

DOCUMENT RESUME

ED 246 812

HE 017 560

AUTHOR Fellers, John
TITLE Current Trends in Image Assessment: Working Paper Series.
INSTITUTION National Center for Higher Education Management Systems, Boulder, Colo.
SPONS AGENCY National Inst. of Education (ED), Washington, DC. Educational Policy and Organization Program.
PUB DATE 82
CONTRACT 400-80-0109
NOTE 29p.
AVAILABLE FROM National Center for Higher Education Management Systems, P.O. Drawer P, Boulder, CO 80302 (\$4.00).
PUB TYPE Reports - Descriptive (141)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS College Administration; Decision Making; Evaluation Methods; Faculty College Relationship; Higher Education; *Information Needs; Needs Assessment; *Public Opinion; *Reputation; Research Methodology; *School Attitudes; *School Community Relationship; *Self Evaluation (Groups); Student College Relationship

ABSTRACT

Image assessment in higher education and procedures for conducting image assessments are discussed. Image assessment is the process of finding out what others think about an organization. It is proposed that when image assessments are approached objectively, the results can help determine constituent needs, anticipate vocational trends, survey private and public funding patterns, discover shifts in demographic patterns, and detect inaccurate perceptions so they may be corrected. Since internal factors affect external images of an institution, image assessment efforts should be directed not only to outside constituents, but also to students, faculty, and staff. Assessment zones or circles of assessment influence that surround an institution can be analyzed in terms of prestige, resource, recruitment, impact, and commorancy (the town, city or suburb in which the institution is located). In addition to goal setting, image assessment should involve systematic categorization of information needs. Within internal and external environments, academic and support items may be grouped according to their essential qualities (i.e., cost, administration, evaluation, maintenance and repair, and expansion). Research techniques for collecting data are identified, and the use of image-assessment results for institutional decision-making is discussed. (SW)

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Current Trends in Image Assessment

Working Paper Series

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Current Trends in Image Assessment

John Fellers
1982

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Introduction

Image assessment is the process of finding out what others think about an organization. Business and industry have provided much of the groundwork for image-assessment studies; this essay seeks to demonstrate the validity of transferring certain corporate theories to academic institutions.

Business and higher education aspire mutually for images that are both accurate and positive. The academic community, however, has tended to focus its evaluations on internal self-assessments rather than on image assessment which entails surveys and interviews with the surrounding communities. In the private sector, people generally want to know what a company does, how it does it, and what customers say about its products. To the extent that this consumer-oriented approach can be faithfully applied to the domain of higher education, it suggests that if a college or a university wishes to become more fully aware of community needs, and to do something about those needs, its constituents will be more likely to respond favorably to its resulting programs and policies.

Although higher education has typically remained aloof from the application of formal marketing strategies, recent trends indicate that academic institutions are now willing to take a closer look at such tools. Murphy and McGarrity (1978) surveyed a broad sampling of private colleges to determine their understanding of fundamental marketing concepts. On the one hand, the authors received a very high and positive response to their survey (219 out of 350 responses were returned), but on the other hand, they noted a poor understanding of marketing basics.

To be effective, marketing strategies must involve more than simply implementing institutional image assessments; the results of these studies must also be carefully considered in academic decisionmaking. For example, if an image assessment discovers that a college's graduates view their education as having been impersonal or indifferent, but nothing is done to change this climate, then the image assessment will be of little value to the institution. To create images that are both accurate and positive requires a close coordination of constituent perceptions with institutional fact.

This study maintains that when image assessments are approached in a spirit of objective evaluation, the results can help (1) determine constituent needs; (2) anticipate vocational trends; (3) survey private and public funding patterns; (4) discover shifts in demographic patterns; and (5) detect inaccurate perceptions so they may be corrected.

Today academic institutions must be sensitive to trends in politics, business, and the economy. Colleges and universities must be open to change while guarding their heritage; sympathetic to special needs while maintaining their standards; and committed to community while preserving their autonomy. Image assessment provides one way for

academic institutions to secure these goals by providing them with a clearer understanding of their constituents' needs.

The following chapters present a discussion of image formation, suggestions about procedures for conducting image assessments, and some conclusions and recommendations.

Chapter 1: Image Formation

When the term "assessment" is applied to Institutional Images, it indicates the process by which perceptions of an Institution are formed, analyzed, and then cataloged. To illustrate the formation process, let us take the example of a child growing up in a college town. Football games, holiday crowds, bands, and graduations may fill his early imagination. Psychologists tell us that these early images are fleeting, fragmentary, and emotionally charged. As the child grows older, however, his images will tend to become less emotional and more varied. To handle the increased complexity, the child will start to sort the images into various categories of special meaning, forming whole complexes of data about the local college. If his experiences seem threatening, he may tend to make negative associations; if they are agreeable, he will tend to form positive associations.

As soon as the child becomes old enough to handle abstract concepts, he may become aware of the college's public-relations activities. At one point, he may be told that his self-interest will be served if he decides to attend the college. He will make his choice on the basis of the evaluation of his image formation.

How the maturing child arranges his complex of images is poorly understood, but somehow, he arrives at a definite position as a result of various social, psychological, and cultural factors. Part and parcel of this process are the "publics" or, in other words, the people who share his views. Each public represents power proportionate to the number of its members and its strategic position. Occasionally these publics become so formalized as to develop into powerfully organized groups that lobby for certain forms of legislation such as ERA, gun control, or senior citizens' rights.

Image assessments reveal that multiple images usually exist for each public. In other words, one public may hold various images of different aspects of the same organization. Because of this, an individual perceptor in responding to a questionnaire sent out by an institution will generally shift viewpoints from question to question. The chart below demonstrates this propensity in the case of a hypothetical respondent who is a female doctor, a conservative, a Roman Catholic, and a sports fan.

<u>Publics</u>	<u>Issues</u>	<u>Perception</u>
Sports Fan	A winning football team	Favorable
Woman	The sports program favors men	Unfavorable
Doctor	The sports program teaches hygiene	Favorable
Conservative	Some instructors are very liberal	Unfavorable
Roman Catholic	The hygiene program teaches birth control	Unfavorable

At some point, most surveys ask respondents to make an overall judgment. For people who image themselves as being consistently in

more than one public, such responses require qualification. Because each public views an organization from its own perspective, if a response cannot accommodate the respondent, he or she may feel too frustrated to continue filling out the questionnaire.

Figure 1 distinguishes between publics divided into internal and external circles according to Schoenfeld. Each of these publics may have an image, or several images, which will influence the organization's overall image.

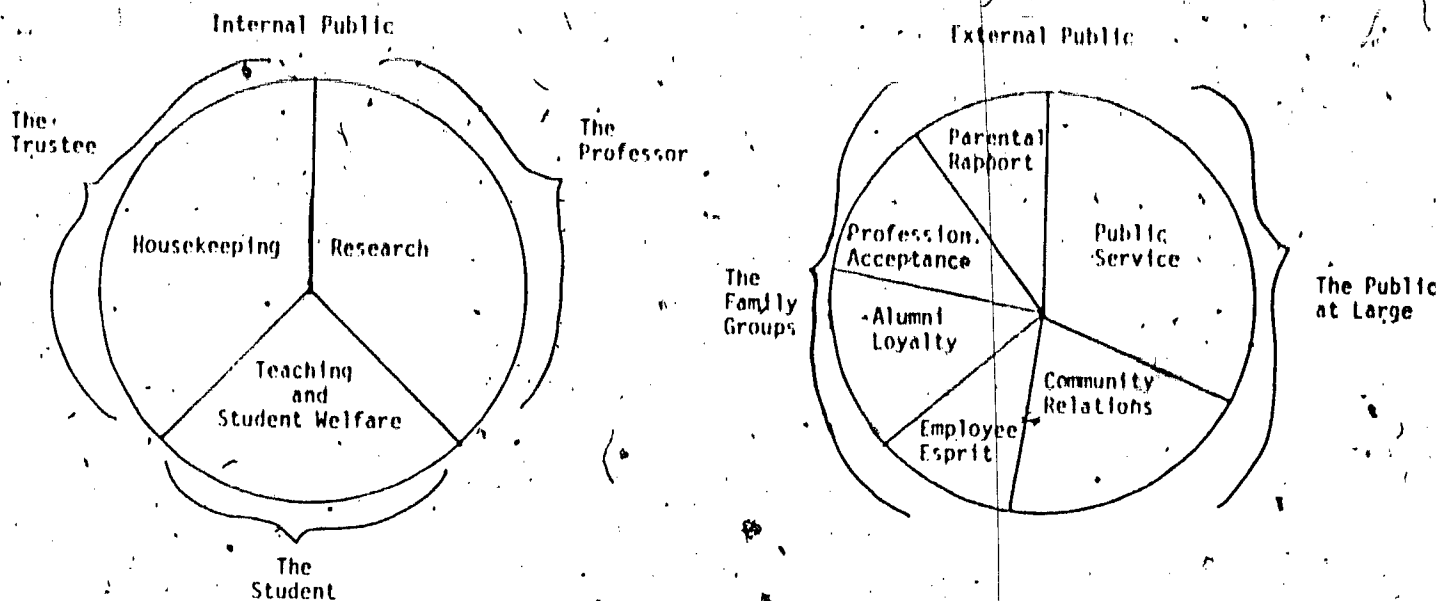


Fig. 1. Internal and external publics viewed relative to the academy.

In addition, internal factors may affect external images of an institution in two ways: constituent experience and corporate projection. Constituent experience can be illustrated by the example of a carpenter who receives thoughtful assistance from a library staff member. As a constituent of the library, his views are favorably modified by the librarian's behavior. Corporate projection, on the other hand, refers to the tendency of an organization's members to project the image held by the organization. In this case, the librarian may try to be friendly and helpful to project the library's reputation as a friendly, helpful organization. Because of such factors, image assessment efforts should be directed not only to outside constituents, but also to students, faculty, and staff. Because of its cumulative nature, an image can be said to solidify or acquire delineation to the degree of the perceptor's exposure to the organization. To make an accurate assessment it is therefore necessary to discover the degree of solidity of each perceptor's image.

Five terms are employed in this volume to indicate possible zones or circles of assessment influence outside of an institution. Commorancy designates the smallest zone and refers to the town, city, or suburb in which the institution is located. Generally, this area is viewed as having socio-political boundaries. Next in line is the impact zone where the economic and cultural activities of an institution are most strongly felt. Continuing-education classes, as well as campus cultural and athletic events, may draw from this area. It can be distinguished from the recruitment zone which refers to all the communities from which potential students and staff are drawn. The term resource zone refers specifically to the political, geographic, or demographic area that supplies funds to operate the college or university. And finally, the prestige zone forms the largest circle and refers to the area in which the institution is known generally.

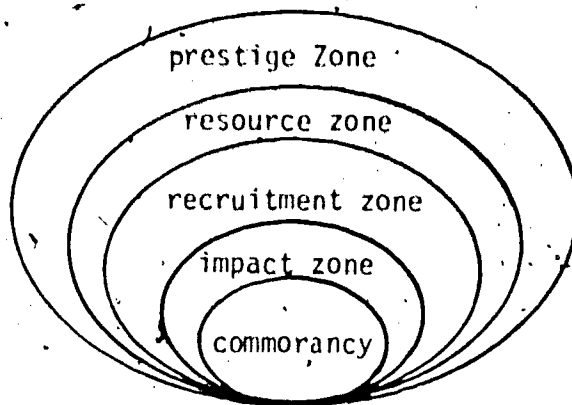


Fig. 2. A demonstration of community components when seen as concentric circles or zones.

For a small, state-supported junior college, the prestige zone will not extend far beyond its recruitment zone, but its resource zone will be the entire state. A regional agricultural college, on the other hand, may find that its resource and prestige zones encompass the entire state but its recruitment zone is restricted to its particular quadrant of the state. When the recruitment and prestige zones are roughly equal, the institution is seen to have little influence beyond its service area. When commorancy and resource zones are equal, the financial base for the institution is limited and a strong image is paramount. Below is an example of assessment zones as plotted for Stanford University.

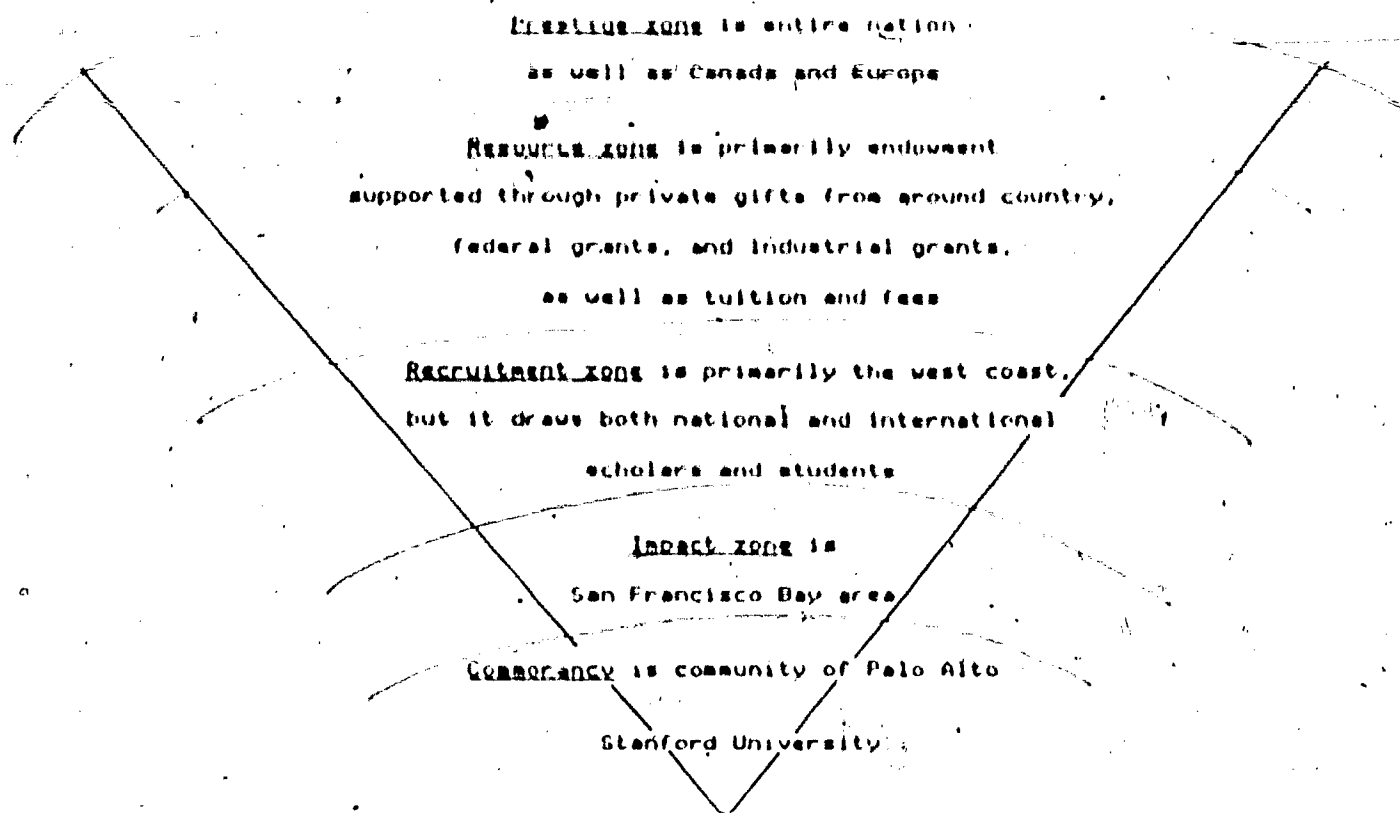


Fig. 3 An analysis of zonus relative to Stanford Unlyersity.

When talking about image, we must take into account that just as publics form images of institutions, institutions also form images of publics. This rather obvious statement gains significance when a study is planned. At that time, the image that an institution has of its publics may modify the method and procedure of the study. Similarly, the image that a public has of itself will influence how it perceives (and reports what it perceives) in an image study. No problems will ensue from this situation provided that the institutions and the publics take an active stance regarding the mutual imaging (see figure 4).

Image Projection by Institution and Public.

	Public		Institution	
	Passive Role	Active Role	Passive Role	Active Role
Institution Being Imaged	Public receives impressions of the institution through the media and the experience of friends and acquaintances. The image that develops may or may not be an accurate one. It is subject as well to the cultural background and expectations of the public.	As students, former students, businessmen, or simply members of the community, the public has a direct and first-hand experience with the institution, and a new perception is created, or an old perception is modified. Such images have a greater likelihood of accuracy.	The institution receives impressions of its image through channels and events that reflect back an image that is an impression of how it is perceived. The institution reacts by initiating changes, often on such a subtle level that it is unaware that such decisions are motivated or influenced by how it reads the image it thinks its publics have.	The institution initiates an image assessment and then, based upon the data collected, it initiates decisionmaking for change.
Publics Being Imaged	Public reads its own image informally by means of personal observations and conclusions based on these observations and feels that its image possesses certain qualities. The public may be working from an accurate or an inaccurate impression of how it is being perceived. How it in turn assesses the institution may be determined by how it perceives its own image.	In those communities with aggressive and innovative civic or community agencies, image assessment is sometimes done. This activity is frequently part of a community's effort to attract business. Depending on the nature of the study, the results may be accurate or inaccurate. Once the image has been determined, dissemination of the information within the public is made.	The institution may perceive its publics as possessing precise and detailed images. Such imaging may be accurate or inaccurate. At best, such images are based on impressions that rely upon uncontrolled data. At worst, such impressions are based on nothing more than subjective impressions. Yet decisions are frequently made at institutions which have only cursorily sampled its publics.	The institution that works very closely with its publics often serves as the leader in seeing to it that the community assesses its own image. Even if such leadership has not occurred, the institution seeks out information about the community, assists in an assessment, or makes use of an existing one. In-house information is also selected and interpreted to get a better focus on community image.

Fig. 4. Image projection by institution and public.

Institutions which try to be detached from the various considerations of image assessment generally succeed only in being ignorant of genuine community and academic needs. By failing to monitor their environments in a comprehensive fashion, institutions may find that they end up acting after the fact, thereby depriving the institution of a vital impetus for positive growth.

Chapter II: Conducting an Image Assessment

Commitment to examine Image involves more than acquiescence. Funds must be budgeted; members of staff, faculty, and student government must be prepared to work extra hours; computer facilities and programmers must be scheduled; an extensive information campaign to the community must be conducted; and opportunities to discuss, debate, and consider the results must be arranged. Image assessment is expensive and time-consuming. Few institutions have on their staffs persons who are well qualified to conduct such a study. Initially, most colleges and universities must bring in outside authorities to help set up and administer the study, as well as to evaluate the results.

Goal Setting

Goal setting is the first step in image assessment. By examining the specific reasons for conducting an image assessment, goals can be determined with accuracy. For example, before a reliable image assessment can be administered, the college or university must identify the nature of the problem to be addressed. If an institution has experienced a declining enrollment in certain professional or paraprofessional programs, the defeat of a referendum, or an overall attrition problem, then a perceived difficulty clearly exists. But even in cases where such concerns are not at first obvious, by refining the relevant factors, a hypothesis can be derived to describe the nature of the problem. Cutlip (1971) suggests that the planning process make this refinement by asking (1) What specifically brought the organization to its present situation? (2) How stable is the community demographically? (3) What are the factors that will affect the organization in the foreseeable future? and (4) Does the organization possess the capacity for change?

Furthermore, by systematically categorizing information needs, an institution can gain additional assistance in the refinement process. Figures 5 and 6 show how, within internal and external environments, academic and support items may be grouped according to their essential qualities. Depending on the hypothesis to be tested, the researcher can employ data in any of these categories. Additional categories may be included for subordinate or peripheral purposes.

ITEM QUALITY	HOUSING AND FOOD SERVICES	INSTRUCTION	LIBRARY SERVICE AND AUDIO/VISUAL FACILITIES	CLASSROOMS/ LABORATORIES/ STUDIOS	SERVICE ACTIVITIES, REMEDIAL PROGRAM, REGISTRATION, ETC	COUNSELING ACTIVITIES ACADEMIC AND PERSONAL	FISCAL ACTIVITIES
COST	Dorm utilization/ Food utilization	Appropriateness of class sizes	Controlled growth of volume and periodical count	Determining a projection for utilities cost	Based on members served and frequency of use	Based on academic and personal use	Placement and utilization of personnel/place- ment and utili- zation of phys- ical resources
ADMINISTRATION	Adequacy of ac- counting pro- cedures/reduction of overhead	Definition of department re- sponsibilities	Long-range plan- ning to accom- odate larger study area	Efficient sched- uling	Assignment of personnel and equipment	Assignment of personnel	Observance of standard business practices/ade- quate management of financial resources
EVALUATION	Quality of living conditions and food	Determining if fair and equit- able procedures exist	Use, accessibil- ity of help/ef- ficient check-out procedures	Presence of teaching aids	Speed of service and effectiveness of service	Speed of service and effectiveness of service	Yearly perfor- mance of certi- fied audits, timeliness, and accuracy of periodic reports
MAINTENANCE AND REPAIR	Condition of facilities	None	Binding costs; replacement of lost or damaged books and equip- ment	Cleaning/all equipment func- tioning/fire safety	None	None	Standardization and clarity of billing pro- cedures
EXPANSION	Special planning if growth anti- cipated	Hiring of faculty if growth anti- cipated	Capital outlay for projectors, screens, etc., if growth anti- cipated	Scheduling of classroom if growth anti- cipated	Increased program if growth anti- cipated	Hiring extra counselors if growth anti- cipated	Presence of an ongoing long- range planning activity

Fig. 5. Internal Environment.

QUALITY / ITEM	PROSPECTIVE NUMBER OF STUDENTS	PUBLIC AND PRIVATE DONORS	ALUMNI INVOLVEMENT	RELATIONS WITH BUSINESS AND INDUSTRY	RELATIONS WITH CIVIC GROUPS	RELATIONS WITH RELIGIOUS GROUPS	RELATIONS WITH GOVERNMENTAL AGENCIES
COST	Personal communication and brochures	Personal communication and brochures	Personal communication and brochures	Advisory Committee	Speakers bureau	Speakers bureau	None
ADMINISTRATION	Contact with local high schools	Special planning	Current mailing list	Curriculum development	Source of feedback	Source of feedback	Special projects/grant and aid
EVALUATION	Data on quality, type, degree of preparation	Judging success of campaign	The degree to which they actively support the institution	The degree to which they actively support the institution	The degree to which they actively support the institution	The degree to which they actively support the institution	The degree to which they actively support the institution
MAINTENANCE AND REPAIR	None	None	None	None	None	None	None
EXPANSION	The degree that the service area can be increased	Aggressive search for new sources	None	Outreach to larger service area	Outreach to larger service area	Outreach to larger service area	Outreach to larger service area

Data Collection

Once the data categories have been determined, researchers must decide how to collect the data. Data for evaluation research can be collected by a wide variety of research techniques. Listed below are some possible sources.

1. Interviews
2. questionnaires
3. observation
4. ratings (by peers, staff, experts)
5. psychometric tests of attitudes, values, personality, preferences, norms, beliefs
6. Institutional records
7. government statistics
8. tests of information, interpretation, skills, application of knowledge
9. projective tests
10. situational tests presenting the respondent with simulated life situations
11. diary records
12. physical evidence
13. clinical examinations
14. financial records
15. documents (minutes of board meetings, newspaper accounts of policy actions, transcripts of trials)

[Weiss 1972, p. 53]

Whatever sources are tapped, a truly representative sampling is essential, and sufficient representatives from each public must be included to insure dependable results. Questionnaires that are well suited for the collection of certain kinds of data may be ill suited for others. The more abstract the concept, the less appropriate it will be for the questionnaire. Questions on financial aid, campus activities, tuition costs, or the presence of desired departments or programs may supply highly usable data of one type for the researcher. On another level, the researcher may find entirely different data by asking questions that, for example, require specific comparisons of the institution relative to other institutions.

Several companies that specialize in test development have worked with some aspect of image assessment. The American College Testing Program, Educational Testing Service, College Entrance Examination Board, and the Council for Advancement and Support of Education have prepared survey instruments for these purposes. They address interests and needs of students, reactions of students to college policies, goals of the college, internal environment of the institution itself, attitudes of non-returning students, attitudes of former students, attitudes of alumni, attitudes of current students toward college activities, and so on.

The most effective studies, however, seem to have been done by colleges and universities that have tailored their own testing instruments. For example, the State University of New York (SUNY)

system has devised several image-assessment instruments which focus specifically on SUNY's attrition problems. In addition, the SUNY College at Fredonia has conducted a survey of community attitudes and perceptions. Results of these studies are applicable both as evaluative tools prior to program review and as diagnostic devices for planning public-relations activities.

Whether surveys are devised by the educational testing services or the individual institutions, they should be constructed so that responses reflect the constituents' felt needs. Without the proper response vehicle, community members may not be able to express the form a solution should take even when they know the problem exists. Because of this possibility, the college itself must translate community responses into viable programs. For example, classes in parenting or in art appreciation for retired couples indicate ways that institutions can enrich the lives of their constituents although such courses are seldom asked for specifically.

The Decisionmaking Process

Often misconceptions arise about the way survey results should be incorporated into institutional decisionmaking. Because a campus activity is perceived as being inadequate does not mean that it is inadequate. Opinion research is often more useful in identifying problem areas than in delineating their nature. In other words, dissatisfaction with a campus activity may be more a comment on the way an activity is managed than a statement about the actual activity.

When all factors are properly considered, however, image-assessment data can supply valuable decisionmaking information. A specific example may help illustrate one possible application. College X has an aggressive business department with a two-year associate degree in office skills. The institution conducts an image assessment. Among other things, the assessment reveals that (1) the community is not happy about the options available to the two-year, terminal student; (2) local business is well pleased with the quality of the business department's graduates; (3) companies in the service area are purchasing more sophisticated computers; and (4) more high school students are looking for colleges offering two-year associate degrees in office skills with an emphasis on computer technology. Upon obtaining the image-assessment results, the business department can easily perceive a neglected area of need. By means of appropriate program design, interested students can then be matched with available jobs. This decisionmaking process, from the time of the original study to program implementation, is indicated in figure 7.

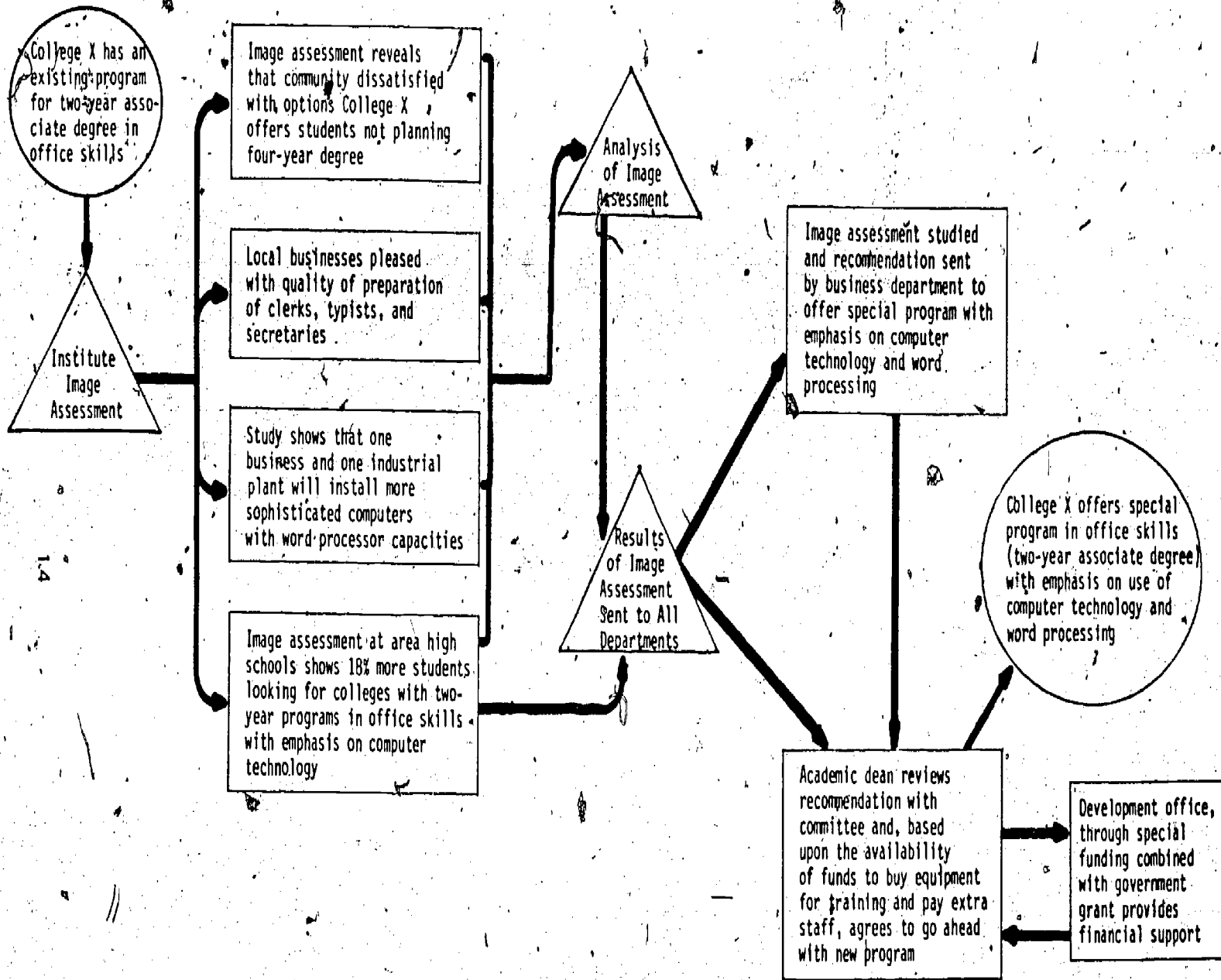


Fig. 7: Flow chart showing process by which a program can be modified using image-assessment data.

For decisionmakers to be effective, image-assessment results must be converted to a form that is readily understandable by nonstatisticians. If the entire procedure has been performed with the involvement and understanding of faculty, staff, and students, as well as the various publics, then the ensuing policy changes are more likely to win wide approval. Below is a concise list of useful safeguards for evaluating study results:

1. The evaluator should always know the source of the data. Data gathered under biased conditions may be invalid. Fresh data are always best.
2. The evaluator should always make provisions for a control. In the absence of a control, it is difficult to know the real source of the change.
3. The evaluator should not place great value on a comparison of the project with a similar project implemented in another environment. The variables are difficult to identify and weigh.
4. The evaluator should not try to objectify his or her measurement. The values assigned are based on judgment, and are therefore not truly objective, nor will they apply in another situation exactly. There is no substitute for informal decisionmaking.
5. The evaluator should not compare results with institutions across the country. Local conditions, size, funding patterns, and backgrounds are so different as to disallow a basis for comparison.

[Suchman 1967, p. 122]

Prior to final implementation of image-assessment results, decisionmakers will want to consider any possible limitations to their studies. In this regard, two basic concerns should be addressed:

1. Have sufficient publics been queried? This question should be asked on the basis of the responses. It has been shown that the lower the educational level, the poorer the return on responses. Although highest response rate comes from publics that value higher education, these results may not be representative. A wide range of attitudes and perceptions is necessary for the study to be most effective.
2. Have the instruments elicited accurate data? Where possible, bias should be anticipated so the survey instrument can be appropriately corrected. A tendency called the halo effect indicates the inclination of respondents to tell the researcher what he or she wants to hear rather than what the perceptor actually feels or thinks. Finally, in evaluating data, perceptions of quantity may not necessarily indicate quality; they may be simply measures of popularity.

Successful policymakers must carefully weigh all possible considerations in making their decisions.

Chapter III: Conclusions and Recommendations

Equally as important as knowing what an image assessment can do is knowing what it cannot do. Despite institutional efforts to meet more closely the needs of their various publics, increased enrollments cannot be guaranteed, nor can negative images always be corrected.

Presently, two circumstances hamper the development of a sophisticated image-assessment methodology for higher education. First is the problem of the scarcity of published image-assessment studies. Because of concerns that data from image studies might be used to rank institutions or else that such efforts might indicate an institution's overt concern with cosmetic activity, many colleges and universities refuse to publish their findings. Accordingly, colleges and universities that cannot learn from each other frequently duplicate each other's mistakes.

A second problem relates to the lack of theoretical studies. Even when colleges and universities have gathered all the necessary data to implement a significant policy change, a public may not necessarily act in the way the institution would like it to. We still know relatively little about the ways images are formed and even less about how they can be changed. Until these problems receive adequate investigation and treatment, image assessment will fall short of its full potential.

When applied to academic institutions, image assessment is still in its infancy. Nonetheless, it offers a promising instrument for helping institutions better serve their communities and themselves. A common failing of many institutions is that they may be talking when they should be listening. A primary virtue of image assessment is that it provides a structured way to listen to what people are saying.

List of References

Cutlip, Scott M. "'Advertising' Higher Education: The Early Years of College Public Relations." College and University Journal 10 (January 1971):25-33.

Murphy, Patrick E., and McGarrity, Richard A. "Marketing Universities: A Survey of Student Recruitment Activities." College and University 53 (Spring 1978):249-61.

Schoenfeld, Clarence A. The University and Its Publics. New York: Harper and Brothers, 1954.

Suchman, Edward A. Evaluative Research: Principles and Practice in Public Service and Social Action Programs. New York: Russell Sage Foundation, 1967.

Weiss, Carol H. Evaluation Research: Methods for Assessing Program Effectiveness. Englewood Cliffs, N.J.: Prentice-Hall, 1972.



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