

## A GUIDE TO ASSESS EXCELLENCE IN INSTITUTIONS WITH VOCATIONAL EDUCATION PROGRAMS

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### Abstract

*A naturalistic study of institutional - level factors which contribute to excellence in a national pool of institutions offering exemplary vocational education programs served as the basis for the development of a quantitative guide to assess excellence. This could assist in the empowerment of agricultural educators to make programmatic improvement in agricultural education programs and in the institutions in which they exist. This paper describes the process used in the creation and testing of a quantitative instrument developed from a qualitative study of the interpretive research paradigm.*

The study of excellence in education has frequently focused on programs, classrooms, and individual student performance. Research is often framed to study course content, methods of instruction and elements of delivery on the classroom level. In the past, little investigation has been done in the larger environments in which agricultural education and other vocational programs are found, the institutions themselves.

In *Achieving Excellence In Our Schools*, James Lewis (1986) discussed what he called hallmarks of excellence for schools. In schools of excellence all school people help children to become something more than they hoped to be. These schools 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 them to 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 long-standing principles and practices, and try new things. Each of these schools has,

"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" (Lewis, 1986, p. xii).

Wardlow, Swanson, and Migler (1992) conducted a naturalistic study to identify the key institutional-level factors that contribute to excellence within institutions among a national pool of institutions offering exemplary vocational education programs. Their Institutional Excellence Project (of the National Center for Research in Vocational Education) was based on the premise that the study of institutions in which exemplary

vocational education programs exist might provide understandings regarding the nature and importance of the environment to the quality of the programs. The thematic areas described by Wardlow, Swanson and Migler (1992) should provide a foundation to empower agricultural educators for programmatic improvement in agricultural education programs and institutions. The researchers sought to quantify the findings of their study through the development of an instrument which might serve as an institutional effectiveness assessment guide (IEAG).

### **Purpose**

This paper describes the process used in the creation of a quantitative instrument from a qualitative study of the interpretive research paradigm. It also describes the development and testing of the instrument which may serve as a guide to assess institutional factors which underlie exemplary agricultural education programs, as well as other vocational education programs. The guide may serve educational decision-makers who seek excellence in agricultural and vocational education programs in their institutions.

### **Procedures**

The project employed both qualitative and quantitative research procedures. The findings of the earlier interpretive study reported in Wardlow, Swanson and Migler (1992) and Wardlow, Swanson and Joerger (1992) served as the framework for the development of the instrument. In that study, approximately 25 institutions offering exemplary vocational education programs were identified by a two-step panel of national experts in vocational education and school effectiveness. The process for the identification of the institutions by the panel was documented in two refereed research monographs published by the NCRVE; it is not explained here due to space limitations.

The 25 institutions served as a pool from which 14 institutions were selected to include comprehensive high schools, secondary vocational centers, postsecondary technical institutes / colleges, and community colleges. The researchers spent 3 to 12 person-days in each of the 14 institutions. Observational, focus group and individual interview data were used to identify institutional factors associated with excellence in education. The factors were then organized into themes and sub-themes and specific descriptive items were created for each. The items were developed into quantitative assessment items and were organized within the original thematic areas.

An interpretive research design was used in the development of the instrument to enable the researchers to gain input and consensus from participants of the institutions regarding the institutional level factors which contribute to excellence in vocational education programs. The participants reviewed the instrument for clarity and accuracy as it was being developed. These procedures were needed to ensure shared understandings of the constructs under study among project staff and the institution participants.

A quantitative research design was employed after the instrument was configured in draft form. The instrument was pilot tested with students, administrators, teachers and advisory committee members of the aforementioned vocational education programs. A descriptive research procedure was used to describe the characteristics and responses of the normative populations, which were used to determine the test statistics of the IEAG.

The populations that participated in completing the final draft copy of the IEAG were advisory committee members, students, instructors, and administrators of the 14 institutions offering exemplary vocational education programs (Wardlow, Swanson & Migler, 1992; Wardlow, Swanson & Joerger, 1992). Ten vocational

students, 10 instructors, 10 advisory committee members, and up to five administrators were systematically randomly selected from each institution to form the samples of each population. Some institutions had fewer than five administrators. In these cases all administrators were included.

The data were collected by use of a draft of the Institutional Effectiveness Assessment Guide (IEAG) instrument. Two versions of the IEAG were developed. One was designed for administrators, instructors, and advisory committee personnel and another was designed for students. The student version was developed by omitting several items included on the administrator/instructor/advisory committee version for which the students were considered to have inadequate information or experience to respond.

The IEAG consisted of six major thematic areas which contribute to institutional effectiveness. The six themes and their subthemes are:

1. school climate (35 items on the full instrument), which includes a physical and material (ecology) dimension, a people (milieu) dimension, a social system (school organization) dimension, and a culture (norms, beliefs and values) dimension;
2. administrator attributes (14 items), which includes dimensions of leadership style, setting high expectations, propensity to take risks, attributes of flexibility, and ability to create a vision and sense of mission for the institution;
3. instructor attributes (21 items) include a caring attitude, an acceptance of student diversity, ability to create a positive climate and hold high expectations, possession of a

high level of professional competence, and propensity to remain in the job role;

4. student attributes (18 items) include aspects of positive feelings toward their programs and related efforts to maintain high self standards;
5. the curriculum theme in effective programs (12 items) is based on extensive use of advisory committees, includes high levels of faculty ownership, and develops in the students both technical knowledge and holistic, personal skills;
6. the institutional marketing / student organizations / support services theme (12 items) indicates that each of these components is a vital service of the institution and/or educational program.

In instrument development it is accepted practice to use statistical tools such as 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 for 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 was previously determined.

The instrument in this study was developed directly from the findings of the NCRVE Institutional Excellence interpretive study. This helped to ensure the quantitative research concept of validity of the findings from an interpretive perspective. Interpretive studies are, by their design and procedures, inherently valid when properly implemented. 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 be valid. To address the reliability of the instrument, both internal consistency and stability coefficients were established.

It is assumed that the items within the guide adequately represented the findings of the initial NCRVE Institutional Excellence Project study that were common across the participant exemplary vocational education institutions. While each of the institutions had unique characteristics or factors that contributed to their institutional excellence, these characteristics were not common across all institutions and were not included in the development of the institutional effectiveness assessment guide. It is assumed that the instrument adequately represents the common institutional factors which underlie exemplary agricultural education programs, since these programs must operate with other vocational programs and within the larger institution. 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.

The two versions of the IEAG, along with instructions for administering it, were packaged and sent to the designated representative at each of the participating exemplary institutions. With the assistance of that contact person, the subjects were administered the respective instruments. 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. Follow-up letters were sent and phone calls made to

the contact persons of exemplary institutions which didn't return their completed instruments on the indicated due date. The due date for return of the IEAG's was extended for a reasonable time for institutions which communicated such a need.

The data were used to calculate the internal consistency of each form of the instrument via the 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 three of the institutions for re-administration to participants approximately two to three weeks after the first administration.

To obtain the data for the analyses, study participants completed either the student version or the administrator / instructor / advisory committee member version of the IEAG. Participants responded to each question by circling one of five possible responses: one for 'almost never', two for 'occasionally', three for 'usually', four for 'almost always', and zero 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 construct that constituted the theme.

### **Analysis of Data**

The SPSS/PC+ computer software was used to analyze the data of the IEAG. As previously noted, the Cronbach's Alpha was calculated as a measure of internal consistency for each of the themes and subthemes, as well as the overall instrument. Simple correlations between two administrations of the instrument (to the same group of individuals) were calculated to determine stability estimates for each of the theme areas and to establish an estimate for the overall instrument. A "weighted score" was also determined for the overall instrument to provide a proportional

representation of each theme area based on the number of items within each theme area.

## Results

There were 80 student, 36 administrator, 87 instructor, and 61 advisory committee useable IEAG instruments returned from nine of the 14 (64.29%) institutions. Five of the institutions were unable to return complete instrument packages from all of the participant groups by the return date because of scheduling difficulties (e.g., end of the school term when instructors and students were not available). These institutions were not excluded for reasons relevant to the constructs under study. It was therefore determined that non-response error was not a significant issue. There were 24 of 25 usable administrator, advisory committee member, and instructor IEAG's used for the test-retest analysis procedures.

The data in Table 1 indicate that the internal consistency coefficients, as measured by Cronbach's Alpha, for each of the themes and subthemes of the administrator / instructor / advisory committee member version ranged from .65 (Administrator - high expectations) to .95 (student attributes). For the themes, School Climate, Administrator Attributes, and Instructor Attributes, the obtained coefficient for each was .92. The Student Attributes theme obtained a coefficient of .95, while the Curriculum Development and the Institutional Marketing / Vocational Student Organization / Institutional Support themes earned internal consistency coefficients of .89 and .86, respectively. The overall internal consistency coefficient of this version of the IEAG was .97.

Internal consistency coefficients for each of the themes and subthemes of the student version of the instrument ranged from a low of .22 (instructor stability) to .86 (student attributes). It should be noted that coefficients for students are low for three

of the subthemes (school climate - culture = .46, instructor attributes - positive climate = .45; instructor attributes - stability = .22). The weak consistency among student responses on these areas may be attributed to several factors, the most leading of which are: some of the participant institutions were post-secondary institutions in which many students may do not spend as much time on campus to develop a sense of the "culture" of the institution, and student experiences with individual instructors are both varied and of a shorter duration (1 term to 2 years) than the experiences that administrators, advisory committee members or other instructors have with instructors or in the institution.

The coefficient of stability was determined through the test-retest procedure for the administrator / instructor / 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 area in Table 1. The theme area reliability estimates range from a high of .93 for Administrator Attributes to a low of .79 for Instructor Attributes, with the overall instrument stability estimate of .82 and a weighted estimate of .84.

## Conclusions and Recommendations

The project reported herein built upon previous works which identified institutional level factors which underlie excellence in vocational education. It sought to develop and test an instrument which might serve as a guide for institutional decision makers who seek to improve their institutions.

As a result of the earlier interpretive efforts, a quantitative instrument was developed and field tested. The development process of this instrument, which was based on accepted

Table 1. Coefficients of Internal Consistency and Coefficients of Stability for the IEAG

Theme/Subtheme	Internal Consistency		Stability
	Student Version	Instructor Version	Instructor Version
School Climate	.83	.92	.90
Ecology	.56	.74	
People	.60	.82	
School Organization	.60	.82	
Culture	.46	.73	
Administrator Attributes	--	.92	.93
Leadership	--	.82	
High Expectations	--	.65	
Risk-Taking	--	.72	
Flexibility	--	.71	
Instructor Attributes	.84	.92	.79
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	.88
Curriculum Development	--	.89	.92
Advisory Committee	--	.88	
Ownership	--	.75	
Program Content	--	n/a	
Dual Curriculum	--	n/a	
Inst Mktng/VSO/Support	.77	.86	.92
Marketing	.61	.82	
VSO	.73	.86	
Support Services	.74	.68	
Instrument Overall	.92	.97	.82
Instrument Weighted			.84

n/a = not enough responses to establish. -- = items omitted from student version.

procedures of interpretive research and instrument development, insured that the instrument was valid. Since it was based on the participant validated attributes of exemplary institutions, it possesses both face and content validity. The instrument was subsequently tested for internal consistency and stability. Each of these processes determined that the instrument is reliable. Therefore, the instrument was determined to be suitable for use in program assessment and improvement.

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 leaders and practitioners in agricultural and vocational education could learn by observing and analyzing the attributes of institutions which exhibited excellence in education.

Following are some recommendations resulting from this study:

1. Research in education has traditionally focused on specific factors in isolation of each other. Many of these factors are based on the classroom as the unit of research with little regard for their manifestation at the institutional level. Additionally, there is a paucity of research which explores the interactions among these factors. Further, little research of this nature has been done in agricultural or vocational education. The larger construct representing institutional level factors which contribute to excellence in agricultural education should be further investigated.
2. Studies should be conducted to determine the relationships between exemplary programs of agricultural education and other vocational education programs within schools, and with the exemplary status of the institutions in which they exist. What is the unique contribution of the institutional quality status to the quality of the agricultural education program?
3. 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, it should be tested in institutions which are more heterogeneous with regards to factors such as the socio-economic status, ethnicity, cultural considerations and gender mix of the constituent groups which they serve. It should be tested in educational programs and institutions which are not necessarily vocational in orientation.
4. 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.

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