

**University of Massachusetts
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Final Report On Professional Development Grant**

Evaluation Methods for On-Line Programs

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INTRODUCTION

The University of Massachusetts Boston has a history of approaching program evaluations with conscientious rigor. Program reviews conducted for accrediting bodies (such as the New England Association of Schools and Colleges, National Council for Accreditation of Teacher Education, National Association of School Psychologists, Rehabilitation Counseling, Management, Nursing, Council for Marriage and Family Therapy Accreditation) have uniformly resulted in positive outcomes. For those programs not evaluated through a national or regional accrediting agency, University of Massachusetts Boston has adopted a rigorous formative program evaluation process ([AQUAD](#)). While well-conceived, these evaluation processes do not address the unique aspects of programs delivered on-line. Since an increasing number of programs are being offered on-line, evaluation strategies are now necessary.

METHOD

This project used information from an existing on-line counseling program to conduct the first stage of a program evaluation, that of preparation, in order to develop a formative evaluation template to assess on-line academic programs. This was accomplished by:

- reviewing already existing models of evaluating on-line programs;
- conducting focus group and individual interviews with students, faculty, and staff;
- examining course expectations, syllabi, student products, and course evaluations;
- incorporating suggestions obtained through the above processes into the AQUAD Self-study Template and forwarding both the Template and this report to the Provost's office for review

Review of already existing models of evaluating on-line programs

To provide excellent programs, universities must conduct period comprehensive program evaluations and use the results of the evaluations to modify the programs. Comprehensive program evaluations consider both input (program components) and outcome (student skills and performance) and have seven steps: preparation, information collection, data analyses, presentation of results, recommendation development, intervention implementation, and evaluation (Bennett, 1988; Maher, 1984; Patton, 1982; and Tuckman, 1985).

A substantial volume of research on on-line instruction exists. Much of this literature focuses on determining factors that affect the experiences for students and/or faculty in on-line classes. For example, Perreault, Waldman, Alexander, and Zhao (2002) explored methods to overcome

barriers to successful instruction; Petrides, L. A. (2002) explored the subjective experiences of students; Hoyt and Shirvani (2002) discuss factors influencing satisfaction with distance learning; and Hampton (2002) and Smith, Ferguson, and Caris (2002) explored instructor experiences when teaching over the web.

The strongest theme to evolve from the above research is that when teaching on-line classes, instructors must take deliberate steps to minimize student disengagement and frustration in order for students to succeed. Gibbons, Mize, and Rogers (2002) indicate that taking on-line classes requires a stronger work ethic than taking on-campus classes, although students may mistakenly believe the opposite prior to enrolling. Richards and Ridley (1997) examined the reasons for persistence in on-line courses and found that student satisfaction and persistence was increased with previous computer skills and proficiency, instructor satisfaction, ease of use with the on-line program, and work accruing degree credits. Rovai (2003b) extended the discussion regarding increasing student persistence by taking a systems perspective. He indicates that some factors affecting persistence lie within the student, some of which can be identified prior to admissions. Other factors affecting persistence are much broader and include external factors, program factors, and pedagogy. Prior to admissions, characteristics affecting student persistence include age, ethnicity, gender, intellectual development, previous academic performance, and academic preparation. Prior to admission student skills include computer literacy, information literacy, time management, reading and writing skills, and computer based interaction skills. After admissions, student persistence is affected by (1) external factors (finances, hours of employment, family responsibilities, outside encouragement, opportunities to transfer, and life crises); (2) student factors (academic integration, study habits, social integration, goal commitment, absenteeism, program fit, grade point average, identification with the school, and levels of self esteem, stress, satisfaction, and commitment); (3) program factors (learning community, clarity of program, advising, utility, institutional commitment, interpersonal relationships, accessibility to services, and course availability); and (4) pedagogy (student learning styles and instructor's teaching styles).

Offir and Lev (2000) suggest that evaluations of on-line classes should investigate both social/procedural and content interactions. Positive social and procedural interactions supply an encouraging environment and result from students' perception that instructors are helpful. Content-related interactions are explanatory, expository and cognitive interactions that affect the degree to which students use the information interactions in developing their cognitive skills for both surface and in-depth processing. Offir, Barth, Lev, and Shteinbok (2003) used this model to increase the effectiveness of a distance learning course by collecting data throughout the semester and using that data to modify the course dynamically. Their methods are depicted in Table 1.

Table 1
Formative evaluation methods and results

| Evaluation Method Result |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Student knowledge Content analysis of student questions to help desk Evaluated students' proficiency in technology, allowed for increased technology support |
| Student self-evaluation after each lesson for content comprehension Allowed for repetition of material if more than 1/3 of students indicated struggle with material |
| Multiple choice quiz scores at conclusion of each lesson Analysis of student comprehension and performance analyzed Teacher-student interactions |

Use of the Model for Analyzing Content of Interactions in a Distance Learning Environment
Allowed for analysis of interaction pattern and the identification of which interactions correlated with positive learning outcomes

Gibbons, Mize, and Rogers (2002) indicate that in addition to academic failure, feelings of disengagement increase academic dishonesty. Instructors can reduce academic dishonesty in on-line classes by (a) explicitly stating that academic dishonesty is unacceptable and giving specific examples of what constitutes academic dishonesty, (b) designing the class such that there is a high degree of interaction with and among students to avoid feelings of detachment, (c) utilizing a variety of evaluation methods.

While the majority of the published literature evaluating on-line courses focuses on the above pedagogical issues, some studies have explored the effectiveness of web-based teaching on student achievement (Martindale & Ahern, 2001); critical thinking by students (Astleitner, 2002); and student communication in on-line classrooms (Miltiadou, 2001). In general, performance assessments for individual classes tend to find that during end of the semester learning measures, on-line students performed as well or better than on-campus students (Campbell, Floyd, & Sheridan, 2002; Merisotis & Phipps, 1999).

More recently, universities have begun to offer entire programs on-line in addition to individual courses. The Council of Graduate Schools (1998, pp. 24-25) developed guidelines for assuring quality and demonstrating equivalency between on-campus and on-line programs. These guidelines stipulate that:

- Distance education programs should be consistent with an institutions' mission and goals;
- Institutions should consider quality and viability prior to offering a distance education program, and proposals for distance education courses and programs should undergo the same stringent governance review process as on-campus programs and courses;
- Distance education programs should be offered through existing academic units, only in those areas in which sufficient academic strength and scholarly resources to support the program already exist, and should be reviewed with the same procedures and schedule as on-campus programs;
- Distance education classes should be taught by regular full-time faculty within their assigned teaching load when possible, or by appropriately qualified adjunct faculty, all of whom receive orientation, training, and technical support;
- Distance education programs should be offered only by those institutions with "sufficiently robust [technical] systems and appropriately trained technical and support personnel;"
- All degrees and certificates should "represent the same level of excellence regardless of the delivery mode...equivalent in academic content and objective, faculty and student quality, evaluation standards, and learning outcomes" such that student admission and completion criteria are identical to students in on-campus programs.

Appropriately evaluating on-line programs must take into account several issues not addressed in on-campus program evaluations. Three models for evaluating on-line programs have been published, by McGorry (2003), Wentling and Johnson (1999), and Rovai (2003). McGorry (2003) recommends a model whereby the following seven constructs are addressed when evaluating on-line programs:

1. Flexibility
2. Responsiveness
3. Student support
4. Student learning
5. Student participation in learning
6. Ease of technology use and technology support, and
7. Student satisfaction.

Wentling & Johnson (1999) recommend a model whereby on-line program evaluations focus on the "fitness" of a program's "vital signs:"

1. Program demand

- a. Number of applications requested per semester
- b. Number of applications received per semester
- c. Number of telephone contacts per semester

2. Student retention

- a. Percentage of dropouts from beginning to end of each course
- b. Percentage of dropouts from the program

3. Student satisfaction

- a. End of courses student ratings of program content, quality of instruction, instructional resources, technology used, amounts of interaction, instructional methods

4. Faculty satisfaction

- a. Faculty ratings of technology, technical support, interactions with students, quality of student work

5. Student achievement/learning

- a. Self-assessment of learning and transfer
- b. Course project scores
- c. Quiz and test scores
- d. Course grades

6. Financial efficiency

- a. Total unit cost, direct cost, overhead cost
- b. Tuition revenue

Rovai (2003a) recommends a model that first addresses the question "what is the purpose of the evaluation and what types of decisions will be made?" with the premise that once the purpose is understood the correct evaluation can be developed. According to Rovai, appropriate evaluations can focus on context (planning decisions), input (structuring decisions), process (implantation processes), or product (outcome attainment).

1. Input evaluation: provides information on the quality of resources used by the program:

- a. System capabilities
- b. Student characteristics
- c. Student Needs
- d. Instructor experiences, competence of admin staff,
- e. Efficiency of course development
- f. Institutional cooperation and support
- g. Number of students served
- h. Program costs
- i. Instructor needs - including proper training

2. Process evaluation: identifies what is (and is not) happening within the program:

- a. Cost effectiveness
- b. Instructor effectiveness
- c. Quality of instructor to student interactions
- d. Quality of student-to-student interactions

3. Output evaluation: evaluates the immediate and direct effects of the program

- a. Program usage
- b. Number of people graduated
- c. Extent to which program objectives met
- d. Changes in student skills/ knowledge or attitude
- e. Graduation rates
- f. Student satisfaction rating
- g. Staff turnover

4. Impact evaluation: addresses the long-term results of program and affect on society

- a. Performance of program graduates in their program-related jobs
- b. Changes in staff and faculty attitudes, behaviors and goals

Methods for collecting the data outlined above include school records, student and instructor surveys, course evaluations, expert reviews, case studies, system statistical data, interviews, and focus groups.

Few evaluations of on-line programs have been published. One example is that of Hoban, Neu, and Castle (2002), who found a high degree of comparability was found in student attitude and performance, as well as a positive response from instructors, with regard to on-line version of an educational administration program. Another example is that of Thormann (1999) who overviewed an on-line Technology in Education Program offered at Lesley College and highlighted methods effective in mitigating the problems/issues associated with distance learning, as seen in Table 2.

Table 2

Methods to mitigate problems associated with distance learning

| Issue | Method of Mitigation |
|----------------------------------------------|---------------------------------------------------------------------------------------------|
| Student readiness for on-line instruction | On-line readiness survey required completed prior to admission |
| Traditional evaluation insufficient | Student assessment/evaluations assessing benefits and concerns regarding course/instructors |
| Student to student interactions insufficient | Students asked to read and comment on each other's assignments |
| | Students shared self-introductions of experiences/demographics |
| | Professors assigned large and small group assignments |

Focus group and individual interviews with faculty and staff

Several UMass Boston faculty and staff who are involved in on-line instruction participated in interviews and focus group meetings during fall, 2003 and spring, 2004. These included:

Varda Konstam, Professor, Counseling and School Psychology;
Rick Houser, Professor, Counseling and School Psychology;
MaryAnna Ham, Associate Professor, Counseling and School Psychology;
Gonzalo Bacigalupe, Associate Professor, Counseling and School Psychology;
Nanzhang Hampton, Associate Professor, Counseling and School Psychology;
Felicia Wilczenski, Associate Professor, Counseling and School Psychology;
Lisa Cosgrove, Lecturer/Assistant Professor, Counseling and School Psychology;
John Jessoe, Instructional Technology Center;
Kitty Gelaitis, Division of Corporate and Continuing Education;
Frank Caro, Gerontology Center and Graduate Studies Committee;
Emily McDermott, Dean of Graduate Studies;
Kevin O'Rourke, Instructional Technology Center;
Peter Langer, Associate Provost; , Institutional Research;
Eileen McMahan, Instructional Technology Center;
Alan Girelli, Instructional Technology Center.

In addition, student comments, both verbal and on course evaluations, were noted.

Examination of course expectations, syllabi, and student products

The University of Massachusetts Boston, Graduate College of Education has provided programs in counseling for twenty years. These programs prepare graduates to be professional practitioners in a variety of community settings and institutions: hospitals, schools, rehabilitation agencies, career planning centers, employee assistance programs, clinics, residential treatment facilities, and other mental health agencies. Students choose to focus on a particular area within the counseling profession. They may choose among the following areas: Family Therapy, Mental Health Counseling, Rehabilitation Counseling, and School Counseling. The curriculum of each track includes both courses and the field-based practicum and internship experiences that are critical to professional development. These are supervised on site by professionals who meet specific licensure and certification qualifications. The course curricula fulfill the academic requirements for licensure by the Board of Allied Mental Health and Human Services Professions in the Commonwealth of Massachusetts or for licensure as a school counselor in Massachusetts. These programs have been traditionally provided on campus in face-to-face class settings. Starting in 2000, the department began to offer classes on-line and starting in 2001, the department began to offer two on-line programs (Mental Health and School Counseling), in which more than 50% of the course work was completed on-line. The foundation counseling courses (individual and group counseling) are offered in face-to-face classes during summer sessions. The following content courses are offered both on-line and on-campus: COUNSL 601, COUNSL 602, COUNSL 604, COUNSL 605, COUNSL 606, COUNSL 608, COUNSL 613, COUNSL 615, COUNSL 620, COUNSL 622, COUNSL 626, COUNSL 630, COUNSL 653, COUNSL 670, and COUNSL 672.

In conjunction with this project, syllabi, course evaluations, and student products of on-line classes were compared with those for on-campus classes. Analysis of the on-line syllabi and student products was conducted by the Project Director and departmental faculty and discussed in interviews and focus groups.

It was found that the syllabi for face-to-face classes and on-line classes are virtually identical, particularly when provided by the same individuals. In general, faculty find that students submit equivalent work and can attain equivalent levels of content knowledge in on-line classes. The faculty also generally find that they can provide very equivalent courses on-line and on-campus,

because of the following factors:

1. Up to date and university supported hardware: the department leases (PC) Dell laptops for all faculty. High quality hardware is necessary to support the software necessary for on-line teaching.
2. Course support software, servers, and technical support for faculty and students (i.e. Prometheus)
3. Synchronous discussion group software, servers, and technical support for faculty and students (i.e. Centrum)
4. Instruction for professors in the use of the above software.
5. Additional technical support in advanced methods including videostreaming film clips and videostreaming narrated PowerPoint lectures.
6. The provision of financial incentives for full-time faculty who already teach the courses on campus to develop the on-line courses.
7. Permitting full-time faculty to provide on-line courses as part of their normal course loads.
8. Extensive on-line library resources including electronic data-bases, electronic reserves, and electronic journals, and electronically available inter-library loans.

The following considerations were also raised:

1. Although some students enroll in on-line courses because they live at a distance, often students enroll in on-line programs because they have full time jobs and prefer to be able to spend evenings home with their families rather than commute in to campus. Such students need careful advising to prevent their becoming overwhelmed. Ongoing monitoring of student participation and comprehension are critical.
2. A program is more than the sum of its courses, as it also involves developing a professional identity and fostering a professional network. In on-campus programs these functions are at least in part a result of informal encounters before and after classes, program clubs, and department colloquia. In on-line programs, developing a professional identity and fostering a professional network can be fostered by:
 - a) Developing an on-line program site to facilitate communication among students
 - b) Holding some classes on-site, particularly at the beginning of a program
 - c) Fostering department colloquia, on-line
 - d) Fostering program clubs, on-line
 - e) Providing advising on-line
 - f) Provide office hours for advising in person and via telephone to encourage students to share concerns and issues they may not be willing to share in writing.

RESULTS

Findings of the literature review, focus groups, and program analysis were incorporated into the attached: **University of Massachusetts Boston AQUAD Self-Study Template, Revised to address on-line program considerations.**

BUDGET EXPENDITURE

Project Director, program faculty, and IT staff
Compensation for work during academic year 2003-2004
In kind contribution
Project Director,
Virginia Harvey
Additional compensation for summer work 2003 and 2004
\$2,000
Research Assistant,
Kate Kendall
.25 time, one semester stipend
\$1,500

SSI and benefits encumbered
\$78.95
Research Assistant, Barbara Ball
Summer, 2003
(\$15 per hour, 73.3 hours)
\$1,100
Supplies
Copying, postage, and food
\$628.76
Total spent

\$5,307.71
Grant allocation

\$5,864
Ending balance
Return to funding source
\$556.29