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ABSTRACT

A study examined the types of outcomes that are currently measured in postsecondary vocational education and the uses to which data on institutional, program, and student outcomes are being put. Personnel from 54 of the 63 two-year institutions in 25 states that were originally contacted were interviewed. The respondents represented institutions that offer vocational curricula and that have between 712 and 92,000 students enrolled either part or full time. Most institutions reported conducting outcomes identification and assessment processes. The following data were collected: the types of outcomes identified and measured, outcome identification methods, identified stakeholders in outcomes practices, driving forces behind changes in outcomes practices, and uses of outcomes data. The most frequently identified outcomes (academic success, transfer success, student satisfaction, employer satisfaction, attainment of student goals, employment, licensure exam pass rate, skill attainment, job placement, and student persistence) all represented an expansion of the focus of postsecondary vocational education. However, the diversity of the different outcomes identified by different institutions indicated that a consensus on outcomes has yet to form in postsecondary vocational education. Eighty-nine percent of those interviewed reported that outcomes assessment had resulted in changes (including better decision making and planning, improved instruction, and improved accountability) at their institutions. (MN)

Exploring Alternative Outcomes for Postsecondary Vocational Education

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Over the last two decades, all levels of America's educational enterprise have come under increasingly stringent scrutiny. At least since the 1980s, policy makers, business and industry leaders, and educational reformers have called for increased performance and accountability in all aspects of education. While demands for reform are certainly not without precedent, this most recent round of criticism is unusual in its protracted length, in the diversity of organizations that have issued reports and offered recommendations, and in the scope of the reforms that are being advocated.

State governments and accrediting associations have been particularly influential in the movement to implement outcomes assessment in postsecondary education. According to Banta (1990), almost three-fourths of the states are recommending that their public postsecondary institutions make improvements in outcomes assessment. Further, all six of the regional accrediting agencies require that their member institutions attend to outcomes assessment issues in some way (Marchese, 1990). Recommendations of these groups have focused on creating assessment systems that are sensitive to measuring both educational processes and educational outcomes.

These shifting demands have compelled educators to assess the results of their efforts (Ewell, 1989). Postsecondary institutions are increasingly seeking to demonstrate that they are meeting reform requirements by improving educational processes, developing performance indicators, and conducting assessment to determine the quality of teaching and learning (Kreider & Walleri, 1988).

Postsecondary vocational education has been affected by each of these reform initiatives. It has also been influenced by the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 (informally known as Perkins II). This legislation mandates outcomes assessment in vocational curricula at all educational levels.

Description of the Study

It is possible to look at both the focus and the methodologies of outcomes assessment from either a "traditional" or an "alternative" perspective. In an effort to understand the full scope of outcomes practices in postsecondary institutions offering vocational curricula, the answers to four research questions were sought. Those questions were:

1. What outcomes are currently being measured in postsecondary vocational education?
2. How are these outcomes being measured by postsecondary institutions?
3. How are the results used by postsecondary institutions?, and
4. What changes have occurred at these institutions as a result of these practices?

Throughout this document, outcomes are viewed as the consequences of involvement in or with education. The term "assessment" relates to gathering and analyzing information about the impact of education, and about how education can be improved (Sims, 1992). Therefore, "outcomes assessment" refers to evaluative processes that determine the results of education. We define "traditional" as those outcomes that routinely have been used in the practice of postsecondary vocational education, such as job placement, occupational competence, program completion or retention, and earnings. These outcomes traditionally have been measured with licensure and certification tests, locally-designed tests, follow-up surveys, and self reports.

"Alternative" outcomes and outcome measures, on the other hand, refer to results that have *not* been used extensively by postsecondary vocational education. Examples of outcomes that fall into this category include transfer success, job satisfaction, and individual attainment of educational and career goals. "Alternative assessment" approaches can refer to "virtually any form of evaluation other than traditional paper and pencil, machine-scored, or multiple-choice tests" (Stefonek, 1991, p. 1). The goal of alternative assessment is to produce more valid information about student knowledge and skills than has been available from more traditional testing procedures.

There are three types of outcomes to be considered when assessing postsecondary vocational education: institutional outcomes, program outcomes, and student outcomes. Within

the range of educational activities undertaken in postsecondary education, there are certain goals that can only be effectively and efficiently addressed at the institutional level. In some cases these are outcomes that represent an aggregation of all efforts occurring across the institution, such as institution-wide retention rates and student satisfaction. In other cases, the assessment of outcomes reflects the result of centralized efforts, such as the impact of economic development initiatives or the utility of management information systems. Often, outcomes assessment at this level is viewed as part of institutional effectiveness evaluation (Alfred & Kreider, 1991; Nichols, 1991; Seybert, 1990).

Program outcomes, also referred to as functional-area outcomes (Alfred & Kreider, 1991), can serve as a bridge between institutional and student outcomes. They provide a means by which an institution and its stakeholders can measure the appropriateness and effectiveness of specific programmatic efforts. In some cases, programs may be assessed by aggregating student outcome measures. Traditional aggregated outcome measures include student enrollment, retention, graduation, and job placement rates and employer and graduate satisfaction levels. In some cases, however, outcomes must be assessed at the program level because that is where they have the most meaning. Often these outcome measures are linked to the efficiency with which programs use resources and personnel, and to the effectiveness of services for diverse student populations.

Student outcomes are concerned with changes that occur in individuals as a result of their participation in an educational experience. The concept of student outcomes is frequently expressed in terms of the value that is added to an individual as a consequence of that participation. These outcomes include the knowledge, skill, and attitudes that learners are expected to acquire and demonstrate. They are measured by assessing an individual's performance. These measures include gains in knowledge and skill competence and are frequently measured by competency- or performance-based tests (taking many forms) and follow-up surveys.

During 1991, we conducted research to provide an understanding of the nature of

outcomes assessment practices carried out by two-year postsecondary educational institutions and administrative agencies in the United States. In an effort to fully describe the interaction of the numerous and diverse factors that come into play in the identification and assessment of outcomes, a primarily qualitative research design was chosen for the study. A purposive sample of two-year institutions offering vocational curricula was obtained by soliciting nominations from experts in the field. These experts included all state community college board presidents, all state vocational education directors, all American Association of Community Colleges board members and selected other officers, and other public and private sector educational authorities and leaders.

The nomination process resulted in the identification of 63 sites located in 25 states across the United States. In 9 of the 63 cases (14%), site personnel did not respond to three or more attempts to contact them by telephone. Consequently, personnel at 54 institutions were interviewed. Table 1 shows the distribution of these sites by accrediting agency. Because the geographic size and number of member institutions varies greatly between the regions, these findings should not be used to draw inferences regarding the use of outcomes assessment in any particular accrediting association.

Table 1

Site Distribution by Accrediting Agency Area

Accrediting Agency	Frequency	Per Cent
Middle States	8	15%
New England	2	4%
North Central	23	43%
Northwest	7	13%
Southern	12	22%
Western	2	4%

Demographic information on the sites, including total non-duplicated enrollment, the proportion of students classified as full-time, and the proportion of students enrolled in vocational or occupational curricula, was collected during the interview. The data is from Fall Semester, 1990. The colleges ranged in size from 712 to 92,000 students enrolled in college credit courses. The ratios of part-time to full-time students and career program to non-career program students also varied widely (Table 2).

Table 2

Fall 1990 Characteristics of Interviewed Institutions

	Mean	Range	Standard Deviation
Non-Duplicated Enrollment	15,757	712 - 92,000	20,211.2
Per Cent Enrolled Full Time	40.2%	4 - 100%	24.1%
Per Cent in Vocational Curricula	51.8%	10.9 - 100%	24.5%

The sample obtained through the nomination process was not intended to be generalizable to other institutions. Rather, the intent was to determine what practices are being used at institutions identified by persons knowledgeable in this area. The underlying assumption was that examining only the nominated sites would increase the chances of uncovering a wide range of practices while keeping the sample size at a reasonable level. Data was collected from the nominated sites using a field-tested, semi-structured telephone interview. Responses from all interviews were recorded on a standard response sheet. In all cases, interviewees granted permission to record the interviews with the understanding that the recordings would remain confidential.

Data analysis was based on content analysis of the responses. Two analysts, working independently, reviewed the written records of the interviews and created frequency distributions of the responses to the various questions. The two lists were then compared. Where there were differences, the written records were examined to resolve the differences. The tape recordings were also used as needed to clarify the notes that had been made on the response sheet.

Findings

At the beginning of the telephone interview, respondents were asked to describe what their institution is doing in the area of outcomes identification and assessment. The responses provided a profile of how personnel at each site are implementing outcomes assessment initiatives with respect to vocational education. Most (78%) of the institutions reported that they are conducting outcomes identification and assessment processes as part of an institution-wide effort. Of the twelve sites that reported that their efforts applied only to vocational education students, four were exclusively vocational instruction facilities. At 84% of the comprehensive education institutions, then, the outcomes identification and assessment practice includes both vocational and non-vocational curricula.

Responses also showed that 59% of the institutions surveyed believe that at least some part of their outcomes identification and evaluation process has been fully implemented. The next most frequent response, indicating that development efforts are underway, was given by 33% of the respondents. The middle ground, field testing and/or revising, was reported by only 24% of the institutions. Although the issue was not pursued during the interview, the interviews and the field data both indicate that field testing and revision prior to full implementation are not priorities at many colleges; once a practice has been developed, it is implemented across the board. The distribution of the responses is shown in Table 3.

Readers will note that some tables reporting survey data indicate more than 54 responses. This reflects the fact that respondents gave multiple answers to some questions. For example, they may have stated that some parts of their outcomes assessment process are fully implemented, while other parts are under development. In these cases, the reported percentages

Table 3
Reported Level of Outcomes Program Maturity

Status	Frequency	Per Cent
Developing	18	33%
Field Testing	7	13%
Revising	6	11%
Fully Implementing	32	59%

also exceed 100%.

Early in the interview, respondents were asked what types of alternative outcomes were being measured at their site. In order to capture the respondents' sense of what constitutes an alternative outcome and thereby gain a broad perspective on how practitioners operationalize the concept, the term "alternative" was not defined. Several colleges indicated that they were not doing anything "alternative" with regards to outcomes assessment. The most frequently given responses were student academic achievement and student success upon transfer to another educational institution (typically a four-year college or university); each was cited by 24% of the respondents. Student satisfaction was mentioned in 21% of the interviews. Given that the interviewees were specifically discussing outcomes of vocational/technical education at their institution, these responses seem to indicate that educational performance and student and employer satisfaction with the services provided are seen as important outcomes for postsecondary vocational education. The most frequent responses are shown in Table 4.

During the telephone interview, respondents frequently described the processes they use to measure the extent to which desired outcome occur. Recently, the use of standardized tests, projects, and portfolios to measure academic achievement has received considerable attention. According to the interviewees, these techniques are being used in postsecondary vocational education. Interviewees reported that surveys are frequently used to measure a wide range of outcomes, including academic achievement, student and employer satisfaction, job placement,

Table 4

Partial Frequency Distribution of Alternative Outcomes Being Measured

Identified Outcome	Frequency	Per Cent
Academic Achievement	13	24%
Transfer Success	13	24%
Student Satisfaction	11	20%
Employer Satisfaction	10	19%
Attainment of Student Goals	7	13%
Employment	6	11%
Licensure Exam Pass Rate	6	11%
Skill Attainment	6	11%
Job Placement	4	7%
Student Persistence	4	7%

goal attainment, and transfer success. Measurement of transfer success has also been enhanced by the implementation of data-sharing mechanisms that link two-year and four-year institutions. The measures identified for the most commonly mentioned outcomes (from Table 4) are shown in Table 5.

Throughout the interviews, the identity of primary stakeholders and the origin(s) of driving force(s) that led institutions to initiate or modify their outcomes practices were sought. Respondents indicated a strong perception that their practices are campus-based. In 63% of the cases, both college administrators and college faculty were identified as stakeholders; students were mentioned in 31% of the interviews. Business/industry, the third most frequently given response (39%), was the only off-campus group to be widely recognized. (See Table 6).

Site administrators were the most frequently mentioned driving force behind changes in outcomes practices; they were mentioned in 35% of the interviews. Mandates from accrediting agencies (22%) and state government (20%) were also mentioned fairly often. Business/industry groups, who were frequently identified as stakeholders, were not specifically mentioned in this

Table 5

Reported Means By Which Identified Outcomes Are Measured

Identified Outcome	Identified Measure(s)
Academic Achievement	Standardized tests, state-developed standardized tests, portfolios, exit tests, grading of work by a panel of faculty, faculty surveys, student surveys, capstone projects, capstone tests
Attainment of Student Goals	student surveys, tracking system
Employer Satisfaction	employer surveys
Employment	state unemployment records, college placement office data
Job Placement	surveys
Licensure Exam Pass Rate	test scores, pass-fail rate
Skill Attainment	on-site assessment, national competence exams, licensure exam scores, state and national competitions, narrative assessment, satisfactory/unsatisfactory performance rating, internships
Student Persistence	enrollment patterns
Student Satisfaction	student surveys
Transfer Success	transcripts, state tracking system, grade reports, success at receiving institution, feedback from receiving institutions

regard. Community needs and trade labor unions were each mentioned only once. Further, faculty were not identified as a driving force for change by any institution. Table 7 shows the full set of responses.

During the telephone interview, respondents were also asked to discuss how the results of their institution's outcomes process are used. Respondents stated that institutions mainly use the information gained from outcomes assessments for program evaluation (33%), strategic planning (31%), and curriculum development purposes (26%). Outcomes data was also frequently cited as a factor in determining how resources are allocated (19%).

Table 6

Identified Stakeholders in Outcomes Practices

Identified Stakeholders	Frequency	Per Cent
College Administrators	34	63%
College Faculty	34	63%
Business/Industry	21	39%
College Students	17	32%
State Policy	2	4%
Auxiliary Personnel	1	2%
College Trustees	1	2%
Community Groups	1	2%
Labor Unions	1	2%

Table 7

Driving Force Behind Changes in Outcomes Practices

Impetus	Frequency	Per Cent
Site Administrators	19	35%
Accrediting Board Mandate	12	22%
State Mandate	11	20%
Process Evolution	9	17%
Federal Mandate	6	11%
Internal Study	4	7%
Self Study	2	4%
State Grant	2	4%
Board of Trustees	1	2%
Community Needs	1	2%
Competition with Other Institutions	1	2%
Institutional Research Office	1	2%
Labor Unions	1	2%

Only 11% of the respondents indicated that the outcomes data gathered is used for accountability reporting. This might indicate that although outcomes identification and measurement is often mentioned as a reform directed at improving accountability, most practitioners do not find accountability reporting to be an important consequence of their outcomes programs. Further, while student outcomes dominated the list of outcomes that were identified as important by practitioners (Table 4), only 7% of the respondents said that outcomes data are used to assess students. This may suggest that the types of practitioners interviewed, mainly institutional researchers, do not typically view student outcomes and student assessment as interrelated practices. Table 8 provides a frequency distribution of responses.

Table 8
Uses of Outcomes Data

Use of Data	Frequency	Per Cent
Program Evaluation	18	33%
Strategic Planning	17	31%
Curriculum Development	14	26%
Resource Allocation	10	19%
Program Planning	9	17%
Accountability Reporting	6	11%
Public Relations	6	11%
Student Assessment	4	7%
School - Business/Industry Coordination	3	6%
Student Services Improvement	3	6%
Demographic Trend Monitoring	2	4%
Institutional Effectiveness Improvement	2	4%

During the telephone survey, respondents were asked whether "outcomes identification and evaluation has changed the college in any way?" In 89% of the interviews, respondents said that there had been changes as a result of outcomes assessment. At 8% of the institutions, interviewees believed that changes were beginning to occur as a result of these efforts. The remaining interviewees did not see that there had been any change.

At those institutions where changes were believed to have occurred, or to be occurring, better decision making and planning was seen as the primary improvement (30%). Improved instruction (29%) and improved accountability (23%) were also frequently cited. These findings agree with the findings reported in Table 6, where issues related to planning, resource allocation, accountability, public relations, and curriculum development were commonly cited uses of outcomes data. From these two sets of responses, it seems possible to infer that many of the changes that are occurring are the result of the utilization of data collected through the outcomes process. The full list of responses is reported in Table 9.

Summary and Conclusions

This study suggests several major findings. The first is that the outcomes currently being measured in postsecondary vocational education generally seem to correspond to the changes sought by policy makers and education reformers. The outcomes most frequently identified by interviewees (academic success, transfer success, student satisfaction, employer satisfaction, attainment of student goals, employment, licensure exam pass rate, skill attainment, job placement and student persistence) all represent an expansion of the focus of postsecondary vocational education. However, the diversity of outcomes identified, and the relatively low frequency with which most outcomes were reported, suggests that no consensus on outcomes has formed in postsecondary vocational education.

The emphasis on student goal attainment has the potential to be problematic for some institutions. As long as institutional outcomes are assessed by performance against such traditional standards as program completion and graduation rate, the tension between serving students who only wish to take one or two classes (or, perhaps, only parts of one or two classes)

Table 9
Changes Seen Resulting From Outcomes Practices

Change	Frequency	Per Cent
Better Decision Making and Planning	16	30%
Improved Instruction	15	28%
Improved Accountability	12	22%
Better Staff Development	4	7%
Faculty See and Use Results	4	7%
Institution is Better Attuned to Business Needs	4	7%
Climate Supports On-going Assessment	3	6%
More Confident of Institutional Effectiveness	3	6%
Decision Making Has a Feedback Loop	2	4%
Faculty More Conscious of Outcomes	2	4%
Helps Everyone See the "Big Picture"	1	2%
Higher Expectations of Faculty and Students	1	2%
Student Perceptions Incorporated in Program Changes	1	2%

and demonstrating programmatic and institutional effectiveness based on degree completion will be a source of aggravation for administrators and confusion for legislatures and the public. Efforts are needed to redefine and reorganize effectiveness and funding formulae to recognize the importance of helping students meet their specific educational goals regardless of whether those goals include degree or certificate completion.

A second finding is that outcomes measurement practices are changing rapidly as instructors seek to incorporate new techniques into their instructional programs. Portfolios are being introduced in a variety of curricula, as are capstone projects, capstone tests, and other means of performance assessment. This is, most likely, a positive development so long as the

faculty using these instruments have the training needed to properly design and use them. As one institution indicated, this is not always the case. There, efforts are underway to develop in many instructors sufficient psychometric skills to facilitate the successful use of practices that have already been implemented. The implementation of new assessment practices might have been much less stressful had administrators provided adequate in-service training prior to launching the initiative. As institutions seek to expand their assessment techniques, the need for staff development in these areas will most likely increase. Unexpected difficulties presented by expanding into new areas indicate that improved feedback and process adjustment mechanisms, including opportunities for field testing, are needed between development and full implementation.

A third finding is that site administrators are seen as being both stakeholders in and driving forces behind changes in outcomes practices. No other group was highly ranked in both categories. Faculty, business and industry, and, to a lesser extent, students are also seen as being stakeholders. The other major driving forces were accrediting boards and state government.

Finally, because the development of an outcomes program is typically a time consuming and stressful process, it is important to know whether institutions and individuals can reasonably expect to receive benefits that justify their efforts. The institutions interviewed stated that outcomes data has improved their ability to address internal issues. Chief among these issues were program evaluation and strategic planning. Curriculum development, resource allocation, and program planning were also mentioned. As mentioned earlier, despite the emphasis on student performance assessment that was indicated in Table 4, only a small number of interviewees mentioned student assessment as a use of the data. This may reflect a bias of the interviewees (mainly institutional researchers) toward institutional rather than student outcomes.

Some of the changes that were mentioned less frequently seem to be among the more interesting that were reported. The need to incorporate a feedback loop into decision-making processes has been previously discussed; two respondents indicated that their outcomes practices provide such a mechanism. Other institutions might be well advised to study ways that they can

incorporate provisions for providing opportunities for feedback into their processes. Doing so might contribute to a more general realization of two more infrequently mentioned changes: development of a climate that supports on-going assessment, and improvement of the ability of faculty to see the "big picture" of educational practices at their institution.

One site indicated that its outcomes practices have raised the expectations of faculty and students. If this is true, then the intent of many reforms has been realized at that college. The prospect that outcomes identification and measurement can bring about such a change is a powerful argument in favor of its continued prominence as a mechanism for effecting reform.

Recommendations for Further Study

This study in no way represents the end of the investigation of outcomes identification and assessment issues in postsecondary vocational education. Indeed, it is just the beginning; the study only describes what selected individuals at a non-representative sample of institutions reported that their colleges are doing. This does not minimize the importance of the research, as it appears to be the first national survey of practice. It does, however emphasize that much remains to be done.

Perhaps the next step should be to determine the generalizability of efforts at sites that were studied to other institutions with similar goals. What factors would enhance the transferability of outcomes approaches? Which factors would inhibit it? With this information in hand, it would be possible to encourage the sharing of ideas among institutions with similar needs, thereby increasing the number of talented faculty and administrators working to resolve these complex issues. An expansion of the knowledge base concerning outcomes identification and assessment would surely enhance efforts to bring about positive change in educational practice.

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