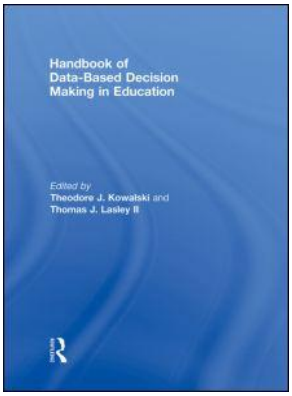

Handbook of Data-Based Decision Making in Education

Theodore J. Kowalski, Thomas J. Lasley

When Data are Insufficient to Make Group Decisions

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When Data are Insufficient to Make Group Decisions

A Case Study in Community College Administration

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In practice, key decisions in all busy organizations are made with a mix of politics, personalities, and data in a complex milieu of competing interests and needs. The goal is to always rely on good data at the heart of important decisions (Kowalski, Lasley, & Mahoney, 2008). However, it is not always clear if collecting good data is sufficient for data to be used. Further, it is not always clear why available data are sometimes not used to guide decisions.

Both of the authors of this chapter have been administrators with substantial decision-making responsibilities and have seen and participated in a wide range of decision-making behaviors in different institutions over the decades. We have seen data used to clarify decisions, and we have seen data overlooked or bypassed to make decisions. We have seen good decisions made with bad data, and vice versa. We had become fascinated by that crossroads in theoretical space where decision theory and data-based decision making should come together to improve decisions with data, and equally fascinated about the kinds of things that keep them from coming together effectively in the shared perceptual and action space of key decision makers. We searched the research literature and found that few studies have been done in community colleges to determine when and why specific data are used, and not used, and how collected data are perceived by key decision makers. We decided to conduct a year-long study of data uses and non-uses in one community college to see if we could increase our understanding of how decisions and data interact in the actions and perceptions of key decision makers. This chapter describes the results of that year-long study.

We chose Treasure Valley Community College (TVCC) in Eastern Oregon as our research site both because it is typical in many ways of community colleges in general and also because the decision groups were enthusiastic and committed to helping us understand more about decision processes at TVCC. TVCC has several data collection and reporting strategies that are designed to inform decision makers and also meet the standards of regional and national accrediting bodies. The stated goals of

the institution included data-driven decision making, but we knew that actual practices did not always meet that goal. This difference between explicit goals and actual practices is not unique to TVCC. In a 2001 study of information used in a university setting, for example, Dhillon found that "tacit knowledge" about organizational culture played a larger role in decisions than did extant data. The "way we do things" or "what people expect" may play a more critical role than "what does the data say." In Mintzberg and Rose's (2003) longitudinal study of McGill University, they reported that little that resembled revolutionary change occurred over decades, and that relevant data were not necessarily a key element in most major decisions. Access to the TVCC key decisions over time would allow us to learn more about data uses in a specific setting.

Review of the Literature

The collection and analysis of data is not a new managerial behavior in community colleges. Data about the success of students and programs have always been essential to managing limited financial resources. For example, recent studies of students have included documentation of the value of attending community colleges (Paulsen, 1998; Rouse, 1998), the value of having graduated from a community college (Sanchez & Laanan, 1999), documentation of graduate rates (Bailey & Weininger, 2002; Scott, Bailey, & Kienzl, 2006), and documentation of results of programs for particular student populations (Chang, 2005; Mellard & Byrne, 1993; Townsend & Wilson, 2006). However, most prior research and most prior data usage have been on the specific application of one data set to one program instead of on organization-level patterns of data usage.

Data use for decisions in the community college setting itself has not been as extensively studied as in other educational settings, such as schools or four-year colleges and universities. The few studies that exist support increased use of data to make decisions. Poole and Denny (2001) found that employees of one community college reacted positively to increased access to data and decision making. In data collected from a random sample of North Carolina community college administrators, Hollar, Hattie, Goldman, and Lancaster (2000) found that administrators were less likely to exhibit escalation behavior (repeated investment of time, money, and other resources into a failing project) when they had ready access to related data, and they had the training and background to make sense of the data available. Clark's (1998) review of research on women in community college faculty found that timely access to data and to decision making increased chances to succeed as campus leaders and increased perceptions of competence.

Hawthorne and Smith (1993) looked at improving teaching and learning in community colleges. They produced a set of guidelines for academic leaders to use in order to produce effective change. The research reported in this chapter replicated a 1987 survey of chief academic officers which was intended to "collect baseline data on the existing level of commitment to instructional effectiveness and to suggest areas that deserve attention so that substantive changes could be made" (Cochran, 1989, p. 34). It contained 712 chief academic officers from community colleges

located across the United States. Each participant was asked to complete a survey instrument with five areas: employment policies, campus environment, strategic actions, instructional enhancement, and instructional development. A series of questions in each of the five areas asked participants to rate each of the questions using a scale from 1 to 10 (with 1 indicating the *least commitment* and 10 representing the *most commitment*). Their findings were that the *highest commitment* by community college administrators was to campus culture and the *lowest commitment* was made toward promoting teaching effectiveness, research, and improving instruction. The intent of this study was to measure the level of commitment to instructional effectiveness and illuminate areas that deserve more attention. It was evident that if the culture was to become focused on academic excellence, more confidence in the use of data needed to be established as well as more attention given to research within the community college setting.

So, what little research had been conducted on using data to drive decisions indicates that community colleges, in general, use data at the program or student level on a regular basis and several studies demonstrated that leaders were willing to use more data that were available to them. What *is* new today are the accelerating demands that data and data documentation be "front and center" in all campus and program-level administrative decision making. In his 2003 survey study of 1,423 faculty and administrative staff of the 14 California systems of community colleges, for example, Smart noted that one of the most important roles performed by successful leaders is the management of data for decision making. However, he also noted that this management of data sources and information must be within the context of also successfully managing other, often conflicting roles. The role of analyzer of data must be in the context of successful management of other tasks, of setting and promoting the vision of the institution, and as being the motivator of self and others by building teams and using participative decision-making strategies.

Smart cited Birnbaum's earlier 2000 study that simply implementing "new" management systems when called upon to "improve" will not necessarily meet the leader's need to demonstrate command of data. Birnbaum argued that "management fads" (e.g., PPBS, TWM, BPR) typically have a short life cycle. Smart's results indicate that such a change in culture only comes when there is a healthy balance among attributes of all culture types, and campus leaders have command of the core competencies of their complex leadership roles.

In his 2005 survey and interview study of the 13 Tennessee community colleges and utilization and understanding of the institutional research function, Schulte identified multiple types of data, levels of data collection, and different uses of data. Types of data were management (budget, enrollment management, and external community), academic, student-oriented, information reporting, efficiency documentation, and external relations. Levels of data included individual, departmental, institutional, discipline, program and geographic area. Uses of data included managing budget, enrollment and staffing, managing political events, and documenting achievement. Schulte noted the absence of empirical research in this area and called for many additional studies of how data are actually used in particular types of decisions made in community colleges.

A Year-Long Research Study

Encouraged by Schulte's "mapping" of the data territory, we decided to identify what data were used during one academic year on one community college campus, with a particular focus on identifying rationales for when data were available but were not used (see Weber, 2006). The specific data users studied included the executive team (consisting of the president, dean of instruction, dean of students, and dean of finance), the board of directors, the directors group, and the department chairs. Each group was responsible for key decisions within the organization. Access to data, and an expectation to use data to make decisions, were part of the regular decision routines within the college. The purpose of our case study was to document and analyze how data were used (or not used) by key decision makers around specific decisions. We wanted to know when data were used by which groups, how they were used, and how data collection or reporting processes could be improved to increase data usage in making campus decisions.

We developed data collection instruments keyed to the specific data sources and decisions on this campus, using Schulte's (2005) data hierarchies to guide how we structured the questions. We worked to develop a triangulated case study informed by surveys and interviews with all key decision makers. Our goal was to have multiple inputs at each chronological stage of decisions, and at each decision group location within the decision structure hierarchy.

Description of the Site

Treasure Valley Community College is a two-year public institution of post-secondary education established in 1962 as part of the Oregon Community College System. The main campus is located in Ontario, Oregon, on the Oregon–Idaho border in Malheur County, named after the Malheur River which flows through it. The Oregon Trail passed through this geographic area, following the river. Dramatic contrasts between Alpine mountains, large expanses of federally owned rangeland, and desolate desert terrain contribute to an unevenly populated and difficult to serve geographic area. Average rainfall is less than 10 inches per year. It is one of the largest (49,428 square miles) and most sparsely populated (2.5 persons per square mile) community college service areas in the United States. Malheur County is the most impoverished county in Oregon. TVCC is one of its largest employers.

The College's vast service area in eastern Oregon (Malheur, Baker, Grant, Wallowa, Lake, and Harney Counties) also includes counties in southwestern Idaho (Payette, Washington, Owyhee, and Canyon Counties). The overall service area is slightly larger than North Carolina but has a relatively small population of just over 175,000. While nearby Idaho communities are not within the college's taxing district, they generate Oregon state reimbursable FTEs (as do all Oregon border states). The nearby Idaho communities are growing in population (while Southwestern Oregon is not), and Idahoans make extensive use of the college. More than 50% of TVCC's reimbursable FTEs now come from Idaho. No Idaho community college serves the region (there

are only three in all of Idaho) and TVCC is the only two-year college in eastern Oregon.

Primary economic drivers are ranching of cattle and sheep, agriculture, and some mining. Food processing has been added to that mix in recent decades with the expansion of extensive irrigated agribusiness farming in the Jordan and Treasure Valley areas. One of the largest employers in the area is the Snake River Correctional Institute, Oregon's largest prison. The extensive federally owned desert lands are used for military waste storage and, during WWII, several Japanese internment camps were located in the most remote areas. Today, the entire geographic area is a destination site for hunters, fishermen, hikers, and rock and petroglyph seekers, and tourism has emerged as a leading economic force.

While TVCC has a unique rural location and cross-state funding situation, the size and program mix is like that of most community colleges. Like most community colleges, TVCC offers associate degrees and a variety of certificate programs with courses under several categories: transfer, professional technical, basic skills, adult education, and community outreach. The mission statement declares that TVCC is dedicated to providing "quality lifelong learning" to "our communities" within "available resources" (Treasure Valley Community College, 2008).

Around 10,000–12,000 students attend classes each year at TVCC. In 2005–2006, 176 associate degrees and 41 certificates were awarded. TVCC is accredited by the Northwest Commission on Colleges and Universities. The most recent full-scale accreditation review was conducted in October 2005. The Northwest Commission on Colleges and Universities (NWCCU) was originally founded in 1917 and is listed by the U.S. Secretary of Education as a nationally recognized accrediting agency for institutions offering programs of at least one academic year in length at the post-secondary level (Northwest Association of Schools and Colleges, 1994, p. 4). This commission continues to focus its assessment process on encouraging colleges to demonstrate decisions based on collected data and documentation as a key part of such assessment (NWCCU, 2003). In the formation of current assessment standards, the NWCCU drew on a growing consensus in the research and policy literature that data can and should be used to affect how decisions are made (Chand & Holm, 1998; Feldman & Tung, 2001; Kowalski et al., 2008; McLean, 1995; Rubenfeld & Newstrom, 1994). The emphasis on data-driven decisions at the accreditation level was an important factor in influencing the key decision makers at TVCC to participate in this research project as part of many efforts to improve data practices.

Decision Groups

There are four key decision groups at TVCC: the board of directors, the executive team (including the president), the program directors, and the department chairs. The TVCC board of directors comprises seven publicly elected individuals who each represent a specific voting district in Malheur County. The only qualification for standing for election is that the person must be an adult resident of the district and not be an employee of TVCC. The board meets on the third Tuesday of each month. One week prior to the meeting each board member is sent a packet of information

from the president's office with a detailed agenda for the meeting. During the period of this research, there were six males and one female on the board. Their ages ranged from 30 to 60 years old. They had served on the board for between one and 25 years.

The executive team consists of the president, dean of finance, dean of instruction, and dean of students. During the period of this research, the executive team was made up of three males and one female, between 50 and 65 years old, who had served the organization between one and 25 years. The directors group was made up of 21 individuals: 13 females and eight males, who ranged in age from 25 to 65, and who had been with the institution for between six and 30 years. The chairs group consisted of 10 individuals: five men and five women, between 40 and 65 years of age, and with eight to 28 years within the institution.

The design of the study reported upon in this chapter included having all members of each group fill out an initial survey where each person was asked to identify what data they used to make decisions related to their TVCC responsibilities. These were open-ended questions. Respondents were also asked to rank importance of different reports in making decisions. This was followed by a second survey that listed specific data reports on campus and asked respondents to identify which reports they recognized, which reports they used, and how data usage was related to making specific decisions. The two surveys were followed by interviews with representative members of each decision group regarding how specific data were used by each individual.

Report of the Data

The participation rate in the initial survey was 81% (29 out of 33 possible participants returned completed surveys). This number included four board members (of seven, or 57%), three administrators (of four, or 75%), 13 directors (of 21, or 62%) and nine department chairs (of 10, or 90%). Thus, each group was well represented in the returned surveys. Each group identified the data sources and reports that they considered most and least useful. The board group reported the highest usage of budget data (75%), enrollment data (75%), and outside sources (75%). Assessment-strategic initiatives, information on faculty and staff, and student reports were used by only one of four members of the board. The administrative group responded that they used budget data (100%), enrollment data (100%), staff-faculty reports (100%), and student reports (100%). Outside sources (0%) and assessment-strategic initiatives (66%) were reported as least used. At the director level, student reports (85%) were used the most while budget data (69%), enrollment data (69%), and outside sources (54%) followed closely. The least reported as useful data by the directors included assessment-strategic planning (31%) along with staff and faculty information (23%). All the department chairs used student reports (100%), with budget data (56%), enrollment data (56%), staff and faculty information (44%) at lesser levels. Outside sources (22%) and assessment-strategic initiative data (0 %) lagged far behind. These patterns are listed in Table 27.1.

Without being given guidance as to what types of data were to be named, these decision makers reproduced the same categories reported earlier by Schulte (2005). The

Table 27.1 Results of first survey of data usage.

	Board %	*Executive %*	*Directors %*	*Chairs %*	*Overall %*
Budget	75	100	69	56	69
Enrollment	75	100	69	56	69
Outside sources	75	0	54	22	41
Student reports (satisfaction survey) completion, demographics, add/drop	25	100	85	100	83
Staff/faculty info (loads/leave/book orders)	0	100	23	44	34
Assessment strategies/initiatives	0	50	31	22	28

Source: Weber (2006)

category of "outside data" included such things named as newspapers, conversations with colleagues and constituents, professional organizations, and newsletters. During member checking, one member of the executive team noted that outside sources had not been named as the assumption had been that this research project focused only on internal reporting. A question was added to the forthcoming interview protocol to clarify this finding.

There was a contrast between board members and the other three groups with respect to use of staff and faculty information, or strategic planning data. The board spent little time looking at staff, faculty or student data, or strategic planning data. This suggests that the members of the board may have a different set of expectations regarding the planning and assessment process than the ones that are held internally by administrators, directors, and deans. The members of the executive group did not report using outside sources of data, but rather the other data sources used by the board, and also those used by the directors and department chairs.

The participants were also asked to rate their named data sources according to frequency of use, using a Likert scale from 1 to 5, with 5 representing the *most frequently used*. Budget information was named as used *most frequently* by the members of the executive team (average rating of 5), followed by the directors group (average rating of 3), members of the board (average rating of 2.75) and the chairs group (average rating of 1.78). Enrollment data were named as used *most frequently* by members of the executive team (average rating of 5), with average frequencies from the other three groups clustered under 3.0.

Student reports, including registration data and transcripts, student opinion surveys, add/drop data, and completion reports were reported as used *most frequently* by members of the executive team (average rating of 4), with lower average usage rates by the directors (average rating of 3.62), the chairs (average rating of 2.85) and members of the board (average rating of 1).

These data were useful to us in designing the second survey. When we reviewed the responses to the first survey, we concluded that not all decision makers could name each specific data report available to them. We decided to name specific reports for the second survey so our data would be more specific. Because of the consistency of responses within groups from the first survey, we also decided to direct the longer

second survey to the interview sample rather than to the whole population. In fact, we asked on the second survey for the survey to be completed and ready for the interviewer at the start of the interview.

Table 27.2 is a copy of the second survey with specific reports named and response rates given.

The follow-up survey confirmed the information provided in the initial survey which was that financial data, including financial reports and budget reports, were the most consistently used by all groups. Each group identified specific reports that they found useful in order to make decisions. Full-time enrollment reports (14/16), financial reports (14/16), budget documents (14/16), and the annual campus climate report (13/16) were used most universally across campus. Data that are reported to the state and federal government [OCCURS (2/16) and IPEDS (2/16)] were the least used in making decisions within the organization. Student information, such as the quarterly success rate report (6/16) and academic history data reports (5/16) were used almost exclusively by the chairs.

The primary finding at this stage in our research, however, was that almost all of the 16 individuals scheduled to be interviewed had not completed their second survey by the time of the interview. In fact, we quickly discovered that having copies of each type of data report available to the individual was helpful to them in completing the survey because very few people knew all of the listed reports by name. Some

Table 27.2 Follow-up survey on data use.

Directions: Please complete the survey and have it available for the interviewer at the time of your scheduled interview on this research project. For each of the sources listed, check if you have used it, identify when and how in the spaces provided. If there is a data source you use that is not listed, please write it in the space provided.

	Board	*Admin*	*Directors*	*Chairs*	*Total*
FTE reports from registrar	2/4	4/4	4/4	4/4	14/16
Student Opinion Survey	2/4	4/4	1/4	4/4	11/16
Campus Climate Survey	2/4	4/4	3/4	4/4	13/16
Financial reports	4/4	4/4	3/4	3/4	14/16
Quarterly student success rate data	0/4	2/4	0/4	4/4	6/16
OCCURS data	0/4	2/4	0/4	0/4	2/16
IPEDS data	0/4	2/4	0/4	0/4	2/16
Student academic history data	0/4	1/4	0/4	4/4	5/16
Grade distribution	0/4	2/4	1/4	3/4	6/16
Assessment database	0/4	3/4	4/4	3/4	10/16
Budget information	3/4	4/4	3/4	4/4	14/16
Graduation follow-up survey data	0/4	3/4	0/4	0/4	3/16
Class evaluations	0/4	2/4	2/4	4/4	8/16
Load report	0/4	3/4	2/4	3/4	8/16
Room availability reports	0/4	2/4	1/4	0/4	3/16
Administrative evaluation	3/4	2/4	1/4	0/4	6/16
Inservice evaluation	1/4	2/4	0/4	1/4	4/16
SMART classroom survey	0/4	3/4	0/4	4/4	7/16

Source: Weber (2006).

had not completed the task because they were not sure what data were signified by which report title, or, when they could identify the report, they did not want to put down on paper that they did not understand the report well enough to use the data in the report. In almost all cases, the pre-interview discussion of the survey extended into an informal discussion and coaching session on the types of data available. It became very obvious to the interviewers that individuals appreciated the private opportunity to admit that they did not understand the data, appreciated a few words of coaching on how to use specific data, and would have been embarrassed to have had to admit their hesitancy in any public way.

One of the possible implications of this finding is that many people may not step forward and ask for assistance in understanding data. Rather than admit ignorance, they are more likely to follow the lead of others who appear more knowledgeable about what the data mean. However, when presented with a private, relatively "safe" opportunity to learn more about data reports, they will actively seek assistance. One of the possible implications of this research is that individual, one-on-one training on the use of particular data sets may be useful when a pattern of non-use is observed. This could be a particularly sensitive area if the non-user is a member of a public board who may not be as familiar with data reports in other aspects of his or her life, or is a key administrative leader who may be more comfortable with the mission and vision of the institution and less comfortable reading complex data tables or charts.

After completing the second survey and discussion of reports, each participant was then asked seven questions in order to identify how and what data had been useful to them in their respective roles over the past year. The interview sessions were tape recorded and the data subsequently transcribed and blind coded for themes by question and then by group. Member checking was done on the transcriptions, identified themes, and initial write-up of the findings in order to increase internal validity.

Members of the four groups responded very differently to the first interview question: "How do you get data that you need within the institution?" The four board members relied almost exclusively on the board packets that were mailed with information prior to each monthly board meeting.

Members of the executive team said that they requested data from the database manager on campus. All four chairs also identified the database manager as how they got data they needed within the institution to make decisions. The directors, on the other hand, said that they relied on their own report-writing skills and went directly into the information system on campus themselves to mine the data. This was a distinctly different response from the other three groups. One possible conclusion from these responses is that the database manager can play a very important role in influencing whether and how data are used and in how decisions are made. The database manager on this campus was a *de facto* decision maker. Yet, the person/role was not initially identified as a formal decision maker. It was also clear that many people depended heavily on a single person to supply critical data; this is perhaps an organizational weakness. Another aspect of the database manager's role is the many and perhaps sometimes conflicting demands for data that were directed to the manager. There seemed to be opportunity for overload and for difficulty in sorting

the significance of particular requests within the overall decision structures of the campus.

The second question requested information on what decisions each individual made that were connected to data. The question generated a variety of responses that were consistent across groups and within each group. First, all four groups pointed to the importance of data in making decisions. This was a particularly interesting response as "importance" was not a direct part of the question. One director stated it succinctly:

> Having access to the information doesn't mean you will always use it [*sic*]. But when the decisions come about, you make better decisions pulling the data together.

A member of the executive team said:

> People have to see data whether they agree with them [*sic*] or not. You have to see it in order to believe it is good or not good, whether there are areas we can improve and whether it is realistic to try to improve.

Another chair cited how data had changed the program review process for accreditation, naming the program expansion in welding as a specific change that had been based on data from within the organization.

> Industry is asking or telling us that we need to expand the welding program. There is a great need for welding right now. So you have to use data. First of all you look at what is the forecast and what has happened in the last three years. We have had a waiting list and spent a lot of our overload (could have hired another part-time instructor with the funds we used in overloads). We used data in that respect to show that industry is right and we need to get something rolling. We have to expand, what does that expansion look like, can we justify it and what will it cost?

A director gave this example.

> Data can validate decisions. I am usually looking at individual pay and equity from program to program. The hiring rates pretty much conform group to group. Having the scores available gives me a better decision point to recommend when a wage is set on an offer. Having access to the information doesn't mean you will always use it. But when the decisions come about, you make better decisions pulling data together, rather than just approximating.

When the respondents were asked what data were *not* useful in their current role, the representative response was: "I don't think there are any. There are times and places where every one of these are important."

Members of all four groups shared the view that all forms of data were useful to the organization and they were not willing to identify any current data or reports as potentially not useful in the decision-making process.

The second most frequent category of data named was budgetary. The board members said they focused data usage first in budget decisions, and then on negotiations decisions and decisions about the college's future. The four executive team members reported that budget data were always in front of them. One of them made this statement.

> Since I deal with the overall resources of the institution, whether people, place or things, money is really looking at enrollment and revenue. I try to look at those as a driver to see what is possible within the institution and what is feasible within the institution. Everything you have has a cost or replacement cost. So I look at what resources will I have to work with or how can I get more resources (either state, federal grant or what ever else is out there)? How you use it effectively, efficiently are somewhat subsequent.

One chair said:

> Around here most everything is built around the budget: field trips, hiring adjuncts, overloads and supplies. I get a budget freeze on accounts in February and you have to kill anything that isn't absolutely necessary for the rest of the year. First of all you have to decide what is necessary and what isn't. When signing a requisition, I am afraid that someone up the line is going to say, "No you can't do this, it will look bad." The pressure from above makes you check budgets closer and make sure that the purchase is really necessary. With the new reports on budget, we can pull that information pretty quickly and find out how much money is left in each department. I sign requisitions on a daily basis so I continually need to know where the budgets are.

The third most frequently mentioned data category was student-related data. It was named by all four members of each of the three campus-based groups, and was not named by the board members. FTE reports were used regularly in all three groups to guide weekly meetings and discussions about program changes. Executive team members reported using FTE reports along with success rate data and accounts receivable that impacted class offerings as well as the financial aid policies regarding disbursement of funds. They said they used these reports in daily conversations with directors and chairs. Directors said they used FTE and class cancellations for directing class scheduling (adding or not). Several noted using data on distance learning, while chairs said they scheduled classes and hired adjuncts based on FTE reports.

Two chairs reported student evaluations to be useful, stating, "The student evaluations are great to help with scheduling classes, hiring adjuncts and continu[ing] to keep them employed." Two directors reported that census data and affirmative action data impacted daily operating procedures. One director stated:

> My focus is our Access database report, because it deals with tracking and all of our accountability pieces for Adult Basic Skills, GED, etc. We are constantly looking at that and asking how the outcomes can be better. How can we get people to stay and achieve what they are here for?

A chair noted:

> The data showing the candidate pool to actual registration showed that we really are doing a great job of turning the candidate into a real student. Some students are focused on coming here and we need to do a more efficient job of getting them information about TVCC. This data helps formulate what special events can be pulled together in order to move applicants from candidate to student.

Almost all of the reports listed in the second survey were named as important at one point in time by at least one respondent. Census data and affirmative action data were noted by several respondents as being specifically useful to them.

When the respondents were asked to identify specific data that had led to change, the board members reported campus climate survey data that had supported

decisions regarding physical changes to campus that included parking and dorm construction. One member of the executive team said: "I was able to use data to dispute a misconception. It led to some curriculum changes and will lead to more."

Several directors also noted that modifications in the financial aid policies and practices had not only led to substantial changes in programs, but had also been almost completely driven by analysis of multiple data sources in making the decision to change the policies.

When asked the last two questions about how the data or reporting processes could be improved to increase the likelihood that data will be used to make decisions, the responses reflected specific group needs. Together with the information learned during the conversations around completing the second survey, we were able to pinpoint how and where specific reports could be modified to increase effective use. Requests for more explanatory and summary information were made from each group. Definitions of data, assuring reliability of data sources, and being able to access the information themselves, were themes that emerged around improving processes from members of all four groups. Most of these comments were made about specific data reports and were of immediate use to the institutional data managers in revising reports, formats, and timelines.

Conclusions

The findings of this case study indicate that data were used often by each decision-making group for a variety of decisions. As Supovitz and Klein pointed out in 2003, the bottom line is that systematically using data to make core decisions takes a commitment on many levels from various stakeholders. These commitments include time, training, technology, and discipline. Each of the TVCC groups demonstrated commitment as it identified a variety of sources it used and noted the frequency of use of each data source. The groups further identified skills in using data by making appropriate and useful suggestions for improvement of data formats and timing, and asking for on-the-spot training to improve their skills. While some participants may have been initially reticent to explore their questions about specific data, they readily gave suggestions about what would help them have a better understanding of specific data or data reports.

Prior research findings had pointed out that noticeable change within the culture occurred as the ownership of the data became more valuable for the individual (Dowd, 2003; Smart, 2003). Individuals who recognize their roles and responsibilities connected to specific data sources are more interested in the frequency, validity, and reliability of the data. Focusing attention on individual responsibility for data use, and individual understanding of the importance of the data to their job success, must be part of the cultural shift that has to take place in order for data to be useful to the organization, at all points in the organization. It appears that each group in this chapter valued data that they were connected to, valued but did not use data that they did not understand or saw no connection to, and were interested in more verification of data validity and usefulness to the institution when a data set was perceived as being useful to them in doing their jobs.

The decision makers whose work is reported upon in this chapter provided insight into what could be improved in data-reporting processes in order to increase the likelihood that data would be used effectively by all decision makers to make decisions. Like the participants in Poole and Denny's study (2001), these decision makers used data regularly and reacted positively to increased access to and understanding of data. These decision makers reflected the commitment to focusing on excellence through the use of data named by Hawthorne and Smith (1993) as essential to improving community colleges. And, like the findings of Smart's (2003) survey of California community colleges, these participants demonstrated that simply having the data available is not enough to guarantee that they will be used. Frequent data usage requires a broadly shared commitment to data-driven decisions, and also requires a subtle one-on-one monitoring process that allows those less confident in their data skills to build their skills in a discrete way.

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