Needs Analysis Theory and the Effectiveness of Large-scale Government-sponsored Training Programmes: A Case Study

Phillip C. Wright
University of New Brunswick, Fredericton, Canada, and
Gary D. Geroy
Colorado State University at Fort Collins, USA

Introduction
The southern portion of the Province of Ontario encompasses the heartland of Canada’s industrial sector, containing a large percentage of the country’s manufacturing, processing and service industries. To ensure the continuing availability of skilled labour, the Provincial Government has set aside approximately $78 million for mostly in-house, work-related training. This considerable amount is made available to the business community through the province’s 22 colleges of applied arts and technology under the auspices of the “Ontario Skills” (OS) programme.

Of primary concern to both government and industry is the effective utilization of these monies. Accordingly, the colleges employ approximately 200 “consultants” to develop training plans and to evaluate the programme.

A portion of this activity is devoted to needs assessment. Unfortunately, little research has been conducted on the process of designing multiple needs assessment for a wide variety of industries, with sufficient speed and accuracy to ensure the optimum use of public funds.

This article begins to develop a theory base for such a process. First, current theory is reviewed and a model depicting an ideal training needs assessment is devised.* Second, the methodology employed by OS consultants is described, along with current government plans and policies concerning consultant training and work procedures. Finally, present work practices are compared with theory, to develop an activity model that will start the process of closing the gap between the consultants’ reality and contemporary training practice.**

* Note that the term “training” is used here. Needs assessment can have a much broader connotation, encompassing all performance problems. For the purposes of this article, training will be stressed, as OS is devoted almost exclusively to training interventions. Other aspects of needs assessment, however, will be taken into account.

** The authors feel qualified to conduct this analysis, as Wright spent some time working as a programme consultant in the OS programme’s predecessor, the “Training in Business and Industry” (TIBI) programme, which operated under similar conditions and regulations.
The Theory of Needs Assessment

It has been more than ten years since Moore and Dutton[1] published their seminal work on training needs analysis. Their paper traced the history of needs assessment practice from 1953, when ‘‘only about 1 in 10 companies reported systematic approaches to determining training needs’’, to 1978. It was found, however, that in 25 years, ‘‘needs analysis theory [had] progressed little further than the expansion, formulation, and creation of specific techniques for collection of data useful in need determination’’. Indeed, most training theorists still defined needs in terms of the equation:

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\text{Standard or desired performance} - \text{Present or actual performance} = \text{Training needs}
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Moore and Dutton’s major contributions were to develop a series of tables that listed the various methods of data accumulation and to reiterate Magor and Pipe’s[2] contention that performance problems may not require a training intervention. Despite this work, the concept that needs assessment is closely linked to training, rather than to the identification of general performance deficiencies, has, until recently, been part of the literature[3].

During the last ten years, however, several different concepts have emerged that have at least the potential to make the assessment process more effective. Of primary note is the final demise of the ‘‘needs-analysis-tied-exclusively-to-training’’ concept. Georgeson and DelGaizo[4], Lampe[5], Bowman[6] and Wright[7] have all suggested that training may not be the appropriate response to any given performance problem. In fact, Wright argued that, as between 80 and 90 per cent of productivity improvements can be found in the work environment or culture, training budgets should be replaced by ‘‘performance improvement budgets’, to be spent whenever the organization would benefit most. The trainer, therefore, becomes a ‘‘performance consultant’’ to management, thus expanding his or her professional role[7, p. 55].

The idea of strategy or pre-assessment has also been put forth at different times[8]. Steadham[9], for example, indicated that the process of choosing the data collection method was of equal importance to the actual research. This work was followed by Cureton, Newton and Tesolowski[10], who linked the needs analysis process to an understanding of management’s strategy, company structure and philosophy. Similarly, it has been suggested that, despite its imperfections, ‘‘cultural profiling’’ may be an effective precursor to formal needs analysis, as many managers are not only unaware of the cultural ramifications of their decisions, but also do not understand the role of needs analysis as an intervention into the corporate culture[7].

Of equal import in needs assessment theory is the concept of proactive versus reactive analysis, ‘‘as training and development [often] tackles short-term individual needs, rather than addressing the long-term productive, competitive and social elements in which the organization must operate’’[11]. Traditionally, trainers have reacted to unfulfilled goals or issues related to such goals instead of anticipating where the enterprise was going and twinng needs analysis with strategy formation[12]. Indeed, integrating assessment into the organization’s
planning process creates links with company policies, politics and workflow[13, 14]. Although changes may be required to cope with the unanticipated, the proactive assessment should remain "the basis for programming during a given time frame"[6, p. 30].

A further concept concerns the breadth of enquiry and research required. It has been known for some time that a multitude of methods are available and what these methods are, but the involvement of individuals from different parts of the enterprise is relatively new. Lampe[5], for example, includes subject matter experts, intended trainees, managers, former trainees and clients in his analysis. He lays particular emphasis on the inclusion of clients, as they "are least likely to be consulted in needs assessments, despite the fact that they are the ultimate reason training is provided"[5, p. 101].

Despite these improvements in needs assessment methodology, there are those who question the accuracy of some current practices. Ford and Noe[15], for example, suggested that a manager's attitude towards training may affect his or her view of the amount and type of training needed, so that self-assessment techniques can be of questionable value. Similarly, Swierczek and Carmichael found that "age is negatively related to (the perceived need for) training in human relations (motivation, discipline, settling differences) and to entry and exit from the organization"[3, p. 268]. Finally, it has been suggested that if managers are asked to create a "wish list" of training needs, "one out of every four programs recommended (25 per cent to 38 per cent) will be unnecessary and waste training funds"[16].

Indeed, there appears to be a long-standing cynicism with needs analysis practice and it has been suggested that, "of course, the results of any needs assessment are, at best, just perceived or felt needs"[5, p. 101; 17, pp. 57-8]. These sentiments are perhaps best articulated by Zemke's findings that indicated only 38 per cent of employers "conduct a formal, structured needs assessment on almost every training project [they] undertake"[18, p. 103]. Faced with this undefined body of amorphous theory and practice, researchers and practitioners are still searching for more effective ways to isolate needs and, indeed, there are still those who advocate the "quick fix"[19].

**A Needs Assessment Model**

Based on the theories and the procedures outlined above, a model was developed that combines what is regarded as the most salient characteristics of a needs assessment programme. While these concepts, taken together, may seem utopian, it is suggested that practitioners would benefit from such an all-inclusive approach, in that a standard format will have been outlined from which to evaluate their own and their clients' needs assessment procedures (see Figure 1).

First, any model should be grounded in the employer's philosophy and strategy. It is at this level that the fundamental attitudes toward needs analysis, training and the broader cultural implications of worker treatment and perceived worth are articulated. In many organizations, management pays lip service to one philosophy, yet follows another. It is this sometimes hidden agenda, along with the organization's political environment, that must be accounted for if the needs assessment process is to be effective.
Second, needs assessment activity ideally should be more proactive than reactive. While it is recognized that most training today concerns already existing issues related to goals that have not been met, the ability to predict training needs is of paramount importance if training is to make a larger contribution to productivity.

This is not to indicate that reactive assessment should be disregarded. There always will be situations, even in strategically-driven organizations, to which the trainer must react. The overall training philosophy, however, should be to shift more and more resources to the proactive side of the training ledger, thus linking the training function firmly to the organization's strategy and policy formation process.

From a less philosophical viewpoint, a mechanism and a willingness to separate problems that can be addressed through training from those requiring other solutions is of significant value. In addition, the model must inculcate the realization that a broad range of assessment techniques can be brought to bear on any assessment problem, necessitating some sort of pre-assessment activity.
A cost-benefit/cost-effectiveness model should also be included. Without some idea as to return on investment, training decisions will be made from a perception, rather than from well-researched data [20].

Maintaining a broad base of participation in needs assessment (including the client) is a fifth tenet of successful needs analysis. Not only are the prospective trainees more likely to be responsive to training initiatives if they have been allowed to participate but, during the analysis and design phases which follow needs assessment, the broader the range of individuals involved, the more likely is the final curriculum to include items of real value to the organization.

Last, and perhaps most important, needs analysis should be seen as a function of behaviour. Perceptions, even if they are the distillation of opinions gleaned from those occupying several levels of the organizational hierarchy, may not reflect true needs. An analysis of behaviour, by contrast, develops an inventory of job activities for which individuals are paid. Completion of this inventory results in not only an accurate assessment of what people do, but pinpoints areas in which skills are lacking or organizational support is inadequate. Instead of working from an ephemeral perspective based on perception then, the trainer deals with the concrete. This stance allows him or her not only to design realistic programmes, but to sell these learning activities to management.

**The Ontario Skills Programme — Description and Procedures**

For some years, the Ontario Government sponsored the “Training in Business and Industry” (TIBI) programme in which “employer-based training units at the community colleges received funding as a fixed proportion of the money paid to individual firms participating in TIBI” [21, p. 19]. This original programme, however, did not address what were regarded as the fundamental barriers to training: lack of awareness and capability.

Accordingly, in 1986, a new “Training Strategy” was developed, consisting of five “essential services” [21]:

1. 53 Ontario Skills Development Offices were established, mostly in conjunction with colleges of applied arts and technology, to provide a training consulting service (funding $15 million).
2. $43 million in training incentive funds were made available; small- and medium-sized organizations were to be the primary beneficiaries.
3. $4 million were allotted to a Trades Upgrading Programme to provide short-term refresher training for skilled workers.
4. An Access Program, amounting to $32 million, was designed to eliminate barriers to training, e.g. child care, transportation, numeracy and literacy problems.
5. An Institute of Skills Training (funded at $6 million) was formed to “develop sophisticated and practical training products and services”.

A major goal of this new strategy was to:

achieve a significant increase in the number of new clients served, particularly those with fewer than 200 employees. More than 10,000 firms are expected to benefit annually, up from the previous 4,000. Two-thirds will be firms which have offered little or no training in the past, the reverse of the situation under TIBI.
Indeed, "more than half of the allocated budget was to be allocated to firms employing less than 200 employees"[22].

This portion of the article concentrates on the "consulting" aspects of the strategy, to determine what is happening in the field. A telephone interview with an official of the Ministry of Skills Development indicated that the major focus was on "the development of training plans and not on the needs analysis function". Consultants were to spend an initial three hours with each client, explaining the programmes and eliciting information about the employer's past training record, budget and economic situation. If the consultant was not convinced the need could be satisfied through training, an "organizational analysis" was to be conducted. Subsequent visits would be made to help the employer develop a training plan that would identify what specific job functions needed to be addressed and to develop terminal training objectives. As well, any criteria that would affect training could be noted. For example, some employers "shut down" in July and some rotate their employees on three shifts. Finally, an evaluation method focused on training effectiveness would be identified and approved by the employer.

Telephone interviews with Ministry of Skills Development officials confirmed that after course delivery sources were identified and bids received, usually from three sources, the package was sent to the Ontario Skills Development Office manager for approval and then to the budget holder — a separate individual. If sufficient funds were available and all the programme criteria met, the employer then would be informed of his or her allocation and training could commence. On completion, the consultant would aid in course evaluation.

Although it was realized that the time required to complete this process would vary, an average of 15.5 hours per employer had been set. Ministry officials expected to conduct between two and three courses per employer. If programme targets were met, then somewhere between 20,000 and 30,000 courses would be run.

Further telephone interviews with a purposive sample, comprising five different managers or consultants in four colleges, indicated widespread concern about this process. Although the consultants had been given some training[23], and the perceived skill deficiencies in needs assessment methodology were to be remedied through still more instruction, it was felt almost unanimously that the needs assessment process was not being performed well.

In the field, the stress was being placed on situational analysis, as a training plan is developed for each employer. While it was suggested that training needs are often obvious, the training plan format and client contact material published by the Ministry of Skills Development does not lend itself to detailed needs assessment. Indeed, upon review of four actual plans, it was found that the assessment process was barely mentioned, although a brief list of needs was included in each.

When asked how much time was actually allotted to needs assessment, most respondents were unable to answer, but one manager estimated that perhaps two hours would be the average. He stressed, however, that the actual time might vary "between one and 50 hours". Another consultant confided that "no in-depth" assessments were being performed.
As to workload, consultants no longer have to market the programme as they did under the TIBI regime and the Ministry has launched an extensive advertising campaign. In fact, in some regions there is a waiting list of employers who have requested training funds. It seems that the extensive client contacts made as part of the TIBI activity have created a pool of clients predisposed to accepting government intervention in the training arena.

This situation poses some problems. Many of these original clients have already created a "training culture" and no longer need financial incentives. At least one college, therefore, is trying to "wean" some of its larger clients away from the programme so that other, sometimes smaller, firms can be accommodated.

The demand for training monies, then, appears to have remained high. It was suggested that client loads of up to 80 companies per consultant would not be uncommon. Indeed, if this workload can be extrapolated across all 200 consultants, the OS programme will far exceed the 10,000 employer target.

Analysis

It has been suggested that a training needs assessment might have seven facets or characteristics (see Figure 1):

1. A grounding in the organization's culture or overriding philosophy.
2. Proactive rather than a reactive focus.
3. A method of separating training needs from other situations for which training would be an inappropriate intervention.
4. Broad participation among the various groups or individuals affected by training.
5. A training needs identification technique that is based on the identification of behaviours required to perform the job rather than perceptions.
6. The use or the consideration of a variety of data collection methods and/or sources.
7. A cost-benefit analysis module.

The task now is to compare this model to what is happening in the field and to the procedures articulated by the Ministry.

Of the seven characteristics which an effective needs assessment comprises, the consulting process attempts to deal with four. During the initial client contact, an effort is made to assess the overall culture and the work situation in which training will take place. Needs that will not respond to training are to be isolated. According to information received from an official at the Ministry, job function statements and terminal performances are supposed to be set. Finally, cost figures are included as part of each training plan, although their relationship to benefits remains obscure.

The overriding concern at this point is not with intent, but with execution and in particular with time. It was stated by the Ministry that the "average" time spent with each client should be approximately 15.5 hours. Individual
consultants and managers have suggested that 17-18 hours is a more appropriate time-frame. It appears that this time allotment includes travel, interviewing, administration, training, plan writing and evaluation. Needs assessment activity occupies an undetermined portion of the hours spent with each client, but it is clear that there are many competing demands on the consultant’s time.

Assuming that needs assessment is an integral and a necessary part of any effective training programme, the question that must be answered, in specific terms, is how much time is required to do an adequate needs assessment? The literature is not voluble on this point. While it is recognized that some needs are obvious and some can be isolated in an hour or two, in many cases needs assessment requires lengthy and in-depth study and timeframes of one or two weeks are not uncommon[24]. The authors have been involved with needs assessment research that took at least 30 work days to complete.

To complicate the situation, the OS strategy is to bring many more new clients into the programme. The majority of these clients are supposed to be small- and medium-sized firms. It is suggested that few of these organizations will have had much experience in the development of training programmes. While their size may make the needs analysis process simpler, their inexperience is certain to necessitate increased consulting support.

It is suggested, therefore, that a per-client allocation of 15.5 hours or even 18 hours may not be adequate. If current workloads are maintained, it may well be impossible to service these clients competently. For example, a consultant working 7.5 hours each day for 48 weeks yearly has 1,800 working hours available for client contact. If that consultant has 80 clients and spends an “average” of 15.5 hours with each one, 1,240 hours are consumed. The remainder, 560 hours per year or 11.66 hours per week, will probably be spent in meetings, making appointments and performing other administrative tasks.

Furthermore, it is unlikely that each day will have 7.5 productive hours and, during some portions of the year, it is difficult to meet with employers. It is suggested that a large percentage of the consultants’ work will be compressed into late summer, early fall and early winter, thus leaving even less time for needs assessment.

Without doubt, one can manipulate these data in several ways to “free” more consulting time. Even if the consultants’ present skill deficiencies are ignored, however, needs assessments conducted with the 15.5 to 18 hour time allotment will tend to be cursory at best.

If the general consensus among both training professionals and academics is to be believed, poor needs assessment results in inadequate training design and wasted training budgets. So, even in those areas where the Ministry’s strategy follows the previously outlined seven-point model, time constraints tend to make the consulting process less than optimally effective.

As to those sections of the model that are not often addressed by the consultant, perhaps the lack of a broad participation base is the most significant. At present, the consultants deal almost exclusively with management. It has been suggested previously that management’s perceptions are not always accurate and that participation in the development process increases trainees’
commitment to the actual learning activity. As well, the problem of separating training from "non-training" needs cannot be ignored. Again, the time factor is the paramount concern for, under present budgets, only management can be contacted and interviewed.

The scenario that appears to have developed, then, is one of a dedicated but inadequately trained group of professionals attempting to cope with heavy demands for both government and clients. While public funds undoubtedly will be disseminated into the business community where probably they will increase skill levels, the strategy may be flawed. The effects of a $78 million expenditure, therefore, are unlikely to be as great as they would be if it was certain that monies were being spent to address real training needs.

Public Sector Expenditures through the OS Programme: A Model

Although training consultants in needs assessment methodology may help create a higher skill level, the solution to the problem of inadequate analysis will not be found here. This is a time problem!

Given that more funds are unlikely to be made available and, as a result, the time constraints are likely to remain the same, the strategy and the consultants' activities should be restructured. If it is true that 80 per cent of human performance problems lie in the work environment or culture and not in the people who do the work[25], then much more stress should be placed on "non-training" organizational improvement activity. This policy shift would require a drastic change in the consultant's role — from training specialist to organizational improvement specialist.

It must be remembered, however, that while this redistribution of talent is not impossible, it is most unlikely. The Ministry of Skills Development's mandate, philosophy and history have a strong training orientation. The Skills Development Offices, for the most part, are located in or near Colleges of Applied Arts and Technology where, again, the focus is on training. Finally, the consultants, schooled in the TIBI era, are training consultants by profession. Most of the multi-million dollar budget, then, will be spent to support training.

For this reason, the model that follows will virtually ignore "non-training" alternatives. The first premise on which this model will be based is that neither increased funding nor time will be made available for needs assessment. As it has been argued that more time is necessary if public monies are to be spent effectively, this resource must come from another source — the employer or client. If the intent is to create a "training culture" in Ontario, the notion of increased employer involvement is not alien to the Ministry's philosophy.

While the consultants do need more training in needs assessment, it is suggested that increased emphasis be placed on needs assessment training for selected individuals in companies, in trade associations and in business departments at the Colleges of Applied Arts and Technology. In addition, employers should be classified as to their expertise in assessment so that increased time can be spent with the less skilled client.

The training of employer representatives could be accomplished in a variety of ways. A series of seminars could be held in convenient locations. An open-
University programme could be conducted with formal evaluation and recognition given. Colleges could mount evening courses in needs assessment. Provided the dissemination of needs assessment skills is continuous, provided that employers are required to have an employee trained in needs assessment on their staff if they wish to participate in the OS programme, and provided these individuals are given tangible recognition, the employer should have most of the detailed analysis work completed before the consultant is contacted.

Should some employers be unable to provide suitable individuals for training in needs assessment, the Ministry might turn to either the 22 community colleges or to trade associations. The former often employ teaching masters who might be allowed a limited amount of private consulting, while the latter are constantly searching for new services to offer their members.

A major advantage of enhanced employer involvement and resource commitment, in the form of assessment time, is that the company will have an increased stake in the training function. Unless Wright's experience as a TIBI consultant was atypical, many (but by no means all) employers view government training assistance as a "hand-out". The more assistance given, the more will be taken, with no real commitment to developing human resources. Serious involvement by the employer, in which he or she plays a responsible role in the training process, may help meet the objective of developing a "training culture".

As well, trained individuals should be able to identify needs that will not respond to a training intervention. An "off-shoot" of this involvement process, therefore, may be increased organizational efficiency.

Despite this increased focus on needs assessment activity, there is no guarantee that in-house personnel will succeed in isolating those 10-20 per cent of the gaps in business performance that will respond to training. Even if proactive needs assessment theory is ignored, the consultant, arriving "cold" at an employer's door, still may face a daunting task.

In addition to a reorientation of the assessment focus, then, employers could be classified according to their expertise and "track record" in assessment and training. Although much more thought and research would have to be given to studying this concept, why not allocate funds according to an employer's willingness to use them effectively? The Ministry has taken sound steps to ensure that the financial aspects of the OS programme meet established accounting standards. An audit procedure to ensure that training is conducted within established training standards and a ranking of employers along these lines would contribute enormously to the effectiveness of the OS programme.

Should this model be followed, a typical training scenario might be as follows (see Figure 2):

(1) The employer, using in-house expertise, identifies a need that can be met through training, by either proactive or reactive assessment activity.

(2) The employer articulates this need, perhaps using prepackaged models of forms, checklists and procedures supplied by the Ministry.

(3) The consultant is called. He or she reviews the employer's submission, makes suggestions and modifications. The time spent with each employer varies according to some pre-established criteria.
(4) Training, vendor selection and other administration processes are completed.

(5) Funds are allocated using either present criteria and/or an employer-ranking or classification process.

(6) Training commences.

(7) The consultant returns to evaluate.

Summary and Conclusion
It has been argued that needs assessment is an integral part of any training process and that needs assessment activity can require a significant amount of time if valid results are to be obtained. Further, it was shown that the Ontario Skills programme, while generous in its conception, contains flaws in execution that may limit the effectiveness of a multimillion dollar infusion into Ontario's economy. As a significant increase in funding is unlikely, the needs assessment process will continue to be suspect, despite increased training for consultants in that inadequate time is the major variable that prohibits effective analysis.
By increasing the time spent on needs assessment by employers, it is suggested that a more effective training system can be maintained. Otherwise, the present focus on training plans will continue and the validity of training conducted under the Ontario Skills programme must be questioned.

References