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A Paradigm for Student Learning Outcome Assessment in Information Systems Education: Continuous Improvement or Chasing Rainbows?

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Abstract

A paradigm is presented for student learning outcome assessment in information systems education. Successful deployment of the paradigm is illustrated using the author's home institution. The paradigm is consistent with both the scholarship of teaching and learning and the scholarship of assessment. It is concluded that the deployment of the paradigm allows us to address program constituent concerns regarding student learning in higher education while simultaneously being consistent with accreditation requirements at the program (ABET), school (AACSB) and institutional (NEASC) levels.

Keywords: Assessment, Accreditation, Program Constituents, Program Educational Objectives, Student Learning Outcomes.

1. INTRODUCTION

Over the course of the last decade there has been an increased emphasis for student learning outcome assessment at the national level. Although "No Child Left Behind" (United States Congress, 2002) and "Race to the Top" (United States Department of Education, 2009) have garnered the most press, this national movement for educational accountability is now directly impacting accreditation requirements of the regional higher education accrediting agencies (NEASC, 2011). Additionally, both school accreditation requirements (AACSB, 2003) and program accreditation requirements (ABET, 2012) have issued calls for the assessment of student learning.

Further impacting the need for higher education institutions to address assurance of learning is the public's demand for proof that graduates will have a reasonable opportunity for a successful career at graduation given both the catastrophic student debt levels and the ever-changing economic landscape. All of these increasing demands for accountability are arising at a time of both a decreasing traditional college-age population and the emergence of Massive Open Online Courses (MOOC's).

In response to these increased demands for accountability institutions of higher education have placed an increased emphasis on assurance of learning by measuring student learning outcomes. In many cases desired student learning outcomes have been defined at the university, school, and program level. But are we in higher education simply chasing rainbows? Can student learning be measured, in any real sense of the word? The fallout from "No Child Left Behind" is legendary, and the "Race to the Top" is increasingly being met with skepticism. But if we in higher education fail to respond to the increasing demands for accountability with measures and processes that are meaningful to us, and if we fail to convince the public that our results are meaningful, then

it is likely that the measures and processes will be defined for us.

2. INFORMATION SYSTEMS ACCREDITATION REQUIREMENTS

For undergraduate programs in Information Systems, accreditation requirements exist at least at two levels: (1) regional accreditation agencies, for which requirements must be met; and (2) at the program level, through ABET, which is a program-level option. Additionally, for programs existing within Schools of Business, accreditation requirements exist through the Association to Advance College Schools of Business (AACSB), although this is also a voluntary option. All three levels of accreditation require attention to the assessment of student learning, though the individual requirements vary in terms of the language they employ.

While much prior work has been done in terms of information systems assessment, and this prior work has appeared in major Information Systems (IS) journals, only a few articles (Beard, Schweiger & Surendran (2008); Mills, Hauser, & Pratt (2008)) appear to link IS assessment to larger issues of school-wide assessment. An exhaustive literature such has failed to turn up a single article that links IS assessment to larger institutional assessment concerns associated with regional accreditation. Further, most of the current literature is micro in its scope advocating for either (1) a particular method associated with a particular course and/or learning outcome or (Carpenter, Snyder, Slauson, & Bridge (2011); Murray, Perez, & Guimaraes (2008); Wagner, Longenecker, Landry, Lusk, & Saulnier (2008)) or (2) the effectiveness of a particular method employed across the IS curriculum (Al-Mubaid, Abeysehera, Kim, Perkins-Hall, & Yue (2011); AAsheim, Gowan, & Reichgelt (2007); Saulnier, Landry, Longenecker, & Wagner (2008)). But none of the work to date has focused on the larger issue of providing a paradigm that addresses the link of assessment to IS ABET program accreditation while simultaneously addressing assessment requirements at both the school and institutional-levels.

At the institutional level, the New England Association of Schools and Colleges (NEASC), one of the six major regional accrediting agencies, devotes standards 4.48 through 4.54 to the assessment of student learning, specifically requiring that each academic institution implements and provides support for systematic and broad-based assessment of how students are learning. NEASC further requires that each institution use a variety of quantitative and qualitative methods and both direct and indirect measures to understand the experiences and learning outcomes of its students, and that the institution use the results of these assessments for improvement.

At the school level, our information systems program is located in an AACSB-accredited school of business, and as such our school-wide accreditation must conform to AACSB Assurance of Learning standards. These standards are based on the premise that learning is the central activity of higher education, and that the definition of learning expectations and assurance that graduates achieve learning expectations are key features of any academic program. AACSB Standard 16 specifically requires that for each undergraduate degree program the school must define learning goals, and that for each academic program the school demonstrates that students meet the learning goals. Moreover, if assessment demonstrates that learning goals are not being met, that processes are in place and are being employed to eliminate the discrepancy.

At the program level, we choose to use ABET guidelines to maintain program-level accreditation, which requires that student performance be monitored to foster success in attaining student outcomes, thereby enabling graduates to attain program educational objectives. As such, we must define our program level constituencies consistent with the ABET definition of constituency, define our Program Educational Objective, define our student Learning Outcomes necessary for our students to obtain program educational objectives, and develop and execute a successful assessment program to insure that our program is meeting its educational objectives and modify it as necessary based on assessment results.

3. PRECURSOR/PRINCIPLES FOR EFFECTIVE STUDENT LEARNING

In response to the need to address how effective our students are learning, it is desirable for the faculty to engage in scholarly teaching; that is, whatever teaching and assessments they employ should be consistent with what we know about how students learn. While the Scholarship of Teaching and Learning (SoTL) has been an

object of higher education research for decades, the last decade has added significantly to our knowledge base.

Building on the earlier work of Chickering & Gamson (1987), Bransford (2000) has provided significant insight into the science of learning. Consistent with Bransford's findings, Fink (2003) asks us to move beyond the earlier taxonomy of Bloom (1956) to produce *significant* learning for our students by engaging in *backward course* design. Kuh (2008), writing on behalf of a nationally commissioned study group of the American Association of Colleges and Universities (AAC&U), extends the paradigm further by categorizing certain pedagogies as *High Impact Practices;* that is, a research-based group of instructional practices that have been shown to positively impact student learning.

We are fortunate at Quinnipiac University to be in an academic environment that has made an intentional commitment to become an exemplar of a *Learning Paradigm College* (Tagg, 2005). As such, all institutional resource allocation decisions are made based on the degree to which they have the potential to positively impact student learning (Barr & Tagg, 1995). Indeed, our program focuses on active "learning by doing" instructional practices, and among the ways we actively address student learning are our Information Technology for Good (IT4G) initiative, a commitment to service learning, project-based courses with real projects (usually service learning projects done for not-for-profits), and required internships.

4. PROBLEM STATEMENT

All of us in higher education in general, and in Information Systems in particular, seek to promote continuous improvement in our curriculum that results in improved student learning. But in order to objectively do so, we need a mechanism to "measure" our students' learning. Such has been the driver for the emergence of assessment requirements at the regional, school, and program levels.

While much has been done to promote and advance both continuous improvement and assessment of learning accreditation requirements, little appears to have been done to provide guidance and/or promote the use of best practices to information systems programs attempting to meet these requirements. Rather than conduct separate assessments to meet separate accreditation requirements at the university, school, and program levels, it is highly desirable to employ an integrated procedure that meets all three sets of requirements in a single process. It is further desirable that the integrated process should promote the use of the AAC&U high impact practices consistent with the backwards course design espoused by Fink.

5. THE PARADIGM

The following 7-step process has been used to design and develop a program assessment and continuous improvement system consistent with the accreditation requirements of NEASC, AACSB, and ABET:

Step 1. Establish Program Constituencies
Although ABET does not specifically define what it means by a constituency of the program, ABET requires that the program must have published educational objectives that are consistent with the mission of the institution, the needs of the program's various constituencies, and the ABET criteria for accrediting computing programs. In other words, a program's educational objectives are based on the needs of the constituencies. It is therefore necessary for a program to have defined constituencies who are consulted to establish the program's educational objectives. While the ultimate responsibility for curriculum must necessarily lie with the program faculty (NEASC, 2011), the definition of program educational objectives is made with the input and concurrence of the program's constituencies.

Our CIS program has defined our program constituencies to be (1) the full-time program faculty, (2) the CIS Advisory Board, (3) Alumni of the program, and (4) employers of our graduates. The purpose of a constituency, then, is really to assist in the definition of program's educational objectives.

Step 2. Define Program Educational Objectives
Program Educational Objectives (PEO's) are by definition broad statements that describe what graduates are expected to attain within a few years after graduation (ABET, 2012). We have interpreted a "few years" to mean 3-5 year goals of the program. Specific PEO's were adopted by a vote of the full-time program faculty after (1) presentation to and feedback from the program's advisory board, (2) interviews with

internship supervisors and employers of our graduates, and (3) a formally conducted program alumni survey.

Specific PEO's adopted by our CIS program are within three-five years of graduation program graduates will have:

1. Helped an organization achieve its goals by applying knowledge and skills in the application of information systems;
2. Used information systems for decision making to help organizations achieve a strategic competitive advantage;
3. Served as liaisons between end-users and computing specialists by communicating effectively in both oral and written form;
4. Worked effectively in teams to manage both themselves and their colleagues; and
5. Demonstrated lifelong learning skills by attendance at continuing professional education courses/workshops, pursuit and/or attainment of professional certification, and/or higher-level academic education.

Step 3. Define Student Learning Outcomes

ABET accreditation requirements (ABET, 2012) specify that the program must have documented student learning outcomes (LO's) that prepare graduates to attain the program educational objectives, and that there must be a documented and effective process for the periodic review and revision of these student outcomes. The requirements specifically (p. 3) specify that the program must enable students to attain, by the time of graduation:

(a) An ability to apply knowledge of computing and mathematics appropriate to the discipline;
(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;
(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs;
(d) An ability to function on teams to accomplish a common goal;
(e) An understanding of professional, ethical, legal, and security and social issues and responsibilities;
(f) An ability to communicate with a range of audiences;
(g) An ability to analyze the local and global impact of computing on individuals, organizations, and society;
(h) Recognition of the need for and an ability to engage in continuing professional development; and
(i) An ability to use current techniques, skills, and tools necessary for computing practice.
(j) An understanding of the processes that support the delivery and management of information systems within a specific application environment.

These specific outcomes (a)-(i) are recommended/viewed by ABET as the minimal set of required LO's. While individual programs are free to adopt additional LO's to support their PEO's and the specific needs of their constituencies, they are not required to do so.

Though there is no mandate that the ABET LO's by discussed with the program constituencies, we did so to obtain their input as to the appropriateness and completeness of the recommended ABET list. After this discussion, the faculty of the department unanimously adopted the ABET list as our approved student learning outcomes.

Step 4. Map LO's onto PEO's

To determine whether the list of LO's contribute to student attainment of all of the PEO's a mapping of the LO's onto the PEO's is constructed. This insures that the LO's are sufficient to attain the desired PEO's. The specific mapping of our LO's onto our PEO's is shown in Exhibit 1:

Mapping of LO's Onto PEO'S
(Learning Outcome Contribution to PEO's)

LOs/PEOs	PEO 1	PEO 2	PEO 3	PEO 4	PEO 5
LO-a	X				
LO-b	X	X			
LO-c	X	X			
LO-d			X	X	
LO-e		X			X
LO-f		X	X		X
LO-g		X			
LO-h					X
LO-i	X	X			
LO-j	X	X			

Exhibit 1 … Mapping LO's Onto PEO's

Step 5. Assign LO's to Specific Required Courses

Once we are convinced that our LO's are sufficient to attain our desired PEO's, the next step is to assign responsibility for delivering learning outcomes to particular courses. Given that our students will not necessarily take elective major courses, it is necessary that all learning outcomes be addresses in required major courses. While some learning outcomes may also be covered in courses outside the major, we cannot necessarily control what is being taught in those courses.

Required courses specific to our program in Computer Information Systems (CIS) are as follows:

CIS 125 Systems Analysis & Design
CIS 225 Object-Oriented (OO) SAD
CIS 244 OO Programming
CIS 301 Enterprise Systems
CIS 330 Networking & Data Com.
CIS 351 Database Design & Prog.
CIS 440 IT Project Management
CIS 484 IT Internship

Each of these required courses is specifically assigned responsibility for one or more of the LO's within the framework of Bloom's taxonomy of educational objectives (Bloom, 1956). The specific mapping of our LO's onto our required courses is shown in Exhibit 2.

L0'S/ Course	CIS 125	CIS 225	CIS 245	CIS 301	CIS 330	CIS 351	CIS 440	CIS 484
LO-a			X		X			
LO-b	X	X					X	
LO-c			X			X		
LO-d						X	X	
LO-e				X			X	
LO-f	X			X				X
LO-g	X							
LO-h								X
LO-i		X					X	
LO-j	X						X	

Exhibit 2 Course Responsibility Matrix (Mapping LO's onto Required CIS Courses)

CIS 484 is a required internship which is supervised by company personnel. While we are comfortable that success in this internship experience is a highly professional capstone experience, we cannot necessarily document the experience across a range of LO's for every student. Hence, we have mapped but two LO's onto the required internship.

Our CIS Alumni Survey, our CIS Advisory Board Input, and the Career Leader Assessment survey/test administered in *SB 112 Career Development* are the means via which we receive input and document our effectiveness in achieving outcome h – recognition of the need for continuing professional development. This outcome is further reinforced by the internship supervisor input regarding students' attitudes and experiences in CIS 484.

We administer the Information Systems Analyst (ISA) exam in CIS 440, though the information covered on the ISA exam is not necessarily covered in CIS 440; (please see particulars in CIS Assessment Plan – Appendix A).

The LO's that have been assigned to specific courses become the basis for both course design consistent with the principles of backward course design (Fink, 2003), and the adoption of high impact practices (Kuh, 2007) to address the assigned LO's specific to each required course. While courses may have individual learning objectives beyond those that appear in the Course Responsibility Matrix, the matrix becomes the driver for a minimal set of learning outcomes for each required course.

Step 6. Adopt an Assessment Plan to Monitor Attainment of LO's

Prior to constructing individual course syllabi and developing course assignments to specifically address assigned LO's, an assessment plan should be developed such that both the course syllabus and course assignments are constructed consistent with departmentally approved assessment criteria. Such a plan should minimally indicate specifically, for each LO, the following information:

- Where and with what frequency the outcome would be assessed;
- The specific assessment methods for each instantiation;
- The *a priori* target criteria for student performance to be deemed satisfactory;
- Specific assessment results that will be/ have been obtained from the execution of the plan;
- Document which specific actions have been or will be taken as a result of the evaluation of assessment results.

The adopted plan can/should be a combination of both direct and indirect assessment measures/methods. The field of higher education assessment has been an area of scholarly

inquiry for decades, and we should avail ourselves of the scholarly body of knowledge about assessment to effectively construct such a plan. From the seminal works of Astin (1991) and Angelo & Cross (1993) to the more recent contributions of Suskie & Banta (2009) and Sambell, McDowell & Montgomery (2013), much is known about effective assessment techniques and strategies that are consistent with and complimentary to what we know about the most effective teaching methods and how people learn. While standardized testing has a place in higher education, the use of such tests can and should be primarily formative/diagnostic, not the common summative evaluative culture of the academy.

The CIS Department adopted assessment plan is included as information in Appendix A. The plan was constructed to be consistent with both NEASC reporting requirements via consultation with our campus-wide assessment coordinator, and with AACSB reporting requirements via consultation of with the associate dean of our school of business. While readers may employ the format of the plan for guidance, it is highly advisable that each department's faculty construct their own plan in consultation with the appropriate individuals on their respective campuses.

Step 7. Implement the Assessment Plan
The assessment plan was implemented during the 2012 calendar year with data collected from both the spring 2012 and fall 2012 semesters. Syllabi were constructed and course-embedded assessment measures were adopted consistent with the learning outcome responsibilities associated with each required course.

In addition to course-embedded assessments, the following activities were undertaken consistent with the requirements of the assessment plan:

- An alumni survey was conducted to ascertain alumni opinions of both the PEO's and LO's, the effectiveness of our program, and other factors needed to measure our LO's consistent with our adopted Assessment Plan;
- Individual interviews were conducted with both the members of the CIS Advisory Board and CIS Internship Supervisors consistent with the requirements of our Assessment Plan;
- Available data was collected from prior semesters CIS required courses to provide a baseline and effectively summarize results relative to our adopted plan; and
- Data was collected from all of the School of Business courses that contribute to our assessment plan.

The faculty of the department met during January 2013 to discuss the results of the data gathered to date and plan for changes that were implemented during the spring 2013 semester. Further assessment results were obtained from spring 2013 courses and this data has been discussed by the faculty during their end of the year meeting to plan for appropriate changes for the fall 2013 semester.

6. RESULTS

The adopted paradigm has been employed during the 2012 ABET reaccreditation process. Although the results of the reaccreditation process are not known at the time of this paper submission, the process has been well received by the members of the ABET site visitation team.

The paradigm itself is consistent with the measures required for both NEASC institutional accreditation and AACSB school of business reaccreditation, and results to date are consistent with both NEASC and AACSB requirements.

A very real benefit of the deployment of this paradigm has been the almost universal adoption of backwards course design principles by the department faculty. That is, course syllabi are constructed to support student learning outcomes associated with the course, in-class activities are designed to support the syllabi, assignments are constructed consistent with desired learning outcomes, and assessment measures are adopted which specifically address course learning outcomes. Consequently, student performance is rising as we become much more intentional in our teaching and learning focus.

7. CONCLUSIONS

The presented paradigm has been developed and deployed and has yielded results that are consistent with ABET program reaccreditation requirements, AACSB school-wide assessment requirements, and university regional accreditation requirements.

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A major benefit of intentional involvement in the accreditation and assessment processes is that it drives department faculty to consider questions and issues that they ought to be considering on a regular basis, but frequently get overlooked during the rapid rhythms of the normal semester activities. In particular, construction of the assessment matrix forces an intentional consideration of student learning as the primary driver of course design.

The major limitation of the paradigm is not in the design of the paradigm, but rather in its implementation. The outcome measures developed to date are predominantly indirect measures of student learning because successful exam performance does not necessarily mean that students can effectively perform the tasks in a professional work environment. While the use of service-based projects provides for better measures of student performance, those measures are very difficult to quantify.

So we return to the title of this article. Are we just chasing rainbows? We think not! The deployment of this paradigm has provided the CIS department with reliable high quality data to provide to stakeholders concerning the learning of our CIS students while simultaneously addressing the needs of our program constituencies, and it has done so in a manner that supports both school-wide and university-wide assessment and accreditation requirements. Further, maintenance of accreditation at the program level provides the department with data to support ongoing preferential treatment in terms of budget allocation to support faculty professional development activities and student learning outcomes.

One final point – the adoption of this paradigm has directed the faculty toward a much more intentional focus on the learning of our students. In the final analysis, isn't that what our courses should really be about?

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Appendix A - CIS ASSESSMENT PLAN					
Student Learning Outcomes	**Where Assessed/ How Often Assessed**	**Assessment Methods**	**A-priori Target Criteria**	**Assessment Results**	**Recommendations for Improvement / Documentation**
a. An ability to apply knowledge of computing and mathematics appropriate to the discipline;*	CIS 245 / yearly CIS 330 / yearly EC 271 / Each semester SB 450 / Each Semester	Programming Assignments Networking Assignments EC 271 common statistics final exam ETS exam – Quant Bus Anal / yearly	80% of students will score 75% + on 80% of programming assignments. *90% of students will score 75% + on 75% of networking assignments* CIS Students will have an average score of 75% + in common exam in EC 271. *CIS students will have an average score of 50% + on the ETS Statistics questions*	. 80% of students scored >= 75% or above on all programming assignments *95% of students scored above 75% on all course networking assignments* Average score on EC 271 final exam was 83% *CIS ETS Quant Avg. = 44%*	Meets criteria. Continue current assignments and assessments. *Meets criteria. Continue current assignments and assessments.* Meets criteria. Continue with current focus. ***Below average. Area of concern.***
b. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;	CIS 125 / yearly CIS 225 / yearly CIS 440 / yearly	"Requirements" Assignment Course assignments ISA Exam (Systems Analysis) / Yearly	125 - 90% of students will score satisfactory or higher *225 - 80% + on 80% of SAD assignments in 225* CIS majors will have average score 60% + in Systems Analysis section.	125 - 96% scored satisfactory or higher *225 – 88% scored above 80%* QU average was 63% in 2010 ISAE section	Meets criteria. Continue current assignments and assessments. ***225 – above target, but need additional work on activity modeling*** ISA - Meets criteria
c. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs;*	CIS 245 / yearly CIS 351 / yearly	Programming assignments Database assignments	80% of students will score 75% + on 80% of programming assignments. *90% of students will score 75% + on database projects*	80% of students scored >= 75% on all programming assignments *90% of students scored at 85.4%*	Meets criteria. Continue current assignments and assessments. *Meets criteria, continue with current assignments and assessments.*
d. An ability to function effectively on teams to	CIS 351 / yearly	In-course team project	90% of students score 75% or above on team rubric	90% of students scored at 85.4%	351 - Meets criteria, continue with current

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accomplish a common goal;*	CIS 440 / yearly	In course team project	*440 – All teams score 75% or above*	*440 – 86% scored at 86%; 14% scored below 50%*	assignments *440 – Meets Criteria*
e. An understanding of professional, ethical, legal, security, and social issues and responsibilities;*	CIS 301 / yearly CIS 440 / yearly SB 450 / yearly	In-course assignment: Write Ethics Report ETS Exam – Legal & Social / yearly	301 – 85% > 90% *440 – 85% > 90%* ETS Exam Avg. > 50%	301 – 88% scored 90%+ *440 – 86% > 90%* CIS ETS Avg. Score = 59%	301 - Meets criteria ***440 – below criteria, 3 students basically no show skew results*** ETS – Meets Criteria
f. An ability to communicate effectively with a range of audiences;*	CIS 125 / yearly CIS 301 / yearly CIS 484 / yearly Internship Supervisor Survey	In course presentation and analysis *In course assignments and presentations* Company Analysis Paper *Internship feedback / yearly*	90% of students will score satisfactory or higher *90% adequate* *90% of CIS 484 Internship form respondents must grade QU CIS students "adequate/above average" in communication.*	92% scored superior; 100% scored satisfactory or higher *301 – 95% Adequate or better* 484 – 100% of papers *Internships - 100% grade outstanding or above average*	125 - Meets criteria *301 – Meets criteria* 484 – paper meets criteria *Survey – meets criteria*
g. An ability to analyze the local and global impact of computing on individuals, organizations, and society;*	CIS 125 / yearly SB 450	In-Course assignment assessed with common rubric ETS Exam – International / yearly	80% score satisfactory or higher on assignment related to local/global impact *CIS Avg. > 50%*	96% scored satisfactory or higher; 76% at superior *CIS Avg. = 62%*	125 – Meets Criteria *ETS – Meets Criteria*
h. Recognition of the need for and ability to engage in continuing professional development;	SB 112 Alumni Survey / every 3 years Advisory Board Input / yearly	Career Leader Assessment *Alumni Survey*; Advisory Board Input	Avg. CIS Score on Creative, Critical, and Strategic Thinking > 75% *75% of alumni and advisory board engaged in prof development activities yearly*	AVG CIS Score > 75% for all 3 sub-sections *Alumni - 81% engaged; 77% yearly; 100% of advisory board engaged yearly; 55% grad degrees*	112 – Meets Criteria for all three subsections *Meets criteria for both alumni and advisory board.*
i. An ability to use current techniques, skills, and tools necessary for computing practice.	CIS 225 / yearly; CIS 440 / yearly	In-Course assignments *ISA Exam (Programming, Networking, Database) / Yearly*	90% score at or above *85% QU CIS majors will score 50% or better in ISA Exam programming, 50% in data management and*	90% scored >87% *QU CIS majors scored 48% in programming, 50% in database, and 50% in networking in 2010 ISA*	225 – meets criteria ***marginal in database and networking; need to strengthen tech ISA – Below standard in programming portion of***

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			50% + in networking.	*exam.*	***curriculum***
j. An understanding of processes that support the delivery and management of information systems within a specific application environment.*	CIS 125 / yearly CIS 440 / yearly SB 450	Analysis of processes for all SAD phases *ISA Assessment Exam (Information Systems in Business) / Yearly* ETS Exam / Yearly	125 - 80% score satisfactory or higher *440 - QU CIS Majors will score 60% or better in ISAE Info Systems in Business* 450 - CIS avg. score >50% across all business areas	125 - 100% satisfactory or higher; 87% superior *440 - QU CIS students scored 65% in 2012 ISAE exam on this section.* 450 - Avg. score across all business areas = 53%	125 – Meets Criteria ISA – Meets Criteria ETS – Meets Criteria
LO's with an * are consistent with Quinnipiac University Essential Learning Outcomes (ELO's)					