

A Quantitative Case Study Focused On Using A Human Resource Development System To Analyze the Program Performance Assessment Strategies of Federally Funded Career And Technical Education Programs in 12 Minnesota Technical Colleges

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This research analyzed 12 Minnesota Technical Colleges' Program Assessments in terms of: 1. Did assessments of their Career and Technical education programs focus on results-related outcomes? 2. Were program assessment measures "related" to programs' goals? 3. Were targeted programs' goals attained? Conclusions: 1. Report findings had limited relationships to results-related findings. 2. Assessment outcome measures tended not to measure proposed outcomes. 3. Reports generally claimed that they had evidence that program goals were attained.

Keywords: Assessment, Postsecondary, Career and Technical Education

Background

When organizations are granted federal monies they are required to assess the effectiveness with which these monies are used. Typically the funding recipients conduct an assessment that measures the activities that occur rather than actually assessing the outcomes in terms of meaningful results. In this study a theory is proposed for what is essential to the assessment of organizational performance outcomes. The theory is tested using the case of the program performance of federally funded Career and Technical Education Programs in 12 Minnesota Technical Colleges. A conclusion is drawn about the merit of the theory and its application in those 12 Technical Colleges.

Introduction to the Problem

In a survey of recent publications about evaluation of programs in postsecondary education, the authors found few journal articles. Indeed, one theme was the lack of effective evaluation of programs in postsecondary education (Connal, 2001; Parker, Shaw, & McGuire, 2003). Reasons given were that evaluation is hard to do well (Parker et al), and for some institutions the perception is that doing a program evaluation is tantamount to indicating that the program has a problem and so is in trouble. In the authors' experience an additional reason that is given is the time and cost of good evaluation seem prohibitive in a time of tight resources in the academic community.

In the literature, the authors found two typical approaches to the evaluation of programs in postsecondary education. Brinkerhoff was cited by Parker, Shaw, & McGuire (2003) and Zinser (2003), Kirkpatrick was cited by Philips (1998) as sources that shaped or contributed to their evaluative model. Brinkerhoff suggested that evaluation has six levels including immediate outcomes and examined how long these outcomes last. Kirkpatrick (1998) proposed four levels of outcomes: (a) satisfaction, (b) changes in knowledge, skills and attitudes; (c) changes in on-the-job behavior; and (d) changes in business-impact variables. Philips (1998) added a fifth level of return on investment. However, when the studies were analyzed, there was little evidence of the actual measurement of knowledge, of skills that were learned, nor of systemic or financial outcomes.

There appear to be three forces pushing for evaluations of postsecondary programs. One force is the changing nature of the relationship between the business community and technical colleges, in which "there is an increasing sense of urgency to work with individual industries to offer content specific courses" (Zinser, 2003, p. 51). Another force is the growing pressure from federal funding agencies to require outcomes based evaluation. A third force is the pressure from academic accrediting organizations to require more outcomes based evaluation, including provision of evidence of student learning outcomes in terms of knowledge, skills and abilities (Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, 2003).

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The Relevance of the Problem for HRD

This paper involves an assessment of the evaluations of 12 Technical Colleges, looking specifically at the extent to which the evaluations measured meaningful results. The results indicate that typically the evaluations did not reveal meaningful information about outcomes. As a result the evaluations could not be used as effective tools to assist the colleges to improve their performance.

There are two ways in which the evaluation of technical colleges are relevant for HRD. First, technical colleges are organizations, and as such are a legitimate example of the environments addressed by HRD practitioners. Examining the performance of the technical colleges' evaluation system is, in itself, relevant to those who work with technical colleges and similar organizations. Second, if we accept Swanson and Holton's definition of HRD, HRD is "a process for developing and unleashing human expertise through organization development and personnel training and development for the purpose of improving performance" (Swanson & Holton, 2001, p. 4). One element of HRD is accurately assessing organizational outcomes both to discern need and as a baseline against which change will be measured. The evaluation of outcomes thus is a critical aspect of HRD. A look at how evaluation actually occurs in one system is insightful and instructional.

Assessing Results Versus Measuring Activities

The underlying belief that informs this study is that the assessment of organizational outcomes can (and should) provide valuable information for organizations. This may sound obvious, but in fact the practice of measuring meaningful results-oriented outcomes is less common than one might imagine. In addition, the tendency of organizations to avoid assessment is common knowledge. For organizations that do assess their programs, frequently what is studied is activities, rather than outcomes. Swanson and Holton (1999) criticized the often-used evaluation model of Kirkpatrick (1998) because "a key failure is its emphasis on reactions versus the fundamental performance results..." (5) of the organization. Therefore, the desire to overcome this tendency to focus assessment efforts inappropriately is the driving force behind this research effort. (Note: Educational institutions tend to use the term "evaluation" while business organizations typically use the term "assessment." Both will be treated as being interchangeable for the purposes of this document, since as the HRD-oriented Results Assessment System is being applied to educational institutions)

Weaknesses of Typical Assessment Models

One of the commonly used approaches to evaluation is represented by the model developed by Kirkpatrick (1998). Swanson and Holton (1999) reported their belief that the commonly used Kirkpatrick (1998) model is flawed. They offered the following criticisms of the Kirkpatrick assessment model:

1. The model is based on assumptions that are not valid and have not been validated during its 40 years of usage.
2. The model's conceptualized "levels" of assessment hypothesize that reactions are a proxy for learning; learning is a proxy for behavior; and behavior is a proxy for results. Swanson and Holton assert that none of these assumptions is valid.
3. The model is not research based and is not confirmed by research.
4. The model does not address the key evaluation and measurement issues of validity and reliability.

Overview of the Results Assessment System.

Swanson and Holton (1999) defined their Results Assessment System (RAS) as "The organizational process of determining whether meaningful and valued outcomes are achieved from human resource development interventions." The RAS is organized into the three Domains of two categories each, as depicted below:

Results Assessment Domain #1: Performance Results

System: Units of mission-related outputs in form of valued goods and services related to core organizational, work processes, and group or individual contributors to the organization

Financial: The conversion of the outputs attributable to interventions, into financial outcomes

Results Assessment Domain #2: Learning Results

Knowledge: Mental achievement acquired through study and experience

Expertise: Human behaviors having effective results & optimal efficiency, acquired through study & experience within a specialized domain

*Results Assessment Domain #3: Perception Results **

Participant perceptions: Perceptions of people with firsthand experience with systems, processes, goods, and/or services.

Stakeholder perceptions: Perceptions of leaders of systems and/or people with a vested interest in the desired results and the means of achieving them

The RAS approach leads evaluators through decisions about which domains will be assessed, and what kinds of data will be used in each aspect of assessment. The RAS approach was used to guide the analysis of the 12 selected Technical Colleges' APRs in regard to the following:

Measurability: The colleges explored the extent to which their evaluations truly measured results, not just the counting of activities, for each institution's assessment strategies. Those rankings were also compared to the average rating of all 12 institutions' Annual Performance Reports (APRs).

Relevance: The colleges explored the extent to which assessment foci and their measurements were related to the proposed CTE program goals of each institution's assessment strategies, as rated by the researchers. Those rankings were compared to the average rating for all 12 institutions.

Attainment: The colleges explored the extent to which their programs' outcome measures indicated that proposed goals were attained/met. Each institution's assessment strategies was rated by the researchers. Those rankings were compared to the average rating for all 12 institutions' APRs.

Research Methodology

The Case

Minnesota's Technical College System receives a major portion of its operational funds from the US Department of Education. That funding is authorized by Congress via the Carl Perkins Act. These Perkins Act funds are granted with the expectation that recipient institutions will orient their funded activities on 12 "Required Indicators" which describe required program funding categories. In addition, Perkins-funded career and technical education (CTE) programs must be assessed in terms of four "Core Indicators" which specify the high priorities program outcomes. Figure 1 depicts those Required and Core Indicators as they relate to one another, as well as the major Results Assessment Categories addressed by Swanson and Holton's (1999). Results Assessment System.

Research Questions

The researchers have noted that Minnesota's Technical Colleges often seem to focus on assessing their CTE programs' activities rather than on actual performance-related results. In addition, the assessment measures used seem to tend to be poorly related to program objectives. In other words, these Technical Colleges' program objectives sometimes seem to be focused on outcomes of limited value for assessing programs' outcomes and the measures used to assess the extent to which CTE objectives have been achieved often seem to have inadequate relationships to those objectives.

Figure 1. Proposed Assessment Model for Federally-Funded Technical College Programs

Twelve Required Indicators: Funding Priorities

Indicator 1: Integration of academic and technical education

Indicator 7: Effectiveness of services and activities

Indicator 2: Experience in and understanding of *all aspects of industry*

Indicator 8: Broad-based community involvement

Indicator 3: Technology in vocational-technical education.

Indicator 9: Special population learner accommodation(s) and support services

Indicator 4: Professional Development

Indicator 10: Full participation of special population learners

Indicator 5: Evaluation of vocational-technical education programs

Indicator 11: Preparation for nontraditional training and employment

Indicator 6: Continuous improvement for vocational-technical education programs

Indicator 12: Collaboration

The four core indicators and outcome priorities:

1. Student attainment of challenging state established academic, vocational and technical skill proficiencies.
2. Student attainment of secondary school diploma or its recognized equivalent or a proficiency credential in conjunction with a secondary school diploma or a post-secondary degree or credential.
3. Placement in, retention in, and completion of post-secondary education or advanced training, placement in military service, or placement or retention in employment.
4. Student participation in and completion of vocational and technical education programs that lead to nontraditional training and employment.

This research was designed to analyze selected Minnesota Technical Colleges' APRs and the extent to which they are/are not "results oriented." This research is designed to provide a initial baseline that, hopefully, will encourage subsequent research that will enhance the utility and effectiveness of CTE program assessment strategies. Therefore, the researchers examined the APRs of 12 selected Minnesota Technical Colleges in an effort to answer the following research questions:

1. To what extent do reported assessment goals and targeted assessment measures focus on "results," as related to the Swanson's (1999) Results Assessment Model?
2. Are the measures contained in the APRs "relevant" to the proposed goals?
3. To what extent do the reported assessment measures indicate that the proposed goals were attained?

The researchers reviewed and analyzed each component of the 12 APRs. A Likert-type scale was used to rate these APRs in relation to each of the above key examples of those comments are presented below for selected Technical Colleges.

The process for assessing each APR used the following rating form depicted in Figure 2 below:

Figure 2. Rating Scale Applied To Each Technical College's Assessment Processes

| Perkins Indicator #: _____ | | | |
|--|--|--|--|
| RAS Categories Represented: <ul style="list-style-type: none"> • System • Financial • Knowledge • Expertise • Participant Perception • Stakeholder Perception | Measurability of Proposed Activities? (e.g., RESULTS-Oriented vs. Activity count) 2= Good 1= Needs Improvement 0= None Observed | Outcome Measure's Relevance to Proposed Activities? 2= Good 1= Needs Improvement 0= None Observed | Extent to Which Measures Indicate Objectives Were Attained? 2= Good 1= Needs Improvement 0= None Observed |

RAS Category(ies) :

Measurability

Relevance

Attainment

Average Rating: _____

After reviewing each of the 12 APRs, a series of insights were developed in relation to each of the three research questions. Those insights for this case study are listed below:

Research Question 1. To what extent do reported assessment goals and targeted assessment measures focus on "results," as related to the Swanson's (1999) Results Assessment Model?

Accomplishment statements often differed substantially from targeted results measures. For instance, a "2% increase in Annual Enrollment Rate" was reported versus accomplishments expressed in terms of % of total population enrolled. The growth in numbers reveals nothing of the quality of the students, nor of their ability to perform in their studies. Many assessment strategy statements seem unrelated to targeted measures. Actual measures of knowledge and related expertise levels/gains are seldom addressed. Three examples of this trend follow:

a. Many professional development and student learning measures reported by participating institutions were focused on numbers of students or events:

- Number of workshops conducted
- Number of workshop participants
- Number of internships

- Number of training sessions
 - Number of Continuing Education Units
 - Number of special populations enrolled.
 - And were not focused on performance related outcome such as:
 - Gain scores
 - Skill standards attained
 - Number graduated
 - Post-training success
 - b. New staff position implementation efforts were assessed in terms of numbers of persons:
 - Number of new staff hired
 - Percentage appointed
 - And were not focused on performance related outcomes such as:
 - Staff members' achievements in terms of job-related accomplishments
 - c. Career Fairs and Community Tours were assessed in terms of numbers of events or attendance:
 - Number of fairs or tours
 - Number of students, parents, business
 - Participation level (attendance)
 - And were not focused on performance related outcomes such as:
 - Perceptions of volume (students and businesses)
 - Number of subsequent CTE enrollees
 - Increase in business input/on-going collaboration
 - Many targets focus on revising, designing for implementation infrastructure.
- Research Question 2.* Were the assessment measures contained in the report relevant to the proposed goals?

Student Surveys were used in numerous cases. However, student survey findings were sometimes extrapolated inappropriately to other time periods, to other groups, or to indicate pre-post gains in knowledge and performance. Enrollment changes were often used as targeted goals. However, this seemed to represent a minimally useful measure, because a wide variety of external factors can also influence significantly influence enrollment trends beyond your control (e. g., effects of changes in the economy). Participating institutions had not yet begun to focus on what new infrastructures will accomplish. Rather they tended to continue to focus only on counting the number of newly developed/revised programs.

In each of these illustrations, the technical colleges either tended to misuse data, set goals for which attainment was beyond the ability of the colleges, or continued in habitual patterns of counting the number of changes (e.g., new programs) without looking at the quality or infrastructure needed to sustain the changes.

Research Question 3. To what extent do the reported assessment measures indicate that the proposed goals were attained? Conclusions regarding the accommodation of Special Populations reported:

All students received services. HOWEVER, the actual knowledge and expertise benefits for those students were not identified. All of the students who requested accommodations were reported as having been serviced. However, there was no indication of the effectiveness of these services, nor was there any comment about special populations who did not request service but who needed those services? The number of Interagency Articulation agreements were listed as desirable outcomes. For example, one college reported: "25% of programs will implement agreements." There was no report if the agreements were used, nor if any benefits were realized, nor if there were any retention or transfer gains. Reports did identify several confounding influences which detracted from the value of the assessments. Some goals were not attained because of delays in needed data. Some goals were delayed due to decisions made by college management that placed other initiatives as higher priorities. Some APR's did not differentiate between proposal and actual budget expenditures.

Conclusions

1. To what extent do reported assessment goals and targeted assessment measures focus on "results," as related to the Swanson's (1999) Results Assessment Model? There is a limited relationship between the Technical Colleges' assessment procedures and findings for their Perkins-Funded programs and those that would have been suggested by the Results Assessment Model.
2. Are the measures contained in the report "relevant" to the proposed goals? Many outcome measures did not meaningfully measure outcomes proposed.
3. To what extent do the reported assessment measures indicate that the proposed goals were attained?

Existing measures were generally claimed as evidence that program goals were successfully attained. When goals were not achieved, results were limited by the following reasons: (a) Some goals were not attained because of delays in needed data, (b) the attainment of some goals was delayed due to decisions made by management that placed other initiatives as higher priorities, (c) some APR's don't differentiate between proposal and actual budget expenditures. This report focuses on actual/revised budget data, if it is reported in the APRs.

4. It is apparent that a basic design conflict exists in the federal model that requires 12 funding priorities that are conceptually disconnected from the four outcome indicators. That disconnect inhibits funded institutions from effectively assessing their proposed outcomes. A proposed new model is given in figure 1.
5. The theory being explored was supported within the 12 Minnesota Technical Colleges. To be able to generalize beyond this population, further studies are needed. Participating institutions should be commended for their participation in this effort to improve program assessment processes. The feedback provided in this report is intended to provide guidance for subsequent efforts, NOT to reprimand institutions for limitations in their current practices.

Recommendations

It is recommended that the 12 institutions whose APRs were reviewed in this document closely examine the extent to which they tended to measure activities, instead of the "results" of those activities. This will require an adjustment in thinking and behaving. However, it will enable these institutions' staff to then adjust their next round of results measures and the nature of their strategies focused on BOTH the Perkins Indicators and the four core competencies. In addition, it is recommended that these institutions begin to expand the focus of their results measures beyond issues related to "system" assessment results categories. The assessment categories of "knowledge" and "expertise" are recommended for immediate attention. The "financial" assessment is strongly recommended for implementation within the next three years. The financial category may represent the most valuable area for attention. However, a period of three years is suggested for the development implementation efforts in this assessment category because it will require the greatest growth in measurement sophistication and the most effort to establish appropriate data collection and analysis procedures. Finally, the existence of the confusing, potentially incompatible, priorities mandated within the funding policies of the Perkins Act should be acknowledged and considered. Assuming that this joint set of priorities continues, grant recipients are encouraged to integrate their program assessment plans and activities into a broader perspective focused on meaningful results, not just activities. Remember, a flurry of activities is not necessarily the equivalent of high productivity.

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