CHAPTER 28

Enhancing Institutional and Program Quality

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Judging by the outpouring of articles in both scholarly and popular journals, "quality" has rapidly emerged as perhaps the critical issue confronting higher education in the 1980s. It may be, as Harold Enarson has implied (1982b), that concern about quality is little more than higher education's most recent *cause célèbre.* More likely, the current fascination with quality indicates at best a widespread commitment to the revitalization of the higher learning, at worst an indifference masquerading as genuine concern.

Whatever the long-term consequences of the spirited public and private dialogue, there seems little doubt that we are in the midst of a period of introspection concerning the purposes and performance of higher education. Just as middle age brings about an assessment of life-span accomplishments, so retrenchment has encouraged us to re-evaluate our priorities in higher education. The period of expansion has ended; contraction seems to be our middle-age task, and quality may be our *passepartout* — our key to the future.

Asking if we in higher education should be concerned about quality is like asking if we should ponder middle age; if we do not do anything about it, time will pass taking its rightful toll. But if we do decide to act — to evaluate institutional programs and activities, to modify our course — then perhaps we can enter the next age with greater potential for an enhanced life's work. For those concerned about higher education, the signs of decline may already be here: grade inflation, declining faculty morale, lowered graduation standards, a loss of public confidence. The challenge for all of us is to commit ourselves to meaningful and concerted efforts to define, assess, and promote quality in hopes of replenishing the present and the future of the higher learning.

Middle age has a surreptitiousness about it; we seldom feel the signs of middle age, no less do we read them. Reality often strikes

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when an external source points the way — a long mirror glanced at by chance, a college chum's off-hand remark about our raquetball game. So it seems to be with higher education quality; outsiders often see the shifts before insiders. In terms of quality assessment, there is a long history of extra-institutional approaches that precourse more recent institutional initiatives. Extra-institutional perspectives tell us much about how quality has traditionally been and continues to be addressed in higher education, so we begin our discussion with a review and critique of the three major extra-institutional approaches to assessing institutional quality. Following that, we critically examine current institutional approaches to assessing and improving quality. Finally, based on our analysis of the limitations of both extra-institutional and institutional efforts, we propose a broad framework to help guide efforts aimed at enhancing institutional quality.

Extra-institutional Perspectives

Much of the current interest in quality has come from various outside publics who are understandably interested in maintaining quality in higher education. These publics include the states, accreditation agencies, and scholars who conduct reputational studies aimed at rating or ranking academic programs — all providing external and summative evaluations of quality in higher education. A look at these three perspectives reveals that external attempts to assess quality have been repeatedly hindered by some serious limitations.

The most recent type of extra-institutional assessment of quality in higher education comes from the states by way of statewide program review. Within the last two decades, as financial and political pressures for the efficient and effective use of public funds have mounted, there has been a dramatic increase in the number of states with higher education coordinating boards that have program review authority over both new and existing programs. Although not all states with legal review authority have so far chosen to exercise that authority, approximately twenty-eight state-level agencies have authority to review at least some existing programs (Barak, 1981). In the remaining states, review authority may be exercised by other means such as legislative budget reviews.

In the light of the possible consequences of statewide actions on institutional quality, it is significant that quality has not become a central consideration in many statewide program reviews. Of the states that currently conduct program reviews or that have established procedures for review, the most frequently used criteria are

costs, productivity, and the compatibility between program and institutional mission. Only about one-third of the states involved in program review explicitly consider program quality in the review process (Barak and Berdahl, 1978).

If quality has not emerged as a central criterion in many statewide program reviews, there are nevertheless indications from many states that quality considerations are beginning to assume a more prominent role. But how is quality being assessed? In general, most states are embracing a traditional view of quality, taken largely from the academy, a view that focuses on resource variables and input variables (such as student characteristics and faculty qualifications). Little attention is being placed on the outcomes of educational experiences, quantitative indicators of quality are being utilized at the expense of qualitative indicators, and unidimensional definitions of quality are linked to the application of narrow criteria in evaluating for quality. Most statewide approaches are simply adaptations of traditional approaches to examining quality, and quality assessment at the state level remains anchored to the limitations of those approaches.

Accreditation and Quality

While state program review is the newest form of quality assessment, accreditation is the oldest form of formal quality assessment. Today there are six voluntary regional associations with nine commissions, over seventy professional associations, four institutional based associations, and several voluntary consortia that are actively involved in accreditation at both the undergraduate and graduate levels (Harcleroad, 1981). Not only is accreditation a prerequisite for participation in federal-aid programs for both institutions and students, but it is also a widely employed barometer of institutional and program quality within and outside of higher education.

Especially in the last decade, the accrediting community has been active in asserting the relationship between quality and accreditation. For example, Kenneth Young, the immediate past president of the Council on Postsecondary Accreditation (COPA), states the common view: "Accreditation is a process that attempts to evaluate and encourage institutional quality" (cited in Lawrence and Green, 1980, p. 43).

In evaluating quality, most accrediting agencies have relied primarily on criterion-referenced assessment in which performance is

judged against institutional and program objectives and/or other mystical touchstones. In practice, accreditation operates like a "pass/fail system" (Solmon, 1981, p. 7): either the goals of a program are clearly stated and appropriate to its mission or they are not; either there are adequate resources to carry out program objectives or there are not, and so on. By implication, institutions and programs which are accredited are taken to be of higher quality than those that are denied accreditation status. Not without justification, this "pass-fail" system has been severely criticized because it tells us little about the relative effectiveness of programs — either in terms of institutional and program objectives or external criteria.

No less important, the accrediting community has been justly criticized for its lack of agreement on a definition, much less the attributes and most appropriate indicators, of program quality. After reviewing the published standards and guidelines of both regional and professional associations, one researcher concluded that "there is such a wide varitey (of standards) among agencies that almost any blanket conclusion or generalization is suspect" (Petersen, 1978, p. 306). Moreover, as in statewide program review, other pointed criticisms can be directed at the efforts of accrediting bodies to evaluate quality: a) quantitative indicators are often used to the exclusion of qualitative ones and b) judgments about quality are based largely on inferences about resources and input variables (such as students' characteristics) at the expense of systematic evaluations of what an institution or program does with its students, faculty, and other resources.

Reputational Studies

Finally, we come to reputational studies, the most visible approach to quality assessment in higher education. The precedent for this approach dates from two widely publicized studies by Raymond Hughes in 1925 and 1934. These two studies not only established faculty quality as the central criterion in the assessment of program quality but fixed the research aperture on the evaluation of doctoral programs. In the Hughes' studies as well as those that have followed (Cartter, 1966; Keniston, 1959; Ladd and Lipset in Scully, 1979; Roose and Anderson, 1970), the major focus has been on evaluating graduate programs in institutions with high national visibility. The most recent example is the reputational study of doctoral programs in thirty-two disciplines conducted by a committee appointed by the Conference Board of Associated Research Councils. Only in the last decade have there been reputational studies of both

professional program quality (cf. Blau and Margulies, 1974-1975; Cartter and Solmon, 1977) and undergraduate program quality (Johnson, 1978; Solmon and Astin, 1981).

The most salient characteristic of reputational studies is the emphasis placed on peer evalutation in which judgments of program quality are made by faculty raters and/or by other experts such as department chairpersons, deans, and professional association and agency officers. In short, all reputational studies share the common assumption that it is experts in the field who are best qualified to make assessments of program quality. Further, reputational studies follow a similar procedure: one or more criteria (such as faculty quality) are chosen to serve as a basis for evaluation, a panel of experts is employed to rate programs on the basis of the chosen criteria, and then individual panelists' responses are combined in order to generate a ranking or rating of programs by institution (Blackburn and Conrad, 1982). Although several recent studies — especially at the undergraduate and professional school levels — have utilized more diverse groups of raters and broadened the rating criteria, the general path cut in the earliest studies of emphasizing narrow criteria and highly restricted groups of raters has persisted.

Since reputational assessments figure so prominently in the literature on quality, they have attracted considerable comment and criticism (Blackburn and Conrad, 1982; Lawrence and Green, 1980; Conrad and Praff, 1983). In brief, many of the criticisms aimed at reputational studies have been methodological, including concerns about rater bias and the extent to which most raters are sufficiently well-informed to make judgments about the quality of programs at other institutions. Moreover, the narrowness of criteria used to assess quality in most reputational studies has been justly criticized. Significantly, scholarly achievement of the faculty has been the major yardstick used to assess quality in most studies, despite attempts in several recent studies to broaden the criteria base (Solmon and Astin, 1981; Conference Board of Associated Research Councils, 1982). By reifying the criterion of faculty quality, most reputational studies have ignored other important evaluative criteria such as program and teaching effectiveness.

The examination of all three major external approaches to quality assessment — statewide program review, accreditation, and reputational studies — reveals serious flaws in past and present approaches to evaluating quality in higher education. Besides various methodological concerns, such as questions of rater bias and rater competency,

other more substantive criticisms should be raised. Perhaps most important, extra-institutional assessments have, with few exceptions, used limited and narrow criteria to evaluate quality (Kuh, 1981). Statewide program reviews, accreditation studies, reputational studies — all have emphasized inputs and resources (such as faculty qualifications and library holdings) and products (such as faculty scholarly productivity and achievement of program graduates) in varying degrees. To be sure, inputs and products can provide a partial foundation for making judgments about what quality looks like. But such an exclusive reliance on inputs and products can also induce a complacency about subtler, yet equally vital, questions of quality (Conrad and Pratt, 1983). Questions about the **process** — such as what is the quality of teaching and learning; what is the degree of intellectual excitement, civility, and humaneness among students, faculty, and staff; and what does a program or institution actually contribute or "value-add" in terms of student growth and development? — should also form the basis of any evaluation and design for quality. When the reductionist approaches of most extrainstitutional studies are coupled with a limited range of quantitative or qualitative indicators, they yield only an incomplete rendering of quality. In short, a holistic view of and approach to assessing quality is sacrificed to unidimensional perspectives which have been wedded to limited criteria and narrow, usually quantitative, indicators of quality.

Consequences of Assessments

Finally, and perhaps most important of all, it is imperative to reflect on the consequences of extra-institutional assessments in terms of the improvement of quality. Consider that all three of the major external forms of assessment are essentially a "pass-fail" approach in which programs and institutions are "labeled": either a program "passes" a statewide program review or it does not, either a program receives accreditation or it does not, either a program receives a high rating or ranking (or even a ranking or rating at all) or it does not. What are the consequences of this "labeling" process for the enhancement of quality throughout academe?

For those programs and institutions which fare well on outside assessments, external validation may invite inertia and complacency. Just as the Greek poets warn us of the dangers of *hubris,* we fear that external confirmation of program worth may lead to an exaggerated pride for which the retribution exacted is a dimunition of excellence. For those programs and institutions in which assessments fail to meet internal expectations, outside assessments may lead, on the one hand,

to despair or cynicism and, on the other hand, to short-term actions — hiring faculty from the ranks of Nobel Prize winners to increasing the amount of laboratory space for graduate students. To be sure, extra-institutional assessments — whether or not they meet institutional and program expectations — may encourage some considerable efforts to improve quality. Still, the more telling point may be that the emphasis on "labeling" programs — as well as the failure to place much emphasis on identifying program strengths and weaknesses as a basis for improvement — militates against widespread institutional efforts aimed at the ongoing evaluation and improvement of quality.

In summary, not all of the above criticisms can be equally applied to all three forms of extra-institutional assessment. Especially in recent years, for example, accreditation studies have more explicitly embraced formative evaluation, and at least one state (Tennessee) has moved beyond the confines of traditional assessment approaches by including "value-added" assessment in its evaluation design and budgeting system. Nevertheless, we do not retreat from our criticism of extra-institutional approaches, for thoughtful criticism of outside perspectives on quality is overdue. Significantly, these external perspectives continue to have a profound impact on the way we view and assess quality, and they likely have major consequences for what actions we take — and do not take — in our institutions. In short, we must not lull ourselves into an uncritical acceptance of the approaches and findings of these external assessments; at best they should provide only a point of departure for the assessment and improvement of institutional and program quality throughout higher education.

Institutional Perspectives on Quality

Concern about quality is a prominent theme in the history of American higher education, and efforts to evaluate quality can be traced as far back as seventeenth-century Harvard and William and Mary. But it is an historical fact of no small significance that self-evaluation as a basis for program and institutional improvement has only rarely been undertaken in academe. Today there still seems to be a reluctance on the part of many colleges and universities to embrace the complementary issues of quality assessment and quality enhancement. Nevertheless, a growing number of institutions are engaging in quality assessment as a foundation for improvement. Faced with major financial constraints, institutions involved in the evaluation of quality are largely doing so within the context of overall financial planning. Quality has become a major criterion in the

distribution of limited resources in which the over-arching questions posed by institutions are 1) what programs, if any, should be discontinued? and 2) what should be the level of program support? Within this financial planning context, institutions are using one or both of two general approaches: evaluation for purposes of resource allocation and program review. Each approach will be briefly reviewed, followed by a more extended discussion of their limitations.

For the next several decades, almost all institutions are faced with the financial constraints of retrenchment. While efforts are bolstered to maintain and increase outside support, there still is the persistent need to effectively allocate existing resources. Many institutions have opted for across-the-board cuts, but others — in the belief that such cuts ultimately will have negative consequences — have utilized various evaluation processes to distribute limited resources. In order to maintain or improve quality concurrent with stable or declining support, these latter institutions are choosing to limit the scope of their offerings through evaluation processes which are linked to the reallocation of institutional resources (Massey, 1981). Such an approach conjoins evaluation, planning, and budgeting in order to enhance strong or promising departments and programs at the expense of weak and unpromising ones. It is, quite simply, a strategy of triage: "feed the strong, and starve the weak."

There is a wide range of institutional approaches to designing for quality through adjustments in budget allocations. Some institutions, such as Stanford University, evaluate quality within the context of their own long-range financial planning models or through models developed by such organizations as the National Center for Higher Education Management Systems (NCHEMS). Other institutions eschew planning models and, in some instances, do not even establish a formal process of assessment. In some institutions, quality is the central criterion in program evaluation, while in others it comes secondary to such factors as demand and cost. In terms of the actual assessment of quality, there are also widespread differences across institutions. Some rely heavily on quantitative indicators; others prefer qualitative ones. Some emphasize resource and input variables; others emphasize outcomes. These differences notwithstanding, there is one common denominator across most evaluation processes: a marked tendency to pattern assessment designs after the major extra-institutional approaches to assessing quality.

The Program Review Process

The most recent, and currently the most visible, approach to quality assessment and improvement is through the program review process. Within the last several years, some of the nation's most prestigious institutions — Duke, Michigan, and Vanderbilt — have undertaken major program reviews. Most program reviews follow the same general procedure (Dougherty, 1981). First, one or more programs are targeted for review which are perceived as being relatively unproductive, less central than other programs to the mission of the institution, and lower in quality. Second, these programs are assessed in terms of guidelines established by the institution. While there are some sharp differences across institutions in terms of guidelines for program review, highly traditional approaches to program evaluation in general and quality in particular cut across almost all program reviews. Third, a decision is reached with regard to the maintenance or the discontinuance of each program under review. The purpose of program review is straightforward. Stronger programs — those which are considered to be more productive, to be of higher quality, to be more central to institutional mission — are retained and financially rewarded; weaker programs are denied funding increases or are eliminated. The short-term effect is to bolster financially those programs considered to be of high quality at the expense or elimination of lower-quality programs. The intended long-term effect is that program quality will be preserved, even enhanced, because the financial integrity of programs taken to be of high quality has been assured.

That some institutions have gone beyond across-the-board cuts to adopt new strategies for resource allocation suggests that questions about quality are moving to the forefront in many colleges and universities. Reconciling quality and scarce resources, whether through adjustments in budget allocations or program review, seems to clearly represent a genuine commitment to nurture quality in the higher learning within the financial constraints of the foreseeable future. Indeed, the signal being sent from many institutions is that those who would pursue quality must no longer stay aloof from the resource allocation process. Yet while we applaud this sentiment, some serious questions must be raised about what is being done — and what is not being done — at the institutional level to preserve and enhance quality.

Some Major Design Weaknesses

What are the major weaknesses of current approaches to designing for quality? Perhaps most important, most institutional approaches are limited because they are based largely on the traditional approaches to evaluation used in extra-institutional approaches to assessment. Since those approaches have been criticized above, suffice it to say here that most institutional approaches have sacrificed a holistic view of quality and quality assessment to unidimensional perspectives, narrow assessment criteria and, in many cases, highly questionable indicators of excellence. To be sure, some institutions (such as Duke University and Stanford University) have, either through program review or through evaluation for purposes of reallocating resources, adopted designs for quality assessment that overcome many of the limitations of extra-institutional assessment strategies. But for the majority of institutions, the clear tendency is to rely heavily on traditional strategies.

Relatedly, almost all institutional efforts to assess quality are exclusively summative. Evaluation aimed solely at reaching summative decisions about the future of programs is very threatening to administrators, staff, and faculty — those who share responsibility for preserving quality. Ironically, it may even work against quality enhancement by lowering faculty and staff morale. Moreover, the exclusive reliance on summative evaluation means that not enough attention is paid to the relative strengths and weaknesses of programs and, more important, the ways in which they might be improved. It is no wonder that the "pruning" of program review and resource reallocation often seems to produce so little new growth; they are regarded by many as "axmanship" performed solely in the interest of "reforestation." With too few exceptions, no formative evaluation exists — no conscious design for improving quality beyond insuring that programs considered to be of high quality and importance receive sufficient resources.

It follows that our fundamental concern about most institutional efforts to address quality relates to the widely shared assumption about the relationship between financial resources and program quality. By linking quality assessment exclusively to current and future resource allocation, institutions are indicating that the maintenance and enhancement of program excellence is primarily dependent on financial resources. Money has come to be viewed as the *sine qua non* of quality.

What is the relationship of money to quality? Most of us are firmly convinced that financial resources are necessary for program quality, and several researchers have found a positive, though small, relationship between expenditures and educational outcomes (cf. Bowen, 1980, p. 288). Since money can provide certain things — better laboratories and libraries, support for faculty service and research, lower student-faculty ratios — seeking the best ways and means of expending limited resources must clearly be a part of any sensible approach to designing for quality.

While money can and does make a difference, have we not perpetuated a dangerous myth when we suggest that money is not only necessary but also sufficient? As reported in his book, *The Costs of Higher Education,* Howard Bowen has found that "affluent institutions could perform as well, or nearly as well, with less money (and) many institutions could achieve greater results with the same money .... Increases in affluence do not automatically result in improvements in performance" (Bowen, 1980, pp. 166-167). Although they are not disposed to admit it, many faculty and administrators in the trenches know they can perform as well with less money. Indeed, there are many things that money cannot buy: an active commitment to quality is but one of those things (Conrad and Pratt, 1983).

Because financial resources are not, by themselves, sufficient to ensure quality, we must recognize that current approaches to assessing and improving quality are inherently limited. While we must decidedly attend to the wise distribution of our limited resources, we must not be content to stop there. We must also recognize that the maintaining and the making of quality remain, at bottom, an ongoing process for the people laboring toward that end. As such, efforts aimed at enhancing quality must extend far beyond the resource allocation process. To continue to approach quality primarily through the resource allocation process is for all of us — faculty , administrators, staff, and students — to absolve ourselves of full responsibility for insuring excellence throughout higher education.

Designing for Quality

Past and current approaches to quality assessment and improvement — both extra-institutional and institutional — have told us much about how to address quality. Yet the time has come for institutions to acknowledge that designing for quality must reach beyond the limited designs of current external and internal assessments; must be more than a justification for resource allocation

decisions; and, most importantly, must address the genuine concerns about quality that have become graver in these times of retrenchment. There are too many outside forces calling for the assessment and improvement of quality for us to be indifferent. We who are ultimately answerable for the quality of our programs and institutions must assume more fully the responsibility — and the opportunity — to both preserve and enhance quality. In this spirit, we propose that individuals, programs and entire institutions engage in self-regulation and self-monitoring of quality through ongoing assessment and action.

The idea of engaging an entire institution — at all levels — in designing for quality independently of resource allocation decisions may be an idealistic notion. To extend this framework, it is helpful to refer briefly to the practice of worker-based quality enhancement as developed by Japanese industry. Following World War II, some very large Japanese industries decided to compete with the United States solely in terms of the quality, not the quantity, of manufacturing and industrial goods. Japanese products would be of higher quality and would be built to last longer (Hodgkinson, 1981). The key then and now to this emphasis on quality is the idea of "quality circles" as utilized in Japanese participatory decision-making. Simply stated, "quality circles" are groups of workers organized to evaluate and discuss the improvement of a particular product. Such circles have been credited with the superior finishing and performance of a number of Japanese products (Nicholas, 1982).

Despite their apparent success, there are several good reasons why Japanese "quality circles" probably should not be adopted outright by American colleges and universities. Perhaps most important, the Japanese approach of linking "quality circles" to management would likely undermine the professionalism and autonomy of staff and faculty alike. Moreover, it would be difficult to reach agreement on the meaning and measurement of quality in regard to many of our "products." Nevertheless, we all should seriously consider the concept of worker-based quality enhancement that lies behind the Japanese design. An appropriate design for quality must come from within those individuals, programs, and institutions involved most directly with the formation and preservation of quality.

In our view, then, the idea of individuals and groups working together should be the main feature of a formative design for quality. As a first step, each faculty and staff member, each program, and each institution should be encouraged to address quality — to evaluate and

improve quality by means of conscious designs. Besides individual initiatives, department, school, college, and institution-wide efforts might lead the way. Especially when they are decoupled from resource allocation decisions, group approaches to decision-making have been remarkably effective in American higher education. Many faculties are still governed largely through consensus, and many institutions (such as the University of Akron) have utilized team leadership to solve departmental and institutional problems. Approaches will and should differ from one institution to the next; the important point is that existing or new structures be selected which will maximize thoughtful discussion of and action about quality.

Systematic Self-evaluation

The important point of departure for discussions about quality is for both individuals and groups to engage in systematic self-evaluation. In order to go beyond previous efforts, evaluation efforts should draw from the limitations as well as the strengths of previous extra-institutional and institutional assessments. Moreover, they must resist the tendency to reach judgments about quality on the basis of incomplete designs which are based on little more than rumor and uninformed opinion. Building upon our earlier critique of current approaches to evaluating quality, we would make several suggestions. Most important, systematic and holistic approaches must be employed in which multidimensional definitions of quality are reflected in appropriate criteria for evaluation. Concurrently, designs should encompass inputs, outcomes, the educational process, and the integrality of all these elements. Finally, formative designs for quality should utilize a range of both quantitative and qualitative indicators consistent with shared understandings concerning the meaning and the measurement of quality.

The key point in designing for quality is just that — designing, developing a formative framework which seeks to improve quality and not merely to summarize it for purposes of reward — whether that reward is status, accreditation, continuance, or increased financial support. All of us — faculty, staff, administration — have little use for autopsies of where we have failed quality, no need for more ex-cathedra utterances of past sins. Instead, hope and encouragement are needed which are built upon both individual and shared commitment to excellence. Designs for quality that identify program strengths and weaknesses, as well as point the way toward quality improvement, may go a long way toward renewing that commitment.

Today, most administrators and faculty are understandably concerned about resource acquisition and efficiency. But too many decisions are being made for short-term survival, rather than long-term planning for enriched educational experiences. Decisions about faculty and staff utilization, planning for program cutting, recruitment and retention of students are receiving far more attention than the quality of the educational process. To the extent that we have looked at quality, it has almost always been within the context of summation of the status quo. As we head further into the 1980s, we may pay a heavy price for using evaluation only to discontinue or dismember programs, displace faculty and staff, and discourage public confidence in the future.

In conclusion, the improvement of quality in higher education should no longer be tied exclusively to financial planning. At bottom, the question of quality is not simply one of the wise investment of financial resources but rather of moral ones (Enarson, 1982a). We can no longer hold quality as the central element of the higher learning and, at the same time, tolerate both individual and institutional indifference to quality. In the words of the unorthodox Zen Buddhist, Robert Pirsig, we will "all grow toward Quality or fall away from Quality together" (1974, p. 325).

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The Empirical Basis for Action

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The purpose of this paper is to examine the demographic transformation of Arizona and to explore the implications of that challenge for the future of higher education in the state. Since the changing size and character of the minority population figures so prominently on the demographic landscape, the major focus will be on changes in the minority population and the implications of those changes for future minority participation in higher education. The paper is divided into three major sections. The first section highlights several important characteristics of the population of Arizona, placing major emphasis on the minority component. The second section focuses on current minority participation in education, particularly higher education. In the context of the demographic trends discussed and current minority participation in higher education, the concluding section raises a number of issues about the future of minority participation in higher education in the State of Arizona.

Before turning to the opening section, several caveats are in order. First, the reader should be apprised of the fact that there are some substantial gaps in the data on the demographic characteristics of Arizona residents. Unfortunately, it is especially difficult to find and capture data on minorities in Arizona, both in the population at large and within higher education. (In the latter case, it is interesting to note that some higher education institutions have almost no data on minority students, while others simply refuse to release their data.) While several fugitive studies were found which helped to enrich the data base used here, it should be acknowledged that the analyses--and perhaps some findings--presented in this paper were shaped in part by the availability of data. Second, owing to data gaps as well as changing data categories used in some sources of information, it was difficult in many instances to identify trends in the data. While trends are discussed whenever the data allow, the lack of compatability in some of the data and the absence of the necessary information, frequently militated against trend analysis. Third, while we assume that the data used here are accurate, it must be acknowledged that there is no assurance that these data are valid. Fourth, the reader should recognize that the categories used by the Bureau of Census in the **1980 Census of Population** are not mutually exclusive. Individuals claiming an ethnic identification also are members of a racial group. Because