A PERFORMANCE MEASUREMENT AND EVALUATION FRAMEWORK FOR CONTINUING EDUCATION

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Abstract: This article reviews the literature and sets out a framework for performance measurement (PM) and evaluation within post-secondary continuing education. In the framework, PM serves as ongoing data collection and decision support placing outputs, outcomes, and ratios as performance indicators in a matrix. Evaluation serves to periodically assess the PM system. The result is the continuing benefits of PM with the capacity-building benefits of evaluation. An example is given and the framework is judged against the evaluation standards of accuracy, feasibility, utility, and propriety.


For some time, public post-secondary educational institutions in Canada have been required by legislation to conduct periodic institutional reviews. As well, these institutions are increasingly required to demonstrate accountability for the results of their programming. This pressure comes from users and the community as well as government.
At the same time a movement is underway, across government and industry, to use information and data from performance measurement (PM) and key performance indicators (KPI) to make sound and accountable management and funding decisions (Office of the Auditor General of BC, 1996).

In the post-secondary education system, accountability initiatives and the use of KPI have been underway for some time but the PM initiative has not extended to continuing education (CE). While there is some debate as to whether PM should be used in public post-secondary education, this article does not debate the issue of appropriateness. The assumption is that PM is going to effect a change of direction in the continuing education discipline.

This article presents a conceptual and theoretical orientation for PM and evaluation. Poised as we are at a crucial juncture, educational administrators planning to use performance measurement need to map out an appropriate framework. This article presents a heuristic device, a road, and some approaches for travelling that road.

LITERATURE REVIEW

For the purpose of this article, continuing education is defined as “providing or coordinating purposeful learning activities for adults” (Easterby-Smith, 1994, p. 6). Performance measurement is defined as “the identification and measurement of carefully chosen indicators to provide feedback on performance” (Bowmar, Early, & Homer, 1999, p. 1). Framework is defined as “a simplification of the real world, as is a model, [but] it has the advantage of a flexibility that a model may not offer” (Leclerc, Moynagh, Boisclair, & Hanson, 1996, p. 125). The evaluation of CE is the assessment of the process and outcomes of the continuing education process for the purposes of accountability and improvement.

This review identifies and examines two relevant areas, the literature on institutional evaluation and on the evaluation of adult and continuing education in the Canadian context.

Institutional Evaluation

The literature includes a wide variety of articles, varying in their utility. Some offer highly developed and complex models limited in
usefulness to administration theory (Jorjani, 1998). Others are centred on the stages of development or capacity building needed for institutional evaluation (Love, 1991). Rowe and Jacobs (1998) offer twenty principles and practices to put in place for an organizationally integrated evaluation. The more practical writings in institutional evaluation suggest that it should be continuous and integrated into the operation of the organization.

Continuing Education Evaluation

Evaluation within continuing education must take into account advances in adult learning theory and participatory evaluation. Burnham (1995), for instance, focuses on evaluation in its most important and widest context, the educational endeavour. Peden and Rose (1990) outline a theoretical framework for the evaluation of continuing education for nursing and test its value as a vehicle to predict the success of the program. Cousins and Earl (1992) are more specific when they present an extension of a stakeholder-based model focusing on the increased participation of primary users.

Throughout the literature, there is the thread of ongoing self-assessment, as in Dixon (1996) who focuses on self-assessment models that promote quality assurance systems. A very practical model for post-secondary evaluation can be found in Gowdy (1995), who provides a good starting point for those entering into an evaluation exercise. Others adopt a project management approach toward evaluation of CE (Brett & Matthews, 1996). All are useful additions to the literature.

Recent trends in qualitative assessment have not gone unnoticed; for instance, Osigweh and Yg (1986) examine a performance evaluation model that emphasizes measurement of outcomes by assessing the quality of the changes that occur in the program. At least one article focuses on the preconditions necessary and the types of preparation that are required to ensure successful institutional evaluation (Manson, 1993).

Although there are many examples of models tangential to the issue, there are none that specifically address the integration of evaluation and performance measurement in continuing education as the present article does.
When assessing these various approaches, we must ask: “On what basis do we judge evaluations?” This problem faces evaluators of continuing education as it does other evaluators. Perhaps the most applicable criteria for evaluation in education are those of the Joint Committee on Standards for Educational Evaluation (1994), which are utility, feasibility, propriety, and accuracy. These are the standards used to judge the framework presented here.

Existing Frameworks

More than 30 evaluation frameworks were examined from the published and unpublished literature including Cousins and Earl (1992), Dixon (1996), Gowdy (1995), Kirkpatrick (1996), Learning Resources Network (1998), McKey and Tarullo (1998), Montague (1999), Office of the Auditor General of BC (1996), and Osigweh and Yg (1986). Two in particular, Montague (1999) and McKey and Tarullo (1998), had direct impact on the creation of this framework. However, the framework is a composite of approaches that directly or tangentially relate to performance measurement and continuing education.

PERFORMANCE MEASUREMENT AND EVALUATION FRAMEWORK

First, the framework is presented, then the definitions of performance measurement, the PM matrix, and the distinction between evaluation and performance measurement. An example from CE and an example PM matrix are presented along with the eight steps. A discussion of the application of the evaluation standards is followed by the conclusions. For a detailed presentation of the eight evaluation steps in this framework, see Bowmar et al. (1999).

The Framework

The Performance Measurement and Evaluation (PM&E) framework uses the analogy of a road, shown in Figure 1, which leads from the unit’s mission, at the near end, to its goal at the far end.

Performance measurement is the road. Signposts are measures of what the unit does or achieves. Signposts include mission, inputs, outputs, outcomes, ratios, and goal.

Evaluation assesses the road, determines how far the road goes, and notes the signposts, milestones, and areas for (road) improvement.
Performance measurement is the identification and measurement of indicators to provide periodic feedback on performance.

Performance indicators include all the inputs, outputs, outcomes, or ratios (shown as arrows) in Figure 2 and many more. There are almost infinite possibilities for indicators, therefore careful selection of the most critical ones is important. Staffing and overhead are examples of inputs, while reach and relevance are examples of outputs. Outcomes are separated into educational and financial outcomes. Please note that inputs are not true performance indicators, but are included here because they form part of the efficiency ratios.

CE units may select a modest number of the most important indicators to begin. A suggested upper limit is forty performance indicators for a unit. Any individual employee or department should not be working on more than ten at any given time.

Figure 1
Performance Measurement — The Road
Performance Measurement Matrix

A matrix is useful when planning a PM&E system. Objectives can be set for any variable at all. However, the matrix in Table 1 shows the rows as output objectives, outcome objectives, and ratio objectives. Columns demonstrate the activities, indicators, measures, and targets for each objective. The matrix is also key when planning an assessment of the PM system.

The application of the matrix will depend on the CE unit and how developed its PM system is. It takes time to create a PM&E system, up to three to four years. A unit with a partially implemented PM system will expand the upper half of the matrix (outputs and possibly ratios). A unit with a fully implemented PM system will expand the whole matrix (outputs, outcomes, and ratios).
Distinction Between Performance Measurement and Evaluation

The analogy of a road has been used for performance measurement, with the indicators or milestones on the road marking points at which to assess the unit’s functioning. However, it is important to be cognizant that evaluation is not the road. Its purpose is to evaluate the PM system, i.e., to assess the road.

Evaluation in the PM&E framework relates to performance measurement as does attest audit to bookkeeping. It monitors the process and ensures that the means to reach the bottom line reported are valid.

This evaluation points to areas for improvement in the PM system and will increase utility of results. The scope and depth of the evaluation will largely depend on the stage of development of the PM system.

Example: PM&E Framework Applied to Continuing Education

The example begins by identifying the elements of performance measurement. The example mission statement in Figure 3 reads “provide quality continuing education to meet learning needs of adults in a region.”

The mission is operationalized through inputs (resources) devoted to activities. For instance staffing includes salaries, professional development, and other staffing costs. Overhead includes direct costs, production costs, and similar expenses.
As well, the framework includes outputs, or what is to be delivered and to whom. These outputs include reach, e.g., range and scope of offerings, area or population served, response to requests, and community served (Montague, 1999). They also include relevance, which is the appropriateness of programming, types of courses, certification, and laddering.

Outputs are the straightforward counts of service delivered, advertisements placed, classes taught, programs offered, teacher hours spent in the classroom, and such. These are measures of activities within the control of the unit; e.g., courses offered is an output, whereas the graduate completion rate is an outcome, because it is not in the direct control of the unit. In most cases, outputs are currently being measured and adequately reported as required by the related provincial ministry.

Figure 3
Example Application to Continuing Education — Building the Road
Outcomes are of two types: educational and financial. These are the short- or long-term impacts of the division’s programming, as defined by the unit. Educational outcomes are the human results and include, for example, grades, literacy levels, English achievement scores, and computer competencies. Financial outcomes are the fiscal results and include, for example, the gross revenues from tuition, maintenance costs, and annual profit or loss for the unit or its programs.

A note of caution about outcomes; in some cases, desired educational outcomes may span other programs offered by the institution, in which case it makes sense to evaluate impacts at the institutional level. This is true for financial outcomes as well, especially in cases where a unit’s revenues or expenses are inseparable from those of other units.

Performance indicator ratios fall into two groups, effectiveness and efficiency. Effectiveness ratios, for instance, look at reach or relevance outputs required to achieve a certain outcome, either financial or educational. Effectiveness ratios would include, for instance, job placement rates. Efficiency ratios look at inputs spent to achieve an output or outcome, either financial or educational. Efficiency ratios would include production cost as a ratio to revenue generated.

The Goal in this example is “to enhance lifelong learning.” Each CE unit’s goal may be somewhat different.

Performance Measurement Matrix

The example PM matrix in Table 2 uses a set of objectives in a hypothetical PM system. The objectives are specific statements of aspects of the goal. For each objective there is an activity, performance indicator, measure, and target. The data are merely fictitious. In a real-world application, each objective of the matrix would require more rows, more activities, more indicators, and multiple measures.

Evaluation Steps

The evaluation of a CE unit using the PM&E framework follows a series of straightforward steps. The eight steps outlined below are adapted from Leclerc et al. (1996) and are discussed in detail in Bowmar et al. (1999).
Table 2
Example of Performance Measurement Matrix for Continuing Education

<table>
<thead>
<tr>
<th>Category of Indicator</th>
<th>Objective</th>
<th>Activity or Strategy</th>
<th>Performance Indicator</th>
<th>Performance Measure</th>
<th>Target and Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OUTPUT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reach</td>
<td>To provide access to courses across the unit's region</td>
<td>Regionalized delivery strategy</td>
<td>• offerings at remote campuses</td>
<td>• percent of total courses offered remotely</td>
<td>• 30% by year end 2000</td>
</tr>
<tr>
<td>Relevance</td>
<td>To provide training in most current software type and version</td>
<td>Software use survey</td>
<td>• software currency</td>
<td>• percent of population using software taught</td>
<td>• 80% by year end 2000</td>
</tr>
<tr>
<td><strong>OUTCOMES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Outcomes</td>
<td>To increase competencies in certificate programs</td>
<td>Certificate programs curriculum revisions</td>
<td>• graduating students certified by external body</td>
<td>• number of students who passed provincial exam</td>
<td>• 75% by year end 2000</td>
</tr>
<tr>
<td>Financial Outcomes</td>
<td>To generate surplus liquid funds at year end</td>
<td>Cost recovery plus</td>
<td>• profitability of unit</td>
<td>• year-end profits</td>
<td>• $1,000,000 for fiscal year 2000/2001</td>
</tr>
<tr>
<td><strong>RATIO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness Ratio</td>
<td>To increase successful job placements</td>
<td>Job placement interviews and screening</td>
<td>• job placement rate</td>
<td>• students placed as ratio to students graduated</td>
<td>• 80% by year end 2000</td>
</tr>
<tr>
<td>Efficiency Ratio</td>
<td>To reduce course production cost while maintaining enrolments</td>
<td>Streamlining initiative</td>
<td>• course production efficiency</td>
<td>• cost of production as ratio to enrolment</td>
<td>• $90 per FTE by year end 2000</td>
</tr>
<tr>
<td>Other Performance Measures</td>
<td>To implement consistent registration system</td>
<td>Training staff in use of new registration software</td>
<td>• staff training</td>
<td>• percent of staff trained in use</td>
<td>• 60% by year end 2000</td>
</tr>
</tbody>
</table>
Step 1  Plan for the Evaluation
Step 2  Form a Steering Committee for the Evaluation and Assign Roles
Step 3  Decide Boundaries of Evaluation, Inclusions, and Exclusions
Step 4  Gather or Create Objectives, Indicators, Measures, and Targets
Step 5  Gather or Create Performance Measurement Matrices
Step 6  Evaluate Performance Measurement Matrices
Step 7  Decide Next Steps to Develop Performance Measurement
Step 8  Write Report of Evaluation

The Evaluation Standards

Major standards for evaluating the evaluation have been developed by the Joint Committee on Standards for Educational Evaluation (1994). These are used below to examine and critique the PM&E framework and steps.

Utility

This PM&E framework is a useful heuristic device for continuing education administrators and institutional research and evaluation personnel. It assists in setting up a system to provide ongoing and periodic information in a timely fashion. Steps 4 and 5 allows for the identification of audience reached and speaks to relevance as well. In this fashion, it is useful for formative evaluation. As well, the framework meets the demands of accountability where periodic evaluations are required of institutions offering continuing education.

Feasibility

Implementation of a PM system is a costly and lengthy procedure. However, in many cases, this work will have already been started as a result of existing initiatives. In the PM&E framework, regardless of the level of sophistication of the PM system, steps 7 and 8 of the evaluation work to enhance it. When spread over several years, it is cost-effective as a component of capacity building. The method proposed is practical and procedural. Steps 1 through 3 are preparatory, steps 4 and 5 develop the PM system, and steps 6 through 8 are the core of the evaluation.
Propriety

The PM&E framework does not speak to the issues of fairness, legality, or ethics. As with any PM system, steps must be taken to ensure confidentiality while maintaining case-level data that can be aggregated in a meaningful way. Also to be considered are the rights of human subjects, access to the findings by the participants, fiscal responsibility, and accountability to stakeholders.

Accuracy

Any measure of program performance must be based on technically accurate information. Steps 6 and 7 of the PM&E framework will enhance this in each subsequent evaluation cycle. For instance, recommendations may apply to the validity and reliability of the data collected or to the impartiality, clarity, accuracy, or defence of the resulting conclusions. Thus, the PM&E framework stands up to critical aspects of the evaluation standards.

CONCLUSION

The literature on performance measurement and the evaluation of continuing education was reviewed with the conclusion that much of it applies partially, but nowhere is there an integrated performance measurement and evaluation framework.

The PM&E framework presented here uses performance measurement principles applicable to continuing education in a variety of settings. The framework is useful for formative as well as accountability purposes. It proposes a process of developing performance indicators and building from input and output measures toward more sophisticated outcome and ratio measures.

A performance measurement system is in keeping with provincial government and post-secondary education trends toward results-based accountability. This approach provides the best combination of the continuing benefits of performance measurement with the capacity-building benefits of evaluation.
REFERENCES


