

TRANSFORMATIVE ASSESSMENT OF ONLINE EDUCATION

Jacqueline Moloney

Steven Tello

Continuing, Corporate & Distance Education

University of Massachusetts Lowell

One University Ave. vb

Lowell, MA 01854

978-934-2262

978-934-4064

Jacqueline.Moloney@uml.edu

Steven.Tello@uml.edu

ABSTRACT/KEYWORDS

The purpose of this paper is to present a follow up of a case study of an online education assessment program. The paper will summarize how current theories of transformative assessment, coupled with research on online education, were implemented over the last year to develop and sustain a scalable and quality online education program at UMass Lowell. Finally, the study will attempt to outline future challenges and opportunities for transformative assessment and online education.

INTRODUCTION

The public's demand for accountability of online education continued to grow during the past year as competition increased from various sectors of higher education. While best practices in assessment strategies continue to evolve UMass Lowell took its assessment project to a new level in an initiative named the *Assessment for Excellence Project*. While the project has enabled the Division of Continuing Studies & Corporate Education (CSCE) to bring about continuous improvement or transformation of all its programs, this paper will focus on how the assessment project affected the online education program. In this paper we will describe:

- How the theoretical framework presented at the '03 Research Workshop of transformative assessment, was put into action in '04;
- The impact of the Transformative Assessment Project on the University's Online Education program;
- Identify future challenges and opportunities with transformative assessment and online education.

Background

Transformative Assessment refers to an assessment process which organizes the collection, analysis and application of data and findings along a continuum which represents developmental stages characterizing how an institution changes or grows as a result of this process. The Transformative Assessment Project

(TAP), an initiative of the National Learning Infrastructure Initiative (NLII), AAHE, the Flashlight Project and the Coalition for Networked Information, has developed a useful rubric for examining the *purpose of the assessment*, the *type and method of data collection*, *application of assessment results*, and *dissemination activities* along a continuum from **Administrative**, to **Progressive**, to **Transformative** outcomes (NLII, 2003). The TAP continuum parallels the efforts of other organizations (e.g., NCA's Levels of Implementation, AAHE Assessment Forum) which provide a method for ranking assessment efforts while emphasizing the need for assessment to contribute to the continuous improvement of student learning and programmatic and institutional growth.

Our analysis of the efforts of TAP, NCA, AAHE and others reveals five principles underlying transformative assessment that can help institutions realize the potential of online education to improve student learning and transform their institutions. These include:

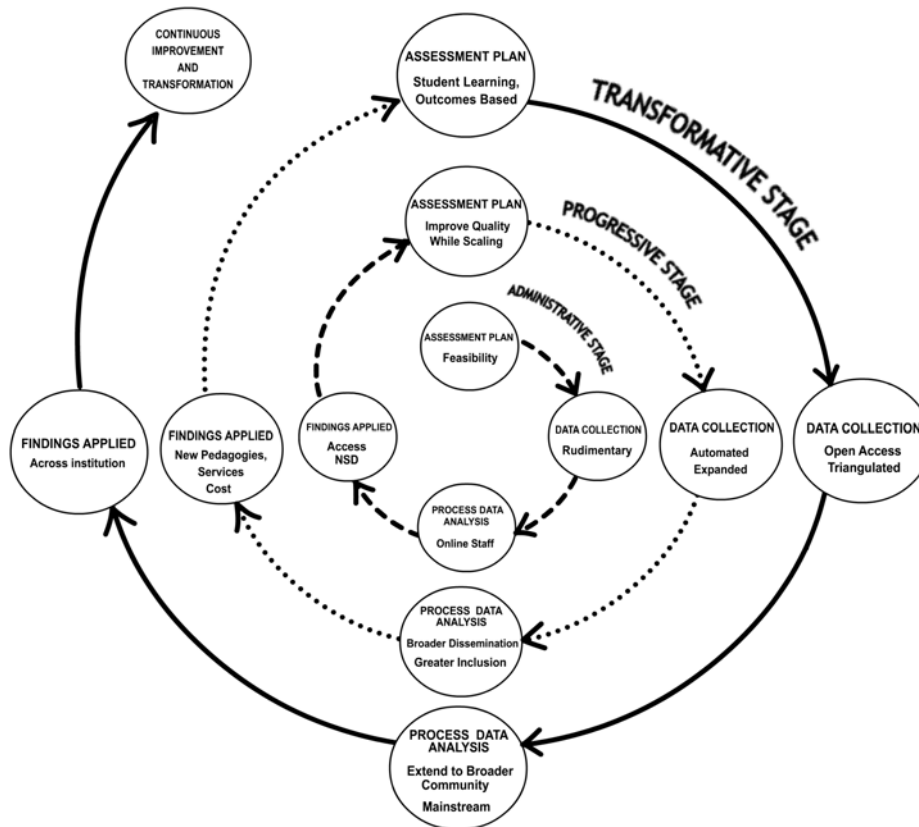
1. Assessment is an iterative process that leads to continuous improvement of teaching and learning.
2. Assessment should be guided by a purpose that reflects institutional mission, goals and objectives.
3. Assessment engages an expanding circle of participants, including faculty, students, administrators and community members.
4. Assessment collects, analyzes, and applies data in a manner that contributes to improvements in student learning.
5. Assessment of online education presents unique challenges and unique opportunities that offer a powerful potential to transform student learning, programs and institutions.

The opportunity to pair transformative assessment with online education is significant and increasingly critical as student participation in this learning environment continues to outpace growth in all other sectors of higher education. Sloan-C, a consortium of over 200 colleges and universities and the leading online education organization, has developed a framework for assessing the quality of online education programs based on access, learning effectiveness, cost effectiveness, faculty satisfaction and student satisfaction. (Mayadas, Bourne & Moore, 2002). By integrating a transformative assessment framework with the Sloan-C pillars, programs may realize the full potential for online education to transform their institutions.

Review of the Frameworks

Figure 1 depicts our vision of how the principles outlined above may be operationalized within a transformative assessment framework.

Figure 1: The Transformative Assessment Process



© Moloney & Tello, 2003

Most institutions or programs begin the assessment process at the Administrative Stage (center of Fig. 1) where a limited data set is collected and studied by a limited number of stakeholders. In the transformative assessment process, findings are applied to make improvements in the program and adjustments in the assessment process itself so that the institution can evolve to the Progressive Stage. At the Progressive Stage, the purpose and process are informed by a much broader constituency which helps to lead to a deeper questioning of the assessment of quality and of teaching and learning. Application of the findings leads to improvements in access, learning effectiveness and cost effectiveness and, when shared with an even broader community, helps evolve the institution to the Transformative Assessment Stage. At the Transformative Stage, assessment is integrated into the culture of the institution where all goals and objectives are uniformly assessed and the results are applied to achieve continuous improvement (Moloney and Tello, 2004). It's important to keep in mind that we are presenting a model or framework and in practice, an institution's progression through these stages may be inconsistent, moving toward transformation in some areas or programs, while other departments remain in an administrative cycle.

DEVELOPMENTS ON THE APPLICATION OF THE TRANSFORMATIVE ASSESSMENT MODEL

In the case study presented last year, the authors described the evolution of UMass Lowell's CSCE assessment program through the administrative, progressive and emerging, transformative stages. UMass Lowell's online education program offers 7 full degree programs and approximately 7500 enrollments per year, is one of the largest in New England and is a major contributor to UMassOnline (UMOL), UMass' system-wide portal for online education. The UMass Lowell online program is entirely self-supporting and returns significant revenues to the campus and UMOL to seed continuous growth (for an in-depth review see Moloney & Tello, 2003). At the time of last year's research paper, the campus was just entering the Transformative Phase of assessment.

Transformative Assessment Stage: Continuous Improvement

As was stated in last year's report, this stage of assessment is quite challenging as it requires institution-wide involvement and commitment to continuous improvement around student learning. To set the stage for the transformative stage, the CSCE leadership team met with groups of faculty, departments and deans to identify strategic opportunities for implementing a new Assessment for Excellence Project. Using the framework outlined above, we created a shared vision for the Assessment for Excellence Project, invited broader participation in our data collection, deepened the kinds of questions asked during the data analysis and identified opportunities for applying the data to make continuous improvement possible in the program.

1. Defining the Purpose of the Assessment for Excellence Project

This year, the faculty and campus administrators developed a shared vision for the purpose of the Assessment for Excellence project which was to bring about continuous improvement in student learning. In addition, we determined that the Project would help guide CSCE in achieving its vision of becoming a leader in online education. Finally, we sought new directions in fiscal management to sustain positive trends in the return on investment of the online education program.

2. Data Collection

Data collection in the transformative stage should reflect the multiple goals and objectives which support transformation and improvement within an organization or greater community. This requires that different types of data be collected from multiple sources. Quantitative data can be used to identify levels of student and faculty satisfaction, enrollment trends, retention rates and costs. Qualitative data can be used to identify emerging concepts, trends and perspectives. In the transformative stage, it is important to mine multiple sources of data in order to both confirm findings and to identify new trends and opportunities. For our purposes, we collect and examine both quantitative data (student course evaluations, faculty satisfaction surveys, enrollment rate, retention rates, budget sheets) and qualitative data (open-ended questions on surveys and evaluations, student exit interviews, faculty meetings). Several examples of the CSCE data collection process

In order ensure that data collected would support the goals of the Assessment for Excellence Project and CSCE, a faculty committee was established to review and revise existing course evaluation tools for both

online and on-campus students. Several different course evaluation tools and data collection methodologies existed so this group was charged with strengthening the data collection process and improving the consistency of data collected across CSCE and across the campus.

This committee first developed a goals statement which was consistent with three of the five Sloan-C Pillars (i.e., Learning Effectiveness, Student Satisfaction, Access). The goals statement is:

To make CSCE a program of choice by offering students a relevant curriculum and a high quality of instruction in a comfortable and supportive learning environment.

The committee then developed groups of evaluation questions which examined different dimensions of each of these three areas (i.e., relevant curriculum, high quality instruction, supportive learning environment). A sample of questions and their respective dimensions is included in Table 1.

Table 1. Sample questions from revised Student Course Evaluation

Question	Dimension
The course strengthened my ability to understand and analyze problems.	Curriculum
The course improved my oral and/or written communication skills.	Curriculum
The instructor provided helpful feedback to exams, quizzes and assignments.	Instruction
I made use of the library (campus and/or electronic) to obtain information related to class assignments.	Supportive Environment
Advising services were available to me when I needed them.	Supportive Environment

Student responses to these and other questions, which are completed either online or on a paper survey format, provide a benchmark measure for examining student perspectives to different dimension of their online and on-campus learning experience. The data is then tabulated at the end of each semester and presented to instructors in a summary format that allows instructors to compare course scores to overall program and discipline specific scores across questions. Student comments on open-ended questions are also included for review.

To strengthen our ability to assess student learning, we began to collect data on the content of course syllabi to determine what percent conform to Division standards for statements of course goals, learning outcomes, course requirements and detailed grading criteria. This effort is integrated with a faculty development effort to encourage more faculty to incorporate formative assessment strategies into their courses to reinforce our commitment to developing students through assessment. An expanded faculty survey now enables us to collect data on the progress the division has made in these areas as well as to assess the carry over of effective online teaching strategies to face to face courses. The survey continues to query faculty on satisfaction with course migration, training and other development services and needs. Data on faculty satisfaction is also collected through interviews, at open meetings and other important qualitative venues.

To expand student participation in the assessment process, a recommendation by NCA and TAP, the student graduation interview process, previously designed for face to face students, is being redesigned to collect more pertinent and qualitative data from our online students. Data regarding community and corporate educational needs is now routinely collected as part of our program development process and

includes needs assessment of students at companies and educational organizations.

In addition to reviewing student perspectives regarding their online and on-campus course experiences, we also examine enrollment, retention and cost data. From our perspective as a revenue-generating resource for the campus, it is important to measure the relative cost and expense of each online program. While initial cost accounting efforts focused on the costs of individual course and faculty development (Progressive Stage activity), a new template to assess cost effectiveness at the program level has been implemented. This data along with enrollment trends, is factored into Division and University budgetary data to determine revenue, expense and net ratio targets in the 5 year strategic plan.

3. Process for Data Analysis

Our process for analyzing data has evolved from a closed, limited review in the Administrative Stage to an open, inclusive process in this Transformative Stage. Faculty actively engaged in setting the assessment agenda, conducting studies and influencing the development of the online program. The process for engaging the faculty and other professionals has been encouraged in two ways. First, by enabling the faculty to conduct scholarly research related to the assessment process, several of the faculty have published their findings in professional publications and enhanced their professional portfolios while contributing to the developing literature on this topic. Second, we have provided additional compensation to several faculty to expand and formalize both data collection, analysis and dissemination. This has helped to institutionalize assessment by cultivating a pipeline of assessment experts who are able to continuously advance our assessment program.

In regard to the actual data analysis process, data is collected and grouped in several different levels. As discussed above, course level surveys are tabulated at the end of each semester and presented to instructors in a summary format that allows instructors to compare course scores to overall program and discipline specific scores across questions. These course and program summaries are also shared with department chairs (as permitted by labor contracts) to assist in identifying program strengths and weaknesses and to improve programming or delivery in areas we low scores persist. An excerpt from a survey feedback sheet is included in Figure 2.

Figure 2
Sample Online Program
Evaluation Feedback Form
ABC Master's Degree

Question	Responses	All CSCE Online Spring 2004 N = 2580			Program N = 104		
		n	M	SD	n	M	SD
Q5. This course contributed to my knowledge regarding the subject matter.	1=Strongly Disagree 4=Strongly Agree	1040	3.48	0.64	51	3.51	0.81
Q6. The instructor provided feedback regarding my homework and other course assignments in a timely manner.	1=Strongly Disagree 4=Strongly Agree	1040	3.33	0.78	51	3.22	0.76
Q12. I would recommend this course to another student.	1=Strongly Disagree 4=Strongly Agree	1033	3.20	0.80	51	3.33	0.86
			Y(%)	N(%)		Y(%)	N(%)
Q13. Do you intend to take another online course next semester? *	1=Yes 2=No	733	85.8	14.0	37	84	16

While individual course evaluations are shared privately with instructors, we typically schedule a larger open faculty meeting that promotes a discussion of the broader program level findings. Recent discussion topics have included strategies for improving the use of the University's library by online students, a review and update of all CSC academic program learning objectives and strategies for improving student information literacy skills.

4. Findings and Application of the Findings

As indicated in the model, transformative assessment is successful only when the process and the findings bring about improvements in student learning. As was done last year, we analyzed our success around improvements in our online education program along the Sloan-C Pillars of access, student satisfaction, learning effectiveness, faculty satisfaction and cost effectiveness.

a. Improvements in Access

In AY '04 our focus on improvements in communications and online services to students continued. Technical services were expanded to include 24/7 support – an increase from 14/7 in the past. Students and faculty reported high levels of satisfaction with this new support. To strengthen student services, the campus is undergoing a migration from the current legacy system to Peoplesoft which will enable students to conduct self-service online within AY05.

The accelerated semesters described in last year's paper were piloted as a result of student demand and 10 online courses were redesigned in a 10 week accelerated format. A comparison between online 14 week and online 10 week course persistence rates found not significant difference in course persistence rates, while a comparison of student satisfaction and performance data indicated that students performed as well as students enrolled in 14 week online courses.

Based on student demand, the Division has also launched several new certificates and Graduate degree programs. Early enrollments and assessment of student satisfaction are being monitored and fed back to faculty for continuous improvement in these new initiatives.

b. Improvements in Learning Effectiveness

As was mentioned in the previous section, based on feedback from our faculty and students, our course

evaluation process was redesigned through the new Assessment for Excellence Project. A team of 10 faculty and online education professionals worked for the past year to redesign the course evaluation tool which is now focused on curriculum, instruction and learning environments. Since the form is being piloted this summer it is too early to discuss the results.

The Online Teaching Institute

The UMass Lowell Online Teaching Institute continues to expand its role in the improvement of learning effectiveness in our online program by applying feedback from faculty and students. To address faculty needs for a learning community, the Institute launched an Online Book Club in which 25% of the online faculty actively participated this summer. This encouraging participation rate suggests the need to expand this activity.

Additionally, application of faculty feedback about the continuing pressure for scholarship, the Institute assisted faculty in finding their way to the Sloan-C Effective Practices Website resulting in the posting of 8 Effective Practices from UML.

Table 1 Impact of Online Teaching Institute

	AY 2001	AY 2002	AY 2003	AY 2004
Faculty Trained	101	126	108	114
New Courses Developed	37	44	34	36
Total Online Courses	210	264	293	338
Total Online Enrollments	4371	5428	6374	7330

Though the Institute was launched to migrate online courses for CCDE, demand from traditional face to face faculty grew as word of the Institute’s successes spread among faculty. To respond to this demand, the Institute, in collaboration with the UML Faculty Teaching Center, now provides on-going seminars open to all UMass Lowell faculty. As a result, approximately 150 web-enhanced courses in the undergraduate and graduate day programs have been developed at little cost to the institution. Perhaps more importantly, 84% of faculty participating in Institute training activities in AY 2003 indicate their face-to-face teaching was enhanced by this training. These joint training programs helped move Institute offerings beyond technical discussions of chat tools and course management systems to workshops which explore deeper issues regarding the development of online course objectives, student assessment across disciplines and the facilitation of deep learning with online communication tools.

The Institute opened their faculty development services to colleges and universities across New England and with help from a grant from the Sloan Foundation, the Institute was expanded to include online development courses. The Online Teaching Institute has introduced over 400 faculty from across New England to online teaching and course development and has provided training and development services to all five UMass campuses as well as faculty and staff from the region’s community, state and private colleges.

In 2003, 93% of faculty participating in the training program indicated the program provided them with the skills and understanding needed to develop and teach online. Over 90% of the UMass Lowell faculty who participated in the Institute training program went on to develop and teach at least one online course, 97% of these faculty also indicated they will develop and teach another online course at UMass Lowell. A

review of online course teaching assignments confirms that 95% of online faculty continue to teach in subsequent semesters.

Cost effectiveness

UML's system for monitoring and assessing our capacity to generate new income for the campus has gained widespread attention and is being adopted by institutions across the country. The system will now be incorporated by a broader effort across the UMass system to estimate return on investment calculations.

SUMMARY

As can be seen UMass Lowell's online program has greatly benefited by moving its assessment efforts to the Transformative Assessment Stage. Those practices which have been established as best practices in online education after several years of assessment are now being mainstreamed into our institution and higher education in general. If this trend continues, all students may benefit from the rigorous assessment initially focused on online education.

We continue to apply the framework presented and test its applicability and capacity to cause continuous improvement and have been encouraged by the results. As outlined above, we have initiated several projects this year that will move this agenda forward for the online education program, and our capacity to mainstream these efforts have yielded positive results.

We feel strongly that the concept of iterative development of assessment of online education will yield the greatest result when it fosters engagement by the entire academic community. We maintain that Angelo's suggestion that assessment should foster a shared trust, shared motivation, shared language and shared guidelines have the optimum conditions for moving into transformative assessment. We hope that this case study motivates other academics to take a new look at assessment as an opportunity to build a learning community characterized by trust and a capacity to continuously improve the way in which faculty teach and students learn.

REFERENCES

1. **American Association for Higher Education Assessment Forum.** 9 Principles of Good Practice for Assessing Student Learning, <http://www.aahe.org/assessment/principi.htm>., available online 8/28/03.
2. **Palomba, C. & Banta T.**, *Assessment Essentials*, San Francisco: Jossey-Bass 1999.
3. **Angelo, T.**, Doing Assessment As if Learning Matters Most, AAHE Bulletin, May 1999, www.aahebulletin.com/public/archive/angelomay99.asp?.pf=1.
4. **North Central Association of Colleges & Schools, Higher Learning Commission.** *Levels of Implementation*, <http://www.ncahigherlearningcommission.org/resources/assessment/index.html>. Available online 8/28/03.
5. **National Learning Infrastructure Initiative**, Transformative Assessment Systems, <http://www.educause.edu/nlii/keythemes/transformative.asp>, Available online 8/28/03.

6. **U.S. Department of Education**, National Center for Education Statistics. *Distance Education at Degree-Granting Postsecondary Institutions: 2000–2001*, NCES 2003-017, by Tiffany Waits and Laurie Lewis. Project Officer: Bernard Greene. Washington, DC: 2003.
7. **Mayadas, F., Bourne, J. & Moore, J.**, Introduction. In: Bourne, J. & Moore, J. (Eds.). *Elements of Quality Online Education, Vol. 3*, SCOLE, Needham, MA, 7-12, 2002.
8. **Moloney, J. & Tello, S.**, Principles for Building Success in Online Education, *Syllabus*, 16(7): 15-17, Feb. 2003.
9. **Banta, T., Lund J., Black, K., & Oblander, F.**, *Assessment in Practice*, San Francisco: Jossey-Bass Publishers, 1996.
10. **Russell, T.** The “No Significant Difference Phenomena” website. <http://teleeducation.nb.ca/nosignificantdifference>, Available online 8/28/03.
11. **Swan, K.**, Learning Effectiveness: What the Research Tells Us. In: Bourne, J. & Moore, J. (Eds.). *Elements of Quality Online Education, Vol. 4*, SCOLE, Needham, MA, 13-45, 2003.
12. **Moore, J.** *Elements of Quality: The Sloan-C Framework*, Needham, MA: SCOLE 2002.
13. **Spooner, F., Jordan, L., Agozzine, B. & Spooner, M.**, Student ratings of instruction in distance learning and on-campus classes. *Journal of Educational Research* 92(3): 132-141.(1999).
14. **Verduin, J. R. & Clark, T.**, *Distance Education: The Foundations of Effective Practice*. San Francisco: Jossey-Bass Publishers, 1991.
15. **Wideman, H. & Owston, R.D.**, Internet-based courses at Atkinson college: an initial assessment, *Technical Report 99-1*, York University. <http://www.edu.yorku.ca/csce/tech99-1.html>, Available online 8/28/03, (1991).
16. **Tello, S.**, An Analysis Of The Relationship Between Instructional Interaction And Student Persistence In Online Education. Doctoral Dissertation: Graduate School of Education, University of Massachusetts Lowell, 2002.
17. **Bishop, T. & Schweber, C.**, Linking Quality and Cost, In: Bourne, J. & Moore, J. (Eds.). *Elements of Quality Online Education, Vol. 3*, SCOLE, Needham, MA, 45-58, 2002.
18. **Twigg, C.**, *Expanding Access to Learning: The Role of Virtual Universities*, Center for Academic Transformation, 2003, <http://www.center.rpi.edu/PewSym/mono6.html#Anchor-Case-11481>.

About the Authors

Dr. Jacqueline Moloney has been actively involved in curriculum and instructional innovation in higher education for the past fifteen years. In addition to spearheading the development of a comprehensive student learning center and faculty development center, Dr. Moloney led the successful redesign of Lowell's Division of Continuing Studies, Corporate and Distance Education. Under her leadership, the Division developed one of the region's largest online education programs which has received national notoriety and three Sloan Grants for program and faculty development. In addition, she has crafted numerous innovative partnerships with business and industry that have yielded impressive results for the Lowell campus.

As an active member of the Sloan Consortium for of Asynchronous Learning Networks, Dr. Moloney has served as a contributor to the national dialogue on the emergence of online learning programs. In addition to consulting with numerous private and public institutions on faculty and student development, Dr. Moloney assisted in the creation of UMassOnline, a system-wide effort to expand its online programs. Dr. Moloney has authored articles on the use of technologies in the classroom; cross-disciplinary approaches to curriculum reform; and the organizational reform of higher education.

Dr. Steve Tello received his Doctorate of Education in Leadership in Schooling from the Graduate School of Education, University of Massachusetts Lowell in 2002 and is Associate Director of Continuing

Studies, Corporate and Distance Education at UML. Dr. Tello oversee the operation and development of the campus' online program. Dr. Tello has extensive experience in the development and delivery of technology training and education for both college and K-12 faculty. Mr. Tello has taught as an adjunct for the University's Multimedia Certificate program and recently developed the UML Online Teaching Institute to provide higher education faculty with an online training on teaching online.

Dr. Tello is affiliated with the University Continuing Education Association, Association for the Advancement of Computers in Education, and Association for Supervision and Curriculum Development and the Sloan-C. He has authored numerous articles on online education, and served as a consultant to several colleges and educational organizations seeking to develop their online education and faculty development programs.