to-date)	--	14
Personal (e.g., finish what I start, enjoyable, healthy atmosphere, enjoyed peers)	--	19

Table 3. Themes from Open-Ended Question on Motivation to Enroll and Remain Enrolled

NOTE: Respondents were asked for five reasons for why they chose to enroll and remain enrolled, so total responses are greater than the number of respondents.

Table 4 presents the mean response—in order from highest to lowest—to the 16 Likert items on factors that influenced the student to stay enrolled in the program. While all responses are high (most are in the 4.0–4.9 range), it is interesting that the program's availability online was the highest and only consistent response. One might conclude that at least for this group of students, online was a necessary condition for staying enrolled in the program.

Item	Not Important (=1)	Somewhat Important (=2)	Moderately Important (=3)	More Important (=4)	Very Important (=5)	N	` Mean
Program was online	--	--	--	--	30	30	5.0
I didn't have to commute to campus	--	--	--	3	27	30	4.9
Course assignments were flexible & help me in my job	--	--	--	5	25	30	4.8
Registration & library support was online	--	--	1	6	23	30	4.7
Advising was helpful	--	--	4	6	20	30	4.5
I liked the classes	--	--	5	5	20	30	4.5
I'm fascinated by library media	--	--	7	7	16	30	4.3
I was treated like an adult	1	2	4	4	19	30	4.3
I enjoyed the other students	2	1	5	7	15	30	4.1
The program cost	1	1	9	5	14	30	4.0

I needed certification to get certified in my state	5	1	2	3	19	30	4.0
I needed certification to get a job in library media	5	4	--	4	17	30	3.8
These students are my peers; I don't have library media to talk to (in my job)	3	1	6	12	8	30	3.7
I paid my fees online	4	1	8	4	13	30	3.7
Program was offered by Montana State	5	3	11	3	8	30	3.2
I needed certification to stay employed	12	2	1	--	14	29	3.1

Table 4. Responses to Likert Questions on the Importance of Factors to Stay Enrolled (Listed In Order of Mean Response, Highest to Lowest)

Table 5 takes the same responses from Table 4 and groups them into possible indicators of the various retention theories. The first two groups are not retention theories per se, but items to capture issues of interest to MSU and online educators. The next three groups are possible indicators of the social integration portion of Tinto's model, the academic integration portion of Tinto's model, and Bean and Metzner's model for adult, non-traditional students. Please note that these groupings – of items to model – are not intended to be definitive, but suggestive. In any case, these respondents were consistent in their high support for online education as necessary to stay enrolled and moderately supportive of the role of academic integration in keeping them enrolled. Bean and Metzner's model is a close third explanation of why they stayed enrolled, which stresses the importance of job training and more instrumental reasons for staying enrolled.

Item	Retention Theory or Other Explanation	Group Mean
The program cost	Items of interest to Montana State	3.6
Program was offered by MSU		
Program was online	Online as convenience	5.7
Registration & library support was online		
I paid my fees online		
I enjoyed the other students	Tinto's social integration model	3.9
These students are my peers		
Advising was helpful	Tinto's academic integration model	4.4
I'm fascinated by library media		
I liked the classes		
Course assignments were flexible & help me in my job	Bean & Metzner's non-traditional adult retention model	4.2
I didn't have to commute to campus		
I was treated like an adult		
I needed a certification to get a job in library media		
I needed certification to get certified in state		
I needed certification to stay employed		

Table 5. Group Mean Responses to Likert Questions on Importance of Factors to Stay Enrolled, Categorized by Retention Theory or Other

With Table 6, the analysis focuses on the Community of Inquiry Model and the respondents' assessment of the faculty. What is interesting in the analysis of the open-ended question on what faculty did well is its emphasis on the quality of the course and the faculty's role in designing and carrying out a quality educational experience, and the qualities of the faculty themselves. These qualities are both personal (their passion, helpfulness, and knowledge) and interpersonal (willingness to listen to students and adjust assignments to meet their needs or answer questions and provide feedback). In other words, while the quality of the course takes precedence, the qualities of the faculty are also remarkable and perhaps another key to keeping students enrolled in the program.

Theme	Distribution
Quality (e.g., up-to-date content, well-designed, practical lessons, clear expectations, relevant & thoughtful discussions)	25
Qualities of Faculty (e.g., passionate, wise, helpful, fair, knowledgeable)	20
Flexible (e.g., open to suggestions, allowed students to work ahead, adjust assignments so they are more meaningful to current job)	18
Responsive (e.g., answered questions, provided feedback, lots of communication)	17
Personal (e.g., valued my contributions, treated me professionally, encouraging)	3

Table 6. Themes from Open-Ended Questions on What Faculty Did Well

Table 7 presents the mean response—in order from highest to lowest—to the Likert items on questions related to the Community of Inquiry constructs. While again all responses are high (all are in the 4.0–4.8 range), it is interesting that it is the faculty's ability to make themselves "present" or real to the students despite the restrictions of online education that is rated highest.

Item	Poor (=1)	Below Average (=2)	Average (=3)	Above Average (=4)	Very Well (=5)	N	Mean
Giving me a sense of a real person behind the title	--	--	1	3	23	27	4.80
Setting climate for learning	--	--	2	3	25	30	4.77
Establishing netiquette	--	--	2	4	24	30	4.73
Encouraging & acknowledging student contributions	--	--	2	4	24	30	4.73
Drawing in participants & prompting discussion	--	--	2	4	24	30	4.73
Focusing discussion on specific issues	--	--	1	6	23	30	4.73
Injecting knowledge from other sources	--	--	--	8	22	30	4.73
Presenting content or questions	--	--	2	6	22	30	4.67
Responding to questions quickly	--	--	2	6	22	30	4.67
Was friendly & concerned about me	--	--	2	6	22	30	4.67
Expressing interest in me as a person	--	--	1	8	21	29	4.67
Using media effectively	--	--	1	9	20	30	4.63
Establishing time parameters	--	--	2	8	20	30	4.60
Using humor	--	--	2	8	20	30	4.60
Designing activities	--	--	3	7	20	30	4.57
Responding to technical concerns	--	--	4	7	19	30	4.50
Expressing emotion	--	--	4	7	18	29	4.48

Identifying areas of agreement or disagreement	--	--	3	9	16	28	4.46
Confirming understanding through assessments or feedback	--	1	5	5	18	29	4.41
Seeking to reach consensus or understanding	--	--	3	12	13	28	4.36
Assessing efficacy of discussion	--	--	6	8	15	29	4.31
Summarizing discussion	--	2	5	6	16	29	4.24
Diagnosing misconceptions	--	1	5	9	11	26	4.15

Table 7. Responses to Likert Questions on the Faculty Performance (Listed In Order of Mean Response, Highest to Lowest)

Table 8 takes the same items in Table 7 and groups them into the constructs in Table 1 and presents a group mean for the construct. While all group means are high, the highest construct is the faculty's "social presence," and more particularly in the affective realm; in other words, these faculty are best at projecting themselves socially and emotionally in an online course so that students can get a real sense of them as humans and unique personalities. Also rated highly are the design and organizational skills of the faculty who created the courses and activities that have kept students involved in their learning and perhaps more academically integrated (using Tinto's term).

Question	Presence	Construct	Group Mean
Designing activities Establishing time parameters Using media effectively Establishing netiquette	Teaching	Instructional Design and Organization	4.63
Identifying areas of agreement or disagreement Seeking to reach consensus or understanding Encouraging and acknowledging student contributions Setting a climate for learning Drawing in participants, prompting discussion Assessing efficacy of discussion	Teaching	Facilitate Discourse	4.56
Presenting content and/or questions Focusing discussion on specific issues Summarizing discussion Confirming understanding through assessments or feedback Diagnosing misconceptions Injecting knowledge from other sources Responding to technical concerns	Teaching	Direct Instruction	4.50
Responding to questions quickly Using humor Expressing emotion Giving me a sense of a real person behind the title Expressing interest in me as a person Was friendly and concerned about me.	Social	Affective	4.65

Table 8. Group Mean Responses to Likert Questions on the Faculty Performance, Categorized by Community of Inquiry "Presence" and Construct

V. IMPLICATIONS

As designed, this study cannot answer certain questions. It cannot answer whether dropouts from an online program might have different assessments of the program and its faculty than those who stay and it cannot answer whether such assessments might be different for students in a traditional program. But the answers we do have are intriguing.

There is support for the importance of academic integration to online learners who stay enrolled. There is also support for adult, non-traditional students to stay enrolled when they are involved with relevant and/or job-related training. But most important, the availability and convenience of online education is necessary to have students like these—working adults without nearby access to the specific programs that will help them prepare or keep their jobs—enroll and stay enrolled. Based on the group mean responses in Table 5, Tinto's academic integration and Bean and Metzner's model for adult students are close in importance to these students and graduate, but having the program online is clearly the most important. The portion of Tinto's model devoted to social integration received a lower mean response, which although still high, wasn't as important as academic integration and having their specific adult concerns addressed.

It is tempting, but premature, to assert that the factors that influence a student's decision to stay enrolled in an online program are the same as for other types of programs. In other words, perhaps factors that affect retention do so irrespective of program type. Except, of course, for those students who must have the program online to enroll at all. In other words, perhaps a necessary condition of retention for this population is the program being online, and afterwards, other conditions such as academic integration and relevance to the students' work lives may be sufficient to keep them enrolled.

There is also support for the Community of Inquiry model as a way to distinguish what faculty do well and what students who stay enrolled in an online program find valuable. This use of the model—as a possible explanation for student retention—ought to be explored by other studies.

This study of near-perfect retention has two implications for current and future online programs. First, designers of online programs for adults ought to incorporate content and activities that maximize academic integration and relevance for students. Second, faculty involved with online programs for adults need to learn the techniques for creating teaching and social presence that stress both traditional roles of instruction such as design and facilitating discourse but also ways to let the personality of the instructor come through.

And remember that student from Louisiana? After Hurricane Katrina damaged her school, another student in the certification program worked to have his school district adopt her damaged school. He has been raising supplies and money to help repair the damage to the school and get it ready to open. This is an excellent example of how online education—which draws individuals from several states and countries away—can support learning that is both personally and professionally relevant but also socially important.

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VII. ABOUT THE AUTHORS

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USING ASYNCHRONOUS LEARNING IN REDESIGN: REACHING AND RETAINING THE AT-RISK STUDENT

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I. INTRODUCTION

Many students who begin postsecondary education drop out before completing a degree. According to the Lumina Foundation, an estimated 60 percent of students at public institutions fail to complete degrees within five years, and half of these students leave during the freshman year. As shown by research by the Policy Center on the First Year of College at Brevard College (NC) and others, the first year of college is the most critical to a college student's success and to degree completion.

Successful completion of introductory courses is critical for first-year students, but typical failure rates in these courses contribute heavily to overall institutional drop-out rates between the first and second year. Although success rates vary by institutional type and by subject matter, Research I universities commonly cite a 15 percent drop-failure-withdrawal (DFW) rate in introductory courses. Comprehensive universities' DFW rates range from 22 percent to 45 percent in these courses. Community colleges frequently experience DFW rates of 40 percent to 50 percent or more.

Most of the weaknesses attributed to large introductory courses are generic in nature and have as their source the limitations of the predominant form of instruction in U.S. colleges and universities: the didactic lecture. An overwhelming body of research shows that students do not learn effectively from lectures, and testimony from the field corroborates the literature.

What's wrong with the lecture? The lecture method treats all students as if they were the same, as if they bring to the course the same academic preparation, the same learning style, the same motivation to learn, the same interest in the subject, and the same ability to learn. The reality is that students with weak skills need more individual attention and more opportunity for interaction, particularly at the beginning of the term. At the same time, students with strong skills are locked into a fixed time frame for completing the course. The large, impersonal lecture format simply cannot accommodate the broad range of differences among students.

Most lecture courses are notoriously ineffective in engaging students. The lecture format neither encourages active participation nor offers students an opportunity to learn collaboratively from one another. It does not provide adequate tutoring assistance, and consequently, students receive little individual attention. Even though individual help may be available during office hours, only a small fraction of students take advantage of this help. Most students simply study the text, turn in their homework, and take quizzes and exams.

The primary alternative structure for large-enrollment courses, the multiple-section model, suffers from

problems of its own. In theory it allows greater interaction with students, but in practice, sections are often quite large and are dominated by the same presentation techniques as used in larger courses. In addition, the multiple-section model suffers from a lack of coordination. As a result, course outcomes vary considerably and, more important, are not always consistent with students' abilities. Clearly, making significant improvements in first-year courses can have a major impact on student success and retention.

II. THE PROGRAM IN COURSE REDESIGN

Supported by an $8.8 million grant from the Pew Charitable Trusts, the Program in Course Redesign [1] was created in April 1999 to demonstrate how information technology could be used to address the significant academic problems experienced by first-year students at most institutions. The program is managed by the Center for Academic Transformation [2] at Rensselaer Polytechnic Institute. Selected from hundreds of applicants in a national competition, 30 institutions each received a grant of $200,000, awarded in three rounds of 10 per year. Participating institutions include research universities, comprehensive universities, independent colleges, and community colleges in all regions of the United States.

Comparative research studies have shown that, instead of improving quality, most technology-based courses produce learning outcomes that are only “as good as” their traditional counterparts—the “no significant difference” phenomenon [3]. By and large, colleges and universities have not yet begun to realize the promise of technology to improve the quality of student learning, increase retention, and reduce the costs of instruction. In contrast, the goal of the Program in Course Redesign is to support colleges and universities in their efforts to redesign instruction using technology to achieve quality enhancements as well as cost savings.

All 30 redesign projects focus on large-enrollment introductory courses that have the potential to affect significant student numbers and generate substantial cost savings. Why focus on such courses? Because undergraduate enrollments in the United States are concentrated heavily in only a few academic areas. In fact, just 25 courses generate about half of all student enrollments in community colleges and about a third of enrollments in four-year institutions. The topics of these courses are no surprise and include introductory studies in disciplines such as English, mathematics, psychology, sociology, economics, accounting, biology, and chemistry. Successful completion of these courses is critical for student progress toward a degree.

Each of the 30 participating institutions is conducting a rigorous evaluation focused on student learning, comparing the outcomes of redesigned courses with those of courses with the same content delivered in a traditional (pre-redesign) format. Twenty-two of the 30 projects involved in the program have shown statistically significant increases in student learning; the other eight have shown equivalent learning to traditional formats. Of the 24 projects that measured retention, 22 have reported a noticeable decrease in DFW rates, ranging from 10 to 20 percent.

Each institution has developed a detailed cost analysis of both the traditional and the redesigned course formats, using a spreadsheet-based course-planning tool [4] developed by the center. Preliminary results show that all 30 institutions reduced costs by about 40 percent on average, with a range of 20 percent to 77 percent. Other positive outcomes associated with redesigned courses include better student attitudes toward the subject matter and increased student satisfaction with the new mode of instruction.

The Program in Course Redesign has produced many different models of how to restructure such courses to improve learning as well as to effect cost savings. To counter the belief that only courses in a restricted

subset of disciplines—science or math, for instance—can be effectively redesigned, the program contains successful examples in many disciplines including the humanities (6), math and statistics (13), the social sciences (6), and the natural sciences (5). What do these projects have in common? To one degree or another, all 30 projects share the following six characteristics:

1. *Whole course redesign*. In each case, the whole course, rather than a single class or section, is the target of redesign. Faculty begin the design process by analyzing the amount of time that each person involved in the course spends on each kind of activity, a process that often reveals duplication of effort among faculty members. By sharing responsibility for both course development and course delivery, faculty save substantial amounts of time while achieving greater course consistency.

2. *Active learning*. All of the redesign projects make the teaching-learning enterprise significantly more active and learner-centered. Lectures are replaced with a variety of learning resources that move students from a passive note-taking role to an active learning orientation. As one math professor put it, "Students learn math by doing math, not by listening to someone talk about doing math."

3. *Computer-based learning resources.* Instructional software and other web-based learning resources assume an important role in engaging students with course content. Resources include tutorials, exercises, and low-stakes quizzes that provide frequent practice, feedback, and reinforcement of course concepts.

4. *Mastery learning*. The redesign projects add greater flexibility for when students can engage with a course, but the redesigned courses are not self-paced. Rather than depending on class meetings, student pacing and progress are organized by the need to master specific learning objectives, which are frequently in modular format, according to scheduled milestones for completion.

5. *On-demand help*. An expanded support system enables students to receive assistance from a variety of different people. Helping students feel that they are a part of a learning community is critical to persistence, learning, and satisfaction. Many projects replace lecture time with individual and small group activities that take place either in computer labs—staffed by faculty, graduate teaching assistants (GTAs), or peer tutors—or online, enabling students to have more one-on-one assistance.

6. *Alternative staffing*. By constructing support systems consisting of various kinds of instructional personnel, the projects apply the right level of human intervention to particular student problems. Not all tasks associated with a course require highly trained, expert faculty. By replacing expensive labor (faculty and graduate students) with relatively inexpensive labor (undergraduate peer mentors and course assistants) where appropriate, the projects increase the person-hours devoted to the course and free faculty to concentrate on academic rather than logistical tasks.

Although all 30 projects have these characteristics in common, each has chosen a design model that implements the characteristics in a way that varies according to the discipline involved, the particular student audience, and the preferences of faculty. While the Program in Course Redesign is directed at a broad first-year student population at all types of institutions, we know that the redesign techniques have been particularly effective with minority students, community college students, and adult learners. For example,

- With an undergraduate minority student population of 46.4 percent, the University of New Mexico reduced its drop-failure-withdrawal rate from 42 percent to 18 percent in Introductory

Psychology. At the University of Idaho, success rates in Intermediate Algebra for Hispanic students who are part of the College Assistance Migrant Program (CAMP) increased from 70 percent to 80 percent, and CAMP students surpassed the success rate for the entire algebra population as a whole.

- Two community colleges, Rio Salado College and Tallahassee College, respectively increased course completion rates from 59 percent to 65 percent in pre-calculus mathematics and from 56 percent to 62 percent in English composition.
- Two urban universities that serve a high percentage of adult learners, Florida Gulf Coast University and Indiana University-Purdue University Indianapolis, respectively reduced their DFW rates from 45 percent to 11 percent in a fine arts course and from 39 to 25 percent in Introductory Sociology.

To illustrate the impact of redesign on these at-risk and nontraditional students, brief case studies of redesign projects conducted by these institutions are presented here.

A. The University of New Mexico

Located in the heart of Albuquerque, the University of New Mexico (UNM) is one of only three Hispanic-Serving Carnegie Doctoral/Research-Extensive universities in the nation. With an undergraduate minority student population of approximately 46.4 percent (31.3 percent Hispanic, 5.5 percent Native American, and 9.6 percent other), UNM leads the nation's research universities in student diversity. UNM students are primarily commuters who also work 30 or more hours per week.

UNM redesigned General Psychology, its largest and most popular undergraduate "killer" course, which enrolls 2,250 students annually [5]. UNM's primary redesign goal was to improve the course's extraordinarily high 42 percent DWF rate, 30 percent of which were failures and a disproportionate number of which were minority students. UNM has one of the lowest student retention rates among public research universities. High failure rates in core curriculum courses such as General Psychology are known to have a strong negative impact on UNM's low overall retention and graduation rates.

The course redesign reduced the number of lectures each week from three to two and incorporated a weekly 50-minute studio session led by undergraduate teaching assistants, strong students from previous sections of General Psychology, or upper-division honors students. In-class activities were supplemented by interactive web- or CD-ROM-based activities and quizzes, offered on a 24/7 schedule. Students were able to interact online with other students and review concepts based on individual need. Online components used commercially available software that contained interactive activities, simulations, and movies. Students took repeatable quizzes each week requiring a C-level mastery.

The asynchronous learning environment also included programmed self-instruction (PSI), a learning technique that provides the individual student a self-paced method of learning new information. Using a branching sequence of interconnected questions, PSI includes repetition, examples, illustrations, and anecdotes to convey important psychology concepts. An active intervention strategy ensured that students were making progress. Graduate teaching assistants monitored quiz performance, counseling students with weak performance as to how to improve.

UNM's goal of reducing drop and failure rates in General Psychology has been achieved. The failure rate was reduced from previous levels of 30 percent to 12 percent, and the DWF rate fell from 42 percent to 18 percent. The number of students who received a C or higher rose from 60 percent to 76.5 percent, and there were more A and B grades than recorded in previous semesters. At the same time, the course was

arguably more difficult, requiring students to cover completely a high-level introductory text.

B. The University of Idaho

Created in 1889, the University of Idaho (UI) is a comprehensive land-grant institution with principal responsibility in Idaho for performing research and granting the Doctor of Philosophy degree. UI offers 154 undergraduate majors, 71 master's programs and 25 doctoral degrees, and is home to the state's only law school.

UI redesigned three courses—Intermediate Algebra, Algebra, and Pre-Calculus—based on the Math Emporium model first developed at Virginia Tech [6]. The courses enroll a total of 2,428 students and were traditionally taught in a lecture format with assistance from a Mathematics Assistance Center. The traditional courses suffered from high DFW and repeat rates.

The prime objective was to move students from a passive learning environment to an active one in which the student controls and individualizes learning. Class meetings were eliminated; learning activities were moved to a learning center containing 72 computers in pods of four. Pods were designed for up to three students to work together at each monitor. Faculty, teaching assistants, and peer tutors worked with students individually and in groups. The courses used commercially-available math tutorial software that generated problems and offered immediate feedback. Short topical lectures were available on streaming video or video-on-demand. Since most of the course material was web accessible, students were not required to be in the center.

Students met weekly in focus groups of 40 to 50 students each to coordinate activities and discuss experiences and expectations. Aside from the weekly focus group meeting, students had the freedom to manage their learning time, types of learning activities, and rate of progress. Online bulletin boards and email provided a continuous means of communication between students and instructors.

Overall student performance as measured by grades based on comparable examinations and assignments has improved. In Algebra and Intermediate Algebra, the percentage of As and Bs was higher and the percentage of Cs, Ds and Fs was lower. In Pre-Calculus, the percentage of A and B grades also tended to be higher for redesign students, though the proportion of failures was not reduced dramatically. The redesign has been particularly successful with Hispanic students who are part of the College Assistance Migrant Program (CAMP). During the fall 2002 semester, however, these students achieved an 80 percent pass rate in Intermediate Algebra, compared with the previous 70 percent pass rate. CAMP students also surpassed the success rate for the entire algebra population as a whole.

C. Rio Salado College

Rio Salado College, one of 10 community colleges in the Maricopa County Community College District in Phoenix, places high value on creating convenient, high-quality learning opportunities for diverse population and specializes in customized programs and partnerships, accelerated formats, and distance delivery. Rio has been offering distance education for the last 20 years, with a focus on serving adult learners who work or have family commitments.

Rio redesigned four pre-calculus mathematics courses [7]. Before the redesign, the college had used mathematics software developed by Academic Systems to deliver its pre-algebra and college algebra courses via the internet. Although the internet classes showed a modest retention increase of about 2 percent over the print and mixed-media format of distance delivery, the overall retention rate was only 59

percent. Rio wanted to increase retention and to maintain or increase the number of students who completed the course with a grade of C or better.

Because the Academic Systems software presented course content so well, instructors did not need to spend time delivering content. Prior to the redesign, the majority of instructors' time was spent troubleshooting technology problems, helping students navigate through the material, and advising students rather than helping them learn mathematics. The redesign added a nonacademic course assistant to address non-math-related questions (which constituted 90 percent of all interactions with students!) and to monitor students' progress, thus freeing the instructor to concentrate on academic rather than logistical interactions with students. As a result, one instructor was able to teach 100 students concurrently enrolled in any of four math courses.

Rio took advantage of the Academic Systems software's large bank of problems and answers for each topic to increase the amount and frequency of feedback to students. All assignments were graded on the spot by the software. Students knew what they had not mastered and were able to take appropriate corrective actions. Students could take end-of-module quizzes as soon as they were ready, moving quickly or slowly through the material. The software also provided a built-in tracking system that allowed the instructor and the course assistant to know every student's status (both time on task and progress through the modules) in each of the four courses.

By using these techniques, Rio was able to increase completion rates from 59 percent to 65 percent, while tripling the number of students handled by one instructor. Using the Academic Systems software ensured that all students who completed the course successfully had the same kinds of learning experiences. This means that they were more consistently prepared when they moved to the next course in the sequence or to other courses requiring a mathematical background.

D. Tallahassee Community College

Since 1966, Tallahassee Community College (TCC) has worked to expand educational opportunities to learners through a variety of instructional delivery mechanisms and formats, specifically, web-based college-credit courses. TCC ranks first among Florida community colleges in the enrollment of African-American students, and first in the percentage who are A.A. degree completers. TCC's number of minority graduates ranks 53rd in the nation.

TCC redesigned College Composition, a required course serving approximately 3,000 students annually. The traditional format, which combined lecture and writing activities in sections of 30 students each, made it difficult to address individual needs. Considerable class time was spent reviewing and re-teaching basic skills, thus reducing the amount of time students had to engage in the writing process. Success rates were poor (less than 60 percent annually). Many students had to repeat the course, which placed a financial burden on the English Department and led to a heavy dependence on adjunct instructors. The redesign had two major components. The first involved using appropriate technologies to provide diagnostic assessments resulting in individualized learning plans; interactive tutorials in grammar, mechanics, reading comprehension, and basic research skills; online tutorials for feedback on written assignments; follow-up assessments; and discussion boards to facilitate the development of learning communities. Students submitted mid-stage drafts to online tutors at TCC or to SMARTHINKING, reducing the amount of time faculty spent grading papers. These activities took place outside the classroom and were accessible to students at any time.

The second component involved restructuring the classroom to include a wide range of learner-centered

writing activities that fostered collaboration, proficiency, and higher levels of thinking. By shifting many basic instructional activities to technology, faculty could focus the classroom portion of the course on the writing process. Students worked in small groups or on individual writing efforts, depending on their identified needs.

During the 2002–2003 academic year, students in the fully redesigned sections had a 68.4 percent success rate, compared with 60.7 percent for the traditional sections. The overall success rate for all composition students was 62 percent for the 2002–2003 year, compared with 56 percent for the 1999–2000 year, representing a 13.6 percent decrease in the DWF rate. Faculty have observed that redesign students are more actively engaged in the learning process, are taking greater responsibility for their learning, are more independent and self-sufficient as learners, and are more adept at collaborative processes.

E. Florida Gulf Coast University

Opened in 1997, Florida Gulf Coast University (FGCU) was established to serve the needs of the southwest Florida region, one of the fastest growing areas in the United States. Located in Fort Myers, FGCU has experienced phenomenal growth for the past three years. FGCU is committed to increasing access to quality academic programs that emphasize student learning while controlling costs through creative teaching and course-delivery practices.

FGCU redesigned Understanding the Visual and Performing Arts, a required course in its general education program, to accommodate enrollment growth and achieve greater coherence and consistency [8]. FGCU's goal was to increase the number of As and Bs and to decrease the number of Ds and Fs. All students were moved into a single, fully online section, using a common syllabus, textbook, set of assignments, and course, website. Students were placed into cohort groups of 60 and, within these groups, Peer Learning Teams of six students each. The redesign allowed FGCU to maintain the most important elements of humanities courses—active engagement with ideas and a collaborative and experiential learning experience—while eliminating seat time completely.

The course included three modules, each of which had the same format, including an exam with both short-answer questions and a short-essay question. After reading chapters in the text, students repeatedly took low-stakes quizzes that provided feedback in preparation for the objective portion of the module exam. To prepare for the essay portion, students participated in web board discussions with their Peer Learning Teams, analyzing sample essays. These discussions increased interaction among students and developed critical thinking skills. Students also attended two arts activities in the community to gather material for two longer critical-analysis essays.

In the area of content knowledge, students demonstrated a markedly enhanced level of learning in the redesigned course. The average score on standardized exams in the traditional course was 72 percent and 85 percent in the redesigned course. The percentage of As and Bs on standardized exams went from 37 percent to 77 percent, and the percentage of Ds and Fs went from 37 percent to 10 percent.

F. Indiana University-Purdue University Indianapolis

Indiana University Purdue University at Indianapolis (IUPUI) is an urban research university created in 1969 as a partnership by and between Indiana and Purdue Universities. Because it grants degrees in 185 programs from both universities, IUPUI offers the broadest range of academic programs of any campus in Indiana. IUPUI ranks among the top 15 in the country in the number of first professional degrees it confers and among the top 5 in the number of health-related degrees.

IUPUI redesigned Introduction to Sociology, which enrolls approximately 2,000 students annually, to encourage greater collaboration among students, increase student learning, and improve student success rates [9]. In the traditional course, 39 percent of students received a D or F or withdrew from the course. The traditional lecture-and-testing format did not offer students the opportunity to learn collaboratively from one another. The course redesign involved eliminating the multiple-section course format and substituting a common format that included online learning modules, threaded discussions, interactive computer-based testing and an interactive research module.

Collaborative learning theory suggests that the more often students are able to engage in extended discussion about the course material, the more likely they are to learn it. The redesign introduced collaborative computer work in a research module common to all sections, with a special focus on the collection and analysis of data. The software also created a common discussion space that allowed all students (resident and commuter, traditional and nontraditional) to work collaboratively without location and time restrictions.

A traditional problem with classroom-based groups on IUPUI's urban campus is that students have trouble meeting with each other. Increasing the ease and amount of communication is especially important in large sections where instructor-student and student-student interaction is often inhibited by class size. Interactive testing allowed students to take exams outside of class, which freed in-class time for additional student-faculty interaction. A course management system allowed faculty to monitor students' progress and participation, permitting early intervention in problem situations.

In the fall 2000 pilot, the percentage of students receiving a D or F or withdrawing dropped from 39 percent to 33 percent; in spring 2001, it was 30 percent; in fall 2001, it dropped to 25 percent. In fall 2000, students in redesigned sections had higher (.10 level) grades. In spring 2001, redesign students had significantly higher (.05 level) grades than those in the traditional format. Finally, in fall 2000, a difference-of-means test showed that students in redesigned sections scored significantly higher (.05 level) on a set of common questions measuring understanding of key sociological concepts.

III. CONCLUSIONS

In addition to experiencing the generic quality and cost problems faced by all colleges and universities, community colleges face problems particular to their student populations. They need to design more flexible schedules for working adult students, create a greater sense of community or engagement for commuting students, address the special needs of English-as-second-language students, and serve at-risk students more effectively. The Program in Course Redesign has shown how information technology and asynchronous learning strategies can be used to address these challenges when combined with proven pedagogies, and do so while reducing instructional costs. The six institutions described in this article reduced their course costs on average by 35 percent, with a range of 20 percent to 42 percent. Their successes are easily transferable to community colleges throughout the country. The result: greater learning for less cost and, most importantly, more students able to achieve their academic goals.

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V. ABOUT THE AUTHOR

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