

AACSB Outcomes Assessment: An Example Using the CCER Exam

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Abstract

This paper is a case study illustrating how the use of the IS 2002 Standard Curriculum (ACM) and the Information Systems Analyst Examination (CCER) provided effective AACSB International format Program-Level Outcomes Assessment. It presents the quantitative evaluation of the CSULA BS in CIS and MSIS degree programs in the AACSB five-year maintenance reporting format. It illustrates the type of data used to revise the curriculum and improve the teaching of key courses.

Keywords: Program-Level Outcomes Assessment, AACSB Accreditation, CCER ISA Certification Exam, Information Systems Curriculum Standards.

1. THE REQUIREMENT

In 2003, AACSB International started a push toward program level outcomes assessment. Major revisions to their standards during 2009 and 2010 expanded their program level assessment orientation. The AACSB Standard 16 now requires that programs,

"adapting expectations to the school's mission and cultural circumstances, the school specifies learning goals and demonstrates achievement of learning goals for key general, management-specific, and/or appropriate discipline-specific knowledge and skills that its students achieve in each undergraduate degree program" (AACSB, 2010a, 71).

Our university has traditionally used course-level assessment including homework, written and oral exams and quizzes, individual and team projects and cases, and presentations for all our business and information systems courses. Our experience during the 2006 review indicated that this would not be sufficient for maintenance of accreditation during our 2011 visitation. We therefore became involved with the Center for Computing Education Re-

search (CCER) at the University of South Alabama. They run the ICCP sponsored Information Systems Analyst certification program using an online testing system. The certification exam is administered to all our undergraduate and graduate students as the final exam in our capstone courses.

The Information Systems Analyst certification exam serves as our primary program level outcomes assessment tool and was funded by our college as a pilot for evaluating the potential reaction of AACSB to the use of other external exams (such as the CPA) for outcomes assessment.

The AACSB fifth year maintenance requirement for Assessment Tools and Procedures states,

"Summarize in a brief statement learning goals for each degree program, along with a list of the assessment tools, procedures, and results used to demonstrate progress toward achievement of the mission. What are the most recent outcomes from the assessments, and what is the impact on curricula development actions?" (AACSB, 2010b, 7)

A copy of the draft of the information Systems Department’s section of our college’s Fifth Year Maintenance Report responding to this requirement follows.

2. THE SUBMISSION

The BS in CIS and MSIS Programs

The BS in CIS degree includes the junior level BSBA core designed to meet leadership and management goals, and senior level options designed to produce information technology professionals and systems analyst professionals. BS in CIS students learn the various technical and managerial aspects of organizational information systems: not just the design, development, implementation and operation of information systems, but also the management of such projects and systems.

The junior level BSBA core service courses cover interpersonal skills (BUS 305), business fundamentals (including accounting, finance and law, management, production, marketing, and economics), and organizational development (CIS 301). The ICCP Test results shown in Figure 1, indicate that our BS in CIS majors slightly exceeded national averages in interpersonal skills and were slightly below national averages in business and organizing skills. Considering that CSULA is competing with primarily large research universities with strict admission requirements, our students are doing quite well.

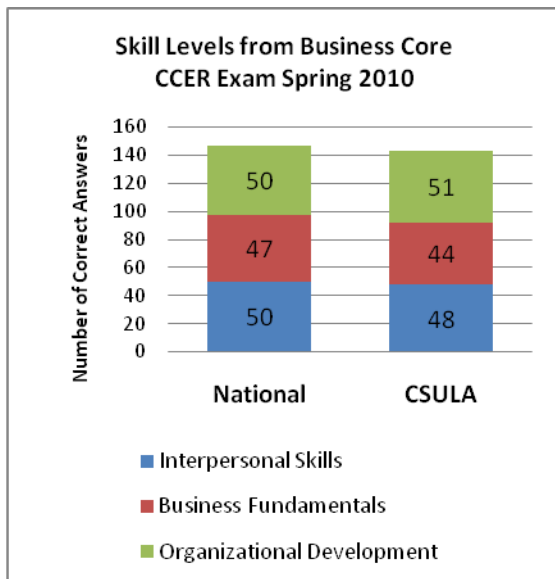


Figure 1: Management Skill Scores

The MSIS degree courses are designed to produce future IS/IT professionals, and are particularly directed toward developing project managers and consultants. The MSIS uses the MBA prerequisite courses, when needed, to meet fundamental business knowledge requirements.

Statement of Learning Goals

The BS in CIS and MSIS have been based since their inception on the Standard Curriculums developed under the sponsorship of the major computing professional organizations... The latest curriculum standard (IS 2010) includes the following definition of information systems programs learning goals and mission.

“The high-level IS capabilities that the curriculum specifies as the highest level outcome expectations are as follows:

- Improving organizational processes
- Exploiting opportunities created by technology innovations
- Understanding and addressing information requirements
- Designing and managing enterprise architecture
- Identifying and evaluating solution and sourcing alternatives
- Securing data and infrastructure, and
- Understanding, managing and controlling IT risks.” (ACM, 2010, vii)

The same organizations that periodically update the standard curriculum also produce a certification exam designed for new college graduates that measures compliance with these learning goals. CSLA’s department of information systems has been involved in the development of the original testing systems and has since used the exam for all of its BS and MS graduating students. Additionally, every course in the BS in CIS and MSIS programs employs standard BSBA course-level assessment of learning outcomes.

BS in CIS and MSIS Programs Summary of Assessment Findings

The BSBA and MBA sections describe the methodology used to measure attainment of leadership and management skills through the undergraduate and graduate business core courses. The senior and graduate level IS/IT technical and managerial assessment program level outcomes are directly measured by the CCER exit/certification exam given in CIS 490

and CIS 590. The summary results of the most recently completed academic year are shown in the Appendix.

Note that the majority of undergraduate students qualified for the Systems Analyst certification (over 50% scores) and that the CSULA class was close to the national average. For graduate students, the MSIS average ICCP exam percentage scores for the past five years in all of the six areas that are tested, have also been close to the average scores of students at other universities in the country.

Since the majority of other universities using the CCER exam are research institutions with much more rigid admission standards than CSULA, our conclusion is that our primarily part-time minority students are doing quite well.

BS in CIS Program Assessment Methods

In 2009 and 2010, the learning objectives and measurable learning outcomes of each degree program were updated in order to ensure coherence with the College's Overall Learning Objectives shown in Chart 1. For each undergraduate and graduate degree program, the Graduate and Undergraduate Studies Committees, respectively, reviewed the updated program learning objectives, demonstrable learning outcomes, and program-specific skills.

College Learning Objectives	
i.	Acquire functional business knowledge and understanding
ii.	Integrate functional business knowledge
iii.	Acquire industry and professional knowledge
iv.	Acquire leadership and managerial skills
v.	Integrate business knowledge with ethical and global considerations
vi.	Achieve other program and option-specific learning objectives

Chart 1: 2010 Learning Objectives

The programs general learning objectives (i-v) logically fit within the overall BSBA learning objectives. The Functional Area learning objective (vi) are specific to the industry standards as set forth in the standard curriculum (IS 2010) and the ICCP Exit/Certification Exam. The Functional Area vi is discussed in this section.

Grades are of course the primary course level assessment method. The following scatter chart, Figure 2, shows the correlation ($r = 0.48$) between student GPA's and the ICCP exam grades for our most recent undergraduate class.

The correlation coefficient indicates an approximate 50% relationship between course grades and the ICCP exam. This level of reliability should be sufficient to permit using the CCER examination results to evaluate curriculum and course pedagogy.

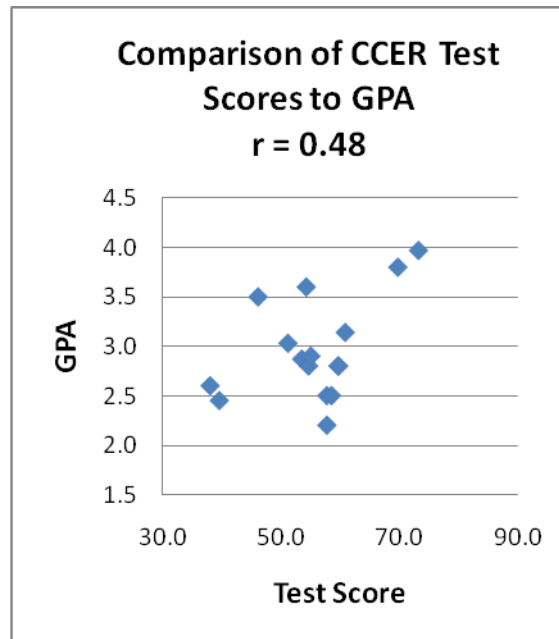


Figure 2: Test Scores and GPA Correlation

MSIS Program Assessment Methods

MSIS program admission standards are more flexible than those of the University and College. An undergraduate GPA of 2.5 or better in the last 90 units, a TOEFL score of 550 (paper version), and an interview reviewing each individual students experience, education, GMAT or GRE Score, and work experience are used to assess the students for admission. The intention of this holistic approach is to find a better way to identify capable students interested in pursuing a career in IT for admission to the program.

Direct assessment methods used in the MSIS program include the GVAR test of writing, (required for advancement to candidacy), a Comprehensive Examination (of knowledge and

skills in multiple IT disciplines and IS management in an integrative manner), and the MSIS Exit/Certification Exam which uses the CCER exam (leading to the Systems Analyst certification) and an optional CISSP (information security) exam, both administered by professional certification agencies outside the College.

Indirect assessment occurs when students apply for graduation, when they report on milestones achieved during the program (certifications, projects completed with clients, etc.) and plans for further study. Indirect assessment is also carried out by means of the Student and Alumni survey. Lastly, the MSIS program is subjected to a comprehensive program review process every 5 years.

BS CIS and MSIS Impact of Assessment on Curriculum and Program

A detailed analysis of our student's results by course led to numerous adjustments to individual courses. The most major change was that coverage of project management and the operational and managerial roles of IS in organizations was expanded at both the undergraduate and graduate levels.

Figure 3 presents a trend analysis of undergraduate ICCP test scores that indicates that the curriculum and teaching changes in the initial year and during the 2007-2009 time periods have led to significant improvements. The department's continuous improvement process appears to be working.

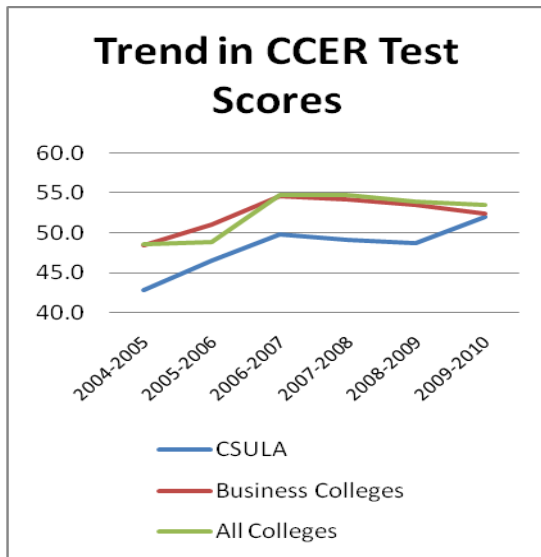
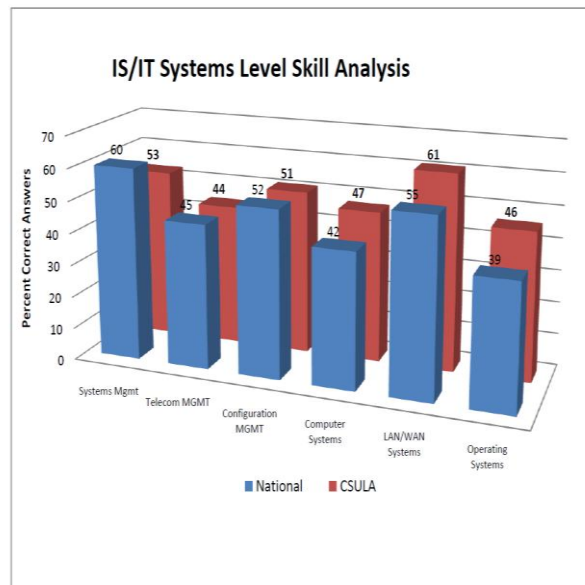


Figure 3: Trend in Test Scores

The ICCP Exam provides national comparisons at the program and course level. They showed that, in general, our instructors tend to spend more time on hands-on use of specific tools than the other universities whose scores on theory type areas are higher. As shown in Figure 4 a Systems Level Skill Analysis Chart, CSULA students score slightly higher on the systems level (entry level skills) than on the management level (advanced level) skills.

Figure 4: Skill Analysis

The department has decided that this minor



emphasis on entry-level skills is appropriate for our students and satisfies the university and college missions.

3. DISCUSSION

The College of Business and Economics at Cal State LA represents a unique mix of students and faculty that reflects the emerging profile of American demographics. We are a diverse group of students and faculty, reflecting the minority populations of our community and its preponderance of first and second generation Americans. Several surrounding research universities (UCLA, USC, Pepperdine ...) recruit the top 10-15% of available freshman and transfer students.

Our students therefore come with mediocre preparation, but as shown in the graphs we are almost meeting the average of the primarily

research universities also participating in the CCER certification exam. We believe using the exam results for assessment and the use of the Information Systems Curriculum Standards (IS 2002 and MSIS 2006) as the basis for our curriculum has significantly helped us reach this level.

The use of the CCER Exam was also a pilot for use of this approach by other business functional areas. The Financial Accounting faculties are considering using the CPA exam that produces scores in four areas. We do not believe it will provide useable results because of the prevalence of CPA preparation courses. They will remove most of the college's preparation impact with most of the variance in scores based on test-taking skills. As shown in the legal area, the higher the programs entrance requirements the higher the Bar exam scores.

The keys to our success in using the CCER Exam for Program Level Outcomes Assessment is in using the exam as the final in our capstone courses, and in basing our department's curriculum on the AIS/ACM/AITP sponsored standard curriculums.

vision of the Education Foundation of the Institute for Certification of Computing Professionals.

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5. Appendix

Center for Computing Education Research

A Division of the Institute for Certification of Computing Professionals Education Foundation

Exam Summary

California State University - Los Angeles

IS2002 Exit Exam Sp 10

Summary Group	No. of Takers		No. of undergrad takers		No. of grad	
	Avg		Undergrad avg		Grad avg	
All institutions	273	53.3	259	53.5	14	48.5
Business institutions	232	52.2	218	52.4	14	48.5
CSLA	37	50.6	28	52.0	9	46.4

IS Core Area Exam Summary All

California State University - Los Angeles

IS2002 Exit Exam Sp 10

IS Core Area	No. of test items		All inst.		Inst. Undergrad.		All inst. undergrad.		Inst. grad.		All inst. grad.	
	inst. avg.		avg.		avg.		avg.		avg.		avg.	
Hardware and Software	10	50.0	44.3	52.9	44.4	41.1	42.9					
Modern Programming Language	12	41.2	43.3	42.3	43.6	38.0	38.7					
Data Management	44	49.8	53.0	51.2	53.2	45.2	49.5					
Networking and Telecommunications	12	54.7	50.1	54.5	50.0	55.6	52.4					
Analysis and Design	108	49.8	52.5	51.0	52.8	46.2	47.2					
Role of IS in Organizations	72	53.3	58.0	55.1	58.4	48.0	51.7					