

ASSESSING ACADEMIC PROGRAMS IN HIGHER EDUCATION

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Assessing Academic Programs in Higher Education

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DEDICATION

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To my husband, Carey, and my colleague in assessment, faculty development, and teaching, Richard Noel.

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ALIGNMENT

As a whole, the educational experience should encourage, support, and reward students for mastering program learning objectives. We should develop and offer cohesive curricula that are systematically aligned with program objectives, and we should use objectives to plan course activities and grading schemes. Learning objectives guide curriculum planning and are the criteria for program success. “When taken seriously, assessment shapes curricula and instructional practice. The business community axiom that ‘what gets measured, gets done’ holds true in education as well” (Association of American Colleges and Universities, 2002, We Can Ensure Ongoing Improvement by ... section, H 7).

Alignment involves clarifying the relationship between what students do in their courses and what faculty expect them to learn. Here is a true story, and it is not unique. Faculty developed a set of learning objectives for their program, and among them was a statement that graduates should be able to write traditional term papers. They were surprised when they examined the curriculum. Faculty who used to assign term papers had substituted different types of writing assignments. They required students to write position papers, reflective essays, personal journals—everything except term papers. Faculty, working independently, had made good decisions for their courses, but they had assumed that others continued to assign term papers. Discussing the alignment between curriculum and objectives allowed them to identify this problem

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and find a solution. They agreed to reintroduce term papers in several required courses.

Faculty frequently identify gaps when they analyze the alignment between their curriculum and learning objectives, and they often make curricular changes to improve student learning opportunities before they even begin to collect program assessment data. This is why curricular alignment is an important component of program assessment. An interesting side effect of the curriculum alignment process often occurs. As faculty consider their own and others’ contributions, they often develop increased appreciation for the complementary strengths of all department members. If program objectives are valued, then faculty who help students achieve these objectives are valued, too. For example, in some departments there are conflicts between theoretical and applied faculty; however, most faculty agree that students should develop both strengths. Faculty who specialize in one of these approaches often develop more respect for colleagues who specialize in the other approach when they recognize that complementary faculty strengths allow them to present a well-rounded curriculum. A typical comment goes something like this: “I used to think that Terry was dispensable, but now I’m really happy that Terry is in our department because I’d hate to have to teach those applied/methods/theoretical courses that our curriculum requires.”

THE COHESIVE CURRICULUM

A cohesive curriculum systematically provides students opportunities to synthesize, practice, and develop increasingly

complex ideas, skills, and values. Important learning objectives should be introduced early, and they should be reinforced and further developed throughout the curriculum (Diamond, 1997). For example, if faculty want students to develop writing skills, increasingly complex writing projects should be assigned. This is different from having a single “Engineering Writing 101” course in an engineering curriculum. Such courses are unlikely to have much long-term impact if the rest of the curriculum provides no reinforcement for writing. The same could be said for other core abilities that students should develop, such as oral communication, teamwork, and information competence skills. The distribution of content across the curriculum also is important. For example, are American literature majors more

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likely to develop an understanding of African-American literature if it is restricted to one required course or if it is spread throughout the curriculum? Aligning the curriculum with program objectives helps faculty address such questions.

Focusing on learning objectives allows faculty to evaluate and improve curricula and can lead to the development of new policies and procedures. Many examples of alignment projects are summarized in *Student Learning: A Central Focus for Institutions of Higher Education* (Doherty, Riordan, & Roth, 2002). Here are a few of their experiences:

- Faculty at the University of Alaska Southeast identified student writing as a major goal, and faculty from its three campuses (Juneau, Sitka, and Ketchikan) worked together to develop a common lower-division curriculum aligned with learning objectives and a set of rubrics to assess student writing portfolios. The process was eventually broadened to include the alignment of courses within majors to improve student writing throughout the curriculum and the examination of senior-level writing samples (Madden & Mulle, 2002).
- Faculty at Avila College examined the alignment of their curriculum with college-wide learning objectives. Responsibilities for teaching and assessing learning objectives were assigned to specific courses, procedures for certifying communication-intensive courses were developed, policies for embedding the assessment of higher-level thinking skills were enacted, and faculty development opportunities to increase faculty assessment expertise were offered to faculty and were integrated into new faculty orientations (Harris, 2002).
- Faculty at Bowling Green State University examined learning objectives for the majors and identified six “University Learning Outcomes” that were common to all programs. These are indicated by the verbs: “write, present, investigate, connect, participate, and lead” (Gromko & Hakel, 2002, p. 42). They noticed the need to better align general education and major expectations for student learning and to align courses with these objectives. Faculty are considering the use of common rubrics to assess these university-wide objectives (Gromko & Hakel, 2002).

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- The B.A. program at the DePaul University School for New Learning is designed to meet 50 competence statements, and learning objectives are assigned to specific courses. Faculty are encouraged to develop appropriate pedagogy and assessment procedures, and the campus provides ongoing faculty development support for these activities, including an orientation for new faculty, ongoing mentoring, and a “core course handbook” with suggested assessment activities (McGury, 2002).
- Faculty in the Department of Mathematics/Computer Sciences at River College analyzed the alignment of their curriculum with their learning objectives and found the need to add a new capstone course, to better integrate learning objectives into syllabi and course planning, and to better integrate adjunct faculty into assessment activities. A follow-up analysis of syllabi verified improved use of course learning objectives (Cunningham, 2002).
- Faculty at the Rose-Hulman Institute of Technology use an electronic “curriculum map” that ties course objectives to campus-wide objectives. Campus-wide assessment data are analyzed to identify program-specific deficiencies, and program faculty use the curriculum map to identify where changes are needed (Rogers, Williams, & Misovich, 2002).
- Faculty in Truman State’s Liberal Studies program developed learning objectives for their program, then built a new core curriculum based on courses specifically created or redesigned to align with these objectives. Faculty submitted course proposals which described how learning objectives would be developed and assessed, and a committee evaluated these proposals to decide which courses would be included (Christiansen, 2002).

ALIGNING CURRICULA WITH OBJECTIVES

An easy way to analyze the alignment between curricula and objectives is by organizing the data into matrices. Figure 3.1 is an alignment matrix for an undergraduate program with nine required courses and six learning objectives. Entries in such matrices can be simple check marks, or they can provide more information, as illustrated here. Take a few min-

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utes to examine Figure 3.1 before reading the next paragraph. Does the curriculum appear cohesive?

The program summarized in Figure 3.1 appears to be well-aligned with Objectives 1 and 6. Both are introduced early, practiced in other courses, and demonstrated in upper-division work. The program, however, appears to have some problems with other objectives. Although Objective 2 is introduced, it is ignored in the rest of the curriculum; graduates are unlikely to retain the learning or develop sophistication in it. Objective 3 was never formally introduced. Perhaps this is not a problem if the introduction is known to occur in other coursework, such as general education classes. Objective 4 was not included in the curriculum. Faculty who teach the 490 course assume students have already had experience with Objective 5, but this has not been structured into program requirements. Faculty who are responsible for this program are in the best position to identify problems and find solutions. They also may decide to revisit their objectives and ask if some objectives, such as Objective 4, are worth retaining.

**FIGURE 3.1
CURRICULUM ALIGNMENT MATRIX**

Course	Program Objective 1	Program Objective 2	Program Objective 3	Program Objective 4	Program Objective 5	Program Objective 6
100	I					I
120		I				P
200	P		P			P
204						P
300	P		P			
329	D					P
400			P			D
480						
490	D		D		D	D

I = Introduced, P = Practiced, D = Demonstrated

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ALIGNING COURSES WITH OBJECTIVES

Consider two faculty who are teaching a Shakespeare course for majors. One works on a campus in which most English majors will become high school teachers, and faculty agree that a priority objective for this course is to help students learn to stage Shakespeare’s plays with high school actors. The other teaches in a department that places strong emphasis on understanding writing in its cultural context, and faculty agree that this course should be designed to help students understand the historical context underlying Shakespeare’s works. These faculty will develop substantially different courses. Their students may read the same plays, but they will participate in different activities and will be graded based on different criteria.

Explicit course objectives guide course planning. “The idea is simple: one should have a clear idea of what the intended outcomes of the course are if one is to rationally develop it” (Menges, Weimer, & Associates, 1995, p. 188). Or, as the saying goes, “If you don’t know where you’re going, you’re likely to end up someplace else.” Having delineated objectives allows faculty to plan assignments, activities, and grading. For example, faculty might create a table with three columns (objective, activity, and assessment) that shows what students will learn, how the course will be structured to promote this learning, and how learning will be assessed. Figure 3.2 shows course planning entries for one objective. Notice the focus on what students will do to develop the competence and an explicit plan for giving feedback about their mastery when determining grades.

Course learning objectives are not secrets. Highlighting them on syllabi allows students to make informed decisions before enrolling, to monitor and direct their own learning, and to communicate what they have learned to others, such as graduate schools, employers, or transfer institutions. Explicitly tying course objectives to program objectives helps students recognize their involvement in a cohesive curriculum, and some assessment practices (such as portfolios) encourage students to monitor their progress throughout the curriculum. The Association of American Colleges and Universities (2002) promotes the development of students as intentional learners, and alignment efforts promote faculty as intentional teachers. The use of learning objectives contributes to these goals.

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FIGURE 3.2
COURSE PLANNING GRID FOR ONE OBJECTIVE

Course Objective	Activity	Assessment
Students can write research reports in APA style.	<ul style="list-style-type: none"> Students will work in groups to apply the APA style manual to a set of simulated research report sections created to include APA style violations. Whole-class discussion will ensure that all violations have been identified. Students will conduct a research project and will iterate drafts of the sections of their research reports, based on peer feedback collected on checklists specifying APA style requirements. 	<ul style="list-style-type: none"> Objective exam questions on the second quiz and the final will examine student knowledge of APA style guidelines. The grade for student research reports will include a measurement of conformity to APA style.

Figure 3.3 is an example of a matrix that could be used to examine course alignment with program objectives by relating course objectives to program objectives. Course objectives need not be identical to program objectives. For example, a program might specify that graduates will have a variety of laboratory skills, but a particular course might have only some of those skills among its objectives. As before, these matrices might contain only check marks, or they may contain more detailed information, such as the level of expectation for student mastery. Before reading the next paragraph, evaluate the course summarized in Figure 3.3, assuming that the program has only four learning objectives.

Taken out of context, it is difficult to evaluate this matrix. This appears to be a lower-division course in the major because its objectives tend to be at basic or intermediate levels of expectation. The course also appears to play an important role within the overall program because

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FIGURE 3.3
COURSE ALIGNMENT MATRIX

	Program Objective 1	Program Objective 2	Program Objective 3	Program Objective 4
Course Objective 1	B			
Course Objective 2	B	B		
Course Objective 3		B		
Course Objective 4			I	
Course Objective 5			I	
Course Objective 6				
Course Objective 7				

B = Basic, I = Intermediate, A = Advanced expectation for this objective

three of the four program objectives are given attention. Program faculty, of course, are the best judges of this, and they may prefer that this course offer more extensive development of one or two program objectives, rather than split time among three of them. The faculty member has added two additional course objectives beyond program expectations, which is fine as long as students are given sufficient opportunity to develop the agreed-upon program objectives. Faculty advisors, aware

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of these added course objectives, can advise relevant students to take this section of the course, giving them opportunities to develop additional strengths.

This course alignment matrix maps details of each course's relationship to program objectives, allowing all program faculty to be aware of what individual courses contribute and providing information for discussion concerning where learning should occur. .

FACULTY COLLABORATION AND AUTONOMY

Developing a cohesive curriculum should not threaten faculty control of their courses. Sections of required courses need not have identical syllabi and structure, and programs are strengthened if students are advised into course sections that match their individual needs. Basic, agreed-upon learning objectives should be included in each course, regardless of teacher and instructional mode, but faculty, of course, can supplement these basic objectives with personal objectives and can structure the course in different ways to promote student learning. Most faculty enjoy finding creative ways to motivate and contribute to their students, including sharing aspects of their disciplines that they find particularly exciting. Programs should capitalize on faculty strengths and encourage faculty to share what they love with students.

Agreeing on course learning objectives does not standardize courses. There are many ways to help students learn. For example, if an objective is for students to improve their ability to work in groups, groups could be given a variety of assignments and could be formed in many ways. Groups could meet face-to-face during class or outside of class, or virtual groups could be formed. One instructor may have a series of small group projects with groups varying in membership, while another may form collaborative groups that work together throughout the term. Feedback on group participation could be made by peers, self-evaluation, and/or faculty evaluation, and it could be structured using rating scales or rubrics. Similarly, if one of the course objectives is to improve student writing, students could write a variety of papers, review each other's writing, do collaborative writing, iterate drafts of papers, and/or critically examine writing samples. Individual faculty should find ways to meet learning objectives that are consistent with their own and their students' teach-

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ing and learning styles, and faculty who foster similar learning objectives should be encouraged to compare notes on the effectiveness of the strategies they employ.

ALIGNING TEACHING, GRADING, AND ASSESSMENT

Identifying specific learning objectives for programs and courses helps faculty focus on developing effective pedagogy for achieving these objectives. Here are some projects designed to align pedagogy with learning objectives:

- Faculty at Indiana University of Pennsylvania are invited to participate in the Reflective Practice Project in which they discuss and develop pedagogical approaches tied to specific learning objectives. Faculty participate in monthly workshops, interdisciplinary teaching circles, departmental teaching circles, and two annual Saturday workshops featuring nationally recognized pedagogy experts. This program helps faculty develop a repertoire of teaching approaches so they can customize course activities for particular needs. Faculty in some programs, such as chemistry, have coordinated their teaching to systematically focus on the development of their students across the curriculum (Cessna, 2002).
- The mission of Niagara University includes commitments to serve the poor and to learn through service, and their general education learning objectives specify that "students become committed, dedicated members of their society and seek to serve others" (Baxter, 2002, p. 85). To align their courses with this mission and objective, faculty routinely include community service. For example, accounting students help senior citizens and disadvantaged people fill out tax forms, and they participate in class discussions of what they learned from such experiences. Students in a senior-level literature course read novels about people living in poverty, and they are required to volunteer for about 20 hours at a local parenting center that serves underprivileged families. At the end of the semester, students publicly share reflections relating their readings to the reality of the families they served, and students

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“regularly comment that the experience was a life transforming one” (Baxter, 2002, p. 86).

Faculty at North Carolina State University are invited to participate in their grant-funded inquiry-guided learning project. Students in inquiry-guided courses learn through solving problems that have multiple answers. Efforts target four learning goals: “critical thinking, independent inquiry, intellectual development and maturity, and student responsibility for learning” (Lee, 2002, p. 89). Faculty, staff, and administrators jointly focus on these goals, providing students with a cohesive environment that helps them master discipline-based, as well as project-based learning objectives (Lee, 2002).

Faculty at Samford University have adopted a problem-based learning (PEL) approach to teaching, and courses are organized around a series of complex problems that students address. Problems are selected that lead students toward the mastery of relevant learning objectives, and many faculty have developed authentic measures to assess this learning. Chapman (2002) reports that using a PEL approach helps improve faculty focus on what students do and what students learn, reducing their emphasis on content coverage and increasing their emphasis on developing student skills to produce, rather than consume, knowledge.

Faculty at the College of William and Mary defined campus-wide objectives for “digital information literacy” with three major foci: knowledge generation, knowledge access, and knowledge evaluation. They developed web-based tutorials targeting these objectives and embedded assessment within the teaching modules. Students learn about technology by using technology, and assessments allow students who enter with strong technical skills to quickly complete modules, rather than spend time “learning” skills they already have (College of William and Mary, 2002).

Faculty in nearly two-thirds of the programs at the University of Wisconsin-La Crosse have targeted student writing by participating in their writing-in-the-major project. Rather than rely on composition faculty to develop student writing, program faculty work together to develop a cohesive curriculum that systemati-

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cally develops writing skills within the major. Program faculty agree on learning objectives for student writing, plan a developmental approach for teaching writing, and use assessment data to improve the pedagogy (Cerbin & Beck, 2002). Aligning teaching and grading with course objectives reinforces the alignment of program objectives with the curriculum, promotes student development in agreed-upon directions, and provides opportunities for embedded assessment. For example, faculty could agree to embed some common questions in course exams to assess mastery of both course and program objectives.

Exams which challenge students should be in courses that provide students opportunities to meet these high expectations. If learning objectives focus on deep learning and higher levels of Bloom’s taxonomy, students should practice this depth during course activities, and assignments and exams should require the demonstration of this depth. Grading is a powerful tool for motivating and directing student learning (McKeachie, 1999). If exams focus on simple regurgitation of facts, students will focus on acquiring facts; but if exams focus on deep processing, students will change what they learn.

Douglas Eder, director of undergraduate assessment and program review at Southern Illinois University Edwardsville (SIDE), advocates the integration of assessment and teaching (Eder, 2001). He offers the flight simulator as a model for this activity. Student pilots spend hours in flight simulators, and they learn by responding to simulated catastrophes, “crashing” planes in a safe environment without risk to themselves or passengers. They can repeatedly deal with real-world situations faced by professional pilots, and teaching and assessment are inseparable because the feedback and the opportunity to try again are instantaneous and unambiguous. Eder encourages faculty to embed the equivalent of flight simulators in their classes and to use these authentic activities to teach as well as assess student learning.

SIUE faculty in many disciplines have developed the equivalent of the flight simulator by integrating a Senior Assignment into their programs (Eder, 2001). Senior majors create a product (e.g., a thesis, essay, or performance) under the supervision of a faculty member, and then present this product to the appropriate audience (e.g., faculty, peers,

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agencies, or the general public). Students learn while developing these projects, and their ability to integrate learning from previous courses can be assessed as products are developed, refined, and presented.

Faculty have become accustomed to traditional tests, but many have become more interested in using authentic assessments when learning objectives specify deep learning. Eder’s suggestion that faculty embed safe opportunities to apply what is being learned promotes deep learning and provides embedded assessment data. This approach is similar to the classic apprenticeship model for teaching skilled trades and for mentoring graduate students. Students learn while creating products under the supervision of expert mentors, and the proof of their learning is in the quality of their products and their ability to explain and defend them. Opportunities to use these products for program assessment abound.

Wiggins (1998) provides other examples similar to the flight simulator: Students in teacher education interact with simu-

lated and real students in mentored classrooms, and music students participate in bands and orchestras. Similarly, art, business, ethics, journalism, nursing, pharmacy, and psychology students analyze real-word cases and do internships in museums, corporations, and health centers.

Embedded assessment allows activities to serve multiple functions and can provide effective grading and assessment data. Participating faculty often develop improved understanding of program objectives as they collaborate on embedded assessment projects. Embedded assessments make good use of what students and faculty already do, making assessment a part of the department's normal operations, rather than an extra task. Last, and most relevant to this chapter, embedding assessments can lead to more cohesive curricula because faculty work together to focus on program objectives when planning and implementing embedded assessment projects. Faculty already spend a great deal of time examining student learning, and embedding assessment allows these efforts to also serve program assessment purposes.

ALIGNING STUDENT SERVICES TO SUPPORT LEARNING

Important faculty advising and mentoring roles often occur outside of the formal curriculum, and faculty are not the only ones who contribute

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to student development (American College Personnel Association, 1996). Imagine being admitted to a hospital in which doctors, nurses, lab technicians, pharmacists, food service personnel, and other staff don't communicate about patient care. They aren't aware of what each other is doing, and they don't attempt to coordinate their services or examine their impact on patient health. We would not opt for this type of health care. Similarly, colleges and universities should provide coordinated support for student learning-in and out of the classroom (Maki, 2002a). Diamond (1997) expresses this well: . . . what goes on in the classroom is only a part of the total instructional experience of our students. No matter how effective we are as teachers and how well designed our courses and curricula are, we will not be successful if our libraries and residence halls are not conducive to studying, if student advisers and counselors provide our students with little personal support, if few opportunities for recreation exist, and if we, as faculty, are rarely available to meet with students outside of the classroom, laboratory, or studio. . . . A total educational program must be nurtured and planned by involving the staff from the offices of student affairs and residential life, among others, (p. 14)

Faculty, administrators, student support professionals, clerical and technical staff, and others should collaborate to support student achievement. An analysis of how campuses actually function suggests a lot of room for improvement (AAHE, ACPA, & NASPA, 1998). A cohesive campus should support faculty efforts, and other campus divisions should examine their impact on student development (Maki, 2002a). In this way, campuses examine their institutional effectiveness. Publications on the assessment of student affairs programs are available to assist campuses in this enterprise (Bauer & Hanson, 2001; Malaney, 1999; Upcraft & L. Schuh, 1996), and a balanced perspective on their impact would benefit from input from program assessment efforts.

The Policy Center for the First Year of College maintains an active listserv and web site to connect campus leaders who coordinate and assess freshmen programs (<http://www.brevard.edu/fycAistserv/index.htm>). Gardner (2000) suggests that campuses examine their freshman experi-

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ence "as a forest, rather than the trees" (U 4), and Cuseo (2002) suggests that they put this advice into practice by assessing the impact of new student orientations, advising, curricula, the co-curriculum (e.g., recreational and athletics programs), academic support programs (e.g., the library and tutoring center), and personal support programs (e.g., counseling and health services). Program faculty can profit from this advice when they do program assessment- they can examine overall campus and department support for their students in addition to examining how well students have mastered program learning objectives, and they can work among themselves and with other campus professionals to improve the educational environment for their students. Many of the indirect assessment techniques described in Chapter 6 are particularly useful for this task.

Alignment is not just a concept for faculty. A joint committee of the American Association of Higher Education, the American College Personnel Association, and the National Association of Student Personnel Administrators (1998) calls on college and university leaders to align all campus operations to promote student learning. They ask that: administrative leaders rethink the conventional organization of colleges and universities to create more inventive structures and processes that integrate academic and student affairs; align institutional planning, hiring, rewards, and resource allocations with the learning mission; offer professional development opportunities for people to cooperate across institutional boundaries; use evidence of student learning to guide program improvement, planning and resource allocation; and communicate information on students' life circumstances and culture to all members of the college or university commu-

nity. (11 5)

This is no small task! Program assessment is one part of some major changes occurring in higher education, and it contributes to our understanding of campus-wide educational effectiveness.

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Assessment of higher education learning outcomes. AHELO. Feasibility study report.Â Global trends in higher education Expansion of higher education systems Wider participation Emergence of new players More diverse profiles of institutions, programmes and students Continuing advancement and rapid integration of new technology Greater internationalisation Increasing pressures on costs and new modes of financing Growing emphasis on market forces: competition and signalling mechanisms New modes of governance stressing performance, quality and accountability. Higher education professionals have moved from teaching- to learning-centered models for designing and assessing courses and curricula. Faculty work collaboratively to identify learning objectives and assessment strategies, set standards, design effective curricula and courses, assess the impact of their efforts on student learning, reflect on results, and implement appropriate changes to increase student learning. Assessment is an integral component of this learner-centered approach, and it involves the use of empirical data to refine programs and improve student learning. Assessing educational outcomes Defining learning objectives Alignment Assessment planning and implementation Direct assessment techniques Indirect assessment techniques Making sense of assessment data Putting it all together. Rubrics: Educational evaluation Education, Higher Evaluation.Â [pdf, txt, ebook] Download book Assessing academic programs in higher education / Mary J. Allen. online for free.