Implementing Outcomes Assessment On Your Campus

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Overview

This paper is designed to assist colleges and universities as they develop outcomes assessment policies and practices. The pages below provide a guide for planning and conducting outcomes assessment in the areas of general education, basic skills, the major field of study, personal/social growth, and professional/technical education. The paper ends with a bibliography of sources for other ideas and strategies that colleges and universities may find useful.

Because student learning and development rest at the core of colleges and universities, this paper focuses primarily on assessing the effectiveness of teaching and learning. Based upon their particular missions, colleges and universities may choose to assess other aspects of institutional effectiveness, as well as teaching and learning. This is particularly advantageous if the purpose and mission of the institution provides the context for the articulation of measurable goals and objectives.

Three questions lie at the heart of student learning outcomes assessment:
1. What should our students learn and in what ways do we expect them to grow?
   Answering this question requires clear goals and objectives.
2. What do our students learn and in what ways do they actually grow?
   This is the measurement question.
3. What should we do to facilitate and enhance student learning and growth?
   This is the improvement question and requires effective use of assessment results.

Thus, student learning assessment by its nature is goal driven, evidence based, and improvement oriented. Each college or university should set its own particular goals for student learning and personal development, should develop suitable methods for measuring progress toward achieving those goals, and should establish the mechanisms for analyzing, reporting and using the results to

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improve outcomes in the future. The actual implementation of these assessment activities should be a collaborative endeavor among the faculty, administrators and students.

THE CURRENT CONTEXT

The 1990s altered forever the context under which institutions of higher education are evaluated in fulfilling their goals and missions. Colleges and universities face more intense pressures to demonstrate their accountability, effectiveness, and efficiency.

Both federal and state agencies appear to be holding institutions of higher education more **accountable** as a condition for receiving funds. *The Student Right-to-Know and Campus Security Act*, for example, now mandates the reporting of graduation rates, transfer rates, and campus crime. Federal student financial aid regulations stipulate the length of time a student may receive various types of financial aid while attending college, the academic grades he or she must maintain while receiving the aid, and the number of credits that must be accumulated in a given time. Recent amendments to the *Higher Education Act* require "performance measurement" reports for curricula receiving grants from *the Vocational and Applied Technological Education Act* (VATEA). Such new requirements come on top of previously existing legislation pertaining to affirmative action compliance, environmental health and radiation safety, and research involving human subjects and warm-blooded animals, among others.

One response to these new accountability regulations and policies has been to debate the purposes of higher education and to focus greater attention on measures of **Effectiveness.** As a result, there is growing interest in obtaining answers to traditional questions such as*, What should students learn?* and *How well are they learning it?* In addition, the following questions are receiving more emphasis: *How does the institution know? What evidence does the institution possess to demonstrate its effectiveness to the public?, and What does the institution plan to do with this evidence to improve outcomes?* Such results-oriented questions lie behind federal and state requirements to supply information, and higher education faces difficult challenges in developing measures of its performance.

Efficiency joins *accountability* and *effectiveness* as a third major public concern. The costs of higher education constitute an enormous national investment. No longer is it sufficient to demonstrate "student success" alone. Colleges and universities must additionally demonstrate that teaching, research and service programs are being conducted economically. Such concerns stimulate current legislative and trustee interest in class size, faculty workload, administrative salaries, time to degree, loan default, economic impact, and research productivity, among others.

THE SCOPE OF OUTCOMES ASSESSMENT

The net result of these recent developments is to broaden the scope of the outcomes assessment process. While the traditional phrase "to produce an educated citizen" still constitutes the heart of higher education, the outcomes assessment process must also respond to new expectations from the governmental sector, the business community, and the public-at -large

concerning issues of greater effectiveness, greater efficiency and greater accountability. The challenge is more acute, given the rapid changes that are transforming the world of work and requiring graduates that are more competitive, technologically sophisticated, and intellectually adaptable.
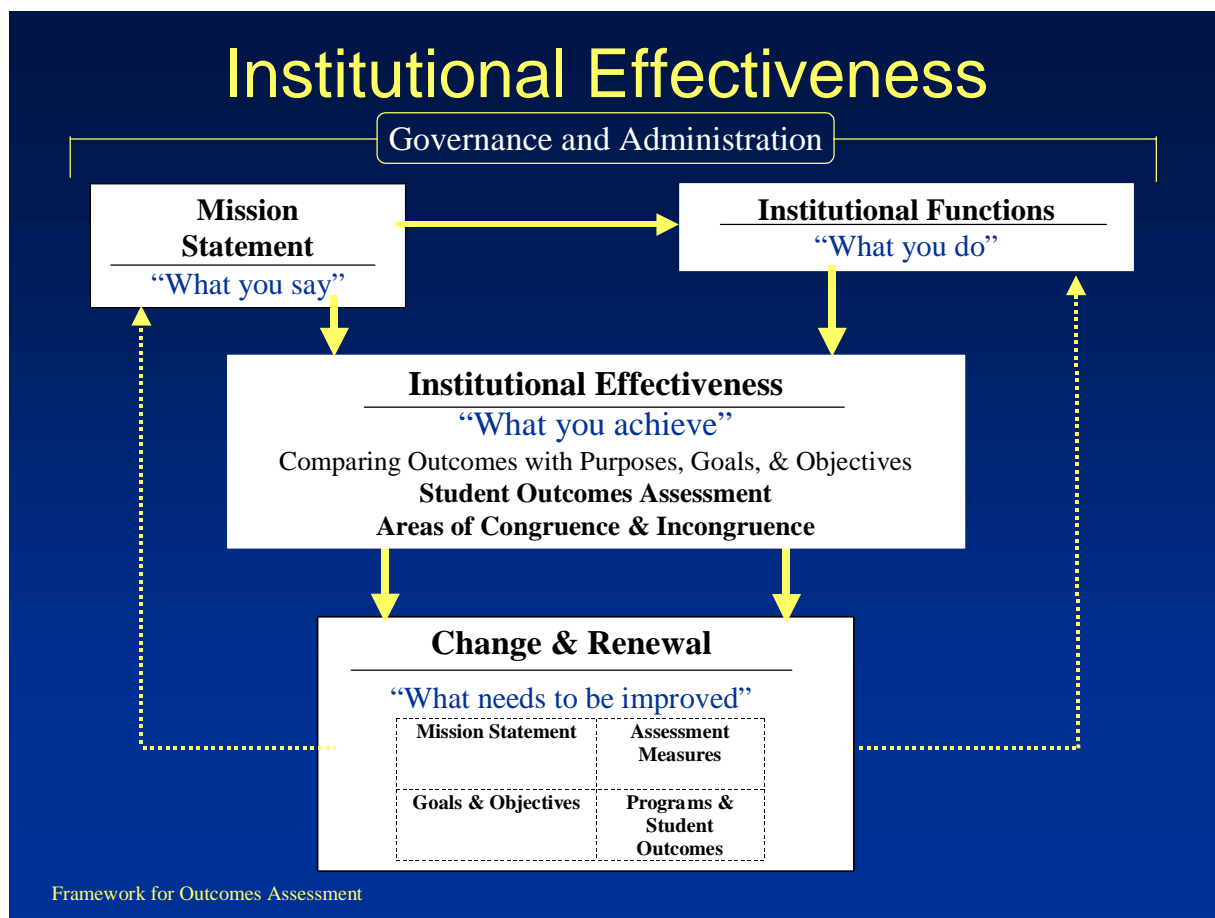
Though it is not the only means of doing so, student outcomes assessment provides an important campus tool for increasing effectiveness and efficiency. With simultaneous pressures to both contain costs and remain competitive, the outcomes assessment process offers a valuable means for colleges and universities to evaluate their current programs and policies, to innovate where necessary, and to assure their particular mission attainment.

What is the connection between student outcomes assessment and institutional effectiveness? Student learning outcomes are central to the purpose of educational organizations. The greater the evidence of congruence between organizational outcomes and the statements of mission, goals, and objectives, the more institutional effectiveness is demonstrated, and the more likely is re-accreditation. The accreditation process, then, may be thought of as an attempt to examine the connection between desired and actual outcomes, with the assessment process providing much of the evidence. While institutional effectiveness may be demonstrated in a variety of ways, student outcomes assessment supplies some of the most important documentation. Student Outcomes Assessment is the act of assembling and analyzing both qualitative and quantitative teaching and learning outcomes evidence, in order to examine their congruence with an institution's stated purposes and educational objectives.

Outcomes assessment also is an integral part of an institution's planning and resource allocation activities. Institutional goals and objectives provide the foundation for sound planning, and continuous self-study is an essential ingredient to test the adequacy of the resulting plans and budgets. Thus, evidence about student development and learning outcomes not only can be used to make broad judgments about institutional effectiveness, but also can be used internally to enhance curricular programs and to adjust planning and resource allocation.

Under ideal conditions, the mission statement clarifies institutional purposes, goals, and objectives -- *what you plan and hope to do*. The campus planning and resource allocation processes translate these ideals, through the faculty and staff, into specific instructional and co-curricular programs that impact student learning and development -- *what results you actually achieve*. The assessment process then assembles and examines the student outcomes evidence and enables the institution to identify areas of congruence and incongruence with purposes, goals, and objectives.

In order to understand and to rely upon the outcomes evidence, four issues must be addressed: the clarity and appropriateness of the mission statement, the utility of the institution's goals and objectives, the adequacy of the assessment measures, and the impact of the institution's programs on students (shown in the box at the bottom of Chart 1).

Institutional Effectiveness

Governance and Administration

Mission Statement
"What you say"

Institutional Functions
"What you do"

Institutional Effectiveness
"What you achieve"
Comparing Outcomes with Purposes, Goals, & Objectives
Student Outcomes Assessment
Areas of Congruence & Incongruence

Change & Renewal
"What needs to be improved"

Mission Statement	Assessment Measures
Goals & Objectives	Programs & Student Outcomes

Framework for Outcomes Assessment

First, just as articulating educational objectives is a necessary first step in measuring student academic attainment, articulating institutional purposes is a necessary first step in demonstrating organizational effectiveness. If a mission statement does not exist, or has been ignored and forgotten, or is too generic to be taken seriously, or in other respects is no longer a helpful reality for the campus, the institution needs to articulate a current and clear mission.

Second, any statement of mission or purpose needs to be translated into clear goals and objectives in the form of specific short-range and long-range plans. Such statements of intent bring concreteness to the institution's broader mission, thus enabling the campus to assess the congruence between its expectations and its actual outcomes. In fact, assessing institutional effectiveness is problematic in the absence of such plans. Moreover, by equating congruence with effectiveness, we tacitly assume that the purposes, goals, and objectives are the "right" ones for the institution at that particular moment in its history when, in fact, a lack of congruence might conceivably indicate the need for changes in the mission and goals statements themselves, rather than in the outcomes. As institutions evolve and student clienteles change, alterations in institutional purposes and aims may be needed.

Third, the outcomes assessment measures themselves may be inadequate and need improvement. The collection of appropriate outcomes data is a challenge that is fraught with

problems of measurement and design. Even though learning and growth may be taking place the qualitative and quantitative measures may not be sensitive enough to measure the change and development that is occurring. Most campuses have found that longitudinal, multi-measure studies produce more meaningful results than one-time, single measure studies. Student interviews, faculty evaluations, periodic program reviews, opinion surveys, alumni studies, and student test performance, measured over time, all constitute complementary ways of obtaining useful feedback.

Fourth, incongruity between campus goals and actual outcomes usually suggests the need to improve educational programs, especially if mission clarity and inadequate measures do not appear to be a difficulty. To the extent that student learning and growth is not occurring, the institution needs to take corrective action. Various alternative actions are usually coordinated through the curricular, planning, and resource allocation mechanisms on the campus.

Rather than a "congruent" versus "incongruent" conclusion, it is more likely that an institution will find evidence of partial educational attainment: outcomes that are congruent with campus goals in some respects, but not in others. The campus may be quite proud of one kind of student outcome, but quite shocked at the lack in another important area. For example outcomes assessment may suggest that one population of students experiences significantly more growth than other populations, or that one part of the curriculum is having a greater impact than other parts, that program improvement is needed in some areas but not in others. Thus, assessment is inherently formative, developmental, and improvement oriented.

IMPORTANT USES OF ASSESSMENT

Thus there are two principal uses of assessment for colleges and universities: the central and traditional use of assessment is as an impetus for **improvement** (formative evaluation); but there is a second necessary use that focuses on **accountability** (summative evaluation). The ultimate goal of assessment is to improve teaching and learning as well as to contribute to the personal development of students. But if we are able to accomplish that goal, we can simultaneously demonstrate our educational effectiveness to external stakeholders.

The Ancient Roman God Janus was the God of Doors and Gateways. Like the two sides of a door, Janus has two faces -- one looking outward and one looking inward. The classic Janusian challenge for most of us is resolving the tension between the internal and the external uses of assessment and performance. In public and private institutions alike, we face the need to improve ourselves and to become better teachers, learners, scholars, and administrators. To accomplish this, we need to expose our weaknesses and identify what needs to be changed. However, the very act of such openness runs the danger of reducing our market appeal and our resources, especially in an atmosphere of fierce competition and performance funding.

Various Regional Accrediting Associations, (most prominently Middle States, North Central, and now WASC) attempt to resolve this tension by requiring each campus to present evidence of student learning and growth as a key component in demonstrating the institution's effectiveness. Thus, to be accredited, each of us is expected to gather and present evidence that

we are accomplishing our educational goals. Simply put, our goal should be the improvement of student learning and growth. Campuses need to carry out assessment and self-evaluation not for external accountability, but for internal enhancement. Outcomes assessment does not judge undergraduate education, but improves it. Faculty, especially, identify with this emphasis.

However, in an atmosphere of scarcity, those campuses that can measure their effectiveness will do better in the competition for external resources than campuses that cannot. And on the campus, those academic departments that are able to provide Presidents and Provosts with evidence about the impacts they are having on their students will be more successful in the competition for campus resources than academic units not able to provide such evidence.

Thus, the action by Middle States, NCA, and WASC properly calls our attention to two principal uses of assessment -- improvement and accountability. These dual emphases, these twin purposes, seem to offer a constructive path. They provide the motivation/foundation for our internal development, at the same time recognizing the need to demonstrate our effectiveness to stakeholders.

Colleges and universities are likely to pursue four assessment goals – the first two are improvement oriented and second two are accountability oriented:
(1) to evaluate and improve the quality of academic and co-curricular programs; and
(2) to assist colleges and universities to identify students' academic and personal development needs.
(3) to provide public accountability and accreditation evidence for institutional quality and educational effectiveness; and
(4) to provide alternative criteria for making program and resource allocation decisions.

For Improvement. Although assessment findings will be used by various publics to judge whether an institution accomplishes its purposes, the primary use of assessing is to improve both the quality and quantity of learning for students as well as to respond to their personal development needs. In an assessment program designed and implemented by the faculty, expectations should be clear so that faculty may use assessment findings for continuous educational improvement. It is not sufficient only to _do_ assessment. Assessment findings must be _used_ to discover what works and what does not work in order that an institution may realize a commitment to excellent teaching and effective learning. Assessment promotes self-reflection and evidence-based thinking about teaching and learning and student growth. Within the improvement context, there are a number of important questions that institutions should ask themselves. Such questions might include, but are not limited to, the following:

- Has the institution developed programs to address the deficiencies of entering students in a variety of skill areas?
- Has the institution examined the influence of course selection and course sequence in relationship to student learning outcomes?
- How successfully do students transfer learning and skill development in general education into their major programs?

- Have faculty revised the curriculum in general education or major programs based upon assessment findings?
- Has the institution designed programs to enhance the personal social growth of students?

The answers to these questions on a specific campus should point to actions which need to be taken. Because faculty are closest to these questions, they are also the champions of improvement: using outcomes assessment, faculty members can decide on useful interventions and remedies for change. After analyzing assessment findings, faculty can build an institutional agenda which, in cooperation with administrators, can be translated into an action plan. This response might include curriculum development, pedagogical changes, faculty development initiatives, and reallocation of resources to suggest but a few possibilities.

Thus, teaching, learning, assessment, and outcomes may be thought of in terms of a feedback loop in which teaching influences learning, learning influences outcomes, and assessment of outcomes is used to influence/improve teaching and, ultimately, learning.

The Teaching-Learning-Assessment Loop is the locus of change in educational institutions
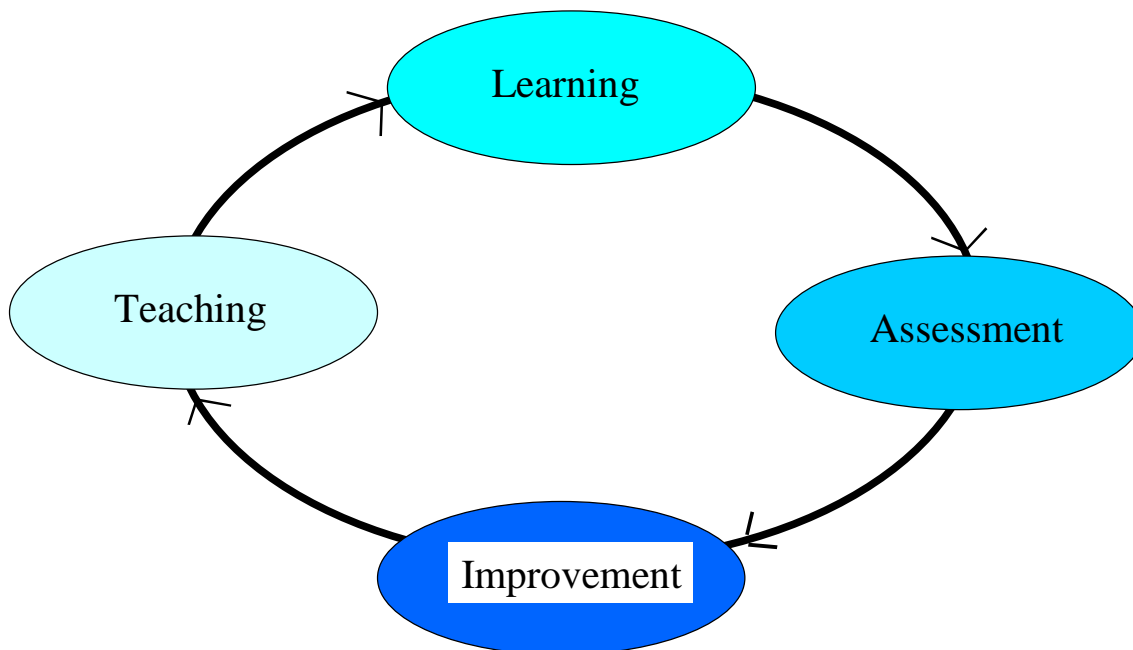
While outcomes assessment, as defined above, has a clearly *academic* thrust (i.e., directed toward the improvement of teaching and learning), outcomes assessment itself must be concerned with the entire spectrum of institutional goals and objectives, including those which may not be tied

directly to particular academic courses or programs. In fact, to the extent that institutional goals for research, service and other important endeavors impact teaching and learning, the outcomes of the institution's goals for these activities should be assessed as well.

Consider, for example, student advisement. For institutions with clearly defined goals and objectives for this function, no matter where it is housed or how the service is delivered, the assessment of advisement outcomes would proceed in the traditional way by attempting to establish evidence for congruence between the advisement goals and objectives and the actual advisement outcomes, appropriately measured. The ultimate purpose of both the exercise itself and the results obtained would be the improvement of teaching and learning, and *not* just the improvement of advising as separate from agreed-upon teaching and learning goals.

Although approaches to outcomes assessment do not need to be elaborate, they should be thorough, persistent and self-sustaining in order to support continuous improvement. An institution should be able to demonstrate that the analysis of outcomes assessment findings have been used as a basis for ongoing self-renewal.

For Accountability. It is important that institutions respond fully and accurately to a variety of public demands for accountability regarding institutional quality and effectiveness. Although each institution, on the basis of its own assessment program, would share its assessment findings publicly, its outcomes could only be compared with those of other institutions sharing common institutional and program goals.

The outcomes achieved through institutional planning provide a broad context for assessing overall institutional quality and effectiveness. Within that context, student academic achievement is a critical component in making the determination that an institution is accomplishing its educational and other purposes. It is essential that institutions develop campus-wide assessment programs through which student academic achievement can be documented in order to provide the basis for making a summative evaluation of institutional effectiveness. Within the accountability context, appropriate questions might include, but not be limited to, the following:

- Is there a clear and appropriate relationship between institutional planning goals and the outcomes of planning?
- Do the institution's curricula and academic support services respond to the needs of entering students as revealed by assessment findings?
- Does the assessment plan include multiple assessments which measure both knowledge and process, i.e., the ability of students to apply their learning in response to a new stimulus?
- Do assessment findings provide evidence that students are meeting faculty expectations at the point of graduation?
- Do the academic expectations set forth by faculty adequately reflect the public's expectations for defining the educational attainment of college graduates?
- Is there an active partnership between Student Affairs and Academic Affairs in providing programs and services contributing to personal and academic development?

ENGAGING FACULTY IN ASSESSMENT

The ideal assessment process emerges from a partnership between the administration and the faculty. While visible and supportive leadership is often needed from the President, Vice Presidents, and Deans, it is the faculty that must be at center of any institutional outcomes assessment strategy. As the constituency most vitally involved in guiding the teaching/learning process, the faculty brings the most relevant experience, and often the keenest professional expertise, to the outcomes assessment task. So too, the faculty are the locus of improvement, deciding on useful interventions and remedies for change, based on the information from assessment.

Many institutions rely primarily on the faculty; however, faculty cannot spontaneously administer a campus wide assessment plan. The institution must facilitate faculty involvement through information, guidance, and mechanisms of support. In other cases, the size of the institution makes it possible to set up of a special office for assessment and hire specialists in assessment to facilitate some centralized collection of data. Clearly, it is a delicate balance between providing enough structure to make assessment happen without taking away faculty involvement. Ownership by faculty is essential to maintain commitment over time and to be sure the results make a difference.

Faculty are most enthusiastic about assessment when they fully understand what assessment is and how they and their students can benefit. If the focus is only on accountability, assessment appears intrusive and a threat to academic freedom. When assessment is focused on improvement of teaching and learning, faculty recognize it as connected to their interests.

To generate faculty commitment to assessment, administrators must respect the time commitments, value systems, and priorities of individual faculty members as well as of the campus. Approaches to assessment that work for one faculty member may not work for another. Approaches to assessment on one campus may not fit another campus. To encourage broad faculty participation, assessment must be meaningfully integrated into ongoing activities, not an additional, "extra" burden. To endure, the assessment program needs to be anchored in institutional goals and link outcomes to agreed upon actions.

Realistically, it does not take participation by every faculty member to have a meaningful assessment program. And it does not require assessment of every course and every program to have a strong basis for continuing improvement of learning. A simple rule of thumb is start with what you have and build on it. It is easiest to start at the classroom and department level because this is the most direct point of involvement for faculty and students, and faculty are familiar with and curious about developmental feedback for individual courses and programs. Some outcomes are best measured at the individual course level, others at the department level, the college level, and the university level. Faculty have a role in developing measures at each of these levels and can most easily get involved if assessment is decentralized.

Classroom Level. To get started on assessment, faculty can apply many classroom assessment techniques to their courses. At the outset they must state clearly their goals and

objectives that answer key questions: What should students learn? How well are they learning it? How do we know? How can this information improve teaching and learning? To answer these questions, the assessment strategy must focus on behaviors that can be changed and need not be complex. One of the great successes of the classroom research movement, built on classroom assessment methods, is that it has helped faculty find answers to real and puzzling questions they have about students and learning in their own classroom. Classroom research can also help students become actively involved in understanding their own learning experience. Thus techniques designed to help faculty understand which of their students is learning and how, also can help students monitor their own progress and become more aware of the skills and strategies they need to enhance their learning. Many of the most engaging and effective assessment efforts, strengthen the partnership between learners and teachers.

Program Level.   Faculty should also be actively involved in assessment at the program level. Assessing the curriculum or department sequence of courses is often anchored in the periodic campus wide program review process. Data gathering and analysis can lead to strengthening course sequences, eliminating or revising courses as fields change, and developing new courses to meet new needs. When assessment is tied to periodic program review, it not only provides appropriate structure but also a stake in the results, for budget reallocations often occur based on the findings of periodic program review.

Institutional Level. Assessment of outcomes at the level of institutional effectiveness can also build on faculty expertise. Faculty participation in the accreditation self study provides an opportunity for a broad view of learning both in and out of the classroom. A broad range of assessment issues can be included such as the effects of participation in co curricular activities, information literacy, and the climate of acceptance for diversity in the residence halls. Committees are a powerful part of institution wide assessment efforts. Such a communal and collaborative process is congruent with self-governance, takes advantage of group energy, and can extend awareness of the importance of assessment.

To encourage active faculty participation in assessment, many campuses have successfully used small grants programs to stimulate pilot projects and teamwork. Other campuses committed to continuous improvement programs have been able to link these efforts to the curriculum and help faculty see assessment as a basis for constant self-renewal. In that context, assessment is something that faculty do for themselves not something that is done to them. Assessment, like faculty development, can be a respected vehicle for professional renewal of faculty and the improvement of teaching. Many faculty find that their research training in their disciplines is useful and applicable. When assessment is intellectually interesting, it has meaning to faculty.

Another key to faculty involvement in assessment is providing many ways for faculty to learn about and try out alternative approaches. Those who manage assessment programs need to have some tolerance for a wide variety of activities going on simultaneously. They need to be able to start where faculty are and provide a wide variety of ways for faculty to learn about assessment including newsletters, workshops, individual consultations, and group sessions. They need to be able to work with faculty opinion leaders and campus committees to bring coherence

to the program. Assessment programs need strong leadership so that they can remain flexible and adaptable to changing needs.

Ideally, assessment is an ongoing activity, a habit of self renewal, supported by administrators, seen by faculty as an intellectually interesting professional responsibility, deemed a commitment to students, and made a basis for curricular and institutional change. When that happens, outcomes assessment will have a profound impact on learning.

FOCUSING ON KEY AREAS OF ASSESSMENT

While outcomes assessment may be conducted for a variety of purposes and uses, the centrality of teaching and learning demands that the process should have a clear academic focus, directed primarily toward the improvement of teaching and learning.   Thus, to the extent that goals for research, service and other important institutional endeavors impact teaching and learning, the outcomes of those activities should be regularly assessed. In this context, the assessment of institutional effectiveness is based on the extent to which programs, services, resources and functions are accomplishing an institution's intended educational outcomes. Because learning is most authentically associated with the intended outcomes of higher education, the systematic study of student learning must be at the center of efforts to assess institutional outcomes.

In focusing an institution's assessment efforts on teaching and learning, several areas of educational activity have special significance in providing a broad framework for the linking of purposes, resources, and educational outcomes. These include: *basic skills (developmental) education, general education, the major,* and students' *personal and social development*. A fifth area, focusing on the special outcomes of an institution's program of *graduate education,* is also appropriate to institutions offering master and doctoral studies.

The discussion below suggests practicable approaches to the formulation of assessment indicators in each of these areas. Underlying the implementation of these strategies is a presumption of specificity in the goal statements whose outcomes are to be measured. Developing *well defined goals and objectives* that characterize in measurable terms the kind of composite skills, understanding and knowledge that institutions of higher education seek to foster is an essential prerequisite to authentic assessment in these areas of focus.

Equally important in the formulation of assessment indicators is the need to seek *multiple measures* of student learning. Certainly, no single indicator or measurement strategy can be expected to capture a sufficient range of outcomes associated with student learning. Indeed, the multidimensional nature of students' learning and development demands a broad range of coordinated measures to provide a *synthesis* of the outcomes of an institution's educational efforts. To assure the *reliability* of the means of assessment, multiple measurement strategies should be utilized to assess each intended student outcome. In this way, the results from these varied approaches can be compared as a means of confirming the appropriateness of the measurement indicator.

An additional concern is the need to include some provision for *analyzing the impact of institutional assessment practices* upon students, the institution and the teaching and learning process. Because the widespread practice of assessment in higher education is a relatively recent development, knowledge of its effects on student performance, instructional methods, and academic and public policy remains limited. Future assessment programs will almost certainly benefit from current research on the impacts of assessment in these areas. Such research should attempt to ensure, especially, that an institution's assessment program is having a beneficial effect on the broad range of students it enrolls through analyses of the impact of its assessment practices upon students of different educational, socioeconomic and ethnic backgrounds. Such analyses permit faculty to examine the issues of access and equity in the broader context of educational quality and to identify probable underlying causes of students' academic achievement. Analyses of the educational experiences and backgrounds of students who have demonstrated superior performance on college assessments is also helpful in identifying successful instructional programs for students with different personal, educational, and career interests.

Basic Skills (Developmental) Education

By enhancing the basic skills of under-prepared students, an institution assumes an enabling role that supports its ability to achieve its broader educational mission with respect to the general and specialized education and affective development of students. Specifically, basic skills assessment has a two-fold thrust: it seeks first to determine the extent to which students possess the skills of thought and communication believed to be essential for a students' participation in a college education, and second, to determine whether the instructional services provided by the institution are effective in remedying the underlying deficiencies.

In recent years, Colleges and universities have directed much attention and resources to the problem of remedying increasingly evident deficiencies in the preparation of entering students. Comprehensive campus programs of developmental education are a specific outgrowth of the concern for this problem and generally provide for *testing* of entering students in mathematics and communication skills; *placement* of deficient students in an appropriate remedial sequence in basic skills; *special counseling, advisement, and tutorial services* provided in resource centers which focus on the needs of developmental students; and *post-remediation tracking* of developmental students to monitor the effectiveness of remedial interventions.

Developmental education is not only concerned with correcting student deficiencies in basic skills as a means of increasing the public's *access* to higher education, but may also be concerned with helping college students make the *transition* to more advanced-level skills to increase their success in the curriculum. For this purpose, many colleges and universities maintain skill development centers that provide on-going assistance to all students to increase their skills in writing, computing, and analysis of written materials. Thus, the principal intents of an institution's program of developmental education are really two-fold:

1. lessening or eliminating the gap between the basic skills of beginning students and the prerequisite skills for beginning college courses; and

2. improving students' chances, in general, for success in college courses.

When viewed in these terms, it is clear that basic skills assessment is more than just placement testing. It must have a close relationship to courses and programs and include meaningful indicators of the performance of students in both developmental classes as well as in subsequent classes in the credit curriculum. As a primary concern, assessments of developmental education should seek to provide assurances that students receiving such interventions perform well in subsequent college-or advanced-level coursework. The assessment system should also provide a view of student satisfaction and other factors influencing student motivation and development and provide on-going feedback for the improvement of teaching as well as student learning.

Meaningful appraisals of the performance of students in developmental classes should assess their progress relative to carefully articulated exit proficiencies whose achievement certifies the readiness of students' for college work. It is necessary, therefore, that exit proficiencies for developmental courses have an established congruence with the entrance criteria for beginning credit classes. The strategies for the required course embedded assessments in developmental classes can be the same as those employed in the assessment of general education. The use of standardized test instruments to assess progress may also be particularly appropriate given the wide range of coordinated placement, diagnostic, and value-added proficiency instruments available at the college level. Thus, basic skills assessment programs may want to consider the use of instruments, such as the College Board. English. Composition, the CLEP-Composition, the Doppelt Math Exam, the Nelson Denny Reading Test, ACT COMPASS, and ACT ASSET.

In a fully operational assessment system, the performance of developmental students in post-developmental courses is part of the regular assessments of students' progress conducted for general education, the major, and the affective domain. The formulation of assessment indicators specific to developmental education should include comparisons of student achievement between developmental students and the rest of the student body. Because developmental education seeks to minimize - if not entirely eliminate - academic differences between developmental and non-developmental students, the use of such comparative measures is not only appropriate, but also necessary for institutions seeking to determine the extent to which this goal is being achieved. Relatively simple assessments of this outcome can be formulated around comparative measurements of course completion rates, grade point average, retention and other routine measures of the educational environment.

In developmental education, as in other areas of teaching and learning, self reported measures of attitude, self image, satisfaction and goal completion provide information about important non-cognitive factors which influence in so many ways the outcomes of the learning process. A feasible method utilizes periodic surveys of students according to a longitudinal design that includes at least the determination of the student's dispositions at entry and a follow-up soon after exit from the developmental program. The "value-added" can be based on students' self reported progress with respect to a list of intended outcomes (e.g., "learning how to communicate in writing", "learning how to work better in groups", etc.), with each item requiring a two-fold response regarding: a) how important the student feels the trait is, and b) how much

the institution has contributed to development of that trait. In general, such self-reported measures have proven to be reliable indicators of student progress for purposes of cohort analysis but not for assessments of individual students. Institutions should also be mindful of the difficulties associated with value-added when changes in students' attitudes and abilities may be partially or entirely due to experiences outside the college and its curriculum.

General Education

The goal of general education is to develop the broad abilities, skills, ideas and values that shape a student's capacity to address problems across varied academic fields. Among the important abilities underlying the transfer of knowledge are, for example: the ability to think critically; the ability to develop problem solving strategies; effective writing and oral communication; technological literacy, including especially library and information technologies; familiarity with mathematics and quantitative analysis; and a range of attitudes and dispositions associated with human values and responsible judgment.

These attributes of the generally educated student are clearly outcomes resulting from students' exposure to the intellectual processes utilized in varied disciplines, including the arts and literature, history, the social and natural sciences, and mathematics.

Such exposure may be provided in *distribution requirements* which ensure breadth in students' elective course-taking patterns or in specially designed *core courses* required of all students that emphasize the development of general intellectual, attitudinal, and communicative skills. Whatever the design, the expectations of general education places two important demands on the curricula formulated by colleges and universities. First, the learning expectations associated with general education demand the concerted attention of the *whole* institution, rather than being the responsibility of any specific department or unit. Therefore, the likelihood that these outcomes will be developed across the curriculum is increased by a statement of the intended learning outcomes; a statement that provides clear direction for assessment and defines the commitment of the entire institutional community. Second, the expectations for students' general education include not only information skills and knowledge of varied academic fields, but also the ability to apply these skills and knowledge in an interdependent and culturally diverse world. The incorporation of multicultural and international themes into the general education curricula of many institutions serves to help students understand diversity in the complex world in which they live.

The analysis of student achievement with respect to general education utilizes different measurement strategies for assessing competencies in four broad areas: Cognitive Abilities (critical thinking, problem solving), Content Literacy (knowledge of social institutions, science and technology), Literacy Skills (communication, information skills) and Value Awareness (multicultural understanding, moral and ethical judgment).

Authentic demonstrations of general cognitive abilities and content literacy are usually thought to be associated with the use of *standardized test instruments*. Indeed, more so than in the past, recent test designs attempt to go beyond information recall and focus on students' ability

to think and analyze new situations across the curriculum. In many cases, the results of these objective tests for seniors can be validly juxtaposed with the scores of the same students when they were freshman, thus providing documentation for the *value-added* by the institution's program of general education.   Some of the same instruments also have diagnostic validity, designed to provide feedback to redirect and enhance student learning.

There are many examples of assessment instruments that have been developed to reflect student general education critical thinking and problem solving.   These include the Watson Glazer Critical Thinking Appraisal, the California Critical Thinking Skills Test and Dispositions Inventory, Cornell Critical Thinking Test, ETS Tasks in Critical Thinking, the ACT Assessment, ACT College Outcomes Measures Program (COMP), ACT Collegiate Assessment of Academic Proficiency (CAAP), the Assessment of Reasoning & Communicating (ARC), the Problem Solving Inventory, and the Reflective Judgment Inventory, among others.

Tests of writing and communication skills include the ACT COMP writing skills assessment, ACT CAAP, College Board College Level Examination Program, ETS PRAXIS I-Academic Skills Assessment, the ETS Academic Profile, ETS Test of Written English and TOEFL, among others.

Tests of general content knowledge include the College Board Advance Placement Tests, ACT CAAP and COMP, The ACT Work Keys in occupational programs, ETS Descriptive Test of Language Skills (DTLS), College Basic Academic Subjects Exam (C-BASE), among others. Access to a rich array of assessment instruments can be obtained through the links on the AIR website http://www.airweb.org/.

While test scores are readily quantifiable, their interpretation in terms of student achievement is sometimes elusive, depending to a large degree on the validity of the test constructs in relation to the learning goals they attempt to measure. This problem prompts some researches to develop *self-reported measures* of progress obtained through locally designed and published survey instruments. The assumption underlying this approach, that students are generally accurate reporters of how much they have gained as a result of their educational experiences, appears to be supported by a credible body of research evidence. Much of this evidence has been reported by Pace (1984) and others and finds that students' judgments are generally consistent with other more objective evidence, when it exists, and with what would be expected based upon correlations with related factors such as student involvement and satisfaction. Some of the more widely used examples of self-report instruments include the ACT College Outcomes Measures Program (ACT-COMP), College Student Experiences Questionnaire (CSEQ & Community College CSEQ), National Survey of Student Engagement (NSSE), College Assessment Program Survey (CAPS), Scales of Academic & Social Integration and Growth (reflected in the ACT/SUNY Outcomes survey).

Beyond institution-wide testing and survey practices, many institutions are beginning to adopt the view, advanced by Cross (1988) and others, that assessment of student learning is best accomplished in the place where that learning occurs - in the classroom. The placement in courses across the curriculum of specific expectations for the general education of students and

the coordination of *course-embedded assessment* tasks to document their attainment is a strategy which holds much promise in providing a natural context for the assessment of cumulative learning. Indeed, course embedded assessment may well be unlimited in the range of outcomes which can be assessed, including the cognitive abilities as well as the literacy skills and value awareness outcomes associated with general education.

As an example, relatively straightforward assessments of student literacy are conducted at many institutions through locally developed course embedded instruments across the curriculum. Typically, these assessments present students with natural literacy tasks such as applications involving library resources, interpreting published charts and graphs, and the reading, analysis and interpretation of issue-oriented essays - all of which are conducted in the contexts of the varied disciplines students contact during their educational careers.

Portfolio assessment, or the assessment of an individual student's work over time, is another emerging practice for gathering information concerning students' cumulative learning and development. An assessment portfolio can include term papers, laboratory reports, student-authored computer programs, and evidence of thinking processes in mathematical and scientific problem solving. It can also document projects exhibitions, artistic creations and other examples of imagination and perseverance.

Another emerging practice which provides opportunity for an integrated assessment of students' general learning as it links with learning in the major field is the *capstone course,* now required of all graduating students at many institutions. Typically, such courses are conducted as seminars and immerse the student in the culminating examination of a significant real world experience, issue, or problem through which the student must demonstrate an ability to integrate knowledge and skills across a variety of fields, including those of general education and the student's major field of study. Although general education, in many ways, fosters a set of generic learning outcomes and common assessment criteria which can be applied equally to all students, capstone experiences recognize a variety of expectations in the application of such learning according to a student's major program of study. Indeed, selective student composition provides a useful variation of the capstone course in which a specific type of student group, such as athletes or business administration majors, are examined with respect to their performance in a capstone experience. In either case, the most obvious advantage of the capstone is that assessment of cumulative learning is not reduced to one test, faculty do not teach to the expectations of a specific assessment instrument, students are engaged in their project, and have many opportunities to share their experience with others. Often, community professionals become participants or project evaluators while program faculty are challenged in the design of the capstone which fosters understanding of the cumulative learning of their students.

The Major Field of Study

The opportunity for concentrated study in a major academic field has traditionally been the centerpiece of higher education. While educators rightly stress the importance of liberal learning, general competencies, and co-curricular experiences in fully fostering student growth, the focal point of the college experience for most students continues to be *study in depth*, guided

most commonly by concentrated coursework within academic departments. It is primarily through this component of the departmental curriculum that faculty find opportunity to engage the discourse and scholarship associated with their disciplines while, as educators, advancing the fundamental goal of the academic major as a program of study. That historical goal is described by the Association of American Colleges (1985) as follows:

> To develop students' ability to apply the intellectual capacities developed through general education to a detailed and disciplined study of a specific area of knowledge and set of problems.

Along with a continuing emphasis on single-discipline majors has come a growth in variations of the major that do not require the depth of study needed by professional scholars and practitioners of the field. *Interdisciplinary programs* are variations of the traditional major which incorporate broad learning to examine the interrelated problems that develop within an increasingly complex environment and diverse social order. *Professional and occupational programs*, on the other hand, are associated with the focused learning required in the practice and application of more specialized skills demanded in an increasingly interdependent civilization. For whatever purpose the major is to serve, it is clear that the exposure of students to general education is as necessary to the practice of the major as is the acquiring of specialized knowledge and skills in a discipline.

Effective assessment programs are those that seek to assess the general and particular knowledge and skills that graduating students acquire as a product of the total learning in the major. While the sum total of courses taken in the major might be expected to approximate the latter in some way, the coherence and comprehensiveness that develops the collective capacity of a graduate to integrate learning almost certainly requires a more comprehensive view of student attainment in each discipline. A critical prerequisite for developing authentic assessments of such *cumulative learning* is the need to involve faculty in a decisive process which defines the rationale and content of the major; that is, to have faculty enunciate what it is they seek in a graduate in the major. Such expectations can, of course, be described by the faculty in a number of practical ways: in outcome descriptions of the content of the courses they teach; in definitions of required proficiencies graduates must achieve; in requirements involving certification of the culminating work of a graduate. Whatever particular priorities are ultimately reflected in these descriptions, faculty must be called upon to express in the language of objectives, purposes and effects what it is they seek in a graduate; only then can authentic assessment of the major be built since the selection of valid assessment instruments presumes a knowledge of what it is that needs to be assessed.

Documenting the extent to which the defined learning outcomes in departmental academic programs are being achieved can be accomplished through many of the same assessment strategies identified for general education, several of which are listed below. The administration of cognitive tests of general education to rising juniors after two years of college and major field tests to graduating seniors are among the most efficient of these assessment practices. Information derived from these alert faculty and administrators of the need to strengthen various aspects of the curriculum; inform students about their educational progress

and needs; and inform policy makers about the need for resource allocation to support various aspects of the instructional program and services.

Chart 1

ASSESSMENT   STRATEGY   **OUTCOMES   ASSESSED**

  Capstone Course   **Cumulative Learning**

  Thesis/Research Project   **Analytical & Information Skills**

  Portfolio of Learning Experiences   **Growth and Improvement**

  Course Embedded Assessment   **Specific Competencies**

  Standardized Tests   **Knowledge & Cognitive Abilities**

  Local Comprehensive Tests   **Program-specific Learning**

  Surveys   **Student Attitude Development &**
                                                      Activity Involvement

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Educational assessments of program majors typically extend beyond the assessment of learning outcomes and include, as additional indicators of program quality, various aspects of the educational environment which are related to or affect student learning in the major. The point is that along with outcomes, environmental experiences are especially critical to assess since (and this is particularly true of the departmental major) the environment includes those things faculty can directly control in order to provide for the development of desired outcomes. The very purpose of assessment, in fact, is to learn how to structure educational environments in order to maximize the development of desired student outcomes (Astin, 1991). Attainment in the major is another area where exams and instruments have been constructed to assist us in the task. Many of these have been developed by professional organizations in the disciplines such as the Fundamentals of Engineering Exam, the AACSB Business Management Test, the American Chemical Society Exam, the ETS PRAXIS tests for beginning teachers, the National Teacher Education tests in professional knowledge and in various specialties. Other tests have been developed by national testing companies such as the ETS Major Field Achievement Tests and GRE Subject Tests, the CLEP-Subject Exams, ACT Proficiency Exams. In addition, to evaluate student attainment in the major many institutions, rely on locally designed exams, course

embedded assessments, performance or field experiences, capstone experiences, and self-reported mastery on dimensions that are locally constructed.

Grades and student ratings can play a legitimate, though not the sole role in the assessment process. Grades in core classes, for example, may serve as valid indicators of student learning in the major and in general education when the grade criteria for these classes are correlated to defined learning expectations and competency levels. Student ratings constitute at least an indirect measure of the instructional process, and they may be especially useful indicators of instructional strengths, as well as weakness needing attention.

Personal & Social Development

Institutional statements about the goals of higher education almost always include aspects of personality and character as well as intellect. Although the personal and social aspects of students' development are seldom an explicit teaching goal of courses in the academic disciplines, all faculty members attach importance to such affective outcomes as tolerance, self-understanding, leadership, and objectivity. However, because of the implicit nature of such outcomes and their lack of specific placement within the total college experience, personal and social development, like general education, is a less practiced area of assessment than other areas of teaching and learning.

Although most agree that affective outcomes are derived from virtually all forms of student involvement with the institution, the deliberate outcomes concerning student development are ordinarily those associated with advising, tutoring, counseling, financial aid, discipline, health, government, athletic, social and other out-of-class activities, and student-faculty-administrative relations -- the myriad of out-of-class activities that together make up the *co-curriculum.* Out-of-class education cannot be viewed as a mere supplement to the curriculum in carrying out an institution's educational mission, but rather must be seen as an integral part of its educational program. To accomplish this, a more deliberate partnership between the formal and informal portions of this program, that is, between the credit curriculum and the non-credit activities of the co-curriculum, is needed. That partnership should be evidenced in well-defined goals and objectives which articulate an institution's expectations with regard to students' affective growth.

The systematic basis for defining such specific (behavior-referenced) objectives and selecting appropriate measurement variables to assess affective outcomes is provided in various empirical and theoretical taxonomies of the outcomes of higher education. The classification system developed by the National Center for Higher Education Management Systems, for example, is a synthesis of various frameworks of student outcomes and provides an inventory of more than 200 assessment items. Well practiced personal development outcomes in this taxonomy include those in four broad categories: *self-awareness and self-reliance, awareness of values, interpersonal relations, and leadership qualities.*

Although college professors rarely attempt to measure non-cognitive outcomes of instruction, researchers in many disciplines have long utilized a variety of data gathering methods to assess non-cognitive dimensions of student growth. *Curriculum-embedded performance measures* are derived from direct observations of students' performance in such curriculum-based activities as internships, work examples, group problem-solving exercises, projects, oral presentations, debates, visual displays, demonstrations and observer check sheets.

Self-report measures by students and alumni can provide two relevant types of information: perceptions of student experiences and the impact of those experiences, and reports of current status, activities, and accomplishments. Methods for obtaining student self-reports include such self-monitoring activities as the keeping of diaries and journals; student portfolios, when organized as "track records" of activities and accomplishments, can also serve well as a form of self-monitoring report. *Questionnaires and surveys* constitute a second category of self-report instruments especially reliable for assessing the progress of groups rather than individual students. Skillfully designed survey instruments can accommodate the assessment of a wide range of affective outcomes, including students' personal qualities (e.g., interpersonal skills, leadership skills, and self understanding), attitudes (e.g., social responsibility, motivation for learning, and understanding diversity), and goal attainment and satisfaction (e.g., occupational choice, educational objectives, and quality of the educational environment). The theories of student involvement (Astin, 1984) and quality of effort (Pace, 1984) provide a quantitative basis for assessing student achievement from scales which rate the extent and depth of students' self reported involvement in various activities (e.g., student union, athletic and recreational facilities, experiences in writing, library experiences) which reflect personal motivation and/or potential value. Available instruments to assist campuses in this effort include the College Student Experiences Questionnaire (CSEQ & Community College CSEQ), National Survey of Student Engagement (NSSE), and the Scales of Academic & Social Integration (reflected in the ACT/SUNY Outcomes survey).

Personal and focus group interviews are really variants of questionnaires which involve the use of an external facilitator in the data-gathering proceeding, coding and analysis. Two frequently used interview methods concern the analysis of Critical Incidents (Knapp and Sharon, 1975) and the analysis of Behavioral Events (McClelland, 1978). In these methods, students can identify the extent of their own growth with respect to a checklist of items and relate their progress or lack of progress to what they perceive as critical factors or causal events contributing to or preventing the desired growth.

Consensus-rendering techniques can be applied to develop a collective assessment among diverse participants, such as students, faculty, and external observers, as to whether a desired educational outcome has occurred, the extent to which it has occurred and why it has occurred. Although a number of formalized conference-type procedures can be used to develop the consensus, the most convenient and widely used format involves the application of card sorts and various modifications of the Delphi technique. This is an iterative process of feedback of survey results to respondents, repeated until the cycle no longer yields significant increases in group consensus.

Inventories, another very common non-cognitive data-gathering tool, consist of multiple-item or single-item scales used in the design of psychometric instruments to indicate characteristics of individuals. Some inventories are projective through theoretical formulations while others seek objective measures of personality which are empirically based. Published standardized inventories are available for a wide range of cognitive and non-cognitive outcomes with well-documented reliability and validity coefficients. Published reviews, helpful to prospective users in evaluating the quality and relevance of inventories, are available in a wide range of affective as well as cognitive areas. See some of the links in the AIR website http://www.airweb.org/.

Secondary data are data every institution collects for such regular functions as planning, budgeting, admissions, and grading. Some of these data may also have application in the assessment of learning and development outcomes. Such applications are referred to as "secondary data" because they usually do not involve direct observations of learning or development, as do the methods previously discussed. For example, if visits to the campus library increase significantly following a special series of lectures on bibliographic instruction, one can infer that the lectures have probably achieved their desired impact even though no direct cause-effect relationship has been established. As most secondary data, similar to this example, provide unobtrusive measures in a variety of outcome areas, their use is widespread in the practice of outcomes assessment. Secondary data, however, should never become the primary indicators of outcomes, but should be used to supplement and clarify interpretations of the results obtained from primary indicators. Taxonomies of potential unobtrusive measures for colleges and universities to consider are available in the literature. Many items are based on such simple observations as student attendance at extracurricular functions.

CONCLUDING PRINCIPLES FOR COLLEGIATE EDUCATIONAL ASSESSMENT

This manuscript summarizes the dimensions of outcomes assessment and offers assistance to campuses as they develop their plans and strategies. Effective assessments of student learning outcomes may be designed around a combination of direct and indirect indicators of student learning and progress. Direct measures of learning may be derived from program embedded evaluation practices or from subsequent tests of knowledge, performance, and skill. Other, less direct indicators may be derived from measurements of selected behaviors or characteristics of the educational environment which are believed to influence strongly the success and learning of students. **Chart 2** gives examples of commonly used direct and indirect measures of the learning outcomes we have been discussing in this paper.

CHART 2

OUTCOME	DIRECT OBSERVATION	INDIRECT OBSERVATION
SKILL DEVELOPMENT	Apprenticeships	Relevant Employment experience
	Mentorships	Meetings and seminars
	Skills Practica & performance	Course attendance
INTELLECTUAL	Pre-Post examinations	Course grades

GROWTH	Course-embedded practicals Papers, essays Faculty-student discourse	Self-reported abilities, knowledge, growth Nature and frequency of library use Frequency of faculty-student interaction
PROFESSIONAL GROWTH	Internships Assistantships Professional practicals Clinical training	Organizational Memberships Attendance at professional meetings Clarity of career goals Self-reported profess'l commitment, values
CUMULATIVE ACHIEVEMENT	Comprehensive examinations Integrative paper/report Oral interview Alumni and employer assessments	Cumulative grades Subsequent career attainment & earnings Leadership & community service

The classification of these as "growth" versus "achievement" indicators is largely a distinction as to the timing of the observation. Growth and development indicators presume that the observation is formative, occurring during the time the student is progressing through the program and providing some opportunity for corrective feedback. The achievement indicators, on the other hand, tend to be summative in nature, occurring as culminating experiences that reflect mastery of relevant skills and knowledge.

In the past 20 years, we have developed various empirical and theoretical models of student outcomes that describe the relationships among expected outcomes and the conditions that produce them. Several current models describe the impact of various personality traits, academic socialization, and participation patterns on the growth and development of students. Many of these models are described in Pascarella and Terenzini (1991). At the campus level, the value of a model is that it drives clarity of purpose and serves as a logic chart for explaining the relationship between outcomes predictors and the expected development of specialized knowledge, skills, attitudes, values, norms, and interests. A model serves as a roadmap and guide for assessment design, data collection, statistical analysis, and report writing. By using a model, the assessment team can be more efficient and avoid measuring everything every year.

For the past decade, assessment of student learning has been guided by principles of good practice that have been developed by national organizations such as AAHE and NASULGC, by regional accrediting bodies such as Middle States and North Central, and by specialized discipline-based bodies such as ABET in engineering and AACSB in business. Summarizing the above discussion and drawing upon these national guidelines, these then are the principles that are the most relevant for effective campus assessment practice.

The Assessment of Student Learning:

- Begins with educational values and goals that are appropriate to the mission of each institution, and works best when these goals are clear, explicitly stated, and measurable.
- Focuses primarily on educational effectiveness and the improvement of student learning, performance, and growth, inside and outside the classroom.

- Reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time. Campuses should use multiple methods of assessing student attainment and growth at educational beginning, midpoint, and completion markers.
- Requires attention to outcomes, but also and equally to the curricular and co-curricular experiences that lead to those outcomes. An outcomes model makes this process more efficient by providing a logical guide that streamlines the amount of data collection, data storage, analysis, and reporting.
- Works best when it is ongoing and not episodic.
- Fosters a wider improvement when representatives from across the educational community are involved. Faculty are crucial partners in the design and delivery of assessment programs, but administrative support and student involvement are important as well.
- Is most likely to lead to improvement when it is part of a larger set of conditions that promote change. Assessment programs work best when linked to strategic planning and program review, or some other institutional activity that encourages constructive change and improvement.
- Is structured so that the results can serve the twin purposes of internal educational improvement and external accountability to the public.

Recommended Readings in Outcomes Assessment

Banta, T.W., Lund J.P., Black, K.E., & Oblander, F.W.   Assessment in Practice: Putting Principles to Work on College Campuses. San Francisco: Jossey-Bass, 1996.

Banta, T. W. "Implementing Outcomes Assessment: Promise and Perils." New Directions for Institutional Research #59, Fall 1988.

Ewell, P.T. "Assessing Educational Outcomes." New Directions for Institutional Research #47, September 1985.

Jacobi, M., Astin, A., and Ayala, F.   College Student Outcomes Assessment: A Talent Development Perspective. ASHE-ERIC Report #7, 1987.

Pascarella, E. T. and Terenzini, P.T. How College Effects Students.   San Francisco: Jossey-Bass, 1991.

Ratcliff, J. L., "Assessment and curriculum Reform." New Directions for Higher Education, #80, Winter 1992.

Stark, J. S. and Thomas, A. "Assessment and Program Evaluation." ASHE Reader Series, Needham Heights, MA.: Ginn Press, 1994.

Terenzini, P.T. "Assessment with Open Eyes: Pitfalls in Studying Student Outcomes." Journal of Higher Education (November/December 1989) 60: 644-664.

Upcraft, M.L. and Schuh, J.H. Assessment in Student Affairs: A Guide for Practitioners.   San Francisco: Jossey-Bass, 1996.

Recommended Websites for Outcomes Assessment Resources

•American College Testing, Inc.: act.org
•College Student Experiences Questionnaire: indiana.edu/~cseq
•Educational Testing Service: www.ets.org
•Internet Resources for Institutional Research: airweb.org/links
•National Survey of Student Engagement: indiana.edu/~nsse•
NPEC Assessment Website: <nces.ed.gov/npec/evaltests/>
•Student Assessment Resources: <uncc.edu/stuaffairs/sar/>