ED 422 827   HE 031 585

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TITLE   A Student Environment Model: A Measure of Institutional
              Effectiveness. AIR 1998 Annual Forum Paper.
PUB DATE   1998-05-00
NOTE   36p.; Paper presented at the Annual Forum of the Association
              for Institutional Research (38th, Minneapolis, MN, May
              17-20, 1998).
PUB TYPE   Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE   MF01/PC02 Plus Postage.
DESCRIPTORS   *College Environment; *College Students; Higher Education;
              Institutional Characteristics; Institutional Environment;
              Self Evaluation (Groups); Student Attitudes; Student College
              Relationship; Student Personnel Services; Student Surveys;
              Technical Institutes; Two Year Colleges
IDENTIFIERS   *AIR Forum; *Student Satisfaction; Texas State Technical
              College Waco

ABSTRACT
        This study traces the development of a student environment
model (SEM) at Texas State Technical College (Waco) that is used to assess
students' perceptions of their college environment outside the formal
classroom, provides baseline data for comparative analyses, establishes goals
for student support services, measures program and process improvements, and
provides decision-making information. The four-part instrument: (1) includes
a student profile; (2) measures students' levels of satisfaction with seven
campus environmental factors (college image, campus publications, rules and
policies, registration, campus grounds, safety, noninstructional personnel);
(3) addresses students' perceived level of satisfaction and frequency of use
of student support services; and (4) asks students to express their level of
interest in eight areas of education and personal interest (job
opportunities, career knowledge, effective job-seeking skills, improving
study habits, understanding computers, using library facilities, improved
interpersonal skills, discrimination). The SEM provides an empirical
mechanism for identifying the strengths and weaknesses of student support
services and students' level of satisfaction with the daily college
environment outside the formal classroom. Use of the SEM has allowed the
college to focus on a campus-wide customer awareness program and has improved
student support services. A table showing comparative levels of student
satisfaction over time is appended. (Contains approximately 200 references.)
(CH)

A Student Environment Model: A Measure of Institutional Effectiveness

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This paper was presented at the Thirty-Eighth Annual Forum
of the Association for Institutional Research held in
Minneapolis, Minnesota, May 17-20, 1998.
This paper was reviewed by the AIR Forum Publications
Committee and was judged to be of high quality and of
interest to others concerned with the research of higher
education. It has therefore been selected to be included
in the ERIC Collection of AIR Forum Papers.

Dolores Vura
Editor
AIR Forum Publications

A Student Environment Model: A Measure of Institutional Effectiveness

Abstract

In a rapidly changing environment of growing competition for limited resources and ever increasing operational costs, institutions of higher education must focus on all aspects of the organizational functions to insure institutional effectiveness and the maximization of student success. This study will use a Student Environment Model (SEM) to assess students' perception of their college environment outside of the formal classroom at a unique two year technical college. The information obtained is used by the administration of Texas State Technical College Waco (TSTCW) to make appropriate adjustments in programs, services, or policies when the student data indicates that change or improvement is needed.

Astin (1968) explains, "The effectiveness of the undergraduate experience relates to the quality of campus life. It is directly linked to the time students spend on campus and to the quality of their involvement in activities." A student's perceived level of satisfaction with the campus environment significantly effects the student's persistence in college.

While the SEM provides an indication of the students' "image" of the college environment, it can also provide indicators of areas which need improvement or require change. Applying the SEM information to decision making, problem solving, and planning will allow the institution and its people to move toward higher productivity and continuous quality improvement. Astin points out, "The fact that the student on the campus serves both as a recipient of stimuli and as a source of stimulation for his peers suggest an interesting hypothesis about the dynamics of the college environment. . . ."

The SEM provides an empirical mechanism, based on perceptual data, for identifying the strengths of each student support service and the overall level of student satisfaction with major issues and processes in the students' daily college environment outside of the formal classroom. Perhaps the most significant impact of the SEM process is that the results are made public across the campus. This creates considerable motivation to improve problem areas.

INTRODUCTION

In a rapidly changing environment of growing competition for limited resources and ever increasing operational costs, institutions of higher education must focus on all aspects of the organizational functions to ensure institutional effectiveness and the maximization of student success. This study will use a Student Environment Model (SEM) to assess students' perception of their college environment outside of the formal classroom at a unique two-year technical college. The information obtained is used by the administration of Texas State Technical College Waco (TSTCW) to make appropriate adjustments in programs, services, or policies when the student data indicates that change or improvement is needed.

The internal and external challenges confronting TSTCW mandate careful attention to institutional effectiveness. The purpose of institutional effectiveness at TSTCW is to provide an institutional perspective that focuses on accurate planning, assessment of accomplishments (both of students and the college's over all effectiveness), and the use of assessment results for planning, evaluation, and goal setting.

Background of the Study

Born from a vision of an economically strong Texas, James Connally Air Force Base, on the outskirts of Waco, Texas was built in 1942, on land where Indian braves once hunted deer and buffalo. During World War II, the base served as a pilot training center for the U.S. Air Force.

In 1964, the federal government announced that the Air Force base would close. With rapid changes in technology Texas leaders were realizing the need for a special institute for quality technical training and education. The Air Force base training classrooms would require little adaptation and could easily be transformed into a college campus.

On April 22, 1965, Governor John Connally signed a bill creating James Connally Technical Institute of Texas A&M University with the vision of a modern top quality polytech institute legislatively mandated to assume statewide responsibility for offering emerging and advanced technical education. From the beginning Texas State Technical College (TSTC) System was unique, offering two-year programs with intensive, hands-on practice in advanced technical programs.

Over the next two decades the TSTC System expanded dramatically. In 1969, the college separated from Texas A&M University and a Board of Regents was appointed by the governor. By legislative mandate, additional campuses were established on closed Air Force bases in Harlingen near the Mexican border, at Sweetwater in West Texas, and Amarillo in the Panhandle. The TSTC System continued to grow. Beginning in 1983, through different appropriations acts, additional education centers were approved for Abilene, Breckenridge, McAllen, and, in 1992, Marshall and Brownwood. In 1994, the McAllen extension of the Harlingen TSTC campus separated from the TSTC System and became McAllen Community College.

The purpose of TSTC System is defined in Senate Bill 1222 of the 72nd session of the Texas Legislature. After a comprehensive study of all issues and concerns relating to higher education, the Legislature redefined the purpose of TSTC as set forth in Section 1-166, which states:

<div align="center">

TEXAS STATE TECHNICAL COLLEGE SYSTEM
ROLE AND MISSION
Education Code Section 135

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(a)   Texas State Technical College System is a coeducational two-year institution of higher education offering courses of study in technical-vocational education for which there is demand within the State of Texas.

(b)   Texas State Technical College System shall contribute to the educational and economic development of the State of Texas by offering specialized advanced and emerging technical and vocational areas

of certificates or associate degrees. The Texas State Technical College System is authorized to serve the State of Texas through excellence in instruction, public service, faculty and manpower research, and economic development. The System's economic development efforts to improve the competitiveness of Texas business and industry include exemplary centers of excellence in technical program clusters on the systems' campuses and support of educational research commercialization initiatives. Through close collaboration with business, industry, governmental agencies and communities, including public and private secondary and postsecondary educational institutions, the system shall facilitate and deliver an articulated and responsive technical education system.

(c)   In developing and offering highly specialized technical programs with related supportive course work, primary consideration shall be placed on industrial and technological manpower needs of the state. The emphasis of each Texas State Technical College System campus shall be on advanced or emerging technical programs not commonly offered by public junior colleges.[1]

Sensing the importance of institutional effectiveness, planning, and self evaluation activities the administration of TSTC demonstrated their commitment to accountability. Beginning in April 1986, TSTC began an intensive planning effort to develop a needs-based strategic plan. Considerable time was spent in defining the larger problems or needs Texas must address and in carefully assessing the responsive capacity and capability of TSTC. Lists of institutional assets and liabilities for TSTC were compiled and reviewed; the prior history of the institution was studied; unique opportunities for service and support were identified and discussed; and future directions were examined and debated. With a clear vision firmly in mind, the college developed a strategic plan that charts a course of technical education in Texas to assist business and industry toward renewed economic health and strength.

This study focuses on the Waco campus of the TSTC System and will use a Student Environment Model (SEM) to support the Goals of (1) Quality: Exemplary Technical Programs, Services and Instruction; and (5) Management: An Organizational Structure and Culture Supportive of Responsive and Responsible Decision Making of the *Texas State Technical College Strategic Plan for 1992-2002*. Keller points out, "good information not only facilitates more rational decision making; it also motivates toward more strategic decision making."[2] Continually looking for ways to improve service to students, the results of the SEM provides valuable information for "informed decision making" which can be used to improve the overall student environment at the TSTCW and ameliorate student success.

Statement of the Problem

This study will use a Student Environment Model to assess the Texas State Technical College Waco students' perception of their environment outside of the formal classroom.

Purpose of the Study

The purpose of this study will be the development of an assessment instrument to assess the students' perception of their environment outside of the formal classroom. The areas of particular emphasis in this study are:

(1)   to assess the present students' perception of their environment outside of the formal classroom;
(2)   to establish baseline data for future comparative analysis;
(3)   to establish realistic and meaningful goals for student support services to support overall institutional effectiveness;
(4)   to measure program and process improvements;
(5)   to measure goal attainment; and
(6)   to provide information for informed decision making.

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[1]Texas. *Texas Codes, Annotated.* Vol. 3, *Education Code* (Vernon, 1995), Section 135.01.

[2] George Keller, *Academic Strategy: The Management Revolution in American Higher Education* (Baltimore: John Hopkins University Press, 1987), 133.

Significance of the Study

TSTCW is committed to its vision of excellence in technical education for a quality workforce supportive of a competitive Texas, access to special populations for technical education, and an environment conducive to learning and professional development.[3] The internal and external challenges confronting the college mandate careful attention to institutional effectiveness. The purpose of institutional effectiveness at TSTC Waco is to provide an institutional perspective that focuses on accurate planning, assessment of accomplishments (both of students' and the college's overall effectiveness), and the use of assessment results for planning, evaluation, and goal setting.[4]

As competition increases for limited educational resources there is growing attention on assessing the quality of institutions by focusing on efficiency of processes and performance outcomes. "Proponents of the outcomes view argue that the ultimate test of an institutions' quality lies neither in its reputation nor in its resources but rather in the quality of its products."[5]

A SEM will allow TSTCW to assess various functions and services that influence the students' environment outside of the formal classroom. Keller explains that "precise knowledge about interrelationships can be obtained only by the technique of models."[6] A SEM will enable TSTCW to take a picture in time and see the students' college environment from the student's perspective as an outside observer. Astin adds to Keller's explanation, "It is irresponsible for an institution not to know what . . . impact the college is having, what suggestions the students have for change."[7]

Quantification of data obtained by the SEM will provide "qualitative sagacity, not replace it."[8] Data will be used to develop predictive indicators for program and service assessment and process improvements by sharpening judgements, analyses, and decisions. The continual evaluation, assessing, and rethinking of institutional planning efforts are vital to any successful strategic planning effort.[9]

> Strategic planning is the activity through which one confronts the major strategic decisions facing the organization. A decision is not rendered strategic merely by being important. By Robert Sherley's definition, strategic decisions or issues fulfill the following criteria:
> •   Define the institution's relationship to its environment
> •   Generally take the whole organization as the unit of analysis

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[3]Texas State Technical College, *Operational Plan 1990.*

[4]Texas State Technical College Waco, *Texas State Technical College Waco/Marshall Self-Study 1993,* .

[5]Alexander Astin, *Achieving Educational Excellence* (San Francisco: Jossey-Bass, 1985), 43.

[6]George Keller, *Academic Strategy: The Management Revolution in American Higher Education* (Baltimore: John Hopkins University Press, 1987), 113.

[7]Ibid., 132.

[8]Ibid., 141.

[9]Donald Norris and Nick L. Poulton, *A Guide for New Planners* (Ann Arbor, MI: The Society for College and University Planning, 1991); Alexander Astin, *Achieving Educational Excellence* (San Francisco: Jossey-Bass, 1985); George Keller, *Academic Strategy: The Management Revolution in American Higher Education* (Baltimore: John Hopkins University Press, 1987).

- Depend on inputs from a variety of functional areas
- Provide direction for, and constraints on, administrative and operational activities throughout the institution[10]

It is estimated that a student at TSTCW spends only twenty percent of his time in a formal classroom or lab. While the college cannot be a parent, "neither can faculty and administrators turn their backs on life outside the classroom, where there is so much learning that either enhances or diminishes the quality of the undergraduate experience."[11]

The major purpose of any institution of higher education is to develop the individuality and full potential of its students. In economic terms. . . higher education is to develop the "human capital of society."[12]

"The principal justification for the existence of a college . . . does not rest on its capacity simply to provide credentials, but on its capacity to create educational environments."[13] Further support for studying the student environment can be found by examining the reasons that students give for dropping out of college. "The major function of environmental measures in such studies is to provide a basis for interpreting any differential institutional effects that may be observed."[14]

The *Assessment of the College Environment*, a college employee environment scan, was completed by all levels of TSTCW employees in March 1991, and again in March 1993. The purpose of the study was to promote open and constructive communication by obtaining the perceptions of employees concerning the campus climate. The 1993 study was a follow-up study to assess the impact of a campus wide effort to improve the environment of the college climate and used the results of the 1991 *Assessment of the College Environment* as a baseline to assess institutional effectiveness and process improvements.

The *Assessment of the College Environment* instrument, a forty-six item institutional effectiveness survey, was developed by George Baker, III, Joseph D. Moore Distinguished Professor, Adult and Community College Education, North Carolina State University. The forty-six items are divided into five domains: (a) Formal Influence - the administrator's/ supervisor's ability to influence the employee's degree of satisfaction or dissatisfaction and the employee's degree of satisfaction or dissatisfaction with (b) Communications, © Collaboration, (d) Organizational Structure, and (e) Student Focus. Respondents were asked to rate the five domain factors on a five-point Likert scale.

The top ten areas in need of improvement were identified for each of the four personnel groups. Each group had a slightly different set of priorities, with the four groups agreeing that three areas needed change. The number one area of priority for all four groups of personnel surveyed was "the extent to which a staying environment is created for students," an environment which is supportive of the holistic student while providing the opportunity for the student to maximize his learning and professional development experience while at TSTCW.

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[10]Norris, 1991, 8.

[11]Ernest L. Boyer, *College: The Undergraduate Experience in America* (New York: Harper and Row, Publishers, 1987), 193.

[12]Astin, *Achieving Educational Excellence*, 16.

[13]Arthur W. Chickering, "Quality from the Students' Point of View," *AASCU Studies* 1 (1983):11.

[14]Alexander W. Astin, *The College Environment* (Washington, D.C.: American Council on Education, 1968), 2.

"Properly designed. . . a program of analytic support can provide key environmental intelligence, can manage and identify the issues confronting the organization, and can move the process along by focusing attention and forcing decisions at appropriate junctions."[15] To create an environment to enhance student success has become a campus priority and is a part of the *Texas State Technical College Waco/Marshall Agency Strategic Plan 1992-1996*.

An institutional effectiveness model to assess the student environment at TSTCW outside of the formal classroom is necessary to measure the conditions of the present student environment. The results of this assessment provided baseline data against which to measure program and process improvements annually. Predictive indicators are used by administration to set process and service goals and to measure goal attainment. The outcomes of this study have become a part of the overall TSTCW Annual Institutional Effectiveness Monitoring Cycle.

REVIEW OF SELECTED LITERATURE

College administrators have often sought ways by which they could quickly determine the attitudes and opinions of their students, particularly on issues which could be or are affected by administrative decisions. Alexander Astin suggests: "Students' satisfaction with the institution's program is one of the most important indicators of an institution's effectiveness. Students should be asked about their satisfaction with more specific matters: the quality of teaching, advising, curriculum, facilities, extracurricular activities, and various student services."[16]

Webster's *New Collegiate Dictionary* defines environment as "1: the circumstances, objects, or conditions by which one is surrounded 2: the aggregate of social and cultural conditions that influence the life of an individual or community."[17] Astin points out that "in the broadest sense, we can define the 'college environment' as including any characteristic of the college that constitutes a potential stimulus for the student. . . ."[18]

The undergraduate college, Boyer explains, "should be held together by something more than plumbing, a common grievance over parking, or football rallies in the fall. What students do in dinning halls, on the playing fields, and in the rathskeller late at night all combine to influence the outcomes of the college education."[19] Arthur Chickering articulated, "The principal justification for the existence of a college . . . does not rest on its capacity simply to provide credentials, but on its capacity to create educational environments. . . ."[20] The challenge [Boyer continues]. . . in building of community, is to extend the resources for learning on the campus and to see academic and nonacademic life as interlocked."[21]

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[15]Norris, *A Guide for New Planners*, 16.

[16]Alexander W. Astin, *Achieving Educational Excellence* (San Francisco: Jossey-Bass, 1985), 170.

[17]A. Merriam-Webster, *Webster's Ninth New Collegiate Dictionary* (Springfield, MA: Merriam-Webster Inc., Publishers, 1988), 416.

[18]Alexander W. Astin, *The College Environment* (Washington, D.C.: American Council on Education, 1968), 3.

[19]Ernest L. Boyer, *College: The Undergraduate Experience in America* (New York: Prentice-Hall, Inc., 1987), 177.

[20]Arthur W. Chickering, "Quality From the Students' Point of View," *AASCU Studies* 1 (1983): 11.

[21]Boyer, *College: The Undergraduate Experience*, 177.

Norris explains that analyzing institutional contextual factors is time well spent. Institutions should "employ environmental scanning to search out the emerging issues and challenges that require changes in strategy. . . .[22] The development of appropriate databases on which policy intervention, and decision-making can be guided is an integral part of institutional effectiveness . "In brief, the task of defining the college environment is one of identifying and measuring those institutional characteristics that are likely to have some impact on the student's development. . . ."[23] Astin continues by explaining that "a very practical problem, from the point of view of academic administration and educational planning, is to discover what factors determine the particular character of any given college environment".[24]

"The effectiveness of the undergraduate experience relates to the quality of campus life. It is directly linked to the time students spend on campus and to the quality of their involvement in activities."[25] A student's perceived level of satisfaction with the campus environment significantly affects the student's persistence in college.

In 1975, Astin's study on the theory of student involvement focused on identifying factors in the college environment that significantly affected the student's persistence in college. Satisfaction with and adjustment to the total college environment were shown to have significant impact on students' rate of persistence. Astin emphasized that "students' ratings of the undergraduate college experience and environment are strongly influenced by various forms of involvement."[26] Academic advising, residential facilities, orientation, financial aid, counseling, and campus life in general offer opportunities to enhance student involvement in the college environment.

Boyer explained, "The theory of student involvement can be regarded as a useful tool to be used by both faculty members and administrators as they attempt to design more effective environments. . . ."[27] Astin, Boyer, and Norris stressed that in the past little assessment of the students' environment outside of the formal classroom has taken place. Unfortunately, Astin concludes, ". . . information gathering is one of the weakest parts of the institutional process."[28] Norris continues, " information and analytic support are often the stepchild of the planning process, an afterthought used to provide piles of data for planning committees to 'chew on' while the planning process unfolds."[29] Boyer noted that "the role of students in campus decision-making is not taken seriously in higher education"[30]

> They cannot be expected to feel loyalty to a college where they are not seriously consulted in matters that affect their lives. . . . In our national survey, we asked students about the role they feel they should play in college decisions. We learned that most undergraduates want a limited, informal role in matters related to faculty promotion and student admissions. They see themselves playing a

[22]Donald M. Norris and Nick L. Pulton, *A Guide For New Planners* (Ann Arbor, MI: The Society for College and University Planning, 1991), 14, 24.

[23]Astin, *The College Environment*, 2.

[24]Ibid., 140.

[25]Boyer, *College: The Undergraduate Experience in America*, 191.

[26]Astin, *Achieving Educational Excellence*, 144-145.

[27]Ibid., xiv.

[28]Ibid..

[29]Norris, *A Guide For New Planners*, 15-16.

[30]Boyer, *College: The Undergraduate Experience in America*, 235.

far more formal role in student discipline and residence hall regulation. . . . We . . . recommend. . . that undergraduates be more fully consulted in the full range of campus life.[31]

Throughout his writings, Astin emphasized the fact that without student feedback, academic administrators cannot hope to plan and to make decisions that will enhance the student's overall learning experience. The physical environment of the college includes the dormitories, laboratories, the library, and other facilities directly connected with student's life.

> Perhaps the best way to assess the adequacy of campus life in general, insofar as stimulating student involvement is concerned, is to pose a series of questions. To what extent does campus life provide opportunities for students to take part? What changes in the physical plant and surroundings might make the campus a more exciting place? What special provisions are made for commuter students? Are social and cultural events scheduled so as to encourage students' participation? Are enough extracurricular activities offered to permit most students to get involved in at least one?[32]

To provide the highest quality of education, educational administrators must seek to understand the unique environment of their college and the needs of their students. Rinehart explains, "Students need to develop the confidence and drive necessary to pursue their dreams and desires. Part of this purpose will be realized by involving students in the transformation process and continuous improvement of their school. . . ."[33]

Norris emphasized that while supporting the concept of institutional effectiveness, "properly designed, . . . a program of analytic support can provide key environmental intelligence, can manage and identify the issues confronting the organization, and can move the process along by focusing attention and forcing decisions at appropriate junctions."[34]

Hanson and Swann added, "The assessment of institutional effectiveness requires that we not only document what students have learned but how and under what conditions the learning occurred. . . . Traditionally, individual educational programs have been evaluated in isolation from the larger context of the institution's total effort."[35]

Colleges and universities are seeking ways to improve the quality of their programs and services and to demonstrate that quality to prospective students. By becoming more aware of the students' perception underlying our institutional policies and practices, we can greatly increase the likelihood that our students will indeed be able to realize their full educational potential.

"In higher education pressure to restructure and reform is being applied . . . by public opinion and a climate of economic uncertainty and decline that is unlikely to moderate very much in the foreseeable future."[36] Taylor, Meyerson, and Massy stressed that at a time of rapidly increasing cost and a decline in resources, higher education has

[31]Ibid., 244-248.

[32]Astin, *Achieving Educational Excellence*, 167.

[33]Gary Rinehart, *Quality Education: Applying the Philosophy of Dr. W. Edward Deming to Transform the Educational System* (Milwaukee, WI: ASQC Quality Press), 68.

[34]Norris, *A Guide For New Planners*, 16.

[35]Gary R. Hanson and Denise McGinty Swann, "Using Multiple Program Impact Analysis to Document Institutional Effectiveness," *Research In Higher Education* 34, no.1 (February 1993), 71.

[36]Barbara E. Taylor, Joel W. Meyerson, and William F. Massy. *Strategic Indicators for Higher Education Improving Performance* (Princeton, NJ: Peterson's Guides, 1993), ix.

more competition for scarce resources than ever before. Economic constraints are forcing a movement toward performance based funding at both the state and the federal levels. Institutions are forced to look critically at their resource allocations and the effectiveness of their operating processes in meeting stated objects. "Learning from past planning activities and facing new challenges is the hallmark of successful planning. [Norris states] in a sense this is what Cohen and March refer to as ' planning in the future perfect tense:' using your experience with the past to confront new challenges and to posit what the future must be to deal with them."[37]

"Strategic thinking requires objectivity, and honest assessment of how an institution is doing and where it is heading --- that is, its strategic position. . . . Strategic indicators enable decision-makers to assess an institution's strategic position through comparative analysis."[38] The analysis of strategic indicators provides important data to administrators for *informed decision* making.

Norris explains that "strategic planning is externally directed, focuses on 'what' the organization should do, deals with 'macro' issues, spans organizational boundaries, is a continuing process dictated by changes in the environment that occur on an irregular time frame, deals with relatively greater levels of uncertainty, and values expert judgement."[39]
As a futurist Morrison explains, "Environmental scanning is a tool to identify signals of change in the external environment in order to gain lead time to respond or to adapt to these signals. It is a key research tool in an effective strategic planning process."[40]

In the early stages of an institutional effectiveness initiative, careful selection of assessment instruments is critical to success. According to Nichols, "a plan for attitudinal surveys is a way to 'do something' and offer constructive, useful results in the early stages of an assessment process."[41]

"What is needed is a method that enables decision makers both to understand the external environment and the interconnections of its various sectors and to translate this understanding into the institution's planning decision-making processes. Environmental scanning is a method of accomplishing this."[42]

Astin explained, "the simplest way to approach the issue of assessing satisfaction is to consider ways of assessing overall satisfaction as well as satisfaction with specific aspects of the college experience."[43] Astin recommends

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[37]Norris, *A Guide For New Planners*, 37.

[38]Taylor, *Strategic Indicators For Higher Education*, x.

[39]Norris, *A Guide For New Planners*, 10.

[40]James L. Morrison, *Environmental Scanning as a Key Institutional Research Tool in the Planning Process*. Workshop presented at the 17th Annual Conference of the Texas Association of Institutional Research (San Antonio, TX, February 21-22, 1995).

[41]James O. Nichols, *Institutional Effectiveness and Outcomes Assessment Implementation on Campus: A Practitioners Handbook* (New York: Agathon Press, 1989), 74.

[42]James L. Morrison, "Environmental Scanning," in Meredith A. Whitely, John D. Porter, and Robert H. Fenske, eds *The Primer For Institutional Research* (Tallahassee: The Association for Institutional Research, 1992), 86.

[43]Alexander W. Astin, *Assessment for Excellence: The Philosophy and Practice of Assessment and Evaluation in Higher Education* (New York: American Council on Education, Macmillan Publishing Company,

(continued...)

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the use of a four-point or five-point Likert scale which allow the student to indicate overall level of satisfaction and no rating if they did not use or receive the service.

Using an ". . .effective planning process makes all of the management functions more effective. The insights gained from successfully utilizing the full range of academic management skills strengthens the planning processes in the academic administrative units and in the institution as a whole."[44] Astin adds that without student feedback, academic administrators cannot hope to plan and to make decisions that will enhance the student's overall learning experience.

The American Association of Community Colleges emphasizes that while "confronted with the pressing issues such as changing accreditation guidelines and federal and state policies, our colleges have no choice but to become involved in the effectiveness arena."[45] As Boyer suggests, it is time to focus on the quality of the students' educational encounter. By becoming more aware of the students' perception underlying institutional policies, practices, and services, the institution can greatly increase the likelihood that students will indeed be able to realize their full educational potential.[46]

PROCEDURES, DEVELOPMENT, AND TREATMENT OF THE DATA

The current emphasis on assessment for institutional effectiveness has created a preoccupation with seeking student feedback for every college experience. Without proper planning, students end up bombarded with surveys. Before long, they cease to take them seriously and the opportunity for credible feedback is lost. Properly executed, well-designed instruments which are judiciously administered, correctly analyzed and promptly distributed can contribute much useful information for assessing institutional effectiveness.[47]

Development of the Student Environment Model Instrument

Gray explains that a "survey is a planned data-collection effort for the purpose of describing or predicting as a guide to action, or for the purpose of explaining the relationships between two or more variables."[48] The fifteen points of Gray's Checklist of Survey-Planning and Administration Activities were modified to twelve points for the Student Environment Model (SEM).

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[43](...continued)
1991), 62.

[44]Norris, A Guide For New Planners, 8.

[45]American Association of Community Colleges, Community Colleges: Core Indicators of Effectiveness, a report of The Community College Roundtable (Washington, D.C.: National Center for Higher Education, 1994), 4.

[46]Boyer, College: The Undergraduate Experience.

[47]Sharron L. Ronco, Obtain Student Feedback: Some Practical Advice For Survey Researchers, paper presented at the 17th Annual Conference of the Texas Association for Institutional Research (San Antonio, TX, February 1995), 2.

[48]Robert G. Gray, Edmund Jacobson, Sidney S. Micek, Cathleen Patrick, Nancy Renkiewicz, and William Van Dusen, "Student-Outcomes Questionnaires: An Implementation Handbook (Boulder, CO: National Center for Higher Education Management Systems, 1979), 17.

1. Decide on the objectives of the SEM and the specific study questions to be answered.
2. Write out a plan and schedule for the entire SEM.
3. Study the SEM instrument to ensure that it will provide data appropriate for the survey objectives.
4. Meet with potential institutional users of the SEM results to discuss the survey objectives, plan, schedule, and survey instrument.
5. Decide whether to survey all students in the population or a sample of a specified percentage.
6. Set up a method for identifying students in the population.
7. Prepare survey materials (survey instrument, cover letters, mailing envelopes, return envelops, address labels, tracking sheet).
8. Decide what method would be used to distribute the SEM instrument.
9. As the SEM instruments are returned, record appropriate information on tracking sheet.
10. Once the SEM instruments are returned, implement coding and data scanning process.
11. Conduct the data analysis needed to answer the SEM questions.
12. Develop the reports for disseminating the results of the SEM.[49]

The SEM was developed to assess TSTCW students' perception of their environment. Four survey parameters were defined to act as guidelines as the specific questions of the SEM were developed. Parameter I: The SEM instrument would focus only on the students' college environment outside of the formal classroom. Parameter II: The SEM instrument would be limited to a 20 minute administration time period. Parameter III: Unless necessary for data analysis, questions would not be included on the SEM's instrument which could be answered from other data sources. Parameter IV: The results of the SEM will be published and distributed campus wide.

Gray explains, "Once the objectives of the survey have been determined and the specific research/evaluation questions identified, the appropriate survey design must be selected."[50] After an extensive review of the currently-available commercial student satisfaction survey instruments written by researchers studying various aspects of two-year community and technical colleges environments, it was determined that none of the instruments could address the unique needs of TSTCW.

The Director of Institutional Research and Planning (IR&P) presented to the President's Council the outcomes of the *Assessment of the College Climate* which had identified the number one priority for change of all categories of employees at TSTCW as "to create a staying environment supportive of the holistic needs of the students." The Director of IR&P also presented a study and recommendation: (1) to develop a SEM to assess the present students' perceptions of the college environment, (2) to build a database of baseline data against which future SEM assessments could be compared, and (3) to monitor the impact of process changes on the students' perception of the college environment to support strategic planning and institutional effectiveness for TSTCW.

It was unanimously decided by the President's Council that the SEM instrument would be developed by the IR&P Office. The development of the SEM instrument began in Fall 1993 with a compilation of the objectives to be achieved as a result of the project. These objectives were institutional effectiveness-oriented. They involved identifying the overall level of student satisfaction with campus support services, the frequency of use of the campus support services, and the students' perception of the college environment outside of the formal classroom at TSTCW.

The Deans from each of the twelve divisions on campus were interviewed and took an active part in defining the questions which would provide pertinent data. In addition to the Deans, four faculty members and two representatives from the Student Government reviewed the research questions. After a systematic review of the research questions, it was determined that the SEM instrument asked all questions germane to each area, while careful attention

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[49]Gray, *Student-Outcomes Questionnaires*, 34.

[50]Gray, *Student-Outcomes Questionnaires*, 18.

was made to ensure that there were no questions on the SEM instrument asking for data that could be obtained from other sources.

The SEM instrument was designed to assess four major dimensions: (1) performance of functions, (2) responsiveness, (3) frequency of use, and (4) overall perceived level of student satisfaction with the college environment outside of the formal classroom.

Section I of the SEM provides a student profile identifying ethnicity, gender, marital status, residency, present enrollment status, original enrollment status, employment status, and educational intentions of the students.

Section II of the SEM illustrates the students' level of satisfaction with seven major issues or processes which make up the students' daily college environment: (1) the college image, (2) campus publications, (3) rules and policies, (4) registration process, (5) campus grounds, (6) students' sense of safety, and (7) the attitude of non-instructional personnel toward students.

Section III of the SEM addresses the students' perceived level of satisfaction with and frequency of use of 30 Student Support Services: (1) Academic Advising and Course Planning, (2) Admissions and Records, (3) Bookstore, (4) Business Office, (5) Campus Health Services, (6) Campus Police (Public Safety Department), (7) City Bus Service (College Contracted Service), (8) Computer Labs, (9) Counseling for Personal Concerns, (10) Day Care Service, (11) Department of Human Services on Campus, (12) Family Housing Service, (13) Financial Aid Service, (14) Head Start Program, (15) Job Training Partnership Act, (16) Library/Learning Resource Center, (17) Parking Facilities and Convenience, (18) Post Office Service, (19) Recreational/Intramural Programs and Facilities, (20) Red River Student Apartments and Residency Hall, (21) Student Activities - College Sponsored, (22) Student Center Snack Bar, (23) Student Employment (Part-Time on Campus), (24) Student Government, (25) Texas Rehabilitation Commission on Campus, (26) Tutorial Services - College Sponsored, (27) Veterans Services on Campus, (28) Village Oaks Student Apartments, (29) Vocational Guidance and Career Planning, and (30) Women's Resource Center.

Section IV of the SEM asked the students to express their level of interest in eight additional areas of educational and personal interest: (1) Learning About Job Opportunities, (2) Discussing Career Interests With People In the Industry, (3) Developing Effective Job Seeking Skills, (4) Improving Study Skills/Habits, (5) Understanding and Using Computers, (6) Use of Library Facilities, (7) Learning How to Get Along Better With People, and (8) Coping with Discrimination.

To outline the process and to improve time management, a Gauntt chart was used to outline and schedule the development, implementation, assessment, analysis, and distribution of the SEM. Resources needed were identified and allocated using the SEM Gauntt chart.

The SEM instrument was pilot-tested during the Fall 1993 quarter. The primary components of the SEM instrument were tested for Content Validity by representatives from each of the twelve campus divisions, members from the faculty, and representatives from the Student Government. In addition, the SEM instrument was reviewed by current students, former students, and a panel of experts of eight institutional researchers from two-year technical and community colleges.

"Sometimes the only way to obtain a scientifically valid sample of students is to capture them in their classrooms. This presents a problem, since faculty are rarely willing to give up their class time for a project which they consider useless."[51] For this reason faculty representatives from the Faculty Senate asked to served on the SEM instrument review committee. During the pilot test faculty comments and recommendations were solicited. Prior to the first administration of the SEM instrument, the Director of IR&P met with each of the three instructional division Associate Deans and with the Program Chairs to explain the purpose of the SEM and how the data would be used.

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[51]Ronco, *Obtaining Student Feedback*, 7.

Because 88% of the students at TSTCW are full time, it was determined to do a point in time census of the student population. For the SEM it was decided to survey the entire student population on the day and at the time identified as the "time of peak attendance." To reduce the possibility of test bias from the registration process and mid-term test anxiety, it was decided to administer the SEM instrument during the fourth week of the Fall Quarter.

The six-page SEM instrument was produced using the National Computer Systems (NCS) Survey Network software and was printed on NCS Trans-Optic Survey Network scannable forms. The Survey Network process used the graphics and visual power of the computer to design the survey and the high quality of a laser printer to produce the survey Questionnaire. After the questionnaires had been fielded, the results were quickly scanned using an NCS scanner. The results were then input into SPSS for statistical calculations.

Packets of survey instruments were distributed to the Associate Deans for their distribution to each instructor in their division having a class at the designated time. Faculty in all classrooms and laboratory facilities stopped class for 20 minutes to administer the SEM instrument. Faculty collected and returned all SEM instruments to the Office of Institutional Research and Planning.

Due to the sensitivity of the data, the survey process was designed to be anonymous. The only tracking was to verify that every class which was meeting during the designated time had the opportunity to participate in the survey. This was accomplished by the faculty signing a statement that the survey was administered in their classrooms.

Following the recommendations of Astin, a five-point Likert scale was used to measure the level of student satisfaction on each of the 30 student support services and processes affecting the students' college environment outside of the formal classroom. Students were also asked to indicate their frequency of use or if they had never used each of the 30 student support services.

Treatment of the Data

The process for this investigation will follow standard methodology for program evaluation (Craven, 1980; Cronback, 1982; Posavac, 1989; Rossi, 1989). The need for evaluation was defined by the emergence of decision-making issues and the need to establish (1) baseline data to measure present program and service status, (2) realistic program and service goals, (3) the ability to assess process improvement, and (4) data against which to measure goal attainment.

Analysis is in two major sections. Section I provides a comprehensive overview in the form of frequency distributions for responses to each item in the SEM survey. Section II provides more in-depth analyses of assessment practices.

Four indexes were computed and used extensively throughout the analyses in Section II of the SEM. One index was based on the respondents' perceptions of their overall level of satisfaction with each of the 30 Student Support Services. The second, third, and fourth indexes respectively were based on the level of satisfaction with each of the thirty Student Support Services by ethnicity, gender, and frequency of use.

SPSS is used for statistical analyses of the data. The statistics and analytical procedures used for tables of cross-tabulation (or contingency tables) are Pearson's product-moment correlation coefficient (r), the Chi-square value, the Phi, and Cramer's V.

The Chi-square statistic indicates whether there are any association between the variables. Cramer's V provides the strength of the association between the variables for nominal level data. A desirable characteristic of Cramer's V is that it has upper and lower limits. Cramer's V equals 0 when there is no relationship and it equals 1 when there is a perfect relationship. So, a significant Chi-square coefficient indicates that two variables are not independent, i.e., that there is a statistical association; and the value of Cramer's V indicates the level of relationship from very low to very high.

The statistical reliability of the measures of the SEM factors is estimated by separating the student responses into two groups: "odds" and "evens" as determined by the units position of the eight-digit identification number that was originally printed on the survey instrument. Scores on each factor were computed separately for the odds and evens. First the Pearson product-moment correlations between two sets of scores was calculated, then the same coefficients corrected by means of the Spearman-Brown formula were used to estimate the reliability of the scores based on all of the subjects, that is, the reliability coefficient that would be obtained if the scores based on all subjects were correlated with scores obtained from another, independent sample of the same size.

These coefficients show clearly that the split-half reliability of the SEM factors are very high, the median corrected reliability coefficient was $r = .93$. If r, the coefficient of correlation, is squared, it becomes a coefficient of determination. The coefficient of determination of $r = .93 = (.93)^2 = 89$ percent, or that 89 percent of the variance is shared.

The SEM provided an empirical mechanism, based on perceptual data, for identifying the strengths and weaknesses of each of the thirty TSTCW student support services and the students' level of satisfaction with seven major issues or processes which make up the students' daily college environment outside of the formal classroom.

SUMMARY, DISCUSSION, RECOMMENDATIONS, AND CONCLUSIONS

Summary and Discussions
Using the Student Environment Model Results

Using the Student Environment Model (SEM) information is perhaps the most important element in conducting this study. The SEM provides an understanding of the students' perspective of the college environment outside of the formal classroom experiences. It aggregates detailed data specific to 30 different student support services and seven major issues or processes which make up the students' daily college environment at TSTCW.

While the SEM provides an indication of the students' "image" of the college environment, it can also provide indicators of areas which need improvement or require change. Applying the SEM information to decision making, problem solving, and planning will allow the institution and its people to move toward higher productivity and continuous quality improvement. Astin points out, "The fact that the student on the campus serves both as a recipient of stimuli and as a source of stimulation for his peers suggest an interesting hypothesis about the dynamics of the college environment. . . ."[52] Astin continues to explain, "A very practical problem from the point of view of academic administration and educational planning is to discover what factors determine the particular character of any given college environment."[53]

As defined in the Student Services Institutional Effectiveness Unit Action Plan (IE/UAP), the statement of purpose for (TSTCW) Student Services is:
   . . . to provide programs and services which are supportive of the educational process. Student Services is committed to creating and supporting a compassionate campus environment which fosters the positive growth and development of the student. By providing such an environment, all students

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[52]Alexander W. Astin, *The College Environment* (Washington, D.C.: American Council on Education, 1968), 15.

[53]Ibid., 139.

are afforded the opportunity to take advantage of programs and services which contribute to their cultural, social, moral, intellectual, physical, and career development.[54]

The SEM allows each of the 30 campus student support services to see themselves through the eyes of the students. The information and insight gathered and analyzed through the SEM can assist the individual support services in their institutional effectiveness self evaluation and planning process for continual improvement as measured by increased student success.

The SEM was first administered during the Fall 1993 Quarter and each Fall Quarter since. Careful analysis of the data identified several areas of concern. Only four of the 30 student support services met the TSTCW Critical Success Factor (CSF), which stated that 85% of the students would indicate that they were satisfied with each support service. The results of the 1993 SEM were printed and distributed campus wide.

The results of the SEM raised as many questions as it answered. As a result of the SEM, it was determined that TSTCW needed to look more carefully at its leavers. Leavers were defined as students enrolled during one quarter who did not return for the next quarter and did not graduate. "The theory of student involvement has its roots in a longitudinal study of college dropouts (Astin, 1975) aimed at identifying factors in the college environment that significantly affect the student's persistence in college."[55]

To address this issue a Leaver's Profile was developed with the hopes of identifying predictive indicators of potentially "at risk" students. If these students could be identified, then strategies for early intervention could be developed. If the perspectives of the students as expressed in the SEM could be correlated by various factors, i.e. "Gender to Satisfaction," "Frequency of Use to Satisfaction," etc., and compared to the Leaver's Profile, then predictive indicators could be developed.

During 1993-1994, the college administration focused on a campus wide "customer awareness" campaign. Directors of the Student Services division and the Instructional Support Services division attended a two-day retreat with their respective Deans to address the issue of student satisfaction with their environment outside of the formal classroom and how each service could improve the students' opportunity for success.

The results of the 1993 SEM assessment provided baseline data against which to measure the 1994 SEM for program and process trends and the impact of new processes implemented during the previous year. Astin explains, "The major function of environmental measures in such studies is to provide a basis for interpreting any differential institutional effects that may be observed."[56]

The 1994 SEM showed that all 30 of the student support services had increased dramatically when compared to the 1993 SEM's outcomes for students' perceived attitude of the various support services for being (1) courteous, (2) knowledgeable about programs, regulations, etc., (3) helpful, and (4) keeping adequate service hours. The increased level of student satisfaction ranged from 31% to 81%. Ten of the student support services met or exceeded the CSF criteria of 85% for Courteous with 20 of the support services having levels of satisfaction at or over 80% on this criteria. Four of the student support services met or exceeded the CSF criteria of 85% for Knowledgeable About Programs and Regulations with nine of the support services having levels of satisfaction at or over 80% on this criteria; and 21 of the

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[54]Texas State Technical College Student Services, Institutional Effectiveness Unit Action Plan statement of Purpose, 1994.

[55]Alexander W. Astin, Achieving Educational Excellence (San Francisco: Jossey-Bass, 1985), 144-145.

[56]Alexander W. Astin, The College Environment (Washington, D.C.: American Council on Education, 1968), 2.

support services having levels at or over 75% on this criteria. Five of the student support services met or exceeded the CSF criteria of 85% for *Helpful* with 14 of the support services having levels of satisfaction at or over 80% on this criteria and 23 of the support services having levels at or over 75% on this criteria. Four of the student support services met or exceeded the CSF criteria of 85% for *Hours of Service* with 17 of the support services having levels of satisfaction at or over 80% on this criteria and 22 of the support services having levels at or over 75% on this criteria.

The outcomes of the SEM were used by TSTCW student support units to make "informed decisions" as a part of their institutional effectiveness and strategic planning cycle and in the development of their Institutional Effectiveness Unit Action Plans for 1995. Support services which had not met the CSF criteria of 85% on each criteria developed goals and strategies as a part of their Institutional Effectiveness Unit Action Plan for 1995.

In 1996, TSTCW began the Noel-Levitz CONNECTIONS program, the Quality Service Training Program for Campus Staff. In the CONNECTIONS program individuals learned why quality service and a caring attitude are so important in helping students feel connected to a whole new environment. The SEM has been administered each Fall Quarter for the past 5 years. This has enabled TSTCW to monitor their continual progress towards the creation of a supportive student environment.

Recommendations

Institutions wishing to replicate the SEM must first take a careful look at their individual campus. It is recommended that they begin by following the *Student Environment Model Modified Checklist of Survey-Planning and Administration Activities.* "Properly executed, well-designed instruments which are judiciously administered, correctly analyzed and promptly distributed can contribute much useful information for assessing institutional effectiveness."[57]

The SEM process can be effective ". . . only if deans and department chairs are willing to make use of the information. Implementing a successful student satisfaction survey will enable an institution to 'see itself as others see it, and it will, if the information is carefully used, free itself from many a blunder and foolish notion' (Nichols, p.74)."[58]

"Since 'individual programs [and services] are the decision focus for most administrators and faculty' (Stevenson, Walleri, and Japely, p. 84), it is essential to include program and service-specific questions which can provide the most useful information for administrative decision-making."[59] Osborne points out that there are many advantages to locally-designed survey instruments with the primary one being ". . .the ownership that comes from the involvement of faculty and staff in development of the instrument."[60]

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[57]Sharron L. Ronco, *Obtain Student Feedback: some Practical Advice For Survey Researchers,* paper presented at the 17th Annual Conference of the Texas Association for Institutional Research (San Antonio, TX, February 1995), 2.

[58]Deborah M. Osborne and Maria Makowski, *Assessing Graduating Students' Perceptions Regarding Academic and Nonacademic Aspects of College Life: Major-Specific Instruments in a Technological University Setting,* paper presented at the Association of Institutional Research 32nd Annual Forum (Atlanta, GA, May 10-13, 1992), 4-5. Photocopied.

[59]Ibid.

[60]Ibid.

The SEM provides a tool that will help an institution to understand a major component of the complex dynamics of the organization. It allows the institution to focus on the identification of issues and problems and solve problems which may improve quality in service to others.

Conclusions

The students' subjective response to the college environment can be assessed using the SEM. The students are asked directly about their degree of satisfaction with various aspects of the college environment outside of the formal classroom. Astin points out the "student's ratings of the undergraduate college experience and environment are strongly influenced by various forms of involvement."[61]

Further support for studying the student environment can be found by examining the reasons that students give for dropping out of college. By becoming more aware of the students' perception underlying institutional policies and practices, an institution can greatly increase the likelihood that its students will indeed be able to realize their full educational potential. Astin, Boyer, and Chickering stress that without student feedback, academic administrators cannot hope to plan and to make decisions that will enhance the student's overall learning experience.

Colleges need to know not only about student attitudes at particular points in time, but also about changes in those attitudes over time. The SEM can search out emerging issues and challenges that require changes in strategy. "The assessment of institutional effectiveness requires that we not only document what students have learned but how and under what conditions the learning occurred."[62]

The SEM can be used by itself to survey a particular student group at a certain point in time --- a cross-sectional survey plan. Or it can be used together with other studies to examine a student cohort group over time by continually monitoring student attitudes --- a longitudinal survey plan --- to see how student perceptions change over time.

The SEM provides an empirical mechanism, based on perceptual data, for identifying the strengths of each student support service and the overall level of student satisfaction with major issues and processes in the students' daily college environment outside of the formal classroom. Perhaps the most significant impact of the SEM process is that the results are made public across the campus. This creates considerable motivation to improve problem areas. There are several other advantages to this approach:
(1)   The SEM provides a great deal of useful information for a modest cost.
(2)   The SEM can work within the existing management structure.
(3)   The SEM results can be linked to personnel changes, new training programs, new methods of communicating information, and improved processes.
(4)   The results of the SEM are used by each campus student support service unit when reviewing and updating their Institutional Effectiveness Unit Action Plan.

And on a broader level, the SEM has been useful in heightening the general campus awareness of TSTCW's commitment to provide quality technical education in an environment supportive of student success.

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[61]Alexander W. Astin, "Student Involvement: A Developmental Theory for Higher Education," *Journal of College Student Personnel* 25 (4) (July 1984): 277.

[62]Gary R. Hanson and Denise McGinty Swann, *"Using Multiple Program Impact Analysis to Document Institutional Effectiveness."* A paper presented at the Association of Institutional Research Annual Forum. Atlanta, GA, May 11, 1992.
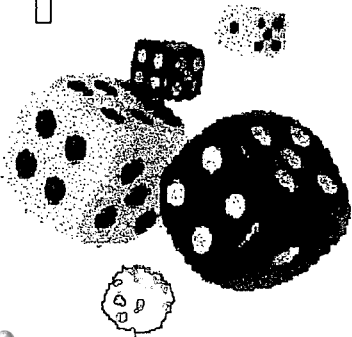
TEXAS STATE TECHNICAL COLLEGE WACO
### Student Environment Study Fall 1997
Level of Students' Satisfaction Compared Over Time

Abstract: This table illustrates the level of Students' Overall Satisfaction of the 30 Support Services during Fall '93, Fall '94, Fall '95, Fall '96 and Fall '97. Only the responses of students having used the service were calculated in this rating. The list is arranged in descending order for Fall '97. Blue shaded cells indicate a constant or increased level of students' satisfaction from the previous year. Yellow shaded cells meet or exceed the 85% Critical Success Factor.

SUPPORT SERVICE	All Students Who Used the Service				
	Fall 1993 % Satisfied	Fall 1994 %Satisfied	Fall 1995 % Satisfied	Fall 1996 % Satisfied	Fall 1997 % Satisfied
Program Advising/Degree Planning	70.8%	86.3%	85.4%	90.0%	92.1%
Student Center Snack Bar	64.4%	75.7%	85.5%	87.6%	91.6%
Records Office	71.8%	83.9%	85.4%	91.7%	91.2%
Library	85.2%	88.5%	86.2%	88.2%	91.1%
Business Office	73.3%	84.8%	87.4%	86.5%	89.5%
Texas Rehabilitation Comm.	75.1%	77.4%	79.2%	84.7%	89.5%
Student Health Services	53.4%	74.0%	82.2%	83.7%	88.4%
Recreational/Intramural Programs	61.0%	83.0%	85.6%	86.9%	88.3%
Women's Resource Center	85.8%	85.3%	85.8%	85.6%	87.9%
Business Office/Post Office Service	72.5%	82.7%	83.1%	78.1%	87.8%
New Student Admissions	N/A	N/A	N/A	N/A	87.0%
Veteran's Services	72.8%	78.5%	85.7%	79.6%	86.0%
Counseling Services-Personal	61.5%	76.6%	78.3%	79.4%	85.5%
Dept of Human Resources	N/A	75.7%	70.1%	63.1%	84.7%
Counseling/Career Planning	50.7%	70.7%	75.7%	77.2%	83.7%
JTPA	N/A	80.3%	77.3%	73.6%	83.4%
College-Sponsored Student Activities	59.1%	73.7%	76.8%	82.8%	82.8%
Head Start Program	N/A	75.1%	78.3%	72.1%	81.6%
College Tutorial Services	66.8%	73.3%	78.1%	78.3%	81.4%
Access to Computer Labs	69.6%	83.3%	82.1%	73.9%	81.2%
Student Employment	62.4%	75.0%	81.9%	81.5%	80.8%
Family Housing Service	57.2%	67.9%	73.1%	79.1%	77.6%
Student Government	51.4%	67.5%	64.0%	73.6%	77.5%
Public Safety Dept. (Campus Police)	58.5%	66.2%	72.7%	72.8%	74.2%
City Bus Service	60.4%	62.4%	78.3%	57.4%	71.8%
Bookstore	59.6%	63.3%	65.5%	66.9%	69.9%
Red River Apt/Lavaca Hall	44.4%	68.6%	70.7%	71.0%	69.8%
Financial Aid Services	40.9%	63.3%	64.4%	60.8%	67.0%
Village Oaks Apartments	44.8%	53.2%	55.5%	60.0%	58.9%
Parking Facilities/Convenience	35.5%	50.1%	56.1%	53.3%	52.4%

Continuous Progress

	1993	1994	1995	1996	1997
Improved	2	26	25	19	25
85% CSF	4	8	8	14	

23

22
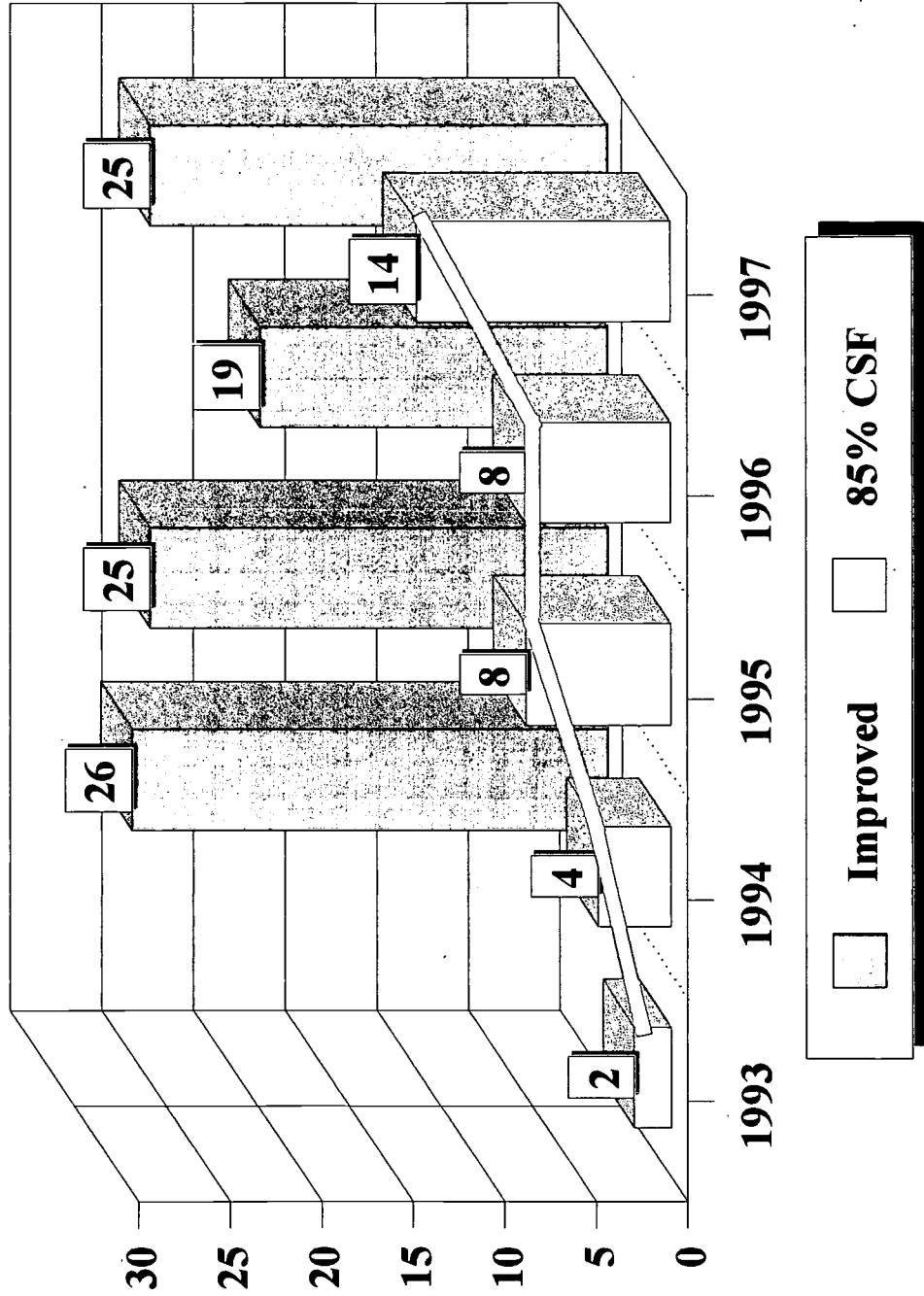
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