Developing Performance Data for Making Useful Faculty and Leadership Decisions: Needs Assessment as a Vehicle

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This article develops a methodology, based on the concepts of a results-referenced needs assessment, to determine and prioritize perceived areas of existing or potential concern in an academic institution. The results were used to develop a baseline against which progress in addressing those concerns can be measured over time for the purpose of assessing continual improvement. The perceived areas of concern were identified by analyzing soft data—perceptions about performance and consequences—collected using questionnaires. These data reflected the personal, not independently verifiable judgments of needs based on the perceptions of the institution's engineering faculty. There is nothing in the methodology that is unique to academic institutions. It applies to any organization that considers human resources a valuable asset.

The role of an academic dean is complex (Swart, 2009). One of the more sensitive issues for a dean is to navigate the often conflicting desires of the faculty and the university's upper administration. During a recent job interview, a leading candidate for dean at a large institution indicated that he saw his job as bringing the faculty's wishes and desires to the upper administration and then relaying the upper administration's responses back to the faculty. Although he was not offered the position, the response indicates the balancing act that deans must perform. Faculty expect deans to do battle with the upper administration to receive what they perceive is their rightful share of university resources, while the upper administration expects the dean to keep the faculty pacified and productive, if not content.

Needs assessment, defined as gaps between current and desired results and their consequences, is useful in both the private and public sectors.[1] This article presents an application in higher education, but the same approach can be generalized to other contexts. The methodology developed and reported here is applicable to new as well as current educational leaders. It was originally developed to assist a newly appointed dean of engineering of one of the largest public research I universities in the United States to determine and prioritize areas of existing or potential concern, develop responses and tactics to address those concerns, and develop a baseline against which progress in addressing those concerns can be measured over time for continual improvement. There is nothing in the methodology that is unique to engineering, and it can be applied to

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practically any discipline, from arts and sciences to education. Neither is the methodology confined to educational institutions. It applies to any organization that considers human resources as a valuable asset.

Erskine Bowles, President Clinton's former chief of staff, shortly after being named president of the University of North Carolina, was quoted as saying that many people in his new constituency thought that he came from an industry that was characterized by its "ready, fire, aim" philosophy while he observed that he now appeared to be in an environment characterized by its "ready, aim, aim, aim …" philosophy ("School Link," 2006). His perception on the "aim" can perhaps be explained by higher education's leadership reluctance, if not aversion, to developing clear, measurable performance criteria for their respective units.

Typically annual reviews by provosts for their deans and by deans for their chairpersons begin by asking for a self-evaluation from the person being reviewed. Upon receiving this self-evaluation, the reviewer completes a performance appraisal. This appraisal rarely compares metrics that were mutually agreed on the previous year to what was actually achieved. When discussing this reluctance to adopt measurable performance criteria, one high-level administrator responded by saying that he would never use metrics in his performance evaluations because "numbers can be argued with." His approach was to couch everything under the rubric of "I believe" or "I feel" since it was his opinion and no one could argue with what he believed or felt.

Searches for senior administrators such as deans and provosts are usually national or international in scope in an effort to find the best person to fill the position. As a result, the successful candidate often is external to the institution. She or he is (or should be) familiar with the higher education environment. However, each campus has its own culture and issues, which are not necessarily highlighted during the interview process. Even if they are brought up in a superficial manner, candidates are always eager to be offered the position and tend to have high confidence in their ability to successfully deal with those issues.

Many administrators have, through their decision making based on any database they employ, unwittingly sown seeds that led to conflict with their faculty early in their tenure and to their eventual downfall (Swart, 2009). Thus, understanding the overall campus culture and issues from a faculty perspective can be an important asset to a successful administrative tenure. This article develops a methodology based on the concepts of needs assessment as developed by Kaufman (2006). This approach collects data on the gaps (they may be perceptions, results, or both) to provide a data-driven assessment of what is seen to be working and where improvements might be considered.[2] An application of the instruments that an incoming dean used are presented, including the use of the results for continuous performance.

Context of the Research

The incoming dean (the senior author of this article) suspected, as a result of conversations with faculty and staff during the interview process,

that the college that he was chosen to lead was in disarray. The prior dean had been asked to step down by upper administration, and the same was true for that dean's predecessor. The faculty was unionized, and salary increases were given according to a system that awarded step increases based on length of service rather than performance-referenced merit. Discussions between the incoming dean, the provost, the department chairs, and faculty indicated that this reward system appeared to discourage faculty working for the good of the institution and encouraged the pursuit of individual goals. The discussions also revealed that morale appeared to be low because the upper administration, which had been in place for 17 years and had a style of strong central control, had not been willing or able to give up any of that control. For example, the provost retained all budgetary control and management and did not share budget decisions or information with the deans. Almost everyone (except the president and the provost) believed that a more decentralized administrative model would be appropriate, given the many years of substantial growth in the number of faculty and students.

Perceptions by themselves can be misleading or incomplete unless they can be placed in context.

The incoming dean had discussed his suspicions with the upper administration before accepting the position. After having been assured of their strong support, he decided that he required specific and, preferably, quantitative data about the faculty. First, he wanted data about how the faculty of each department perceived their chairperson since he recognized that the relationship of faculty with their department chair strongly influenced how they perceived administration in general. Second, he wanted data that reflected the perception of faculty about themselves, their environment, their departmental colleagues, and the availability of resources. Finally, he wanted data that reflected faculty perceptions about the institution in general: its programs, administration, and students.

Having previously served as a department chair, an associate dean, and a corporate vice president, the incoming dean had enough experience to understand that perceptions by themselves can be misleading or incomplete unless they can be placed in context. For example, a professor may feel that each faculty member works only for his or her individual good. This could be interpreted as a negative, but if asked whether that is the way it should be and the answer is yes, then this is not a negative perception as far as that professor is concerned. Of course, this is not a performance standard, as evidenced by the use of the word *feel.* If the dean should decide that the faculty should be more team oriented, then bringing this about in an environment where it is thought that working for the individual good is the way things should be is very different than if there were acceptance for the idea that the pursuit of mutual goals is the norm. Thus, the central purpose of the study was to develop appropriate instruments to collect the desired data as well as a methodology to analyze the data to allow the incoming dean to develop insights into potential problems that might exist or could arise that might compromise his ability to be successful as dean.

Methodology

In order to develop appropriate and useful instruments for decision making and continual improvement, we determined the planned uses for the results and identified the data to be collected to develop these results. The results would describe the actual perceptions of engineering faculty on a number of issues and what the faculty felt those perceptions should be. Given that faculty are more satisfied and productive in an environment where their actual and desired perceptions on key issues are the same, the dean wanted to identify those issues and then formulate and implement tactics designed to align actual and desired perceptions of the faculty. Those would then be aligned with measurable and valued performance criteria for the college. In addition, he wanted to monitor this process over time to ensure continued progress toward closing the gap between actual and desired perception.

Based on the above, it became apparent to the authors (one as dean, the other as a research faculty member) that a methodology based on the principle of needs assessment was appropriate. Needs assessment is defined as the formal process of identifying needs as gaps between current and desired results, placing those needs in priority order based on the cost to meet each need versus the cost for ignoring it, and selecting the most important needs (problems or opportunities) for reduction or elimination (Kaufman, 1998, 2000, 2006).

Unlike most other approaches to needs and needs assessment, this approach has a focus on gaps in results (and consequences) and not means, resources, and activities. The methodology using this definition of need provides two columns, as shown in Figure 1: one each for what is and what should be where ratings are made for each of a number of statements. The variables for rating are results referenced and not based on the conventional focus on means or activities.

The statements in the middle column of the instrument reflect the specific results that are to be addressed by the study. The difference in the rating under the "what should be" and the "what is" columns is referred to as

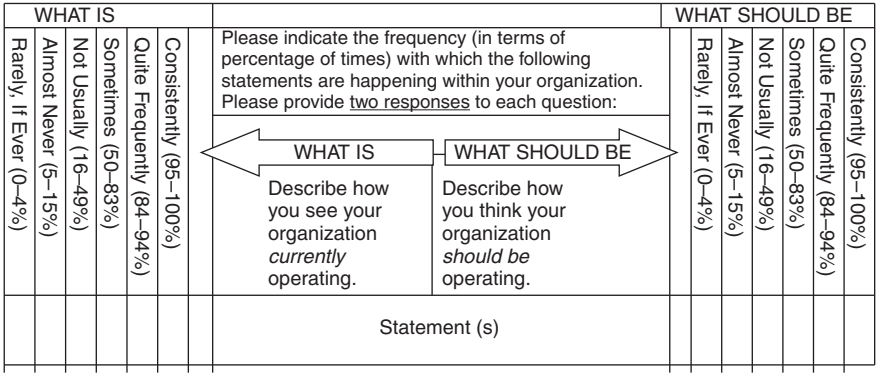

FIGURE 1. NEEDS ASSESSMENT

the *gap in ends.* A key requirement for needs assessment to be effective and valid is to make a clear distinction between ends (results, consequences, payoffs) and means (resources, methods, and how to do it).

The benefits to be obtained from a needs assessment are critically dependent on an appropriate definition of needs and how the results of the analysis are used. This entails, among others (Kaufman, 1998, 2000, 2006), the following:

- Any statement of need is free from indications of how the need will be met, such as training, computers, or technology.
- Any statement of need is free from any indication of what resources will be used to meet the need, such as personnel, time, money, or equipment.
- Needs are listed in priority order on the basis of the magnitude of their gaps and the costs of closing that gap versus the cost of ignoring it.
- Interventions to close the magnitude of the gaps are selected on the basis of a cost-consequence analysis for each need or cluster of related needs.
- Continuous improvement criteria are taken directly from the "what should be" dimension of the selected needs.
- Continuous improvement results report the extent to which gaps associated with needs or families of needs have been reduced or eliminated.
- Continuous improvement results are used for fixing, not for blaming.

This approach is in stark contrast to most existing approaches to needs assessments, which are oriented to identifying means and resources desired (a wish list or "wants" assessment") and assume that getting the means and resources will deliver useful results. Instead of identifying gaps in results, they attend to deficiencies in means (such as training course) or resources (personnel, computers, funds).

Once the instrument of Figure 1 was populated with statements reflecting relevant and appropriate needs, it was administered to the faculty of one department whose chair had consented to have his department serve as the test group for the study. The results indicated that the instrument appeared to serve the purpose for which it was designed. Consequently the needs assessment data were collected for all departments and analyzed.

Application: The Academic Needs Assessment

The academic needs assessment (ANA) was developed to obtain data for making useful decisions about faculty and leadership. Specifically, instruments were developed to collect data that described the faculty's perception of the following: what is and what should be in regard to their chair, the gap between what is and what should be with regard to themselves and their colleagues, and what is and what should be with regard to their college and

the university. Once he had this information, the dean wanted to measure the current perceived status, identify and prioritize needs as perceptions concerning gaps in results, obtain comparative perceived strengths of faculty and chairs by department, and assess the success of tactics adopted to close the gap between what is and what should be.

Each of the three instruments developed resembled Figure 1, but the entries under the Statement(s) column in each of the three are, of course, different. The instrument designed to assess the gap between what is and what should be in regard to their chair has 19 statements, the instrument to assess the gap between what is and should be for the university and college has 69 statements, and the instrument to assess the gap between what is and what should be in regard to them and their colleagues has 63 statements.

Continuous improvement results are used for fixing, not for blaming.

All tenured and tenure-track faculty members were invited to participate, and standard procedures to safeguard respondents' anonymity were employed. Of the 120 tenured and tenure-track faculty members, 57 responded. The distribution of responses across the various departments was proportional to the number of faculty in the department. The responses were analyzed by department, and all department responses were aggregated into a collegewide response so that each department could compare its responses to the college aggregate. The responses for each department differed according to the perceptions of its faculty with respect to the statements contained in the needs analysis instruments.

Tables 1 through 3 are examples of the type of information that was derived from the data collected during the ANA. Table 1 represents the faculty evaluation of their chairs. It shows the top 10 (out of 19) attributes in terms of improvement potential, defined as the difference of what faculty thought the attribute score of the chair should be and what they considered to be his or her actual score. In this case, the faculty thought that their chairs should be better motivators than they actually were. The gap between the "should be" and "is" is 2.07. The next largest gap is 2.05 for what faculty expected for chair leadership qualities versus what they considered to be the chair's actual leadership qualities.

The information presented in Table 1 is an aggregate evaluation of all chairs by all responding faculty. The same information was provided by department so that individual chairs could compare how their evaluation compared to the aggregate. Based on this information, each chair, in consultation with the dean, had the opportunity to develop and implement a program for improvement. During the next ANA cycle, the success of this improvement program can be assessed by the change in the corresponding gaps.

Table 2 represents the evaluation of the college and university by faculty. It shows the top 10 (out of 69) attributes in terms of improvement potential. In this case, the largest gap is 3.14 and indicated that the faculty thought that the university should be higher ranked in the various disciplines than they perceived it to be. The next largest gap (3.12) indicated that the faculty

TABLE 1 ENGINEERING FACULTY EVALUATION OF CHAIRS

MY CHAIRPERSON	IS	SHOULD BE	IMPROVEMENT POTENTIAL
Is an excellent motivator	4.62	6.69	2.07
Is a competent leader	4.60	6.65	2.05
Creates an excellent climate for progress	4.78	6.78	2.00
Is an excellent mentor	4.61	6.60	1.99
Is visionary	4.54	6.50	1.96
Excels in attracting external funds	4.38	6.33	1.96
Is an excellent representative of the department	4.96	6.76	1.80
Is a competent administrator	5.02	6.63	1.61
Works well with faculty	5.18	6.67	1.49
Is successful with the administration	5.09	6.55	1.45

Note. Displayed are the top 10 attributes sorted by improvement potential.

thought that university administrators were not open and forthright with them.

The items in Table 2 represent faculty perceptions that can be addressed only by the administration, as it deems appropriate. Results providing the faculty evaluation by department were also developed so that department chairs could be included in the development of actions to reduce the gaps. The success of such actions could be assessed after the next ANA cycle.

Table 3 represents the evaluation by the college faculty of their peers and work environment. It shows the top 10 (out of 63) attributes in terms of improvement potential. In this case, the largest gap is 2.70 and indicated that the available technical resources required improvement. The next largest gap (2.66) indicated that the faculty should have more respect for the university administration than they did.

The items in Table 3 represent faculty perceptions of a number of attributes that are particularly complex, but may be best defined as relating to their pride in the institution, their colleagues, and their students—the esprit de corps of the organization. To make changes in these attributes will require a conscious effort by the university's top management. This may be particularly difficult for an entrenched administration and an easier task for new leadership when it comes. If addressing these issues becomes an agenda item, then the progressive success of chosen actions could be assessed from one ANA cycle to the next.

Applying the ANA Process

Tables 1 through 3 are representative of the information that can be extracted from conducting an ANA. The information obtained from the

TABLE 2 ENGINEERING FACULTY ASSESSMENT OF THE COLLEGE AND THE UNIVERSITY

AS A FACULTY MEMBER, I FEEL THAT	IS	SHOULD BE	IMPROVEMENT POTENTIAL
The university is in the top 10 in each of its disciplines	2.70	5.84	3.14
Administrators are open with faculty	3.19	6.31	3.12
The college is in the top 10 of each of its disciplines	2.74	5.84	3.10
Our PhD graduates get the better academic positions	3.05	6.12	3.07
Our entering freshmen are well prepared for our curriculum	3.35	6.32	2.97
Administrators trust faculty	3.63	6.50	2.87
Administrators are free from hidden agendas	3.55	6.32	2.77
The department is in the top 10 in each of its programs	3.22	5.98	2.75
Administrators are open with each other	3.68	6.32	2.64
Faculty are free from hidden agendas	3.74	6.33	2.59

Note. Displayed are the top 10 attributes sorted by improvement potential.

TABLE 3 ENGINEERING FACULTY EVALUATION OF PEERS AND THE WORK ENVIRONMENT

AS A FACULTY MEMBER, I FEEL THAT	IS	SHOULD BE	IMPROVEMENT POTENTIAL
Technical resources are excellent	3.78	6.48	2.70
Faculty members in my department respect the administration	3.80	6.46	2.66
Staff resources are excellent	4.07	6.54	2.47
Technical resources are fairly distributed	4.13	6.52	2.39
My scholarly work has produced a book within the past 3 years	2.44	4.80	2.36
Technical resources are available	4.33	6.60	2.27
Staff resources are available	4.31	6.53	2.22
Staff resources are fairly distributed	4.49	6.52	2.03
My opinions are respected and valued by the administration	4.42	6.39	1.97
Faculty members in my department respect the students	4.78	6.63	1.85

Note: Displayed are the top 10 attributes sorted by improvement potential.

ANA for each department was organized and distributed as a report to each department and consisted of the following:

- *Introduction:* A description and the anticipated uses of the results.
- *Executive summary:* This contains the following information:

1. A narrative listing of the statements that are rated highest on the what-is category.
2. A narrative listing of the statements that are rated lowest in the what-is category.
3. A narrative listing of the statements that are rated highest in the what-should-be category.
4. A narrative listing of the statements that are rated lowest in the what-should-be category.
5. A table listing the department's major concerns and opportunities. These are grouped by rank, where rank 1 opportunities and concerns are those whose gap between what should be and what is is greater than 3 and rank 2 opportunities are those whose gap between what should be and what is is between 2 and 3. Opportunities and concerns whose gap was less than 2 were listed in the main body of the report.

- *ANA department details:* This contains the following information:

1. The results of the chair's assessment instrument. This contains the scores for each of the 19 statements on what is and what should be.
2. The information contained in the above sorted by improvement potential (by the size of the gap between what should be and what is).
3. A comparison of the department's minimum and maximum rating for what is and what should be on each statement compared to the same information for all other departments.
4. Same information as above, except that it is a comparison of maximum and minimum improvement potential (gaps) among all departments.

5 through 12. The same information as in items 1 to 4 in the executive summary for the other two instruments (colleagues and the university and college).

- *ANA college details:* The same information as in items 1 and 2 for department details aggregated for all faculty responses in all departments.

Using the ANA Results

Once the department chairpersons received the ANA information, they discussed it with the dean. These discussions, as well other issues not encompassed by the ANA, resulted in a set of key objectives to be accomplished by each department during the next academic year. The objectives relating to the ANA were stated as follows to the department chairs:

> The attached ANA quantifies gaps between what is and what should be, according to the department's faculty responses. You are asked to review this information individually and with your faculty, and identify

which gaps represent opportunities for improvement. Strategies to achieve improvement should be discussed and appropriate ones documented and implemented. The success of these improvement strategies will be assessed by comparing next year's gaps to this year's.

During the first year of the implementation of this process, some department chairs reacted negatively to having such specific results to achieve. In such cases, they were reminded of the purpose of having such objectives by the following statement from the dean:

> I want to make sure that you understand the purpose of the objectives. The objectives reflect University and College requirements. As Chair, you are expected to provide the leadership required at the departmental level to achieve these objectives. This includes securing faculty support and motivation, as well as developing and executing the necessary plans.
>
> Clearly, even the best laid plans can have unexpected results. That is understandable and, to the extent that is used for learning and improving performance, acceptable. What is not acceptable is to consider these objectives as optional. They are the basis for assessing your performance as chair during the next academic year.

Presented with such clear direction, the department chairs adopted the ANA methodology and made it an integral part of their management process. The usefulness of the results was reaffirmed when all academic programs of the college received, for the first time ever, unconditional accreditation from the Accrediting Board for Engineering and Technology.

Conclusion

This article has focused on the development and application of a needs assessment methodology for identifying perceived gaps in ends (results, consequences, payoffs) using soft data. Soft data can include personal and not independently verifiable judgment of needs based on perceptions. By itself, the information is useful for addressing and remedying perceptual issues shared by faculty. However, it is particularly useful when it is embedded in an integrated, system-oriented performance improvement process. Such a process complements soft data with hard data and includes the following (Swart, 2009):

- Strategic planning based on an analysis of the strengths, weaknesses, opportunities, and threats facing the institution.
- Organizational assessment to ensure that the institution is properly organized and led to engage in and receive the benefits from a performance improvement process.
- Objective and measurable results.

- A results-based reward system.
- A procedure for allocating resources.
- Process reengineering to avoid overlap and duplication of effort and resources.
- A receptive environment for change.

[Soft data are] particularly useful when … embedded in an integrated, system-oriented performance improvement process.

Notes

[1]*Needs assessment* as used here is based on the early work of Kaufman (English & Kaufman, 1975; Kaufman & English, 1976, 1979) and recognized by many other human performance professionals (Witkin, 1984, 1991, 1994). It is based on gaps in results. This needs assessment approach used only the soft data, or perceptions, as the basis of a more complete model due to the realities of an ongoing, functioning college of engineering and the requirement for executive decisions for achieving continual improvement. Other performance results–based approaches could be developed and submitted through the cycle of faculty approval followed by administrative action. This approach to needs assessment should not be confused with psychological testing and related validation demands. It is, as noted, an assessment and not a test.

[2]The approach used is found in many applications of needs assessment, including those of Rummler and Brache (1990, 1995), but not those defined and applied by Rossett in her "training needs assessment" that examines only gaps in means, not ends (Kaufman, 2000). The definition of *need* used here and extensively (and noted by Witkin, 1994) is seen as the standard for needs assessment.

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