

Profiles in Retention Part 1: Design Characteristics of a Graduate Synchronous Online Program

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This paper is a case study of a Master of Library and Information Studies degree program online option that has been unusually successful in retaining and graduating students. Design characteristics of this program that has maintained a retention rate of over 90 percent over five years are described and mapped to the literature on distance education published after its implementation. The paper reports that characteristics identified in the practical and theoretical literatures are the same as, or closely related to, the characteristics of the program described. Student transcripts were used to track retention and time-to-completion. Topics for continuing study are identified and described. This is the first of two papers on retention in distance learning programs. The present paper (Part 1) addresses program design and implementation; Part 2 focuses on student responses to the online program option as they relate to student learning styles and outcomes.

Keywords: LIS education, online learning, online education, distance education, student retention, enrollment attrition, program administration, student support services, case study

Introduction

This is the first of two papers, a descriptive case study and a survey, that investigate the design characteristics of the synchronous online MLIS program option at the University of Alabama School of Library and Information Studies (UASLIS) and its unusual success in retaining students to completion of degree program. As shown below, it has been reported for more than a dozen years that retention rates for distance education programs are lower than for programs in which instruction is delivered face-to-face. The UA Master of Library and Information Studies (MLIS) online program option is a 36-hour cohort-based option, drawing students from across North America, that has maintained a student retention rate after one year of greater than 90 percent and an overall graduation rate of greater than 90

percent over its first five successive entering classes.

This paper is structured as follows. After reviewing the relevant literature, we provide a general description of the design characteristics of the UA MLIS online degree program option. In the Methods section, we describe the rationale for the methods employed and the steps for collecting retention data from the transcripts of 216 students who enrolled between 2005 and 2009. We determined retention rates at the half-way point for completion (after one year) and at the graduation point (after 2 years) for the first five years of the program's existence. In the final sections, we present findings and compare characteristics of the UA MLIS program with characteristics that the research literature identifies as related to high retention rates. Finally, we provide a preview of Part 2 of the study and suggest questions that remain to be explored.

Review of Existing Research

Retention of students in online educational programs has been the subject of numerous reports since the first online classes were taught in the early 1990s. There appears to be no clear retention or attrition rate for all programs, and the statistics are confounded by the number and types of programs studied (Perry, Boman, Care, Edwards, & Park, 2008). It has been established, through studies at several colleges, that attrition rates have been 10 to 30 percent higher for courses delivered online than for those delivered face-to-face (Carr, 2000).

Throughout the decade from 2000 to 2010, dropout rates for online classes and programs were reported to range between 20 and 70 percent in secondary, undergraduate, continuing professional, and graduate courses in a wide range of disciplines (Angelo, Williams, & Natvig, 2007; Carr, 2000; Long, 2009; Tyler-Smith 2006). It must be recognized, of course, that attrition occurs among both online and face-to-face student populations: the Canadian Association of Graduate Schools (2004), for example, reported attrition rates for graduate degree programs (masters and doctoral levels) to range between 19 and 46 percent regardless of how instruction was delivered.

Reports of retention rates higher than 90 percent are not evident in the recent literature. While there are many prescriptive recommendations (“how to retain online students”) based on best practice and survey results reporting “why students stayed or left” their online classes or programs, few reports link a broad range or cluster of specific program attributes to higher retention rates. We report here that the combined design and implementation of the online program option at the UA SLIS is associated with the high rate of retention the program has enjoyed, and the literature strongly supports this view.

UA SLIS Online Program Overview

The UA MLIS online program option

was implemented beginning with the August 2005 fall semester. The aim of the online option was to provide extended geographical access to the 36-semester-hour program leading to the MLIS for students unable to move to the Tuscaloosa campus or to commute to the University’s extension campus in Gadsden, Alabama. The program was regarded as a natural progression from both travelling courses introduced early in the School’s history and two-way compressed video classes delivered to remote sites in the 1990s and early 2000s. The faculty decided that a real-time, two-way Voice over Internet Protocol (VoIP) instructional delivery mode would be the online program option best suited to the prevailing UA SLIS culture. A synchronous two-way VoIP program was supported by the University through its College of Continuing Studies, which has a long history of expertise in innovative educational outreach and provides advice and support that includes the financial modeling that provided for both an affordable education for students and fiscal benefit to UA SLIS. After a year of planning and recruitment, the School launched its first student cohort of 45 students in August 2005 using Wimba Live Classroom™ integrated into Blackboard Vista™ for web-based course support.

Primary contacts with prospective and admitted students were handled through the program director; the assistant to the director, a professional staff member responsible for student services at UA SLIS; and the distance education coordinator, a faculty member compensated for this part-time administrative service. The online study option was designed to serve part-time adult graduate students who would complete two online courses each term over six semesters, including summers, to earn the degree in two calendar years.

Given the high retention rate of the UA SLIS online program option, what attributes of this program could be linked to this retention rate?

Methods

This is a descriptive case study. The case study has been used in LIS to investigate, describe and explain reference services (Lawson, 1968), the closing of library education programs (Paris, 1988), and knowledge utilization (Yin, 1981). We chose a single case design rather than a multiple approach because this research opportunity appeared to the authors to represent an extreme or unique situation that would benefit from a method appropriate “to describe a situation (e.g., a case history) or to test explanations for why specific events have occurred” (Yin, 1981, p. 98).

The case being examined is the UA SLIS online program option as designed and implemented and the context is the distance learning community broadly defined. The data were derived from archival and administrative records: descriptions of program attributes and activities came from archival material and current practice while retention rates and time-to-degree for students enrolled in the program were taken from student transcripts. In Part 2 of the study, individual learner attitudes and outcomes are examined through a survey of students and graduates.

Part 1 of this study was not submitted to the University’s Institutional Review Board (IRB) since data were aggregated and did not directly involve human subjects. Part 2 of the study, based on a survey, has been reviewed and approved by IRB.

To establish accurate retention rates for the program, transcripts for a population of 216 students who entered the online MLIS degree option between August 2005 and September 2009 were examined. The objective was to determine whether students completed the program and when they graduated; or to determine, for those who did not remain in program, the length of time students were enrolled before leaving. Graduation years were recorded, as were the dates when students either formally withdrew or ceased enrolling. Students

who left the program were categorized as “early leavers” if they failed to complete the first academic year (two semesters or 12 semester hours of credit) or “late leavers” if they dropped out after completing the first two semesters or the equivalent. Since six years of academic enrollment is permitted for pursuit of the degree, some students who entered in the period 2006-2009 are still enrolled in classes or are in continual contact with their advisors about continuing. They are counted among the “retained” or “active” students as of January 1, 2012.

Having confirmation that the retention and graduation rates were indeed very high, the next step was undertaken: a detailed articulation of program attributes and activities. This step involved outlining, categorizing, and describing the attributes of the high retention program under investigation. To identify program characteristics that had been associated with student retention elsewhere, a search of the literature of attrition, retention, and overall success of online degree programs was conducted. Program attributes associated with retention were identified, regardless of having been empirically or theoretically derived. Because evaluations of online programs were just beginning to be reported, the literature reviewed was published during the period in which the UA SLIS online program option was being designed and delivered to the first five cohorts.

Finally, UA SLIS program attributes were compared with those reported in the literature. Program characteristics not mentioned in the literature were also identified and aspects for additional study were suggested.

Designed Attributes of the UA SLIS Online Program

Recruitment

The initial recruitment goal was to establish a pool that would yield between 35 and 40 students for each entering co-

hort. Prospective students are recruited through student-initiated inquiries to UA SLIS, through advertising by the College of Continuing Studies, by direct mail to potential students in the region, and by word-of-mouth as the program continues to mature. As part of establishing ongoing, cordial, and personal communications, prospective students are also contacted on an individual basis by administrative staff.

Application and Admission

Students are admitted only in the fall semester and must meet University requirements for regular graduate admission. Students who reside within commuting distance of campus must offer a compelling reason to enroll in the online option rather than enrolling in the face-to-face program on campus. Applications are batched and students selected to make up a diverse class based on academic history, age, gender, race/nationality, geographic location, work experience, and professional goals. Administrative staff and faculty communicate individually with each applicant as applications travel through the admissions process. Upon admission, students are contacted by the Distance Education Coordinator with whom students participate in a “test drive” of the distance learning technology to be certain their computers, peripherals, software, and connections are suitable for full participation in courses. Students commit to completing 18 credit hours (the required core) with students entering at the same time (the “cohort”).

Enrollment

Students attend a one-credit-hour residential (on-campus) orientation to the program, the college, and the university for three to four days prior to beginning classes. Students are introduced to one another, and to the faculty, as well as to the technology, curriculum, and traditions of UA SLIS. Students enroll in core courses

based on an established rotation of two courses in fall, spring, and summer of year one. Students are permitted to deviate from the two-core-course norm but must take courses in sequence by making up courses not taken in year one during the same term in year two. Students who elect to reduce their course load to one course, or who choose to “sit out” for a term, will complete those core courses not taken in year one with members of subsequent cohorts.

Instructional Delivery for Core Courses

Core courses are scheduled during evening hours. Each course meets one night per week for 2 hours and 45 minutes except in summer sessions when meetings are more frequent and presented in longer workshop-like formats. Courses meet weekly via Wimba Live Classroom™, wherein students hear live lectures, participate in discussions, give presentations, hear guest lectures, and work individually and in groups. Presentation tools such as Power Point, streaming audio/video, and others are used at the instructor’s discretion and as appropriate to the instructional units being delivered.

Blackboard Vista™ is used to manage online courses and to provide materials associated with courses such as links to readings, assignments, tests, and other required or optional documents. Course e-mail, discussion boards, and announcements enable students to communicate with one another and with faculty between formal class meetings. Facebook and other social media are also employed. Attendance is generally not an issue, since students select this synchronous VoIP program with the anticipation of attending formal class sessions once a week. Students are encouraged to interact with instructors and with one another during the delivery of course material.

Individual class sessions are archived so that students can review content. Lectures, graphics, discussion, and chat are

made available through the course archive, which is activated at the beginning of each class and terminated when the class ends. The technical support staff insure readiness for class sessions by conducting microphone checks, troubleshooting, and directing student problems to relevant assistance when needed. Technical support is available during class sessions so that students who encounter technical problems can have their issues addressed outside the class session so that instruction is not interrupted. Private and public chat is used during classes to resolve technical problems, gain perspectives on content, and encourage the formation of a learning community.

Instructional Delivery for Elective Courses

Upon completion of the first year of core courses (or earlier if a student has successfully transferred a core course from another ALA-accredited program), the student enrolls in 18 hours of electives. Electives were designed to be taken during year two of the student's program. Online electives are open to all UA SLIS students in addition to cohort members so that online students become acquainted with on-campus students, adding to their growing professional networks. Some students elect to take independent studies or internships in addition to elective courses.

Socialization to UA SLIS

A required one credit hour orientation includes academic and social activities designed to socialize students to SLIS and the University of Alabama. This orientation includes introductions to university, college, and UA SLIS faculty, staff, alumni, and administrators. Members of previous cohorts provide their perspectives as well. Structured introductions of students and faculty allow students to discover affinities with other members of their cohort. Each entering cohort is encouraged to

adopt a "name" to help build group identities and a sense of camaraderie.

Cohorts are encouraged to develop identities through activities such as developing their group's preferred method of networking and engaging in activities that set them apart from other cohorts. Online town hall meetings are called at least once per term to provide online students the opportunity to talk with the director and assistant to the director regarding courses, instructors, program concerns, and scheduling.

Socialization to LIS

Orientation includes the introduction of online students to active members of the profession. Local and state library officials welcome students to the profession. Orientation also includes an introduction to the curriculum with an emphasis on the required core courses. Discussion round tables on career options and functions are held during orientation in order to enable students to interact with like-minded cohort members and to be advised as to appropriate course planning for specializations.

Responding to Barriers to Completion—Isolation

Isolation is addressed through opportunities for group work, communication during and after class sessions, and social interaction. Cohort members hold dedicated leadership positions in UA SLIS student organizations to represent the interests of online students. Isolation is also addressed by making programs and other UA SLIS activities available to online students via technology. Guest speakers, faculty job candidate presentations, and workshops are regularly provided to off-site students live and via the archive. In addition, isolation is addressed by faculty and staff availability at formal and informal social events, at professional conferences, and at meetings throughout the country. Unoffi-

cial networks encourage online students to participate as frequently as, and to whatever degree, they feel comfortable doing so.

Responding to Barriers to Completion—Financial Issues

Financial concerns are addressed by scholarships awarded through the School's endowed scholarship program and by the University's College of Continuing Studies. Students in the online program are also able to work as student assistants and occasional student workers when research funding permits assistance to be provided off campus.

Responding to Barriers to Completion—Time Management

Time constraints of working students are addressed through the flexible enrollment that allows students to drop from two to one course per term, particularly during summer sessions when jobs and family obligations may need attention. Time constraints are also addressed by flexibility in the number of credit hours that may be earned through internships and directed readings or independent study. Students can enroll for one, two, or three hours within the UA MLIS nine-hour limitation for independent work and transferred courses.

Program Administration

A distance education coordinator, selected from the faculty, provides leadership for the admissions process, orientation, and technical aspects of the program and represents faculty interests in decision making about the program option. The director of UA SLIS provides leadership for the program option and assesses and reports to all constituents on matters such as recruitment, student performance, and retention. The assistant to the director, who has responsibility for student services within UA SLIS, manages communication with prospective, applicant, and admitted students. Teaching in this option is part of the normal teaching load. Thus, all UA SLIS faculty members are expected to teach in and participate in decision-making regarding the online program option.

Retention and Time to Graduation Results

Over the five-year period of this study, the UA MLIS program has documented rates of retention considerably higher than any identified in the research literature. Retention history for the first five years of the UA MLIS online program option is summarized in Table 1.

Retention is noted at the end of the first

Table 1. Retention of DE Cohorts That Entered between 2005 and 2009.

Cohort No.	Year Entered	N of Students	N of Students Retained through 1st Year	% of Students Retained through 1st Year	N of Students Graduated or Still Active (2011)	% of Students Graduated or Still Active (2011)	YTG*
1	2005	45	43	95.5	41	91.1	0
2	2006	43	40	93.0	34	79.1	1
3	2007	42	42	100.0	40	95.2	2
4	2008	43	40	93.0	40	93.0	3
5	2009	43	40	93.0	40	93.0	4
All	All	216	205	95.0	196	90.7	—

*Years-to-go = years of academic eligibility remaining as of 2011.

Table 2. Time to Degree for DE Cohorts That Entered between 2005 and 2009.

Entrance Date	N of Students Who are Inactive or Withdrew	1–2 Years to Complete	3–4 Years to Complete	5+ Years or Still Active 12/2011	Total Admitted
2005	4	29	11	1	45
2006	8	30	4	1	43
2007	2	27	11	2	42
2008	3	26	7	7	43
2009	3	35	n/a	5*	43

*All 5 are still enrolled; 3 are scheduled for 2012 graduation.

year of the two-year program and then graduation or continuing status as of December 2011. It is expected that the overall number and percentage of students graduating will increase as cohort members who entered in 2006, 2007, 2008 and 2009, and who are still enrolled, complete degree requirements. Table 2 summarizes time to degree, to date, for the online students and notes the number of students still active after 4 or more years in the program. It also shows that the majority of students (68 percent) who began the online program option completed their studies by the end of the second calendar year. Another 15.3 percent of students have graduated within four years; thus the percentage of students graduating within four years is 83.4 percent. Sixteen active students from the 2005 through 2009 cohorts are highly likely to graduate; they have completed significant portions of the degree program already and are the least likely to quit now. The still-active students could add 7.4 percent to the completion rate, enabling this online program option to see a graduate rate of 90.4 percent over five cohorts.

Discussion

We turn to the education literature on retention in order to better understand the success of the UA MLIS graduate synchronous online MLIS program option in retaining students at an unusually high rate. To accomplish this, the design characteristics of the UA SLIS program have been

mapped to factors associated with retention as reported by others. Shanley (2009) provides a literature-based framework for such a mapping. While Shanley's literature review focuses on specific factors related to asynchronous classes, his list nonetheless provides a good starting point for categorizing activities and attributes of programs identified by other researchers. Table 3 identifies factors that have been associated with retention in online courses, including support services, clear student expectations, orientation to the online course, technology readiness, faculty preparedness, student control, age factors, participation, and social integration. Table 3 then presents a brief statement on each of the designed activities and attributes of the UA MLIS online option implementation as mapped to the factors identified by Shanley and others.

As the online MLIS program option at the University of Alabama School of Library and Information Studies was implemented in 2005, it was designed without benefit of most of the literature reported here. However, the online program option was deliberately designed to maintain the same academic rigor as the face-to-face program and to replicate those characteristics of the SLIS experience most valued by alumni and students. These included "being a program where faculty and students interacted regularly," "being a program where students could receive individual attention if needed," "being a program where the faculty understood the issues confronting employed, part-time students

with adult responsibilities,” and “being a close-knit community.” These aspects and how they were incorporated have been described in part by Aversa, Bajjaly, Barlow, Hahn, Lester, and Riggs (2009), and MacCall, Aversa, and Guenther (2006).

Conclusions and Recommendations for Further Study

It is evident now that many of the factors associated with retention of online students have been implemented by the UA SLIS program option. It is also clear, from comparison with other retention data reported in the literature, that the UA SLIS program option has retained a greater-than-expected proportion of entering students. The role of the individual student, or learner, and his or her academic background, learning style, personal responsibilities, professional obligations and aspirations have not been addressed here, but are included in Part 2. Evidence from the two stud-

ies should allow for discovery of which attributes of a program and its students are most highly related to both retention and program outcomes.

There are still areas that call for additional work. First, there has been very little written about differences in retention rates and factors with synchronous versus asynchronous instructional delivery. Second, we are just beginning to parse the differences between online undergraduate and graduate students and how they respond to online learning. This work should continue. Third, as we gather more data on program retention, we should now begin to look at whether whole programs of study or individual online classes result in similar retention/attrition. And we also need to ask, are retention rates and factors different or the same for programs in diverse disciplines? In professional or cognate programs? Pursuit of these topics is needed if we are to successfully educate 21st century students and move the retention rate higher in online programs.

Table 3. SLIS Program Design Attributes Mapped to Program Activities Associated with Retention

Attribute/ Activity Category	Recommended Attribute/Activity for Retention of Students	Source & Context of Study in the Literature	SLIS Program Attribute/Activity as Implemented
Administrative support	Initiate early contact with students & applicants by telephone	Angelo 2007 - Misc. courses; Bart 2011 - MSHE program	Prospective students are contacted by faculty & staff; ongoing, cordial, & personal communications are established at the recruitment stage. In lieu of e-mail, telephone contact is provided by the assistant to the director who shepherds applicants from first inquiry to enrollment.
Administrative support	Initiate early contact with students & applicants by e-mail	Nistor 2010 - Misc. courses	Initial & ongoing contact is provided by e-mail communications from the assistant to the director who shepherds applicants from first inquiry to enrollment.

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Table 3 (continued). SLIS Program Design Attributes Mapped to Program Activities Associated with Retention

Attribute/ Activity Category	Recommended Attribute/Activity for Retention of Students	Source & Context of Study in the Literature	SLIS Program Attribute/Activity as Implemented
Administrative support	Keep students informed about changes in program	Bunn 2004 - MLIS program	During the application phase the staff informs students of changes via e-mail & posts significant changes on the website.
Administrative support	Make efforts for retention early in program when leaving is most likely	Boston 2010 - Undergrad. program	Students at orientation are made aware of potential difficulties & are given instructions as to how to get assistance from faculty, academic advisors, & staff.
Administrative support	Develop attrition management plans	Nitsch 2003 - Grad. program	The director & assistant to the director, along with the DE coordinator, track student enrollment. Regular planning & follow-up session are held each term with the director, assistant, & coordinator. Admission & retention are also discussed with partnering College of Continuing Studies.
Administrative support	Plan & organize for retention	Siegel 2011 - Undergraduate courses	Orientation, town hall meetings, advising, & social events at professional conferences keep students in touch with the program.
Administrative support	Monitor registration & focus on those who do not register for 2-3 terms	Shahdad 2011 - Misc. programs	If a member of a cohort fails to register, a message or call goes out to determine why, usually the first missed registration.
Student support	Conduct pre-course orientation or boot camp	Angelino 2007 – Misc. courses; Gleason 2004 – Misc. programs; Tyler-Smith 2005 – Adult ed. program	An extensive on-campus orientation consisting of three or four days of academic & social interaction is held with each entering cohort. Students are oriented to the university, the school, the program, technology systems, & their cohort during the orientation.
Student support	Make financial assistance available	Breier 2010 - Campus programs; Siegel 2011 – Under-graduate courses	Earmarked endowed scholarships are offered by UA SLIS & the College of Continuing Studies for part-time & online learners. UA SLIS encourages applications. Online students are also eligible & win academic awards & honor society tapping.

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Attribute/ Activity Category	Recommended Attribute/Activity for Retention of Students	Source & Context of Study in the Literature	SLIS Program Attribute/Activity as Implemented
Student support	Provide early online access to library services, registration, counseling, etc.	Angelino 2007 – Misc. courses	At orientation students are introduced to a wide array of services, & the individuals responsible for them (librarians, students with disabilities coordinators, etc.) Assistance is available by telephone or e-mail regarding registration, financial assistance & other services.
Student support	Provide information on technology, course management, content, & communications at boot camp	Tyler-Smith 2005 – Adult ed. program	Students receive instruction on the use of university systems, the course management system & the Wimba system during the orientation. A session about the first courses & the program curriculum is also held at orientation.
Student academic experience	Provide prompt feedback	Bunn 2004 – MLIS program	UA SLIS maintains the same academic requirements of both faculty & students in online & face to face classes. Students have the same opportunities to assess classes, to provide faculty feedback, & to communicate with the administration. SLIS does not have a specific requirement for turn-around time on e-mail or assignments but students expect reasonable response times.
Student academic experience	Focus on academic integration after initial term	Willcoxson 2010 – Business courses	Faculty advisers assist students in planning both course selection & their careers post-MLIS. Advisers help development the students' individual plans to meet their professional, educational, & personal goals. Most faculty hold online office hours & students may provide feedback to the administration through "virtual town hall meetings." Online classes are taught by the same faculty who teach on-campus classes so course integrity is maintained.

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Table 3 (continued). SLIS Program Design Attributes Mapped to Program Activities Associated with Retention

Attribute/ Activity Category	Recommended Attribute/Activity for Retention of Students	Source & Context of Study in the Literature	SLIS Program Attribute/Activity as Implemented
Faculty preparedness	Prepare faculty with course design workshops & other assistance with pedagogy	Angelo 2007 – Misc. courses	The University & its Faculty Resource Center (FRC) along with the College of Continuing Studies supported course migration to synchronous online delivery mode. Workshops & individual instruction were available to faculty.
Faculty preparedness	Provide faculty opportunities to develop classes & design their own instruction	Serwayka 2005 – Misc. courses	Within the program faculty, an each-one teach-one culture developed & colleagues helped one another develop classes. The coordinator of the program option also spent time assisting as faculty members moved to online teaching.
Instructional delivery	Use synchronous learning tools	Reigle 2010 – Misc. courses	The selection of a synchronous, real-time technology to deliver instruction was deliberate. It allowed for the “personal contact” that graduates valued, & it allowed adult learners to communicate directly with faculty & other students in classes.
Instructional delivery	Provide faculty training in the use of synchronous presentation tools	Roughton 2011 – Misc. courses	The College of Continuing Studies provided travel & faculty development funds for attendance at Wimba conferences & workshops.
Instructional delivery	Vary methods of presentation in classes	Serwayka 2005 – Misc. courses	Faculty are encouraged to exercise academic freedom in how they present material & which tools they use in the online venue.
Technology preparedness	Provide opportunities for students to gain technological knowledge & skills	Nitsch 2003 – Graduate program	Students are introduced to the technology used to deliver instruction prior to attending orientation. Individual “test drives” of the system eliminate anxiety in this area.
Technology preparedness	Provide good technical training & support for students & faculty	Bunn 2004 – MLIS program; Gleason 2004 – Misc. programs	Students have a chance to practice using the technology during orientation.

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Attribute/ Activity Category	Recommended Attribute/Activity for Retention of Students	Source & Context of Study in the Literature	SLIS Program Attribute/Activity as Implemented
Technology preparedness	Provide technical support at single point of contact	Bunn 2004 – MLIS program	Technical support is provided to students through graduate teaching assistants who monitor the classes for technical problems. If support beyond this is required, the technical support monitors can make contact or direct the student to other resources. Some faculty members provide their own technical support & students are encouraged to help one another when rare problems arise.
Social integration	Make group (team) assignments & encourage student interaction	Bunn 2004 – MLIS program; Bart 2011 – MSHE program	Group work is used in many classes. The concept of working with colleagues at a distance is introduced in the first course, & students develop skills at online communication & teamwork throughout the first terms.
Social integration	Provide virtual & alternative activities for students	Angelo 2007 – Misc. courses; Humphreys 2010 – MLIS program	Online students are encouraged to participate in all the activities of UA SLIS & faculty & staff ensure that these opportunities are there. Student meetings, presentations by visiting scholars, & job search workshops & other similar activities are provided via the synchronous live classroom & these activities are also archived.
Social integration	Focus on social integration early in program	Gleason 2004 – Misc. programs	Students are encouraged in this regard from pre-orientation communication, through orientation, & into the classroom.
Social integration	Facilitate students to integrate & maintain a presence in class	Willcoxson 2010 – Business program	
Social integration	Use diverse approaches to enhance student engagement	Serwatka 2005 – Misc. programs; Schaeffer 2010 – Misc. courses	
Communications	Require student writing skills	Nitsch 2003 – Graduate program	

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Attribute/ Activity Category	Recommended Attribute/Activity for Retention of Students	Source & Context of Study in the Literature	SLIS Program Attribute/Activity as Implemented
Communications	Encourage faculty-student communications	Bunn 2004 – MLIS program	Communication between the coordinator, assistant, & director are encouraged. Students are also encouraged to communicate directly with their academic advisors & their teaching professors. This emphasis on communication, getting assistance when needed, & keeping in touch with peers is emphasized from the application process & throughout the student’s program at UA SLIS.
Communications	Facilitate communication via chat	Angelo 2007 – Misc. courses	Most faculty allow, and some encourage, the use of monitored chat during class.
Communications	Encourage class participation	Nistor 2010 – Misc. courses	A list of students who are “in the room” is displayed during online classes; some faculty take roll while others encourage regular attendance.
Communication	Provide means for adequate & responsive communications	Humphreys 2010 – MLIS program	Students are encouraged to use a range of technologies, including social networking, in the first semester & to build technical skill on that foundation.
Expectations	Ensure reasonable student expectations of program	Bunn 2004 – MLIS program; Herbert 2006 – Misc. courses	Expectations, both of faculty & students, are discussed at orientation as well as during later advising sessions. The assistant to the director and others maintain templates for e-mail correspondence to assure that questions are answered consistently, but every effort is made to build a personal communication with each student as well.
Student factors	Ensure student understanding of time requirements for learning	Long 2009 – Continuing professional training; Nitsch 2003 – Graduate program	Student factors are addressed in Part 2 of this study.
Student factors	Ensure that students know how to work in teams	Nitsch 2003 – Graduate program	Student factors are addressed in Part 2 of this study.

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Table 3 (continued). SLIS Program Design Attributes Mapped to Program Activities Associated with Retention

Attribute/Activity Category	Recommended Attribute/Activity for Retention of Students	Source & Context of Study in the Literature	SLIS Program Attribute/Activity as Implemented
Student factors	Develop student ability to complete work on time	Nitsch 2003 – Graduate program	Student factors are addressed in Part 2 of this study.
Student factors	Be sure students can deal with jobs, families, finances	Perry 2008 – Graduate nursing program	Student factors are addressed in Part 2 of this study.
Student factors	Maturity, fitness with online learning and motivation factors	Shanley, 2009 – Misc. courses	Student factors are addressed in Part 2 of this study.

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