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ABSTRACT

A project developed and tested an Institutional Effectiveness Assessment Guide (IEAG) that incorporated themes and factors identified by Wardlow et al. (1992) as contributing to excellence. An interpretive design was used to enable researchers to gain input and consensus from participants of exemplary institutions regarding the institutional-level factors that contribute to excellence in vocational education. Wardlow's factors were organized into the following themes and subthemes representing related items: school climate, administrator attributes, instructor attributes, student attributes, curriculum development, and institutional marketing/vocational student organizations/support services. Those items were then developed into quantitative assessment items and organized within the original thematic areas. The IEAG was administered to samples of students, administrators, instructors, and advisory committee members. Because the instrument was based directly on the attributes of exemplary institutions, it was found to possess both face and content validity. The instrument was tested for both internal consistency and stability as two forms of reliability. (Appendixes, amounting to over half of the report, include 20 references; IEAG User's Manual, including information on its testing, instructions for administration, interpretation guidelines, and an outline for institutional improvement; IEAG--Student Version; and IEAG--Administration, Instructor, Advisory Committee Member Version.) (YLB)

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National Center for Research in Vocational Education

University of California, Berkeley

A GUIDE TO ASSESS INSTITUTIONAL EXCELLENCE IN VOCATIONAL EDUCATION

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A GUIDE TO ASSESS INSTITUTIONAL EXCELLENCE IN VOCATIONAL EDUCATION

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EXECUTIVE SUMMARY

Wardlow, Swanson, and Migler (1992) implemented a naturalistic study to identify the key institutional factors that contributed to excellence in fourteen exemplary institutions offering vocational education programs. The Institutional Excellence Project was based on the premise that a study of the institutions in which exemplary vocational education programs were found might provide insights regarding the nature and importance of the institutional context in educational excellence. The project reported herein built upon the previous studies by developing and testing an instrument to serve as a guide for institutional decisionmakers who seek to improve their institutions.

As a result of this effort, a quantitative instrument was developed and field tested. Since it was based directly on the attributes of exemplary institutions, it was found to possess both face and content validity. The instrument was subsequently tested for both internal consistency and stability, as two forms of reliability. Each of these processes provided evidence that the instrument was reliable.

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INTRODUCTION

Attention to excellence in vocational education is most frequently directed toward programs, classrooms, and individual student performance. Research questions are often framed to study course content, methods of instruction, and elements of delivery on the classroom level. Until recently, the broader context in which learning is nested was seldom researched. More importantly, few studies have been devoted toward the larger environments in which vocational programs are found—in this case, the institutions themselves.

Supported by the National Center for Research in Vocational Education (NCRVE) Wardlow, Swanson, and Migler (1992) implemented a naturalistic study to identify the key institutional factors that contributed to excellence in fourteen exemplary institutions offering vocational education programs. The Institutional Excellence Project was based on the premise that a study of the institutions in which exemplary vocational education programs were found might provide insights regarding the nature and importance of the environment. Further, it was assumed that institutional excellence factors were positively related to student educational outcomes, since each of these institutions were observed to be successful in producing desired student outcomes.

An analysis of the anecdotal and contextual data collected from the exemplary institutions visited by the research team yielded a number of general institutional-level themes which were presumed to be associated with educational excellence. These themes were generally consistent across the institutions studied, regardless of their clientele, mission, educational level, or type of institution. The identified themes were placed under the headings of "school climate," "administrator attributes," "instructor attributes," "student attributes," "curriculum development," and "institutional marketing/vocational student organizations (VSOs)/support services."

The researchers identified many component factors within each theme area which contributed to institutional effectiveness. For example, within the administrator theme area, factors regarding the administrator's leadership qualities and risk-taking characteristics were identified. Likewise, within the instructor theme area, factors regarding the instructors' caring attitudes toward students, their acceptance of student diversity, and their professional competence were identified. To empower professionals in vocational

education to apply research recommendations regarding exemplary vocational institutions, the NCRVE Institutional Excellence Project researchers sought to quantify the findings of their study by developing an instrument to serve as an Institutional Effectiveness Assessment Guide (IEAG).

Purpose

The purpose of this project, therefore, was to develop and test an IEAG that incorporated the themes and factors which were identified by the previous efforts of Wardlow et al. (1992). This may serve as a guide for vocational education decisionmakers who strive to achieve educational excellence in their institutions. The objectives that guided this project were

1 to identify institutional-level factors that contributed to excellence in vocational education.

2. to develop and test a quantitative instrument, based on the identified excellence factors, for assessing the presence and intensity of institutional-level factors.

3. to develop a user's guide for the administration of the instrument.

4. to administer the instrument and describe exemplary institutions as perceived by their students, instructors, administrators, and advisory committee personnel in order to provide comparison data.

Rationale

A key goal of the NCRVE Institutional Excellence Project was to disseminate research findings to the profession in forms that are easily applicable. The project co-directors believed that the development of an assessment device for use by students, instructors, administrators, and advisory committee personnel who are involved in institutional improvement was one way to apply the research findings.

Limitations

The guide was developed from the findings of earlier research reported by Wardlow et al. (1992). While the initial study had a high degree of face validity since it studied exemplary institutions offering vocational education, the developers and researchers acknowledge that there may be other institutional-level factors which contribute to educational excellence that were not observed by the researchers or reported by the participants of their initial study.

Therefore, the guide does not assess each of the many factors which may contribute to institutional effectiveness. There may be other instruments available that provide detailed assessments of each individual major theme. However, no instruments were identified which assess all of the major theme areas which provided the basis for this effort.

Assumptions

The Institutional Excellence Project was based on the premise that a study of the institutions in which exemplary vocational education programs were found might provide insights regarding the nature and importance of the institution as an environment in which exemplary education occurs. Further, it was assumed that institutional excellence factors were positively related to student educational outcomes.

It was assumed that the items within the guide adequately represented the findings of the initial NCRVE Institutional Excellence Project study that were common among each of the participant exemplary vocational education institutions. Many institutions had unique characteristics, or factors, that contributed to their institutional excellence. Since these characteristics were not common across all institutions, they were not reported in the findings nor were they included in the development of the IEAG. It is further assumed that all interested exemplary institution participants who were associated with the study had ample opportunities to provide input and feedback for the development of the guide.

REVIEW OF THE LITERATURE

Prior to initiating this project, the researchers conducted a review of the relevant literature, which was summarized in a related document titled *Institutional Level Factors and Excellence in Vocational Education: A Review of the Literature* (Wardlow & Swanson, 1991). The major goal of that literature review was to illuminate the contribution of the educational institution to excellence in vocational education and, more specifically, to describe institutional factors associated with excellence. It was not the intent of the current report to duplicate the materials and information presented in the earlier document. However, three components of the literature review are of considerable value in establishing the framework for this study. These components are (1) a discussion of the concept of excellence, (2) vocational education as an "unattended issue" in the educational reform movement of the 1980s, and (3) an overview of variables associated with effective schools.

What is Excellence?

Any discussion of exemplary (excellent) institutions which offer vocational education should include an effort at achieving some common understanding of the major construct under study. What is excellence? While the construct seems to be one to which many institutions, programs, and individuals aspire, there is little agreement on what it is. The *American Heritage Dictionary* (Morris, 1970, p. 456) includes in its definition of *excellence* the terms, "superiority; pre-eminence. . . . Something in which a person or thing excels. . . ." It further defines *excel* as, "To be better than; surpass; outdo. . . . To surpass others; to be better than others. . . ." It is noteworthy that each of these definitions is based on a model of comparison in that one achieves excellence in comparison to others.

While a dictionary definition is of value in clarifying the concept of excellence, the operational characteristics of excellent institutions may be of greater benefit in the process of understanding excellence. Fortunately, authors such as Lewis (1986) and Peters and Waterman (1982) have undertaken the task of describing the characteristics of excellent institutions.

James Lewis (1986), in his book *Achieving Excellence In Our Schools*, discussed what he calls hallmarks of excellence for schools. These include the idea that all school people in such an institution help children to become something more than they ever hoped to be. Schools of excellence welcome new ideas and provide incentives and rewards to their personnel for developing innovations and programs to improve student outcomes. They have administrative leadership which creates an organizational culture and structure in which the talents of all the school people may flourish. The school boards avoid the details of the daily operations and trust the administrators. Schools of excellence have top administrators who accentuate the positive and convey a sense of future and vision to the community and school personnel. They back their commitments with dollars and give school people freedom to take risks, question longstanding principles and practices, and try new things. These schools have "the courage to change things even when all is going well, . . . to require its administrators to share power and authority with school people, . . . to stick with its values during difficult times, . . . to rely less on short-term results and more on long-term gain, and the courage to involve all school people at all levels of the organization to improve people and solve problems" (p. xii).

The study of excellence has not been limited to the education profession. American business has had increasing interest in such studies. Additionally, some authors have sought to study examples of excellence in the business community to inform the search for excellence among other institutions.

Peters and Waterman (1982), in their book entitled *In Search of Excellence: Lessons from America's Best-Run Companies*, reported on their investigation of excellence in the business sector. They listed eight attributes which they believed characterized "most nearly the distinction of the excellent" (p. 13) in American business:

1. A bias for action. These companies promote experimentation and implementation.

2. Being close to the customer. They provide "unparalleled quality, service, and reliability." They listen to the customer "intently and regularly."

3. Autonomy and entrepreneurship. They foster many leaders and innovators throughout the organization. Autonomy exists on the "shop floor." They do not "hold everyone on so short a rein that he (sic) can't be creative." They encourage

practical risk taking, an atmosphere in which mistakes are acceptable, and they support good tries.

4. Productivity through people. These companies respect each individual within the organization.

5. Hands-on, value driven. A philosophy based on human values is prominent and the leadership routinely visits all facilities.

6. Stick to the knitting. They focus on the business interests that they know best how to do.

7. Simple form, lean staff. The structural forms within the organization are simple and the top-level staffs are relatively small.

8. Simultaneous loose-tight properties. While autonomy is given to many different levels, these companies maintain rigid adherence to a few central core values. (pp. 13-18)

Additionally, Peters and Waterman (1982) found that these successful companies concentrated their efforts on the fundamental aspects of operating a business. These efforts, which might also be categorized as traits of excellent companies, are described in the following statement:

> Our findings were a pleasant surprise. The project showed, more clearly than we could have hoped for, that the excellent companies were, above all, brilliant on the basics. Tools didn't substitute for thinking. Intellect didn't overpower wisdom. Analysis didn't impede action. Rather, these companies worked hard to keep things simple in a complex world. They persisted. They insisted on top quality. They fawned on their customers. They listened to their employees and treated them like adults. They allowed their innovative product and service "champions" long tethers. They allowed some chaos in return for quick action and regular experimentation. (p. 13)

The Lewis and the Peters and Waterman books are examples of popular works which reflect the contemporary interest in improving educational and business institutions. While they did not provide specific definitions of excellence, they did provide a profile of characteristics that excellent organizations possessed. Such profiles provide insights that

are particularly useful for establishing a framework for understanding institutional excellence.

Perhaps the most important points to be concluded from this discussion of excellence were that excellence is based on a model of comparison and characteristics (attributes) associated with excellence can be identified. These points were central to the researchers' perception of the concept of excellence.

The "Unattended Issue"

Popular works in the educational reform movement literature of the 1980s either ignored vocational and technical education, or dismissed it as a minor consideration in the reform efforts. Authors such as McNett (1984, p. 33) and Magisos, Attwood, Imel, & Hughes (1984, p. 3) called it the "unattended issue." Several reform authors who did address it were less than supportive of the concept. In *The Paideia Proposal*, Adler (1982) considered the concept of vocational education at the secondary level as not viable. Authors such as Sizer (1984) suggested that task-specific approaches to education leave students with outdated skills even before they enter the rapidly changing workplace.

However, Goodlad (1983) and the National Commission on Excellence in Education (1983) each called for a restructuring of schooling to provide a closer collaboration between schools and the workplace. Within the reform movement, vocational and career education was viewed as important by Silberman (1988) who stated that vocational education helped students achieve intellectual, social, vocational, and personal goals. Hughes (1984) also expressed similar support.

Only recently have studies been reported which directly address excellence in vocational education. Two of the first educational reform reports which mentioned vocational education articulated the need for it in the secondary schools. These were *Education for Tomorrow's Jobs* (National Research Council, 1983) and the *Report of the Panel on Secondary School Education for the Changing Workplace* (National Research Council, 1984). *Education for Tomorrow's Jobs* focused on vocational education in comprehensive public high schools. It promoted vocational education as an equal partner with college-preparatory education in the secondary schools.

The *Report of the Panel on Secondary School Education for the Changing Workplace* (National Research Council, 1984) suggested that the same competencies are needed to prepare a young person for work as for college. It further stated that vocational education cannot substitute for the fundamental knowledge and basic intellectual competencies needed for learning and advancement throughout a working lifetime. Basic academic competencies are indeed basic and must precede the development of other skills. The report also referred to a study of employers which indicated that employers preferred employees who are able and willing to learn throughout a working lifetime.

The educational establishment has responded to the reform movement by increasing academic requirements for high school graduation and for college admission (National Commission on Secondary Vocational Education, 1984). These requirements were often viewed as a threat to the survival of the vocational technical classes at the secondary level. Silberman (1988) reported findings of an enrollment survey related to vocational education. He stated that

> The main reasons given for (enrollment) decreases are scheduling difficulties imposed by increased graduation requirements, the general decline in secondary school enrollments, the inability to fulfill academic requirements at the area vo-techs, and the sending schools' unwillingness to release their students. (p. 39)

The vocational education profession responded to the increased competition for students by focusing on structural diversity, enhancing teacher preparation programs, adjusting patterns of financing, and seeking equal access for all students. The reports of these efforts seem to assume that they will meet identified learner needs, while the question of excellence is frequently ignored (Copa et al., 1985; National Commission on Secondary Vocational Education, 1984; Phelps & Hughes, 1985).

Phelps and Hughes (1985) suggested that central questions which should be asked in vocational education are those which relate to mission, purpose, and outcomes. While the core concern of the mission is the preparation of the learner for vocation and work, there was no consensus about whether this preparation should prepare individuals for specific job skills, or prepare individuals for work in general, or both.

Phelps and Hughes (1985) also noted that the field of vocational education had arrived at a pivotal point in history. The nature and viability of its future rested on the

responses to several central, philosophical questions. They cited Copa et al. (1988) who posited some of these questions:

> What is the nature of work in our society today and how do we best prepare individuals to engage in this work? Has the term 'vocational' outlived its usefulness or is it especially relevant given the present conditions of work in our society? Does vocational education prepare for second class work or is all work equally meaningful simply because it is done by people? Why isn't vocational education included as a sound element of an academic curriculum? To what extent could all of secondary education be considered vocational education? (p. 2)

These questions, which are common among educators as well as the general public, raise fundamental concerns about the outcomes and public perceptions of secondary vocational education.

As stated earlier, the education reform literature largely ignored vocational education. If the premise that educatior about work is worthy of study in the educational system is to be accepted, then regardless of whether it should be offered in its present form—as vocational education—or whether it should be presented to students in another form, vocational education should not remain an "unattended issue" in the educational reform debate.

School Effectiveness Studies

One outcome of the educational reform movement has been the abundance of literature associated with school effectiveness. While many articles have not been based on empirical studies, a number of them have been. The majority of studies have focused on student-level outcomes of schooling and/or on classroom-level factors of effectiveness. Fewer have focused on the contribution of institutional-level factors.

What variables are purported to contribute to school effectiveness? Based on a comprehensive review of the literature (Wardlow & Swanson, 1991), the following variables were judged to be associated with effective schools. These variables appeared consistently throughout the literature and indicate the range of influences thought to effect educational excellence.

At the district level, several variables were identified. Each of these may be considered as an institutional-level or larger structural variable:

1. The vision of the head administrator or superintendent and the cohesiveness of central administrative staff.

2. Support for school improvement, within the context of community, cultural, political, and resource considerations.

3. Support of the school board or governing body for the administration of the institution.

4. A political climate which is supportive.

5. The history of the institution within the community. (Wardlow & Swanson, 1991, p. 38)

Several of the variables of educational excellence identified in the literature were directed at the school or building level. For example, the role of the principal is considered important in effective schools for several reasons. Principals in effective schools contribute to the development of a shared vision of excellence; a vision that is accepted and articulated by teachers, students, and parents, as well as the principal. Principals in effective schools are also committed to the achievement of excellence. They possess attributes which enable them to motivate others so that excellence can be attained. Principals in effective schools are also willing, and, indeed, make concerted efforts to involve teachers and staff members in decision-making and problem-solving processes that affect the school. They empower their faculty and staff to become involved in the quest for excellence.

Faculty groups in effective schools are cohesive and provide positive support and encouragement for their colleagues. Noticeable in effective schools are patterns of communication which create cooperative/collaborative working relationships among teachers. Faculty members in such schools also reflect consensus regarding educational values. Consensus is also reflected in goal-focused activities that are oriented toward clear, attainable, and relevant objectives. Progress toward these goals is then assessed in relation to the outcomes sought. An important characteristic underlying these shared educational values (and their associated objectives and outcomes) is a genuine concern for student welfare and attention to maximizing student learning.

Another variable associated with effective schools is employment stability and continuity of key staff. Teachers in these institutions generally are pleased with their work and working conditions and do not desire to leave these schools. One aspect of effective schools that contributes to a positive working environment is school policy that reinforces the authority of teachers and supports effective classrooms.

Effective schools are also characterized as having high and uniform standards for academic achievement. Indeed, high expectations are the norm in these exemplary institutions. High expectations are not limited to students. Teachers, other staff members, and administrators also express a concern for reaching a high level of achievement in their individual and collective roles within these schools. Coupled with this pattern of high expectations was a focus on recognizing success. Students, teachers, and staff received awards or other visible recognition which acknowledged the achievement of success or high quality in personal and group endeavors.

The major points to be gleaned from this brief discussion of variables associated with effective school sites are that

- principals help develop effective schools by creating a sense of vision for the school and by involving teachers in decision-making and problem-solving processes.
- teachers communicate with each other, have effective working relationships, participate in school decisions, and are genuinely concerned with student achievement and welfare.
- a pattern of high expectations exists throughout these institutions.

It must be noted that all of the variables and themes noted previously were based primarily on the results of studies conducted in elementary and secondary school settings. An assumption could be made that these school effectiveness factors and themes apply to institutions offering vocational education. A study of exemplary vocational education institutions was conducted, in part, to address this assumption.

RESEARCH METHODS AND PROCEDURES

The purpose of this project was to develop and test an instrument which incorporated the themes and factors which were identified in the Institutional Excellence Project by Wardlow et al. (1992). The objectives that guided the project were

- to identify institutional-level factors that contributed to excellence in vocational education.
- to develop and test a quantitative instrument, based on the identified excellence factors, for assessing the presence and intensity of institutional-level factors.
- to develop a user's guide for the administration of the instrument.
- to administer the instrument and describe exemplary institutions as perceived by their students, administrators, instructors, and advisory committee personnel in order to provide comparison data.

Design

The project employed both qualitative and quantitative research design components and procedures. The findings of the interpretive study reported by Wardlow et al. (1992) served as the framework for the development of the instrument. In that study, the researchers had identified institutional factors which were found to contribute to excellence. These factors were then organized into themes and subthemes representing related items. The study reported in this report developed those items into quantitative assessment items and organized them within the original thematic areas.

An interpretive design was used in the development of the instrument to enable the researchers to gain input and consensus from participants of exemplary institutions regarding the institutional-level factors which contribute to excellence in vocational education programs. Participants contributed suggestions for factors which they believed should be assessed by an instrument. In addition, they reviewed the instrument for clarity and accuracy as it was being developed. These procedures were needed to ensure a shared understanding among project staff and participants. The instrument was drafted and entitled the Institutional Effectiveness Assessment Guide (IEAG).

Using a quantitative research design, the IEAG was administered to samples of students, administrators, instructors, and advisory committee members. A descriptive research procedure was used to describe the characteristics and responses of the normative populations—students, instructors, administrators, and advisory committee members—which were used to determine the test statistics of the IEAG. Designated contact persons at fourteen exemplary institutions assisted in providing questions and critiques for the development of the questions for the instrument.

Sample and Population

The population that participated in completing the final draft copy of the IEAG consisted of ten advisory committee members, ten students, ten instructors, and up to five administrators randomly selected from fourteen exemplary institutions offering vocational education previously identified by Wardlow et al. (1992). The names and geographic locations of the fourteen institutions are as follows:

1. Alexandria Technical College, Alexandria, Minnesota
2. Dunwoody Institute, Minneapolis, Minnesota
3. The Fashion Institute of Technology, New York, New York
4. Fox Valley Technical College, Appleton, Wisconsin
5. Francis Tuttle Vo-Tech Center, Oklahoma City, Oklahoma
6. Glenn A. Hare Occupational Center, Reno, Nevada
7. Great Oaks Joint Vocational School District, Cincinnati, Ohio
8. Lake County Area Vocational Center, Grayslake, Illinois
9. Mesa Community College, Mesa, Arizona
10. College of San Mateo, San Mateo, California
11. Renton Vocational Technical Institute, Renton, Washington
12. Township High School District 214, Arlington Heights, Illinois
13. Vermont Technical College, Randolph Center, Vermont
14. Westland High School, Galloway, Ohio

Instrumentation

The data was collected using a draft of the IEAG instrument. The IEAG was developed through the cooperative efforts of the representatives of NCRVE exemplary institutions and the NCRVE Institutional Excellence Project researchers and staff. Two versions of the IEAG were developed. One version was designed for students (see Appendix B), and the other version was designed for administrators, instructors, and advisory committee personnel (see Appendix C). The student version was developed by omitting several items included on the administrator/instructor/advisory version for which the students have inadequate information or experience with which to respond.

The IEAG consists of six major thematic areas which were judged to contribute to institutional effectiveness. These six themes are "school climate," "administrator attributes," "instructor attributes," "student attributes," "curriculum development," and "institutional marketing/vocational student organizations/support services." Within each of these themes are identifiable subthemes and component attributes. The themes and subthemes are as follows:

School climate
- ecology
- people
- school organization
- culture

Administrator attributes
- leadership
- high expectations
- flexibility
- risk taking

Instructor attributes
- an attitude of caring
- acceptance of student diversity
- establishing a positive climate
- professional competence
- professional stability

Student attributes (omitted on student form)
- feeling of pride
- involved in programs
- maintained professional standards
- high expectations of self

Curriculum development

- use of advisory committees
- sense of ownership by faculty
- program content
- dual curriculum

Institutional marketing/vocational student organizations/support services

- marketing the institution
- use of vocational student organizations
- quality support services

In instrument development, it is accepted practice to use statistical tools such as a factor analysis to group items and to determine the extent to which multiple items measure like constructs. In the naturalistic interpretive study which provided a basis for this report and the instrument, the individual factors associated with the larger construct under study were identified first and then the themes were developed from those through the research methodologies of the research paradigm employed. Therefore, the use of statistical tools to organize thematic areas would only have served to approximate fact as previously determined.

Demographic data requested on the student version of the IEAG were years of enrollment in the institution, gender, and the students' programs of study. Demographic data on the administrator, instructor, and advisory committee member version were the role of participants, years within the role, gender, and program of instruction, if applicable. Each participant provided information for the demographic items. To address the thematic institutional assessment factors, participants circled the appropriate answers to questions representing each of the factors within the thematic areas.

In the development of a quantitative instrument, validity is a major concern. Instrument validity addresses the question, "Does the instrument measure what the researcher intends it to measure?" The instrument in this study was developed directly from the findings of the NCRVE Institutional Excellence interpretive study (Wardlow et al., 1992) which helps to insure the validity of the findings. Interpretive studies are, by their design and procedures, inherently valid. Thus, it is assumed that the instrument reported herein represents the findings of the earlier study and is, therefore, valid. From a positivistic research perspective, to properly address face and content validity for the items which represent the factors and themes of the earlier study associated with institutional effectiveness, the project researchers, staff members, and the designated representatives

and administrators of the exemplary institutions reviewed the instrument and found it to possess content validity.

Another concern in the development of an instrument is reliability. Both internal consistency and stability coefficients were established after the project data was analyzed.

Data Collection Procedures

Data was collected during the project for two purposes: (1) to develop the questions for the IEAG and (2) to establish the test statistics for the two versions of the IEAG.

The data collected in the earlier study reported by Wardlow et al. (1992) was used to design the IEAG. The NCRVE Institutional Excellence Project co-directors and assistants initially compiled lists of factors that contributed to institutional effectiveness. The data was configured into a draft instrument that was administered to graduate students and faculty members in the Department of Vocational-Technical Education at the University of Minnesota. After appropriate revisions, the IEAG was administered to representatives of each exemplary institution that participated in the initial NCRVE Institutional Excellence Project. The representatives provided additional factors for inclusion in the IEAG, critiqued the draft copy of the IEAG, and provided suggestions for formatting the IEAG for ease of completion and scoring.

The second purpose in the data collection process was to compute test statistics for the two versions of the IEAG through a pilot test. The NCRVE Institutional Excellence Project staff sent a letter to administrators and designated representatives of the NCRVE exemplary institutions requesting that they participate in this phase of the research process.

The two versions of the IEAG, along with instructions for administering it, were packaged and sent to the designated representatives at each of the participating exemplary institutions. With the assistance of the contact person, ten students, ten instructors, and ten vocational advisory committee members from each institution were randomly selected from lists maintained by each institution to participate in the pilot test. In addition, if the institution employed more than five administrators, five of these individuals were randomly

selected. If the institution employed five or fewer administrators, all administrators from that particular institution were included in the study. Contact persons subsequently administered the instruments to the participants.

The IEAG survey that each participant received included a cover letter explaining the study, a brief demographic form, and the guide questions and responses. Contact persons at each exemplary institution provided follow-up communications with participants, collected completed instruments, and returned a packet of completed IEAGs to the NCRVE staff.

NCRVE staff members sent follow-up letters and made phone calls to the contact persons of exemplary institutions who did not return completed instruments on the indicated due date. The due dates for return of the IEAGs was extended for institutions who communicated such a need.

There were eighty student, thirty-six administrator, eighty-seven instructor, and sixty-one advisory committee usable IEAG instruments returned from nine of the fourteen (64.29%) institutions. This data was used to calculate the internal consistency of each form of the instrument via a Cronbach's Alpha.

In order to calculate the coefficient of stability, a second set of the IEAG instruments was sent to the designated representatives at Dunwoody Institute, Fox Valley Technical College, and the Francis Tuttle Vo-Tech Center for readministration to participants approximately two to three weeks after the first administration. There were twenty-four of twenty-five usable administrator, instructor, and advisory committee member IEAGs used for the test-retest analysis procedures. The student version was not tested for stability because it was essentially a shorter version of the administrator/instructor/advisory member version.

Data Analysis

The SPSS/PC+, Version 4.0 (Norusis/SPSS, Inc., 1990) computer software was used to analyze the data of the IEAG. Descriptive statistics (i.e., mean, standard deviation, proportions, and mode) were used to describe the demographic characteristics of participants. Descriptive statistics were also computed for each factor, theme, and subtheme addressed by the two versions of the IEAG. Data was further analyzed by participants' role and type of institution.

The internal consistency coefficient was established for the IEAG instrument, theme, and subtheme using the reliability analyses procedures of the SPSS/PC+ program. In order to establish the coefficient of stability of the instrument, a test-retest procedure was employed. The initial and retest scores for the theme areas of the IEAG of the participants were correlated to establish the final coefficient of stability for the IEAG.

FINDINGS

The data is presented in four sections within this chapter. The first section presents the themes, subthemes, and factors that contribute to institutional effectiveness. Section two provides information regarding the characteristics of the respondents. The third section contains descriptive and test statistics for the student version and the administrator, instructor, and advisory committee member version of the IEAG. The fourth section provides data of comparisons between the groups to whom the instrument was administered by each of the theme areas.

Themes, Subthemes, and Factors that Contribute to Institutional Effectiveness

An overview of each major theme area assessed by the IEAG will initially be presented to inform the reader of the constructs being addressed by that portion of the IEAG. The overview is a summary of the major findings reported by Wardlow et al. (1992). The overview is followed by a report and discussion of the findings regarding each theme area (see Table 1).

NCRVE researchers and staff members along with representatives from the exemplary schools cooperated in identifying the themes, subthemes, and factors that contribute to institutional excellence for inclusion in the instrument. Six major themes were identified. The themes were school climate, administrator attributes, instructor attributes, student attributes, curriculum development processes, and institutional marketing/vocational student organizations/support services. Within each of these themes, subthemes were identified. Within the themes and subthemes were factors that contributed to institutional excellence. All the themes, subthemes and factors were foundational to the construction of the IEAG.

Description of Theme Areas

Anderson (1982) noted that *school climate* encompasses the total environmental quality within a school. She also suggested that school climate is a broad construct that is composed of many variables. These variables, however, can be classified into four distinct dimensions, namely (1) ecology, (2) milieu, (3) social system, and (4) culture. The ecology dimension relates to the physical and material variables in a school. Variables in the milieu dimension are those related to the background characteristics of people in a school. The social system variables reflect the school's organizational structure, while the culture dimension consists of variables regarding the norms, beliefs, and values of people within the school site. The school climate themes identified in this study are categorized according to these four dimensions.

The major subthemes within the *administrator attributes* theme area are leadership styles, high expectations of self and others, risk taking, and flexibility. Administrators in exemplary schools are very effective and successful. The chief administrators exhibit characteristics and behaviors that are indicative of exemplary leadership, particularly instilling a sense of mission and vision for their institutions. The administrators are very flexible while maintaining high expectations for themselves and others.

Specific *instructor attributes* encompassed within this theme are a caring attitude, acceptance of student diversity, and creation of positive classroom climate (including high expectations for themselves and their students). In addition, the teachers are very professional and technically competent; these qualities may be related to the ability of the

Table 1
Descriptive Statistics of IEAG Themes and Subthemes by Participant Role

	Participant Role									
	Overall		Students		Instructors		Administrators		Adv. Com.	
Theme/Subtheme	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
School Climate	102.27	21.68	91.29	18.89	107.10	18.33	117.32	12.44	100.63	26.03
• Ecology	30.35	7.32	26.26	6.97	32.15	6.02	35.06	4.92	30.41	8.00
• People	28.73	7.46	24.92	6.10	31.09	6.13	34.44	4.02	27.18	8.97
• School Organization	20.25	5.73	17.95	5.70	21.53	4.43	23.23	2.90	19.64	7.28
• Culture	22.80	4.36	21.69	4.36	22.78	4.30	24.49	3.12	23.28	4.73
Administrator Attributes	43.28	11.44	17.51	5.33	43.33	10.03	48.68	5.16	40.12	14.47
• Leadership	18.73	4.98	3.26	1.06	18.93	4.31	20.36	2.84	17.47	6.41
• High Expectations	6.24	2.15	6.13	2.15	6.15	2.09	7.11	1.09	5.98	2.59
• Flexibility	5.80	2.23	5.46	2.40	5.87	1.89	6.92	.95	5.47	2.74
• Risk Taking	12.42	3.54	2.66	1.83	12.58	3.02	14.18	1.57	11.22	4.49
Instructor Attributes	70.58	12.76	71.53	9.61	72.12	10.51	68.59	15.81	68.35	16.58
• Attitude	16.95	3.31	16.92	2.71	17.40	2.72	16.83	3.95	16.41	4.24
• Student Diversity	3.27	1.00	3.30	.91	3.39	.78	3.22	.80	3.07	1.39
• Positive Climate	9.94	2.33	9.81	2.23	10.37	1.67	9.86	2.51	9.56	3.01
• Profes. Competence	33.26	6.73	34.39	4.85	33.87	5.60	31.89	7.79	31.71	9.01
• Stability	7.06	1.24	6.97	1.24	6.94	1.08	6.94	1.47	7.39	1.27
Student Attributes	53.02	13.35	56.50	8.21	53.24	11.10	55.42	10.93	46.44	19.83

Table 1 (continued)

	Participant Role									
	Overall		Students		Instructors		Administrators		Adv. Com.	
Theme/Subtheme	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
Curriculum Dev.	34.54	10.77	7.02	3.44	33.01	11.61	37.61	9.00	34.90	10.21
• Advisory Committees	15.17	5.32	1.56	1.81	13.85	5.85	15.56	4.49	16.82	4.51
• Faculty Ownership	13.53	4.79	2.59	1.57	13.59	4.85	15.86	3.44	12.05	4.90
• Program Content	2.89	1.50	-	-	2.85	1.45	3.08	1.48	2.84	1.58
• Dual Curriculum	2.92	1.37	2.82	1.53	2.79	1.27	3.11	1.04	3.11	1.46
Instit. Marketing/ Voc. Student Org./ Support Services	33.91	10.06	31.00	9.64	35.48	8.26	38.31	7.35	32.83	12.84
• Marketing	16.04	5.87	13.39	5.55	17.36	4.98	19.33	4.33	15.64	6.77
• VSOs	4.82	3.17	4.47	3.30	4.87	2.96	5.25	2.86	4.97	3.47
• Support Services	13.04	3.48	12.99	3.66	13.24	2.93	13.72	2.33	12.44	4.37
Institution Score	343.75	65.54	276.67	40.11	344.20	59.29	371.03	43.09	326.00	79.12

institution to retain stable staff members with many years of service in teaching. A low relative turnover rate was previously noted among these institutions.

The *students* exhibit a great feeling of pride in themselves and in their institutions. Students indicate that they possess a positive feeling about being involved in their programs. They maintained professional standards among themselves, including appropriate behavior and dress. Students believe that entry into their programs is by selective processes. The students place high expectations on themselves.

Four important subthemes of *curriculum and the curriculum development process* are evident: (1) The technical content of each of the program offerings is strongly influenced by the use of industry/community-based advisory committees; (2) the content is tempered by the teaching methodology concerns of instructors who work in close cooperation with the advisory committees to insure appropriate program content; (3) individual faculty members have a strong sense of ownership in their curricula; and (4) a holistic or dual curriculum is taught that integrates the key principles and practices of vocational and academic education.

Exemplary institutions do a credible job of *marketing* their programs in their geographic service areas. Marketing of programs is accomplished by establishing support for each program through the use of advisory committees and by providing support and encouragement for faculty members to actively participate in industry-based activities. There is a general expectation of faculty members to physically "get out of the building" and into the businesses.

These institutions are actively involved in their communities, are sensitive to community needs, and provide service activities for their communities. The institutions maintain institutional marketing employees to assess community needs and interests and to determine the institution's role in filling appropriate needs. Furthermore, the exemplary institution considers itself as having good support within an economically sound community.

Active *vocational student organizations* exist for students regardless of their level or age in exemplary vocational education institutions. Because staff members are personally committed to providing an overall vocational student organization, students are afforded the

opportunity to participate in an organization that values student recognition, leadership, public relations, and personal development.

The *support services* in exemplary institutions offering vocational education include general education programs or "basics skills centers," career counseling, and placement programs for students, and clerical support for instructors. If the institution serves adults or other special populations, they are especially "tuned in" to the needs of these groups and provide specialized counseling services and programs to them. The institutions operate some form of general education program to assist students in sharpening necessary skills in academic basics such as reading, writing, and mathematics skills. Many of these programs provide individualized instruction and one-to-one student-faculty assistance.

Respondent Characteristics

Demographic information was requested from participants to provide an overview of the respondents and to provide information toward developing an understanding of their ability to appropriately respond to the IEAG questions. This data is presented in Table 2.

Students

Eighty students from nine institutions participated in the study; there were twenty-nine secondary, thirty-four technical college, seven proprietary school, and ten four-year college students. The sample was made up of thirty-nine males (48.8%) and forty-one females (51.3%).

Administrators

Thirty-six administrators from nine institutions participated. Ten administrators were from secondary schools, seventeen from technical colleges, four from proprietary institutions, and four from four-year colleges. Twenty-two (61.1%) of the administrators were males and fourteen (38.9%) were females.

Table 2
Respondent Characteristics by Participant Role and Institution

School	Students					Instructors					Administrators					Advisory Committee				
		Male		Female			Male		Female			Male		Female			Male		Female	
	n	n	%	n	%	n	n	%	n	%	n	n	%	n	%	n	n	%	n	%
Total Participants	80	39	48.8	41	51.3	87	51	58.6	36	41.4	36	22	61.1	14	38.9	61	39	63.9	22	36.1
Secondary Total	29	15	51.7	14	48.3	33	21	63.6	12	36.4	10	8	80.0	2	20.0	26	15	57.7	11	42.3
• Lake County	9	3		6		12	9		3		1	1		0		6	5		1	
• Great Oaks	10	6		4		10	5		5		5	4		1		10	4		6	
• District 214	10	6		4		11	7		4		4	3		1		10	6		4	
Technical College Total	34	17	50.0	17	50.0	36	21	58.3	15	41.7	17	9	52.9	8	47.1	25	17	68.0	8	32.0
• Renton VTI	9	5		4		10	8		2		4	3		1		4	3		1	
• Vermont Tech	8	7		1		8	6		2		4	2		2		5	3		2	
• Francis-Tuttle	10	5		5		10	3		7		5	2		3		9	6		3	
• Fox Valley	7	0		7		8	4		4		4	2		2		7	5		2	
Proprietary	7	5	71.4	2	28.6	9	7	77.8	2	22.2	4	4	100.0	0	0.0	3	2	66.7	1	33.3
• Dunwoody	7	5		2		9	7		2		4	4		0		3	2		1	
Four Year	10	2	20.0	8	80.0	9	2	22.2	7	77.8	5	0	0.0	5	100.0	7	5	71.4	2	28.6
• FIT	10	2		8		9	2		7		5	0		5		7	5		2	

Instructors

Seventy-eight instructors participated in the study; thirty-three instructors were from secondary schools, thirty-six from technical colleges, nine from proprietary schools, and nine from four-year colleges. Fifty-one (58.6%) of the instructors were males and thirty-six (41.4%) were females.

Advisory Committee Members

There were sixty-one advisory committee members in the study; twenty-six from secondary schools, twenty-five from technical colleges, seven from the proprietary school, and three from four-year colleges. Thirty-nine (63.9%) of the advisory committee members were males and twenty-two (36.1%) were females.

Test Statistics of the Institutional Effectiveness Assessment Guide (IEAG)

The coefficients of internal consistency and stability along with the perceptions of each group of participants are presented in the sections that follow. A brief overview and summary of the descriptive statistics of each theme area along with interpretations is presented. A summary of the reliability coefficients for each theme area follows.

To obtain the data for the analyses, study participants completed either the student version or administrator/instructor/ advisory committee member version of the IEAG. Participants responded to each question by circling one of five possible responses: 1 for "almost never," 2 for "occasionally," 3 for "usually," 4 for "almost always," and 0 for "not observed." Higher scores, therefore, indicate strong evidence of the presence of the factor or theme being assessed. For example, a higher score on the school climate theme indicates that the respondents perceived a greater presence of the constructs that make up the theme.

In addition to determining the test statistics for the instrument, descriptive statistics of the participant institutions were collected from each of the subject groups. Comparisons among these groups were conducted to provide information to the user for interpreting the findings. Within each of the subject groups, means were calculated for each factor on the instrument. For each of the theme and subtheme areas, means were calculated by summing the mean values of each of the component factors within the theme and subtheme (see Table

2). The IEAG was designed to assist institutions in determining areas of strength relative to areas needing improvement. That is, perhaps, the best use of the instrument. This study was not intended to provide normative data for comparison purposes.

Analysis of variance (ANOVA) procedures with Tukey-HSD post hoc procedures, using an alpha of .05, were implemented for the IEAG themes to determine significant differences among the mean scores of the students, instructors, administrators, and advisory committee members.

Student responses were not collected for parts of the administrator and curriculum development theme areas due to their lack of opportunity to adequately view these persons or processes.

Reliability Coefficients

Coefficient of Internal Consistency

The coefficient of internal consistency, as measured by the Cronbach's Alpha, was determined for the entire IEAG, as well as for applicable themes and subthemes of the guide. Coefficients were determined for the student version of the IEAG as well as the administrator/instructor/advisory committee member version. The data in Table 3 indicates that the overall internal consistency coefficient of the student version of the IEAG was .92. The internal consistency coefficients for each of the themes and subthemes ranged from .22 (instructor stability) to .86 (student attributes).

The data in Table 3 indicates the overall internal consistency coefficient of the administrator/instructor/advisory committee member version of the IEAG was .97. The internal consistency coefficients for each of the themes and subthemes of this version ranged from .65 (administrator–high expectations) to .95 (student attributes).

Table 3

Coefficients of Internal Consistency for the IEAG

Theme/Subtheme	Student Version	Administration Version
School Climate	.83	.92
• Ecology	.56	.74
• People	.60	.82
• School Organization	.60	.82
• Culture	.46	.73
Administrator Attributes	—	.92
• Leadership	—	.82
• High Expectations	—	.65
• Risk Taking	—	.72
• Flexibility	—	.71
Instructor Attributes	.84	.92
• Caring Attitude	.62	.75
• Student Diversity	n/a	n/a
• Positive Climate	.45	.71
• Professional Competence	.69	.86
• Stability	.22	.72
Student Attributes	.86	.95
Curriculum Development Process	—	.89
• Advisory Committee	—	.88
• Ownership	—	.75
• Program Content	—	n/a
• Dual Curriculum	—	n/a
Inst. Mktg/VSOs/Support Services	.77	.86
• Marketing	.61	.82
• VSOs	.73	.86
• Support Services	.74	.68
Instrument Overall	.92	.97

Note: n/a = not enough responses to establish.
— = items omitted from student version.

Coefficient of Stability

The coefficient of stability was determined through the test-retest procedure for the administrator/instructors/advisory committee version of the IEAG. This version was tested because it was complete compared with the student version which omitted several items. The coefficients of stability for the administrator/instructor/advisory committee person IEAG are listed by theme in Table 4. The theme area reliability estimates range from .79 to .93 with the overall weighted instrument reliability estimate equal to .84.

Table 4

Coefficients of Stability of the Administrator, Instructor, and Advisory Committee Members Version of the IEAG by Theme Areas

Theme Area	Coefficient of Stability
School Climate	.90
Administrator Attributes	.93
Instructor Attributes	.79
Student Attributes	.88
Curriculum Development	.92
Institutional Marketing/VSOs/ Support Services	.92
Overall Instrument	.82
Overall Instrument—Weighted	.84

Comparative Data

School Climate

The ANOVA procedure indicated a significant difference between groups on the school climate theme. Tukey–HSD post hoc tests of this data, presented in Table 5, indicate the student perceptions (X 91.29, SD 18.89) of the school climate were significantly lower than the perceptions of the administrators (X 117.32, SD 12.44), instructors (X 107.10, SD 18.33), and advisory committee members (X 100.63, SD 26.03). This suggests the students did not see evidence of the school climate constructs as often as the other groups.

Table 5

ANOVA of Summated Mean Scores of the School Climate Theme by Participant Group

Source	df	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	18,334.65	6,111.55	15.35	.000
Within Groups	236	93,952.75	398.10		
Total	239	112,287.40			

School Climate Theme Tukey–HSD Post Hoc Test

Mean	SD	Group	Group 1	4	2	3
91.29	18.89	1				
100.63	26.03	4	*			
107.10	18.33	2	*			
117.32	12.44	3	*	*		

Note: * Indicates significance.

Group 1 Students
Group 2 Instructors
Group 3 Administrators
Group 4 Advisory committee members

Post hoc tests also indicate the administrators (X 117.32, SD 12.44) perceived the school climate to be significantly higher than the advisory committee members perceived it to be (X 100.63, SD 26.03). However, it should be noted that the variance of scores of the advisory committee, as indicated by the standard deviation value, was higher than that of the other groups. A high value such as this indicates that this group was less homogeneous in their ratings than were the other groups. The high obtained variance for this group, rather than the difference in obtained means between groups, may or may not account for the obtained significance between this particular group and the others.

Administrator Attributes

An analysis of the data indicated that administrators of the participant institutions rated the presence of positive administrator attributes in these institutions significantly higher (X 48.68, SD 5.16) than did the advisory committee members (X 40.12, SD 14.47). However, the perceptions of the administrator attributes held by the instructors (X 43.33, SD 10.03) were similar to those held by the administrators. This suggests that administrators rate their perceptions of the administrator characteristics present in their institutions—leadership, high expectations, risk taking, and flexibility—similarly to the way instructors rate them, but higher than the advisory committee members rate them. Students were not instructed to respond to items in this theme area.

Table 6

ANOVA of the Summated Mean Scores of the Administrator Characteristics by Participant Group

Source	df	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	1,579.96	789.99	6.41	.002
Within Groups	170	20,963.16	123.31		
Total	172	22,543.12			

Administrator Characteristics Theme Tukey–HSD Post Hoc Test

Mean	SD	Group	Group 4	2	3
40.12	14.47	4			
43.33	10.03	2			
48.68	5.16	3	*		

Note: * Indicates significance.

Group 1 Students
Group 2 Instructors
Group 3 Administrators
Group 4 Advisory committee members

Instructor Attributes

An analysis of the data presented in Table 7 indicates no significant differences among the way that the students, administrators, instructors, and advisory committee members in these institutions perceived the presence of positive attributes associated with excellence of their teachers. These groups agreed on the degree of caring and acceptance of student diversity demonstrated by the instructors. Further, there was consensus among the groups regarding the professional competence of the instructors, as well as the abilities of the instructors to maintain a positive learning climate.

Table 7

ANOVA of Summated Mean Scores of the Instructor Attributes Theme by Participant Group

Source	df	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	702.07	234.02	1.44	.23
Within Groups	251	40,671.86	162.04		
Total	254	41,373.94			

Student Attributes

A comparison of the scores of student attributes as perceived by the different groups in the study (see Table 8) indicates that the advisory committee members (X 46.44, SD 19.83) demonstrated a significantly lower perception of the attributes of the students than did the administrators (X 55.42, SD 10.93), instructors (X 53.24, SD 11.10), and the students themselves (X 56.50, SD 8.21). The administrators, instructors, and students held views of the student attributes which were similar.

Table 8

ANOVA of Summated Means Scores of the Student Attributes Theme by Participant Group

Source	df	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	3,624.34	1,208.11	7.29	.0001
Within Groups	251	41,623.52	165.83		
Total	254	45,247.85			

Student Attributes Theme Tukey–HSD Post Hoc Test

Mean	SD	Group	Group 4	2	3	1
46.44	19.83	4				
53.24	11.10	2	*			
55.42	10.93	3	*			
56.50	8.21	1	*			

Note: * Indicates significance.

Group 1 Students
Group 2 Instructors
Group 3 Administrators
Group 4 Advisory committee members

Curriculum Development

The data in Table 9 indicates there were no differences among the perceptions of the administrators, instructors, and advisory committee persons in regard to the curriculum development theme. This suggests concurrence among the groups on the perceived value of the role of the advisory committee. In addition, there was agreement on the perception that instructors have a strong sense of ownership of the curriculum development product and processes. The administrators, instructors, and advisory committee members also agreed on the value and utilization of a dual curriculum.

Table 9

ANOVA of Summated Mean Scores of the Curriculum Development Theme by Participant Group

Source	df	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	548.20	274.10	2.40	.0937
Within Groups	179	20,450.94	114.25		
Total	181	20,999.14			

Institutional Marketing/Vocational Student Organizations/Support Services

Analyses of the data in Table 10 indicates that the administrators (X 38.31, SD 7.35) and instructors (X 35.48, SD 8.26) perceived there to be a significantly greater presence of the factors within this theme area within their school than did the students (X 31.00, SD 9.64). Further, the administrators indicated that there was a significantly greater presence of the theme area than did the advisory committee members. A possible explanation for these findings may be that the administrators and instructors may be more aware of the institutional marketing efforts, vocational student organizations, and support services than either the students or advisory committee members.

Table 10

ANOVA of the Summated Means of the Institutional Marketing/VSOs/Support Services Theme by Participant Group

Source	df	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	1,621.43	540.47	5.62	.001
Within Groups	251	24,122.67	96.11		
Total	254	25,744.10			

Table 10 (continued)
Institutional Marketing/VSOs/Support Services Theme Tukey–HSD Post Hoc Test

Mean	SD	Group	Group 3	2	4	1
38.31	7.35	3			*	*
35.48	8.26	2				*
32.83	12.84	4				
31.00	9.64	1				

Note: * Indicates significance.

Group 1 Students
Group 2 Instructors
Group 3 Administrators
Group 4 Advisory committee members

CONCLUSIONS AND RECOMMENDATIONS

The project reported herein built upon previous studies which identified institutional-level factors which contribute to excellence in vocational education. It sought to develop and test an instrument to serve as a guide for institutional decisionmakers who seek to improve their institutions. Specific conclusions regarding the identification of the institutional-level factors associated with excellence in education have been posited in previous reports from this project. Therefore, it is only a discussion of the development and testing of the instrument which is in the preview of this report.

As a result of this effort, a quantitative instrument was developed and field tested. The development process of this instrument, which was based on accepted procedures of interpretive research, provided for the validity of the instrument. Since it was based directly on the attributes of exemplary institutions, it was found to possess both face and content validity. The instrument was subsequently tested for both internal consistency and stability, as two forms of reliability. Each of these processes provided evidence that the instrument was reliable.

In interpreting the utility of the study for application by institutions, it may be useful to understand that the instrument was developed from the findings of exemplary institutions. This may be a limitation in its design; however, the underlying objective of the line of research which was foundational to the development of the instrument was that the profession of vocational education could learn by observing and analyzing the attributes of institutions which exhibited excellence in education.

The following are some recommendations resulting from this study:

- The larger construct representing institutional-level factors which contribute to excellence in education should be further investigated. Research in education has traditionally focused on specific factors in isolation of each other. Further, many of these factors are based on the classroom as the unit of research with little regard for concern for their manifestation at the institutional level. Additionally, there is a paucity of research which explores the interactions among these factors.

- The instrument should be field tested with a much larger and more heterogeneous population of institutions. Institutions which are not identified as "exemplary" but which aspire to that goal, as well as institutions which are neither exemplary, nor aspire to be, should be included in a field test. Further, institutions which are more heterogeneous with regards to the socioeconomic status of the constituent groups which they serve should be tested.

- The instrument should be tested for concurrent validity against other instruments which are available and which purport to measure constructs which are component themes of this instrument. For example, instruments exist which measure perceptions of classroom climate.

- Based on further testing, the instrument should be revised. Possible revisions include reformatting to better identify and understand the themes and subthemes, and to facilitate data analysis.

- The institutions which provided the field for development and testing of this instrument were exemplary institutions which maintained vocational education programs. Further study should be conducted to determine if institutional excellence factors found among these institutions are common among all educational institutions.

- This study assumed that institutional factors associated with excellence positively relate to student outcomes. This association was identified in previous interpretive work by the researchers. However, this assumption needs further testing.

- Institutions that seek educational excellence should use this instrument as a guide, in conjunction with others, to identify their relative strengths and areas for improvement.

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Appendix A
The Institutional Effectiveness Assessment Guide
(IEAG)
User's Manual

THE INSTITUTIONAL EFFECTIVENESS ASSESSMENT GUIDE (IEAG)

USER'S MANUAL

A Guide to the Administration, Scoring, and Interpretation of IEAG

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INTRODUCTION

The Institutional Effectiveness Assessment Guide (IEAG) is the result of collaborative efforts between administrators, instructors, advisory committee members, and students in fourteen exemplary institutions offering vocational education across the United States, and researchers and staff members of the National Center for Research in Vocational Education's (NCRVE) Institutional Excellence Project. A major goal of the NCRVE Institutional Excellence Project was to disseminate research findings to the vocational education profession in forms which are meaningful and easy to use. The User's Manual for the IEAG was designed to provide the user with the contextual information and the test statistics used in developing the IEAG, the instructions for administering and the guidelines for interpreting the guide, as well as serving as an outline for institutional improvement.

Context for the Development of the Guide

Attention to excellence in vocational education is most frequently directed toward programs, classrooms, and individual student performance. Research questions are often framed to study course content, methods of instruction, and elements of delivery on the classroom level. However, some researchers maintain that there may be institutional-level factors that affect educational effectiveness (Goodlad, 1983; Wardlow, Swanson, & Migler, 1992).

Wardlow et al. (1992) implemented a naturalistic study to identify the key institutional factors which may contribute to excellence in vocational education in fourteen institutions from across the United States with exemplary vocational programs. Their research identified several themes which were generally consistent across the institutions studied, regardless of their clientele, mission, educational level, or type of institution. The identified themes were organized under the headings of "school climate," "administrator attributes," "teacher attributes," "student attributes," "curriculum," and "institutional marketing/vocational student organizations (VSOs)/support services."

The IEAG is based upon the findings of the NCRVE Institutional Excellence Project, which was co-directed by Wardlow and Swanson. As such it does not purport to

assess in as great a detail the measures assessed by other instruments which study specific aspects of an institution. For example, it does not measure all the possible attributes of students who attend schools of excellence. Rather, it assesses major themes and attributes identified by the principal researchers.

Intended Uses of the Guide

The IEAG was designed as a vehicle to assist administrators, instructors, students, parents, advisory committee personnel, and others in determining the relative status of their institution as addressed by the themes within the IEAG. Results of the IEAG are intended to be used by groups or individuals as a guide for directing discussions and action activities for institutional improvement.

TESTING THE IEAG

Process of Developing the IEAG

The IEAG is a result of the cooperative efforts of the NCRVE investigators and staff, the key administrators, and the contact persons at the fourteen exemplary vocational education institutions. Additionally, the students, instructors, administrators, and advisory committee members of nine of those institutions participated in the testing of the instrument. The principal researchers visited each school. After extensive questioning, observation, and dialogue, the researchers synthesized the key themes which serve as the primary organizers for the IEAG. Specific attributes within each theme, which were consistent across the institutions, were identified. A process of triangulation of the findings across several data sources was employed to insure the integrity of the findings. This process and the findings of the study are documented in the 1992 NCRVE Institutional Excellence Project report, *Assessing the Nature and Operation of Institutional Excellence in Vocational Education*, by Wardlow et al. Representatives of the exemplary institutions assisted in identifying and refining the questions for the IEAG. Project staff members constructed the final versions.

Description of Normative Populations

Nine of the fourteen institutions with exemplary vocational education programs were included in the pilot test of the instrument. Within each of the nine pilot study schools, random samples of ten students, up to five administrators, ten instructors, and ten advisory committee members were identified. These individuals were administered the instrument to provide normative data for the instrument and to provide estimates of internal consistency (reliability) of the instrument. Administrators, instructors, and advisory committee members from three institutions were readministered the instrument approximately two to three weeks later to establish an estimate of the stability of the instrument. This test-retest procedure provided an additional estimate of the reliability of the instrument.

There were eighty (89%) usable student IEAGs returned for determining the test statistics for the student version of the IEAG. There were thirty-six administrator, eighty-seven instructor, and sixty-one advisory committee member usable IEAGs for determining the test statistics of the administrator/instructor/advisory committee member version of the IEAG.

Coefficient of Internal Consistency

The internal consistency coefficient was determined for the entire IEAG, as well as for the applicable themes and subthemes of the guide, by calculating the Cronbach's Alpha statistic. Coefficients were determined for the student version of the IEAG as well as the administrator/instructor/advisory committee member version. The overall internal consistency coefficient of the student version of the IEAG was .92. The internal consistency coefficients for each of the themes and subthemes of the student version ranged from .22 (instructor stability) to .86 (student attributes). Students were not asked to respond to several themes and subthemes because students generally lack a complete understanding of these areas.

The overall internal consistency coefficient of the administrator/instructor/advisory committee member version of the IEAG was .97. The internal consistency coefficients for each of the themes and subthemes ranged from .65 (administrator–high expectations) to .95

(student attributes). The data representing the internal consistency estimates is presented in Table 1.

Coefficient of Stability

The coefficient of stability as an estimate of reliability for the administrator/ instructor/advisory committee version of the IEAG was determined through test-retest procedures. Twenty-four administrators, instructors, and advisory committee members from three institutions were readministered the instrument approximately two to three weeks after the first administration to establish an estimate of the stability. These obtained estimates for the overall instrument and each of the theme areas are listed in Table 2. The weighted overall estimate of stability for the instrument is .84, while stability estimates within theme areas range from .79 to .93.

Table 1

Coefficients of Internal Consistency for the IEAG

Theme/Subtheme	Student Version	Administration Version
School Climate	.83	.92
• Ecology	.56	.74
• People	.60	.82
• School Organization	.60	.82
• Culture	.46	.73
Administrator Attributes	—	.92
• Leadership	—	.82
• High Expectations	—	.65
• Risk Taking	—	.72
• Flexibility	—	.71
Instructor Attributes	.84	.92
• Caring Attitude	.62	.75
• Student Diversity	n/a	n/a
• Positive Climate	.45	.71
• Professional Competence	.69	.86
• Stability	.22	.72
Student Attributes	.86	.95
Curriculum Development Process	—	.89
• Advisory Committee	—	.88
• Ownership	—	.75
• Program Content	—	n/a
• Dual Curriculum	—	n/a
Inst. Mktg/VSOs/Support Services	.77	.86
• Marketing	.61	.82
• VSOs	.73	.86
• Support Services	.74	.68
Instrument Overall	.92	.97

Note: n/a = not enough responses to establish.
— = items omitted from student version.

Table 2

Coefficients of Stability of the Administrator, Instructor, and Advisory Committee Members Version of the IEAG by Theme Areas

Theme Area	Coefficient of Stability
School Climate	.90
Administrator Characteristics	.93
Instructor Attributes	.79
Student Attributes	.88
Curriculum Development	.92
Institutional Marketing/VSOs/ Support Services	.92
Overall Instrument	.82
Overall Instrument—Weighted	.84

INSTRUCTIONS FOR ADMINISTERING THE IEAG

Assumptions Underlying the Use of the Guide

This instrument was developed for use as a guide for institutions offering vocational education programs and which aspire to educational excellence. As the research project from which it was developed included a major review of the research on educational excellence, it may be representative of much of the excellence literature from the broad field of educational research. However, it was not developed directly from those works. Rather, it was developed from a thorough investigation of exemplary institutions offering vocational education. The researchers viewed the project as an opportunity for the field of vocational education to learn from its own best programs.

The IEAG has been designed with several assumptions which should be considered when utilizing the guide. These assumptions are

1. There are institutional factors associated with educational excellence which are generally universal, regardless of institutional mission, clientele, educational level, or type of institution. This implies that the factors identified in exemplary institutions may occur in any vocational institution (it may be the unique interactions between these factors that create excellence).

2. The themes and subthemes described in the guide represent common characteristics found across the exemplary vocational institutions studied. Other factors which are unique to an institution and which contribute to institutional excellence might exist. These are not included in the guide.

3. The themes and subthemes identified with institutional effectiveness may change over time as new levels of understanding about excellence are developed.

4. The numbering of the themes and subthemes identified in the guide does not represent a hierarchical order.

5. The potential interaction among the factors contributing to institutional effectiveness was not measured in the study; therefore, dependency of one factor on another is not appraised by the guide.

6. All vocational education institutions can reach levels of excellence by addressing, among other issues, those concerning school climate, administrator attributes, instructor attributes, curriculum development processes, how the institution is marketed within the community it serves, student organizations, and support services.

Instructions for Administering the Guide—Selecting Participants

Institutional leaders who wish to make effective use of the IEAG should consider the importance of obtaining a representative set of the range of perceptions about their institution. This requires that the individuals to whom the instrument is administered be representative of the entire population of individuals served by the institution. There is little doubt that the careful and deliberate selection of key individuals to complete the instrument could make even the poorest of educational institutions be rated quite highly. Likewise, the

selection of another set of individuals in a very good institution could result in a very low rating. Either situation would not provide results which truly represent the institution.

Selection of individuals to complete the instrument is, therefore, key to gaining a good understanding of the institution relative to the factors and themes represented by the instrument. Purposeful selection of any individual to complete the instrument should be avoided, unless the purpose of the administration of the instrument is to obtain predictable results. Further, consideration should be given to obtaining information from more than one constituent group within the institution. Groups used to develop the instrument included students, administrators, instructors, and advisory committee personnel. Additionally, support staff members were included in the original study which provided a basis for the instrument. For secondary school programs, parents may be an additional group from which an assessment of the institution would be desirable.

In an ideal situation, all constituents of an institution should be included in a study of the institution. However, the time and cost of collecting and analyzing that volume of information may be prohibitive. If that is the case, information can be collected from representative samples of the constituent groups and, if properly done, the results can then be generalized back to the original populations.

To collect information from samples of groups of individuals which represent an institution, it is recommended that a list of each constituent group be compiled, and a true random sample of each group be drawn. Random sampling is a powerful tool for collecting data about a group. Many people are reluctant to trust it and, therefore, attempt to force the inclusion or exclusion of individuals from a sample for different reasons. As the sample is drawn, the exclusion of any individual for any reason should be avoided. If the institution serves a heterogeneous population, apparent outlets (those who may appear to be nonrepresentative of the population such as students with special needs or who belong to nontraditional groups) should be included if they are among those randomly chosen. The purposeful exclusion of outliers may result in a set of findings for the institution that is not representative of the institution and is, therefore, erroneous. The conclusions based on those findings will also be erroneous.

It should be noted that the smaller the sample size the larger the risk that the sample is not representative of the population from which it was drawn due to natural errors in the

sampling process. To avoid this problem, there are minimum sample sizes which should be considered as acceptable to provide a minimal risk of nonrepresentativeness.

For the administration of any type of instrument to a sample of any group, the likelihood that each of these issues—problems associated with a small sample size, likelihood that the sample actually represents the population, chance for error—will occur can be statistically calculated. If the individual responsible for administering the instrument is unfamiliar with these statistical tools, a "rule of thumb" is offered. It is recommended that a minimum of ten percent of each group be included, with a minimum number of fifteen individuals and a maximum of one-hundred individuals. If there are fewer than fifteen individuals in any group, as may be the case with the administrator group in an institution, it is recommended that all members of the group be included. Obviously, available time and resources will influence decisions about sample sizes.

Instructions for Administering the Guide—Collecting Data

Once individuals who will complete the instrument are identified, each should be notified of their selection, be informed of the importance of participation, and be asked for their cooperation. If any individual chooses to decline, they should know that they are allowed to do so without possibility of retribution. Participants should never be coerced to participate as a term of their employment status or student status. Such pressure would likely result in erroneous results if they were to be included. Should any individual decline participation, they should be replaced in the sample by a replacement chosen through the same random sampling process. The replacement of individuals will insure that the original number of participants is maintained.

Instruments should be administered to all individuals under equal conditions and at approximately the same time. Research indicates that events in individuals' lives, large or small, may have some effect on how the individual responds to a questionnaire. It would, for example, be inappropriate to collect data from teachers the day before the vote on a school funding referendum and from administrators the day after the referendum failed.

The following is a procedure to randomly select members from each constituent group that you wish to study. Remember, a minimum of fifteen members from each

constituent group should be included, unless the entire group is smaller than fifteen. Be sure there is no duplication across groups of participants completing the IEAG.

Example procedure for selecting ten percent of students:

1. Consult with the office personnel who maintain current enrollment data. Obtain a list of students.

2. Divide the total number of students by ten.

3. Randomly select a number between 1 and 10.

4. Begin with this number and select every tenth student from the student enrollment list as determined by the division process. For example, there are 975 students. 975 divided by 10 equals 97. Therefore, if you were to begin with the number "4" you would continue by selecting every tenth student (4th, 14th, 24th, 34th, and so on) until you have selected 97 students.

Scoring Instructions

The IEAG was designed for internal use by an institution which aspires to improve on the themes and factors associated with exemplary institutions. Its primary use was not intended for an institution to compare itself with another institution, although an understanding of some normative data of exemplary institutions may be useful in program improvement. An individual institution should use the data only for purposes of determining relative areas of strength compared with areas in need of improvement.

Within each theme area on the IEAG are several component items. Each of these items represents a factor which was found to exist among exemplary institutions offering vocational education. The scores obtained by these institutions are found on Appendix A and are provided only for comparison purposes. The score obtained by an institution on any individual item should provide some limited understanding of that institution's rating on that factor. However, it may be more useful for an institution to gain an understanding of its rating on each larger theme area. This can be done by calculating the means (arithmetic averages) of each item and then calculating a grand mean (an average of the averages) for all the items within each theme area. To calculate the grand mean, sum the

mean scores of each item within the theme area and divide by the number of items within the theme area.

To obtain the average scores for each item, sum the values of the responses of each participant and divide by the number of participants. To obtain the summated average scores for each theme and subtheme, sum the values of the responses to each item and divide by the number of items in the particular theme or subtheme.

To gain a full interpretation of the average values, it may be useful to calculate statistical mean scores rather than averages. Operationally, an arithmetic average approximates a statistical mean; however, the process of calculating a statistical mean will also provide the user with a statistical deviation of the range of scores which constitute a mean. This value, generally obtained in standard deviations, will inform the user of the shape of the distribution of the scores around the statistical mean.

Since the number of items within each theme area varies, if one wishes to compare across theme areas, it is necessary to calculate mean theme scores by factoring in the number of items within each theme area. Appendix B is provided as a worksheet to calculate the scores for your institution.

GUIDELINES FOR INTERPRETING THE GUIDE

Interpretation of the Overall Score

The maximum overall score that can be obtained for the version of the IEAG designed for administrators, instructors, and advisory committee members is 448, whereas for the student version it is 380. Average overall scores for each group are obtained adding the individual scores of each participant and dividing the total by the number of participants. Average overall scores between 336 and 448 for the administrator version, and between 285 and 380 for the student version, occur when all factors are ranked "usually" or "almost always." Therefore, average overall scores falling within these ranges indicate that members from each of these groups perceive that there is strong evidence of the existence of these themes. Conversely, lower scores may indicate that some of the characteristics evaluated occur less frequently or are not observed.

Interpreting the Meaning of Themes and Subthemes

Each of the six themes identified consist of different subthemes. The subthemes within each of the theme areas are as follows:

School Climate Theme: 1-35
- ecology items: 1-9, 31, 32
- people items: 11, 12, 21, 23-26, 30, 33, 35
- school organization items: 10, 13, 14, 17-19, 34
- culture items: 15, 16, 20, 22, 27-29

Administrator Attributes Theme: 36-49
- leadership items: 36-41
- high expectation items: 42, 49
- flexibility items: 43, 48
- risk taking items: 44-47

Instructor Attributes Theme: 50-70
- caring attitudes items: 50-54
- student diversity items: 55
- positive climate items: 56-58
- professional competence items: 59-61, 64-70
- professional stability items: 62, 63

Student Attributes Theme: 71-88

Curriculum Development Theme: 89-100
- advisory committee items: 89-92, 94
- sense of ownership items: 95-98, 100
- program content items: 93
- dual curriculum items: 99

Institutional Marketing/VSOs/Support Services Theme: 101-112
- marketing items: 101-106
- vocational student organizations items: 107, 108
- support services items: 109-112.

Appendix A contains mean scales by theme area which can be used to score the institution's mean and compare that score to the sample of exemplary institutions' mean score. Appendix B contains a scoring sheet which can be used to evaluate the institution by theme and subtheme areas.

AN OUTLINE FOR INSTITUTIONAL IMPROVEMENT

Priorities at an Institutional Level

While many of the factors within and across the theme areas may interact, the IEAG serves as a basis for appraising factors which may be limiting institutional effectiveness. Without disregarding theme areas in which an institution may score highly, the institution should give priority to areas of relatively low scores as areas for improvement. By addressing these theme areas, and their component items, it is expected that an institution can make gains in its effectiveness.

A Plan for Implementing the Institutional Priorities

Once factors and thematic areas on which an institution believes that its scores are less than desirable have been identified, there are several activities that may be considered to address these relative deficiencies:

1. Among the most important findings by the Wardlow et al. (1992) study was that administrators of exemplary institutions set a long-range vision for the institution and are able to get other constituent group members to accept that vision. Therefore, the administrator(s) must provide visionary leadership in any institutional improvement effort.

2. Organize focus groups with students, administrators, instructors, and other constituent groups to probe issues associated with the identified items and develop ideas to implement plans to address the factors.

3. If particular groups are implicated as being responsible for deficiencies, organize task forces with each of the constituent groups to implement plans and monitor activities.

4. Readminister the IEAG to the constituent groups after implementation of plans to determine if progress has been made.

It is often difficult for an institution to be responsible for its own evaluation, particularly in the interpretation of any findings of such an undertaking. Often, the use of qualified external consultants to provide objective interpretations and assessments is necessary.

Monitoring the Plan of Action

Before the plan of action for change is completed, an assessment of the implementation of the plan should be done in order to make any necessary "mid-stream" modifications in the implementation of the plan. Establishing clearly defined objectives and goals to be accomplished within specified time frames can help institutions to visualize improvements and to make necessary modifications.

A final evaluation should be done upon completion of the plan of action in order to measure the impact. As stated earlier, this may be accomplished by readministering the IEAG.

REFERENCES FOR USER'S MANUAL

Goodlad, J. I. (1983). *A place called school.* New York, NY: McGraw-Hill.

Wardlow, G., Swanson, G., & Migler, J. (1992). *Assessing the nature and operation of institutional excellence in vocational education.* Berkeley: National Center for Research in Vocational Education, University of California at Berkeley.

Appendix A
Summary Scales

♦ = Combined mean scores of students, administrators, instructors, and advisory committee personnel in test institutions, for comparison purposes only.

School Climate

70	80	90	100♦	110	120	130	140

Administrator Attributes

10	20	30	40 ♦	50	60	70	80

Instructor Attributes

40	50	60	70♦	80	90	100	110

Student Attributes

20	30	40	50 ♦	60	70	80	90

Curriculum Development

0	10	20	30	♦ 40	50	60	70

Marketing/Vocational Student Organizations/Support Services

0	10	20	30	♦ 40	50	60	70

Institutional Score

150	210	270	330 ♦	390	450	510	570

Theme	Test Institutions Mean Scores		Your Institution Scores	
	Mean	S.D.	Mean	S.D.
School Climate	102	22		
Administrator Attributes	43	11		
Instructor Attributes	71	13		
Student Attributes	53	13		
Curriculum Development	35	11		
Mktg/VSOs/Support Services	34	10		
Institution Score	344	66		

Appendix B
Scoring Summary

Instructions:

Place the average scores for each group of participants for each theme and subtheme in the Mean Score column of this scoring summary, then transfer the scores to the IEAG Scales Summary form (Appendix B).

Summarized data from the following versions of the IEAG:

( ) Student ( ) Administrator/Instructor/Advisory Committee Member Version
( ) Both Versions

Theme/Subtheme	IEAG Question Numbers	Mean Score
School Climate	1-35	
Ecology	1-9, 31, 32	
People	11, 12, 21, 23-26, 30, 33, 35	
School Organization	10, 13, 14, 17-19, 34	
Culture	15, 16, 20, 22, 27-29	
Administrator Attributes	36-49	
Leadership	36-41	
High Expectations	42, 49	
Flexibility	43, 48	
Risk Taking	44-47	
Instructor Attributes	50-70	
Caring Attitude	50-54	
Student Diversity	55	
Positive Climate	56-58	
Professional Competence	59-61, 64-70	
Professional Stability	62-63	
Student Attributes	71-88	
Curriculum Development	89-100	
Advisory Committee	89-92, 94	
Sense of Ownership	95-98, 100	
Program Content	93	
Dual Curriculum	99	
Institutional Marketing/ Vocational Student Organizations/ Support Services	101-112	
Marketing	101-106	
Vocational Student Organizations	107-108	
Support Services	109-112	
Institution Score	Sum of All Theme Scores: School Climate _____ Admin. Attrib. _____ Instr. Attrib. _____ Student Attrib. _____ Curriculum Dev. _____ Inst. Marketing/VSOs/ Support Services _____	

Appendix B

Institutional Effectiveness Assessment Guide (IEAG)

Student Version

Institutional Effectiveness Assessment Guide (IEAG)

Student Version

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Name_____ Program Area_____
Institution_____ Gender_____

B1

INSTITUTIONAL EFFECTIVENESS ASSESSMENT GUIDE

The Institutional Effectiveness Assessment Guide (IEAG) is a tool designed to assist institutional personnel in assessing and prioritizing the factors that contribute to the effectiveness of vocational education institutions. The major topics and factors included in the IEAG are taken from the findings of a national study on "Institutional Excellence" by the National Center for Research in Vocational Education.

The guide was developed to serve as a tool to assist institutional leaders in determining the status of their institution with regard to those topics and factors which have been determined to contribute to excellence. The IEAG is intended to be completed by students, advisory committee members, instructors, administrators and members of other constituent groups who serve in roles that engage in discussions and programs of institutional improvement.

Institutional Excellence Project

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I. SCHOOL CLIMATE

Directions: Please circle the number to the right of each question that best describes your perceptions of the following school climate factors in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

1.	The buildings, facilities, and grounds are attractive, well-organized, and well-maintained.	1 2 3 4 0
2.	There is little graffiti and no evidence of vandalism around the institution.	1 2 3 4 0
3.	There are adequate resources available for acquiring supplies and equipment.	1 2 3 4 0
4.	Business and industry assists with acquiring supplies and equipment.	1 2 3 4 0
5.	Business and industry provide funding for some new instructional projects and programs.	1 2 3 4 0
6.	The instructional equipment is up-to-date.	1 2 3 4 0
7.	Instructors, advisory committee members, and personnel from industry provide input for the design of facilities.	1 2 3 4 0
8.	Instructors are encouraged to visit other successful schools and programs to gain ideas on how to improve programs and instruction.	1 2 3 4 0
9.	There are financial resources to fund the innovations and creative ideas of instructors and administrators.	1 2 3 4 0
10.	Staff members take advantage of opportunities to communicate regularly and freely with their colleagues.	1 2 3 4 0
11.	There is a sense of camaraderie, trust, friendliness, and respect among students, faculty, and administrators.	1 2 3 4 0
12.	An environment exists within the institution that encourages teachers to have a good rapport with, and demonstrate caring attitudes toward, their students.	1 2 3 4 0

13.	Within the institution, teachers maintain appropriate and productive professional relationships.	1	2	3	4	0
14.	There is a friendly and cooperative, yet a competitive spirit among teachers and programs.	1	2	3	4	0
15.	The staff members are willing and able to articulate the purposes of their programs and school.	1	2	3	4	0
16.	The students are willing and able to articulate the purposes of their programs and school.	1	2	3	4	0
17.	There is an awareness among administrators, instructors, and students of the instructional activities conducted within each program of the institution.	1	2	3	4	0
18.	Administrators are readily available and easy to approach to discuss institutional and program plans, problems, and improvements.	1	2	3	4	0
19.	Staff members are involved in institutional decision-making processes.	1	2	3	4	0
20.	Staff members are treated as professionals.	1	2	3	4	0
21.	There is a family-like atmosphere among staff members.	1	2	3	4	0
22.	An institutional atmosphere exists encouraging teachers to put forth extra effort towards the academic and personal concerns of the students.	1	2	3	4	0
23.	Instructor turnover is limited.	1	2	3	4	0
24.	Programs and policies exist that aim at supporting the long term employment of instructors.	1	2	3	4	0
25.	Instructors provide input for hiring new instructors and administrators.	1	2	3	4	0
26.	Employees from different departments readily cooperate with one another.	1	2	3	4	0
27.	The institution implements special public relations programs that are aimed at specific audiences (e.g., students, staff, institutional supporters and employers).	1	2	3	4	0
28.	The institution maintains and promotes high standards of quality.	1	2	3	4	0
29.	The institution is committed to community and regional development.	1	2	3	4	0
30.	The level of morale among students and staff is high.	1	2	3	4	0

31.	Instructors are encouraged to be innovative.	1	2	3	4	0
32.	Instructors are encouraged to develop and implement new ideas.	1	2	3	4	0
33.	Experienced instructors are employed to maintain program quality.	1	2	3	4	0
34.	Mutual trust exists between employee groups and school administrators.	1	2	3	4	0
35.	The staff displays teamwork.	1	2	3	4	0

II. ADMINISTRATOR ATTRIBUTES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **school administrators** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed". Do not answer questions that contain lines drawn through them.

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

The school administrators...

36.	are people oriented.	1 2 3 4 0
~~37.~~	~~foster a participatory instead of an authoritarian leadership style.~~	1 2 3 4 0
~~38.~~	~~are task and quality oriented.~~	1 2 3 4 0
~~39.~~	~~have developed the ability to ensure that tasks are accomplished while maintaining an atmosphere of concern for staff development and participation.~~	1 2 3 4 0
~~40.~~	~~hold staff members accountable for delegated responsibilities.~~	1 2 3 4 0
~~41.~~	~~give instructors opportunities to develop personal autonomy.~~	1 2 3 4 0
42.	maintain high performance expectations for themselves and their staff.	1 2 3 4 0
43.	welcome changes that enhance existing institutional programs, policies, or practices.	1 2 3 4 0
~~44.~~	~~focus on the benefits of risks when taking on or initiating new projects.~~	1 2 3 4 0
45.	collaborate and cooperate with community, industry, and business groups for mutual benefits.	1 2 3 4 0
~~46.~~	~~can envision future opportunities for program development obtaining new technology, collaborating with business and industry, etc.~~	1 2 3 4 0
~~47.~~	~~encourage and support creativity within staff members.~~	1 2 3 4 0
48.	are flexible.	1 2 3 4 0
49.	model lifelong learning.	1 2 3 4 0

III. INSTRUCTOR ATTRIBUTES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **instructors** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

The Instructors...

50.	exhibit genuine concern and caring attitudes for their students as individuals.	1 2 3 4 0
51.	are patient and willing to create opportunities for students to discuss their needs.	1 2 3 4 0
52.	perform duties not ordinarily thought to be a part of the teacher's responsibility.	1 2 3 4 0
53.	are willing to spend additional time with students.	1 2 3 4 0
54.	encourage students to fully participate in their individual education programs and processes.	1 2 3 4 0
55.	recognize and accept the uniquenesses of each student.	1 2 3 4 0
56.	demand high quality work and workmanship from students.	1 2 3 4 0
57.	encourage students.	1 2 3 4 0
58.	encourage one another.	1 2 3 4 0
59.	are competent and knowledgeable; many are trained craftspersons.	1 2 3 4 0
60.	design high quality learning experiences.	1 2 3 4 0
61.	exhibit professionalism with staff and students.	1 2 3 4 0
62.	are committed to the mission of the institution.	1 2 3 4 0
63.	interact in a positive manner with people.	1 2 3 4 0
64.	are interested in the ideas of their students.	1 2 3 4 0

65.	encourage students to cooperate and collaborate when working on class projects.	1	2	3	4	0
66.	individualize the instruction for students when appropriate.	1	2	3	4	0
67.	deliver specialized technical instruction.	1	2	3	4	0
68.	deliver general education instruction.	1	2	3	4	0
69.	work together in a collegial and cooperative manner.	1	2	3	4	0
70.	model lifelong learning.	1	2	3	4	0

IV. STUDENT ATTRIBUTES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **students** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

The Students...

71.	value the technical content of their laboratory and classroom instruction.	1 2 3 4 0
72.	value effective cognitive and personal development instructional strategies.	1 2 3 4 0
73.	exhibit a sense of pride about themselves and their work.	1 2 3 4 0
74.	exhibit a sense of pride about their institution.	1 2 3 4 0
75.	exhibit a sense of positive self-esteem about themselves and their institution.	1 2 3 4 0
76.	place high expectations upon themselves and their programs.	1 2 3 4 0
77.	were drawn to the school as a result of the good reputation of the school.	1 2 3 4 0
78.	accept the high academic expectations and standards of the instructor.	1 2 3 4 0
79.	believe the high program standards and expectations will give them the "edge" when they go looking for jobs.	1 2 3 4 0
80.	willingly maintain high standards among themselves, including appropriate behavior and dress.	1 2 3 4 0
81.	consider themselves to be highly capable.	1 2 3 4 0
82.	enjoy working with one another on classroom activities and homework.	1 2 3 4 0
83.	contribute to planning classroom activities.	1 2 3 4 0

84.	contribute to the selection of the topics of study for courses.	1	2	3	4	0
85.	enjoy their classes the majority of the time.	1	2	3	4	0
86.	are competitive with other class members for grades and recognition.	1	2	3	4	0
87.	behave in a responsible manner.	1	2	3	4	0
88.	are confident in their abilities.	1	2	3	4	0

V. CURRICULUM DEVELOPMENT

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **curriculum development process and participants** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed". Do not answer questions that contain lines drawn through them.

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

The curriculum development process (is)...

~~89.~~	~~an on-going process that incorporates, when appropriate, the assistance of advisory committees.~~	1 2 3 4 0
90.	allows advisory committees the independence of setting their own agenda.	1 2 3 4 0
~~91.~~	~~involves advisory committee personnel who advise on program evaluation.~~	1 2 3 4 0
~~92.~~	~~involves advisory functions for articulating the training requirements of employees for business and industry.~~	1 2 3 4 0
~~93.~~	~~maintains the use of appropriate frameworks for organizing technical content (e.g. competency based).~~	1 2 3 4 0
~~94.~~	~~keeps advisory council members knowledgeable and up-to-date about program instructional areas, staff, student, and program policies.~~	1 2 3 4 0
~~95.~~	~~encourages ownership of course curriculum among faculty members.~~	1 2 3 4 0
~~96.~~	~~provides adequate support staff to assist faculty members in developing or updating curriculum.~~	1 2 3 4 0
~~97.~~	~~provides financial incentives for instructors for developing and upgrading curriculum and instruction.~~	1 2 3 4 0
98.	develops, revises, and delivers up-to-date curricula that address technical needs of business and industry.	1 2 3 4 0
99.	develops and delivers curricula that address the affective and personal development needs of students.	1 2 3 4 0
~~100.~~	~~enhances instructor professionalism by encouraging them to maintain up-to-date course materials.~~	1 2 3 4 0

VI. INSTITUTIONAL MARKETING/VOCATIONAL STUDENT ORGANIZATIONS/SUPPORT SERVICES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **institutional marketing, vocational student organization, and support services** programs in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

Our institution...

101.	implements an effective marketing program.	1 2 3 4 0
102.	promotes policies that encourage teachers to recruit students.	1 2 3 4 0
103.	promotes policies that encourage teachers to actively participate in industry-sponsored activities.	1 2 3 4 0
104.	promotes policies that encourage teachers to publicize their programs.	1 2 3 4 0
105.	is involved in community activities and enjoys good community support.	1 2 3 4 0
106.	develops and provides activities and services to the community.	1 2 3 4 0
107.	supports the belief that vocational student organizations (VSO) like HOSA, EARTH, and VICA are an integral part of each student's educational experience because they promote student recognition, leadership development, citizenship, and personal development.	1 2 3 4 0
108.	provides at least one VSO for students participation that is related to their vocational courses.	1 2 3 4 0
109.	provides personal and career counseling services.	1 2 3 4 0
110.	provides a program of general education to assist students in sharpening reading, writing, speaking and arithmetic skills.	1 2 3 4 0
111.	has a staff that is supportive of the institution's applied academic programs and other individualized support services.	1 2 3 4 0
112.	provides for effective student placement through instructor/industry liaison.	1 2 3 4 0

Appendix C

Institutional Effectiveness Assessment Guide (IEAG)

Administrator, Instructor, Advisory Committee Member Version

Institutional Effectiveness Assessment Guide (IEAG)

Administrator, Instructor, Advisory Committee Member Version

Developed by

George Wardlow, Ph.D., Associate Professor, University of Arkansas
Gordon Swanson, Ph.D., Professor Emeritus, University of Minnesota
Richard Joerger, Ph.D., Assistant Professor, University of Wisconsin-Madison
Jerome Migler, Ph.D., Curriculum Director, North Dakota College of Science

Institutional Excellence Project
National Center for Research in Vocational Education
University of California at Berkeley

Minnesota Site of NCRVE
College of Education
Department of Vocational and Technical Education
University of Minnesota
Room 350 Vocational Technical Education Building
1954 Buford Avenue
St. Paul, MN 55108

Name_____ Program Area_____
Institution_____ Gender_____
Role (Circle One): Administrator, Instructor, Advisory Committee Member, Other

C1

INSTITUTIONAL EFFECTIVENESS ASSESSMENT GUIDE

The Institutional Effectiveness Assessment Guide (IEAG) is a tool designed to assist institutional personnel in assessing and prioritizing the factors that contribute to the effectiveness of vocational education institutions. The major topics and factors included in the IEAG are taken from the findings of a national study on "Institutional Excellence" by the National Center for Research in Vocational Education.

The guide was developed to serve as a tool to assist institutional leaders in determining the status of their institution with regard to those topics and factors which have been determined to contribute to excellence. The IEAG is intended to be completed by students, advisory committee members, instructors, administrators and members of other constituent groups who serve in roles that engage in discussions and programs of institutional improvement.

Institutional Excellence Project

George Wardlow and Gordon Swanson, Co-Directors
Richard Joerger and Jerome Migler, Research Associates

National Center for Research in Vocational Education
University of California at Berkeley

Department of Vocational-Technical Education
University of Minnesota

Room 350 VoTech Education Building
1954 Buford Avenue
St. Paul, MN 55108

I. SCHOOL CLIMATE

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the following **school climate factors** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

1.	The buildings, facilities, and grounds are attractive, well-organized, and well-maintained.	1 2 3 4 0
2.	There is little graffiti and no evidence of vandalism around the institution.	1 2 3 4 0
3.	There are adequate resources available for acquiring supplies and equipment.	1 2 3 4 0
4.	Business and industry assists with acquiring supplies and equipment.	1 2 3 4 0
5.	Business and industry provide funding for some new instructional projects and programs.	1 2 3 4 0
6.	The instructional equipment is up-to-date.	1 2 3 4 0
7.	Instructors, advisory committee members, and personnel from industry provide input for the design of facilities.	1 2 3 4 0
8.	Instructors are encouraged to visit other successful schools and programs to gain ideas on how to improve programs and instruction.	1 2 3 4 0
9.	There are financial resources to fund the innovations and creative ideas of instructors and administrators.	1 2 3 4 0
10.	Staff members take advantage of opportunities to communicate regularly and freely with their colleagues.	1 2 3 4 0
11.	There is a sense of camaraderie, trust, friendliness, and respect among students, faculty, and administrators.	1 2 3 4 0
12.	An environment exists within the institution that encourages teachers to have a good rapport with, and demonstrate caring attitudes toward, their students.	1 2 3 4 0

13.	Within the institution, teachers maintain appropriate and productive professional relationships.	1	2	3	4	0
14.	There is a friendly and cooperative, yet a competitive spirit among teachers and programs.	1	2	3	4	0
15.	The staff members are willing and able to articulate the purposes of their programs and school.	1	2	3	4	0
16.	The students are willing and able to articulate the purposes of their programs and school.	1	2	3	4	0
17.	There is an awareness among administrators, instructors, and students of the instructional activities conducted within each program of the institution.	1	2	3	4	0
18.	Administrators are readily available and easy to approach to discuss institutional and program plans, problems, and improvements.	1	2	3	4	0
19.	Staff members are involved in institutional decision-making processes.	1	2	3	4	0
20.	Staff members are treated as professionals.	1	2	3	4	0
21.	There is a family-like atmosphere among staff members.	1	2	3	4	0
22.	An institutional atmosphere exists encouraging teachers to put forth extra effort towards the academic and personal concerns of the students.	1	2	3	4	0
23.	Instructor turnover is limited.	1	2	3	4	0
24.	Programs and policies exist that aim at supporting the long term employment of instructors.	1	2	3	4	0
25.	Instructors provide input for hiring new instructors and administrators.	1	2	3	4	0
26.	Employees from different departments readily cooperate with one another.	1	2	3	4	0
27.	The institution implements special public relations programs that are aimed at specific audiences (e.g., students, staff, institutional supporters and employers).	1	2	3	4	0
28.	The institution maintains and promotes high standards of quality.	1	2	3	4	0
29.	The institution is committed to community and regional development.	1	2	3	4	0
30.	The level of morale among students and staff is high.	1	2	3	4	0

31.	Instructors are encouraged to be innovative.	1	2	3	4	0
32.	Instructors are encouraged to develop and implement new ideas.	1	2	3	4	0
33.	Experienced instructors are employed to maintain program quality.	1	2	3	4	0
34.	Mutual trust exists between employee groups and school administrators.	1	2	3	4	0
35.	The staff displays teamwork.	1	2	3	4	0

II. ADMINISTRATOR ATTRIBUTES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **school administrators** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed". Do not answer questions that contain lines drawn through them.

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

The school administrators...

36.	are people oriented.	1 2 3 4 0
37.	foster a participatory instead of an authoritarian leadership style.	1 2 3 4 0
38.	are task and quality oriented.	1 2 3 4 0
39.	have developed the ability to ensure that tasks are accomplished while maintaining an atmosphere of concern for staff development and participation.	1 2 3 4 0
40.	hold staff members accountable for delegated responsibilities	1 2 3 4 0
41.	give instructors opportunities to develop personal autonomy.	1 2 3 4 0
42.	maintain high performance expectations for themselves and their staff.	1 2 3 4 0
43.	welcome changes that enhance existing institutional programs, policies, or practices.	1 2 3 4 0
44.	focus on the benefits of risks when taking on or initiating new projects.	1 2 3 4 0
45.	collaborate and cooperate with community, industry, and business groups for mutual benefits.	1 2 3 4 0
46.	can envision future opportunities for program development obtaining new technology, collaborating with business and industry, etc.	1 2 3 4 0
47.	encourage and support creativity within staff members.	1 2 3 4 0
48.	are flexible.	1 2 3 4 0
49.	model lifelong learning.	1 2 3 4 0

III. INSTRUCTOR ATTRIBUTES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **instructors** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
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The Instructors...

50.	exhibit genuine concern and caring attitudes for their students as individuals.	1 2 3 4 0
51.	are patient and willing to create opportunities for students to discuss their needs.	1 2 3 4 0
52.	perform duties not ordinarily thought to be a part of the teacher's responsibility.	1 2 3 4 0
53.	are willing to spend additional time with students.	1 2 3 4 0
54.	encourage students to fully participate in their individual education programs and processes.	1 2 3 4 0
55.	recognize and accept the uniquenesses of each student.	1 2 3 4 0
56.	demand high quality work and workmanship from students.	1 2 3 4 0
57.	encourage students.	1 2 3 4 0
58.	encourage one another.	1 2 3 4 0
59.	are competent and knowledgeable; many are trained craftspersons.	1 2 3 4 0
60.	design high quality learning experiences.	1 2 3 4 0
61.	exhibit professionalism with staff and students.	1 2 3 4 0
62.	are committed to the mission of the institution.	1 2 3 4 0
63.	interact in a positive manner with people.	1 2 3 4 0
64.	are interested in the ideas of their students.	1 2 3 4 0

65.	encourage students to cooperate and collaborate when working on class projects.	1	2	3	4	0
66.	individualize the instruction for students when appropriate.	1	2	3	4	0
67.	deliver specialized technical instruction.	1	2	3	4	0
68.	deliver general education instruction.	1	2	3	4	0
69.	work together in a collegial and cooperative manner.	1	2	3	4	0
70.	model lifelong learning.	1	2	3	4	0

IV. STUDENT ATTRIBUTES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **students** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
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The Students...

71.	value the technical content of their laboratory and classroom instruction.	1 2 3 4 0
72.	value effective cognitive and personal development instructional strategies.	1 2 3 4 0
73.	exhibit a sense of pride about themselves and their work.	1 2 3 4 0
74.	exhibit a sense of pride about their institution.	1 2 3 4 0
75.	exhibit a sense of positive self-esteem about themselves and their institution.	1 2 3 4 0
76.	place high expectations upon themselves and their programs.	1 2 3 4 0
77.	were drawn to the school as a result of the good reputation of the school.	1 2 3 4 0
78.	accept the high academic expectations and standards of the instructor.	1 2 3 4 0
79.	believe the high program standards and expectations will give them the "edge" when they go looking for jobs.	1 2 3 4 0
80.	willingly maintain high standards among themselves, including appropriate behavior and dress.	1 2 3 4 0
81.	consider themselves to be highly capable.	1 2 3 4 0
82.	enjoy working with one another on classroom activities and homework.	1 2 3 4 0
83.	contribute to planning classroom activities.	1 2 3 4 0

84.	contribute to the selection of the topics of study for courses.	1	2	3	4	0
85.	enjoy their classes the majority of the time.	1	2	3	4	0
86.	are competitive with other class members for grades and recognition.	1	2	3	4	0
87.	behave in a responsible manner.	1	2	3	4	0
88.	are confident in their abilities.	1	2	3	4	0

V. CURRICULUM DEVELOPMENT

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **curriculum development process and participants** in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed". Do not answer questions that contain lines drawn through them.

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The curriculum development process (is)...

89.	an on-going process that incorporates, when appropriate, the assistance of advisory committees.	1 2 3 4 0
90.	allows advisory committees the independence of setting their own agenda.	1 2 3 4 0
91.	involves advisory committee personnel who advise on program evaluation.	1 2 3 4 0
92.	involves advisory functions for articulating the training requirements of employees for business and industry.	1 2 3 4 0
93.	maintains the use of appropriate frameworks for organizing technical content (e.g. competency based).	1 2 3 4 0
94.	keeps advisory council members knowledgeable and up-to-date about program instructional areas, staff, student, and program policies.	1 2 3 4 0
95.	encourages ownership of course curriculum among faculty members.	1 2 3 4 0
96.	provides adequate support staff to assist faculty members in developing or updating curriculum.	1 2 3 4 0
97.	provides financial incentives for instructors for developing and upgrading curriculum and instruction.	1 2 3 4 0
98.	develops, revises, and delivers up-to-date curricula that address technical needs of business and industry.	1 2 3 4 0
99.	develops and delivers curricula that address the affective and personal development needs of students.	1 2 3 4 0
100.	enhances instructor professionalism by encouraging them to maintain up-to-date course materials.	1 2 3 4 0

VI. INSTITUTIONAL MARKETING/VOCATIONAL STUDENT ORGANIZATIONS/SUPPORTSERVICES

Directions: Please circle the number to the right of each question that best describes **your perceptions** of the **institutional marketing, vocational student organization, and support services** programs in your school. If you have been unable to observe a situation, find that a question is not applicable, or you don't have an answer for a question, please circle number 0, "Not Observed".

1 = Almost Never
2 = Occasionally
3 = Usually
4 = Almost Always
0 = Not Observed

Our institution...

101.	implements an effective marketing program.	1 2 3 4 0
102.	promotes policies that encourage teachers to recruit students.	1 2 3 4 0
103.	promotes policies that encourage teachers to actively participate in industry-sponsored activities.	1 2 3 4 0
104.	promotes policies that encourage teachers to publicize their programs.	1 2 3 4 0
105.	is involved in community activities and enjoys good community support.	1 2 3 4 0
106.	develops and provides activities and services to the community.	1 2 3 4 0
107.	supports the belief that vocational student organizations (VSO) like HOSA, EARTH, and VICA are an integral part of each student's educational experience because they promote student recognition, leadership development, citizenship, and personal development.	1 2 3 4 0
108.	provides at least one VSO for students participation that is related to their vocational courses.	1 2 3 4 0
109.	provides personal and career counseling services.	1 2 3 4 0
110.	provides a program of general education to assist students in sharpening reading, writing, speaking and arithmetic skills.	1 2 3 4 0
111.	has a staff that is supportive of the institution's applied academic programs and other individualized support services.	1 2 3 4 0
112.	provides for effective student placement through instructor/industry liaison.	1 2 3 4 0