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ABSTRACT

The "value-added" conception of excellence in education, unlike any traditional view, focuses on the ability of a school or college to affect its students favorably and equitably. It focuses on changes in the student from the beginning to the end of the educational program. The "value-added" approach would involve the testing of students entering a school or college for the first time to determine their entering levels of competence for purposes of counseling and course placement. These initial "pretest" scores would not only provide both students and teachers with information about the student's specific strengths and weaknesses, but they would also constitute a baseline against which to measure later student progress ("value-added"). Following the completion of appropriate courses or programs of study, the same or similar tests would be readministered to measure student growth. This approach, unlike traditional measures such as the reputational view, the resources view, or the outcomes view, promotes equity because it diverts attention away from mere acquisition of resources and focuses instead on their effective utilization. Any school is capable of attaining a significant degree of "excellence" through this method. (JM)

Excellence and Equity in American Education

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A belief widely held among contemporary educators is that the twin goals of excellence and equity in American education are inherently incompatible, and that the price of expanding opportunities is necessarily a reduction in quality. The major premise of this essay is that excellence and equity are not fundamentally incompatible goals, and that it is possible to formulate educational policies wherein both goals can be pursued simultaneously, even in a period of fiscal austerity.

In the following sections I attempt to show that the apparent conflict between excellence and equity results primarily from deficiencies in the way we have traditional attempted to define "excellence." I will argue that, by embracing new and more valid conceptions of excellence, it will be possible to increase substantially the excellence or quality of education offered in the United States, while simultaneously promoting and expanding educational opportunities for all Americans during the coming decade.

What is Equity?

While there is no simple conception of equity that will please everyone, my personal view is that equity involves two issues: the number of available opportunities, and their relative quality. The cause of equal opportunity is thus promoted by (a) expanding the number of opportunities to meet the existing demand and (b) insuring that the available opportunities are of equal quality. Inequality occurs when opportunities are either unavailable or unequal. Whether we judge different opportunities as "equal," in turn, depends on our definition of quality or excellence.

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What is Excellence?

Although schools and colleges in the United States have many functions and serve the needs of many different constituencies, the concept of "excellence" as discussed in this essay will focus primarily on our educational system's fundamental function: the education of students. Certification, research, and public service--also important functions--are considered only insofar as they relate to a school's educational mission.

Before considering traditional definitions of quality or excellence, it is important to point out that some educators believe that excellence simply cannot be defined or measured. Such critics argue that institutions are too complex and varied, that different institutions have different objectives, that the outcomes of education are too subtle, that methodological problems are insurmountable, and so on. In effect, they reject the idea that valid assessments of excellence can be made.

What these critics fail to recognize is that judgments about quality in education are made every day. And these judgments are not mere intellectual exercises; rather, they form the basis for important life decisions. Parents deciding where to send their children to school, high school graduates picking a college, governmental agencies deciding where to award grants, and school board members deciding how to allocate resources among various schools within a district are all making quality assessments. Even within individual schools or colleges, teachers and administrators apply their particular judgments about quality when they set admissions policies, establish course requirements, hire new staff, and develop the library and physical plant. In short, the argument that quality in education cannot be evaluated is simply unrealistic. The real issue is how these assessments are done and whether they can be improved.

In evaluating various ways of defining or measuring excellence, I shall apply three criteria:

Does it reflect what we mean by quality?

Does using it help to enhance quality in American education?

Is it compatible with the goal of educational equity?

In other words, if a particular conception of excellence or method of assessing excellence fails to satisfy these three criteria, it should be changed or abandoned in favor of definitions or measurements which do.

Traditional Conceptions of Excellence

Excelience in education has traditionally been conceived of from three different perspectives. For simplicity I have labeled these as the reputational conception, the resources conception, and the outcomes conception. I shall briefly consider each of these in order.

The Reputational View

Probably the most straightforward way to identify the most "excellent" schools and colleges is on the basis of a consensus of opinion. Excellence, in these terms, is whatever people think it is. In almost every major metropolitan area of the country there exists a kind of folklore about which are the "best" schools. If you have any doubt about the reality of this folklore, ask a dozen of your friends to make a list of what they consider to be the five or ten best high schools in the city where you live. If you live in the New York metropolitan area, the Bronx High School of Science is likely to be on almost everyone's list. In the Chicago area, most lists would include New Trier and Evanston Township High Schools. In Los Angeles, most lists would include Pacific Palisades High School. And in the New England states, most lists would include several private high schools. As a matter of fact, private high schools would tend to appear on lists in most major metropolitan areas.

An even more highly refined folklore exists in postsecondary education.

If almost any group of parents, educators, or students were to make a list of what they considered to be the 10 "best" higher educational institutions in the United States, the degree of agreement would be remarkably high, especially considering that there are some 3,000 institutions to choose from. Without any further elaboration on what is meant by excellence, most of us would name institutions such as Harvard, Yale, and Stanford. These and the other institutions with the most votes would have highly selective undergraduate admissions policies, large enrollments, and large graduate faculties.

The makeup of any such list can be changed by specifying more precisely what is meant be excellence. For example, if the raters are asked to list the 10 colleges or universities offering the highest quality undergraduate education, some of the same institutions would be named, but some new ones would also get a lot of votes. The new ones would be much smaller than the ones on the first list and more selective in their undergraduate admissions than the ones they replaced. Thus, institutions such as the University of Michigan or the University of California at Berkeley might be replaced by colleges such as Swarthmore, Oberlin, and Reed. As a matter of fact, this second list would correspond very closely to the list that would result from ranking all higher education institutions in terms of their selectivity (that is, the average academic ability of their entering freshman classes). For further information on reputational ratings of higher education institutions, see Cartter (1966), Roose and Andersen (1970), Solmon and Astin (1981), and Astin and Solmon (1981).

These facts demonstrate several important realities about reputational ratings of American colleges and schools:

1. In the folklore of American education, there is a small group of schools and colleges that are generally regarded as the "best."
2. This folklore exists in the minds not only of educators but also of highly able students and their parents who manifest their belief in the folklore in their choice of institutions.

3. In higher education, judgments about overall excellence are favorably influenced by the selectivity and size of the institution. Size is given less weight, however, when judgments about the excellence of the undergraduate program are made.

Despite their subjective nature, judgments about institutional reputations tend to be highly stable over time (Cartter, 1966; Astin and Solmon, 1979). In other words, colleges or schools that are judged as excellent today are, with only a few exceptions, the same ones that were judged as excellent several decades ago. The reasons for this stability may become clearer as we consider the next two approaches to defining institutional excellence.

The Resources View

When educators and policymakers feel the need to develop objective measures of institutional excellence, they often equate excellence with an school's educational resources: quality of teachers, quality of students, physical plant, and fiscal resources. Teacher quality is usually assessed by determining the proportion who have advanced training beyond the bachelor's degree, and at the postsecondary level faculty quality is frequently assessed in terms of their publication rate or scholarly visibity. Student quality is typically assessed by means of the performance of students on standardized tests. Physical plants can be assessed in terms of the number and quality of classrooms, library resources, and laboratories. Fiscal resources can be assessed in a variety of ways, including endowments, expenditures per student, student-faculty ratios, average class size and faculty salaries. In higher education student quality is frequently equated with "selectivity," which is defined as the average scores obtained by entering freshmen on standardized college admissions tests given during the senior year in high school. A related measure might be the number of high ability students (National Merit Scholars, for example) who enroll at the institution.

Elementary and secondary schools tend to be somewhat variable with respect to resource measures, but the greatest degree of variability occurs at the postsecondary level. Per student expenditures, for example, vary from less than $2,000 to more than $12,000. The percent of faculty holding doctorate degrees varies from less than 50 percent to more than 90 percent. And the selectivity of postsecondary institutions, using the sum of the Verbal and Mathematical scores on the College Board's Scholastic Aptitude Tests, varies from a mean of less than 600 to a mean of more than 1400.

Research has also shown that these resource measures are highly related to each other (Astin, 1962; Astin and Henson, 1977; Astin and Holland, 1962). That is, if an institution turns out to be "excellent" with respect to one of these resource measures, it also tends to be excellent with respect to most other resource measures. Institutions that are highly selective, in other words, also tend to have large endowments, highly trained and prestigious faculty, high faculty salaries, low student-faculty ratios, and so forth.

Another important feature of resource measures is that they also tend to correlate with reputational judgments. Thus, institutions that are judged as being excellent tend to be the same ones that enroll the students with the highest college admissions test scores, have the largest endowments, recruit the best trained and most prestigious faculty, pay the highest faculty salaries, and so forth. These correlations, of course, tend to lend credence to the reputational ratings.

Before completing our discussion on the resource approach to excellence it is useful to say a few more words about the role of institutional size. I have already pointed out that size positively affects judgments about an institution's overall excellence. Part of this effect may occur simply because more people are familiar with the larger institutions because of their large staff and large student bodies. Beyond this, however, is the fact that the

larger institutions tend to have more of everything: more different courses, larger libraries, a greater variety of extracurricular activities, and more special facilities for science or for handicapped students, special educational programs, and the like. As a matter of fact, the principal reasoning behind James Conant's (1959) landmark study of the American high school was that the larger schools were more "excellent" because they simply had more diverse curricula and facilities. As we shall see later on in this essay, however, the idea that "bigger is better" is not necessarily supported by evidence at either the secondary or postsecondary level.

The Outcomes View

An increasingly popular approach to the assessment of excellence at any level of education is to focus on the educational outcomes. Proponents of the outcomes view argue that the ultimate test of any schools' excellence lies not in its reputation nor in its resources, but rather in the quality of its products. By far the most common application of this view at the elementary and secondary levels is the use of standardized achievement tests. In virtually every major school district in the country, it is a common practice to administer standardized achievement tests to all the students and to publish the test results on a school-by-school basis in the local newspaper. Schools whose students obtain the highest scores on these tests are, by implication, the most "excellent" schools in the district. Schools whose students obtain relatively low scores, on the other hand, are considered to be the worst schools in the district.

Some of the earliest work using the outcomes approach in postsecondary education looked at outcomes like the proportion of an institution's graduates who end up being listed in Who's Who, the proportion who win graduate fellowships (Knapp and Greenbaum, 1953) or the proportion who go on to get doctorates (Knapp and Goodrich, 1952). Other outcome measures that have been used from

time to time include the persistence rates of the institution's undergraduates and the lifetime earnings of its alumni (Solmon, 1973).

The outcomes approach to measuring excellence has a special appeal because most outcome measures, like most resource measures, turn out to be highly related to reputational measures. Thus, the students at New Trier High School and the Bronx High School of Science tend to obtain high scores on standardized tests and to win a disproportionate number of National Merit awards. Similarly, colleges like Harvard and Stanford tend to have low attrition rates and high proportions of alumni who earn doctorates, make good salaries, and get listed in Who's Who. And such prestigious colleges are also "excellent" in terms of most resource measures: endowments, faculty salaries, expenditures per student, library size, and so on.

What's Wrong with Traditional Approaches?

Let us now consider how well these traditional measures--reputation, resources, and outcomes--satisfy our three criteria. Do they really measure what we mean by excellence? Does their use tend to promote excellence? And are they compatible with the goal of equity? Let us consider each of these questions in order.

Do They Really Measure Quality?

With respect to whether or not traditional measures reflect what we mean when we speak of "excellence" in education, the most obvious problem is with reputational measures: Just because an institution enjoys a good reputation in the minds of parents, students, and teachers does not necessarily mean that students will learn more from attending that institution than some institution with a less favorable reputation. Reputation alone, in other words, does not necessarily guarantee a high quality educational experience.

The resource approach may come somewhat closer to what some people have in mind when they speak of "excellence," because it is reasonable to assume that a given student's educational experience will be superior if that student attends a school that spends alot on its educational programs and the student is exposed to highly trained teachers, good libraries and laboratories, and student peers who are high achievers. Unfortunately for those who espouse the resource approach, research at both the precollegiate level (Coleman, 1966; Jencks, 1972) and at the postsecondary level (Astin, 1968) generally fails to support the resource view. There is, in short, little evidence to substantiate the claim that greater expenditures, more highly trained faculty, and highly able student peers necessarily lead to greater learning. Research has also failed to support the argument that "bigger is better." As a matter of fact, recent evidence at the postsecondary level (Astin, 1977) suggests that most students fare better in small rather than large colleges.

The limitations of outcome measures are easier to see with an analogy from the field of industry. Would it be legitimate, for example, to conclude that a given manufacturing company was an "excellent" business just because it had higher-paid employees than its competitors or because it spent more money than its competitors? Obviously, it is difficult to interpret such "resource" measures without having any information on "outcomes" (sales, profits, and the like). In the same way, it is difficult to accept resource measures as valid indicators or excellence in a school or college without also having information on how much students are actually learning.

I am not suggesting here that financial resources are entirely irrelevant to excellence. Clearly, there are points beyond which fiscal cutbacks will almost certainly come at the expense of quality. Perhaps the most important point to keep in mind is that research so far suggests that the relationship between available financial resources and the excellence of educational programs

is a weak one at best, and that the manner of resource utilization is probably of much greater importance than the sheer level of resources per se.

And what of the outcomes approach? Is it not reasonable to assume that those institutions with the most excellent outcomes are the ones doing the most excellent educational job? Not necessarily. A substantial body of research has shown that the achievement level of a school or college's graduating students is heavily dependent on the achievement level of those students when they first entered the school or college (Astin, 1962; 1968; 1977). In other words, if a school or college enrolls a sufficiently well-prepared class of students at the entry point, a high level of achievement at the exit point is virtually guaranteed, regardless of the quality of the educational program. What these findings reflect is the simple fact that students who are high achievers at one point in time also tend to be high achievers at subsequent points in time, and, conversely, that low achievers at one educational transition point tend to be low achievers at subsequent transition points. This is not to say that individuals cannot change their relative achievement level, but rather that groups tend to retain their relative achievement levels over time. In short, what this discussion suggests is that outcome measures are of little value unless they also take into account the achievement potential of the students at the time they first enter the school or college. This elaboration of the outcomes approach very much resembles the "value-added" approach to be discussed shortly.

Do They Promote Excellence?

How do traditional approaches to excellence stack up against the second criterion, namely, does their use help to enhance quality in education? Let us first consider the reputational and resource views together, since, even though they are conceptually different, their use produces very similar rankings of

schools or colleges. Reputational measures, by definition, limit the amount of "excellence" that is possible within a system of schools or colleges because they are normative in nature: There must be winners and losers. Any competitive ranking system, whether it involves athletic teams, television shows, or educational institutions, limits the number that can be considered to be "the best." If one manages to increase its rank, then some other is displaced.

Similar problems occur with the use of resource measures to assess educational excellence: Resources such as highly able students, highly qualified teachers, and money are finite. Thus, in a highly competitive and meritocratic educational system, the distribution of these resources tends to become highly skewed, with just a few institutions at the top, and with the majority being regarded as being mediocre. Competition among institutions may serve to redistribute these resources, but not necessarily to increase the total amount of such resources available to the educational system as a whole. Finally--and this is a subtle but very critical point--resource-based conceptions of excellence tend to focus institutional energies on the sheer <u>accumulation</u> or <u>acquisition</u> of resources rather than on the effective <u>use</u> of these resources to further the educational development of the student.

An outcomes-based approach to excellence could conceivably contribute to the enhancement of excellence, depending upon the particular means used to enhance outcomes. At the secondary school level, for example, competency examinations are now being adopted in most states as a means of ensuring that high school graduates have certain minimal competencies before they receive high school diplomas. If such examinations are actually used to strengthen the curriculum in the high schools, then they may indeed enhance excellence in our secondary schools. If, on the other hand, the exams are used simply as screens to prevent the less qualified people from obtaining a high school diploma, they

may not contribute significantly to improving the quality of education in the secondary schools.

Similar dilemmas arise in applying an outcomes-based approach in our colleges and universities. If a college or university desires to decrease its attrition rate (outcome measure), it may seek to strengthen its programs so that fewer students drop out. Under these circumstances, the quality or excellence of the program may actually be improved. On the other hand, if the college tries to increase graduation rates merely by raising admissions requirements, neither the excellence of the educational program nor the quality of the educational experience for students is necessarily improved. Moreover, since the pool of well-prepared students is finite, an institution that succeeds in recruiting more highly-prepared students is simply depriving some other institution(s) of these same students. Of course, if all institutions simultaneously impose more stringent admissions requirements, the excellence of secondary school programs might be strengthened, assuming of course that schools and students were given adequate time to adjust to the new requirements.

In summary, two of the three traditional measures of excellence--the reputational and resource approaches--clearly do not offer much hope of enhancing educational excellence in our schools and colleges. The third measure--the outcomes approach--could conceivably be employed to enhance excellence, depending upon how it is used. However, as we shall see shortly, any possible advantage to be gained from using the outcomes approach can also be gained through the value-added approach (see below).

Do They Promote Equity?

Does adherence to traditional notions of excellence promote the aim of educational equity? If one accepts the "resource" approach to defining excellence, there is a clear-cut conflict between excellence and equity, since the expansion of educational opportunities to more members of the society (the

pursuit of equity) necessarily requires that finite resources be distributed among a larger number of individuals, thereby diluting the average investment in any given individual (overall excellence is reduced). Conversely, without an increase in the total resource pool, the only way to enhance quality ("the pursuit of excellence") is selectively to redistribute resources from one group to another (equity is reduced). Since resources are never infinite, the twin goals of equity and excellence are inherently in conflict when we embrace a "resource" conception of excellence.

Similar problems arise in the use of reputational and outcomes approaches. In a decentralized, diverse, and competitive educational system such as we have in the United States, substantial differences among schools and colleges in their reputations and outcomes are inevitable. Only a limited number of these institutions will emerge at the top of the reputational pecking order, and these top-ranked schools and colleges will tend to be the same ones whose graduates display the "best" outcomes (as reflected, for example, in alumni achievement). Since the top-ranked schools and colleges tend to attract a disproportionate share of applicants, many persons are thus denied entry through the process called "selective admissions." In reputational terms, these rejected applicants are being denied an "equal opportunity" because they are not permitted to avail themselves of the most "excellent" opportunities. And if an institution succeeds in enhancing its reputation (becomes more "excellent"), it tends to become more selective (less equitable).

To argue that reliance on resource and other traditional definitions of excellence leads inevitably to conflict with the goal of equity is not to suggest that resource considerations should be ignored altogether in trying to achieve greater equity in our educational system. As a matter of fact, in postsecondary education there are great discrepancies in resources that have potentially important implications in our attempts to achieve a

greater degree of equity. To take one simple example, consider for a moment the availability of college residential facilities. Given that a substantial body of research (Astin, 1975, 1977; Chickering, 1974) suggests that living on campus rather than at home leads to a number of desirable educational outcomes, residential facilities appear to represent a potentially important educational "resource." Since public four-year colleges and universities are much more likely than community colleges to have residential facilities (Astin, 1982), students who are denied entry into public four-year institutions because of selective admissions policies are, in effect, being denied an equal educational opportunity.

A New Approach to Excellence

As an alternative to traditional approaches to defining educational excellence, I would like to suggest an approach which emphasizes educational impact, or as economists prefer, value added. My impression is that sympathy for this approach has been growing in recent years. As a matter of fact, if people are given an opportunity to define precisely what they mean by educational excellence, most will respond with a definition that resembles the value-added approach.

The basic argument underlying the value-added approach is that true excellence resides in the ability of the school or college to affect its students favorably, to enhance their intellectual development, and to make a positive difference in their lives. The most excellent educational programs are, in this view, those that have the greatest impact--add the most value--to the student's knowledge and personal development.

In its simplest terms, the value-added conception of excellence focuses on changes in the student from the beginning to the end of an educational program. The most "excellent" program, in this view, is one that facilitates

the greatest learning or growth. Clearly, to know how excellent a program is in value-added terms requires some form of repeated assessment, whereby the knowledge and competence of the student is assessed initially at the beginning of the program and again at the completion of the program. An "excellent" school or college is thus one that produces substantial improvements in competency or achievement from the beginning to the end of the program.

How well does the value-added approach satisfy our three criteria for evaluating different approaches to excellence? First of all, it is conceptually consistent with what most people have in mind when they speak of "excellent" educational programs: the enhancement of student knowledge and competency. And by focusing on the improvement of student performance over time, it would seem to foster excellence by emphasizing the need to employ existing resources in such a way as to maximize student learning. Of equal importance is the fact that a given school's capacity for excellence, in value-added terms, is not constrained by what other institutions accomplish. Thus, unlike the reputational and resource approaches, which define excellence in comparative terms, the value-added approach permits institutions to attain high levels of excellence without regard to what other institutions accomplish. (It is possible, of course, to make institutional comparisons using the value-added approach, but such comparisons would still focus on the degree of improvement in student performance that occurs in individual schools and colleges.)

And how consistent is the value-added approach with the goal of educational equity? Since excellence in value-added terms emphasizes improvement in student performance, the education of high achievers is not necessarily given higher priority than the education of middle or low achievers. Opportunities for further education are thus not denied simply because a given student is performing at a lower level than other students, and equal efforts can be made to encourage student learning at all levels. In value-added terms, then, any

educational investment in a student is "paying off" as long as the student continues to show progress. Students are not denied educational opportunities simply because they happen to be performing below some "norm," and all students are encouraged to continue their formal education as long as they continue to show progress.

The value-added concept can also be useful in deciding whether opportunities are "equal": Two different educational opportunities can be regarded as equivalent if they would lead to a similar amount of value-added for a given individual. Thus, if a person is admitted to school A but denied entry to school B, that individual is being deprived of an "equal educational opportunity" only if there is reason to believe that attending school B rather than school A would produce a greater amount of educational value-added for that person.

In actual practice, the value-added approach would work something like this. Students entering a school or college for the first time would be tested to determine their entering levels of competence for purposes of counseling and course placement. These initial "pretest" scores would be useful not only in providing both students and teachers with information about the student's specific strengths and weaknesses, but would also constitute a baseline against which to measure later student progress ("value-added"). Following the completion of appropriate courses or programs of study, the same or similar tests would be readministered to measure student growth. Differences between "pretest" and "posttest" performance would provide students, teachers, and school officials with critical feedback on the nature and extent of student growth and development. Unlike traditional course grades, which do not necessarily reflect what students have learned but merely rank them in relation to each other at a single point in time, before-and-after testing indicates whether, and to what extent, students are actually benefitting from their educational experience. Results

from many years of research on human learning suggest that such "knowledge of results" for both students and teachers would greatly enhance the effectiveness of the teaching-learning process.

The value-added approach does not depend on the use of any particular assessment method. Objective tests, essays, oral examinations, and many other approaches might be appropriate, depending on the content and objectives of the course or program in question. Note that the testing in this instance is done not so much to select or screen as to measure improvement over time in the performance of individual students.

Some readers may be tempted to conclude that the value-added approach, by focusing more on changes in individual students than on competitive comparisons between students, would somehow reduce academic "standards." The value-added approach is not a substitute for academic standards, nor does it require any change in such standards. The notion of "academic standards" ordinarily refers to the absolute level of performance or competence that students are required to demonstrate in order to earn course credits or degrees. If necessary, the same measures used to assess "educational value added" can also be used to define whatever "academic standards" the school chooses for itself. In fact, defining academic standards via such measurements would provide a much more rigorous and far less ambiguous set of standards than current academic standards based solely on relativistic end-of-course grades. Moreover, the student's "pretest" performance at the time of initial entry to the school would provide both students and teachers with concrete information on just how much the student needs to improve in order to reach certification or graduation standards.

Under a value-added approach, what role would traditional course grades play? There is some research evidence suggesting that course grades can be very misleading indicators of individual student progress. For example, some students who learn very little from a course can still get As, if their "pretest"

level of knowledge or preparation at the beginning of the course is sufficiently high. Many students who end up with Bs or Cs, on the other hand, may actually have benefitted much more from the same course. Without before-and-after assessments, there is simply no way to know whether, and how much, each student is actually learning.

The same problems occur with one-shot standardized testing given at various educational exit points. Can high schools take the credit if their students do well on the SATs or ACTs? How do we know that these students weren't already performing at a relatively high level when they first enrolled as 9th or 10th graders? And can undergraduate colleges legitimately take the credit if their seniors perform well on the Graduate Record Examinations? How do we know that they weren't already high performers when they first started college?

A special appeal of the value-added approach is that, by capitalizing on a well-established fact of human learning (the feedback principle), it offers the possibility of significantly enhancing the educational effectiveness of schools and colleges without large investments of additional resources. Some educators, however, may be inclined to question the feasibility of the idea on the grounds that teachers would be unable to implement it. While I am not so naive as to think that all teachers and professors would embrace this approach with open arms, I do feel that, with patient and informed leadership, many can be persuaded to try it out. If individual teachers are willing and able to assess student competence at the end of a course (via final examinations and the awarding of course grades), why cannot they also assess competence at the beginning of the course? Assuming that a course already has a final examination, this simple addition of an initial "pretest" is all that would be required to implement the value-added approach. While much of the value-added assessment could thus occur in individual courses, it would also be useful to assess

growth in general skills such as writing, reading comprehension, and mathematics at the school-wide level. For example, among those schools or colleges that already require entrance or placement examinations, the value-added approach could be implemented simply by the addition of a follow-up "posttest" at the exit point.

The advantages of a value-added approach over the traditional outcomes approach to defining institutional excellence are obvious. At the elementary and secondary school levels, for example, the traditional practice of publishing average test scores on a school-by-school basis would be abandoned in favor of an approach where gains or improvements in test scores became the focal point of attention. All schools (or none, for that matter) could be "excellent" under such a system. Further, schools whose entering students scored poorly would not be unduly penalized, nor would schools whose entering students obtained relatively high scores be given an unfair advantage.

Implementing the Value-Added Approach

Despite its apparent advantages, the value-added approach is not without its drawbacks. Full implementation of this approach obviously requires more assessment (pretest and posttest) than currently goes on in most schools and colleges. Certain economies could, of course, be effected if the "posttest" at one school level (junior high school, for example) could serve as a "pretest" for the next higher level (senior high school). Another problem is the cost and complexity of tracking individual students over time so their performance at different educational transitional points can be compared. In addition, reaching a consensus among teachers and other school officials about which instruments to use might be difficult and time-consuming, particularly if the instruments are to be administered on a district-wide or state-wide basis. If comparisons between schools are to be made, of course, some standardization in

assessment instruments must occur. That some degree of consensus is possible, however, is attested to by the fact that many school districts already use standardized instruments of this type on a one-shot basis.

If the value-added approach really represents a significant improvement over traditional conceptions of educational excellence, some readers may wonder, "If this idea has such obvious advantages, how come we haven't been doing it all along?" While I am not sure I know the answer to this question, let me offer a possible explanation. Most of us who are concerned about education--and this includes lay persons as well as teachers and administrators--have accepted uncritically the "resource" conception of excellence. That is, we believe that the best way to improve the quality of our schools and colleges is to acquire more highly trained teachers, more money, better facilities and well-prepared students. And educators have put so much energy into competing for these limited resources that the process of resource acquisition has taken precedence over considerations of resource utilization. As a consequence, a casual visit to almost any school or college will demonstrate that educational practitioners frequently ignore some of the fundamental principles of learning and human development. My impression is, that by focusing our attention on the value-added question ("How much are students actually learning?"), we will be forced to apply more directly some of this neglected knowledge to current institutional policies and practices, with the ultimate aim of improving the quality of the student's learning experience.

Research on learning has taught us at least two important principles that apply to almost any learning situation. For simplicity, I will call these principles "knowledge of results" and "time on task." A large body of research evidence (Bloom, 1974; Gagne, 1974; Kulhavy, 1977; Kulhavy and Yulkovich, 1978) shows that students learn best when they have knowledge of the results of their learning efforts and when they invest time and energy in the learning task.

Value-added research at the postsecondary level also shows that several different forms of student effort or time on task can be effective: how much time students spend on campus, how much they study, and how much they participate in extracurricular activities (Astin, 1977).

My general proposal is that schools and colleges should allocate their resources and gear their educational policies to maximize the learner's knowledge of results and time on task. Although I have no hard evidence to cite, my hunch is that time on task is most likely to pay off when knowledge of results is adequate and fairly immediate. It may also be that these two phenomena are casually related, so that the learner will invest more time on task when knowledge of results is adequate. One advantage of the value-added approach is that it automatically provides the learner with knowledge of results through pretesting and posttesting.

Note that I used the term "learner" here rather than "student." My reason for this is that teachers and school administrators are also potential learners, in the sense that, with better feedback about what their students are actually learning, they are in a better position to improve their own skills, which will in turn result in improved student learning.

The value for teachers and administrators of good feedback on student learning goes considerably beyond what would be forthcoming from pretesting and posttesting of student achievement. For example, if student time-on-task is really an important ingredient in effective learning, then one of the most precious "resources" a school or college has at its disposal is student time. How much time do students spend studying, reading, and doing homework assignments? Considering that the quality of the student's learning might be heavily dependent on such matters, it would seem important for school administrators periodically to survey students to learn how they spend their time. Since this

would be a relatively inexpensive form of data collection, the results of such surveys should probably be made part of the regular feedback provided to faculty and administrators in our schools and colleges.

The importance of adequate feedback can be illustrated with another analogy from corporate business. It can be very informative, for example, to compare the typical business, whose primarily objective is maximizing profits, with the typical school or college, whose primarily objective is presumably maximizing the student's educational learning and educational development. The typical business simply cannot function without appropriate feedback on how well it is accomplishing its mission. The typical school or college, on the other hand, somehow manages to scrape along with very little regular feedback relating to its particular mission: the education of the student.

To see how ludicrous this lack of information on student development is, we need only to consider what would happen to a business enterprise that had no information on sales volume or on profits and losses. No corporate executive in his right mind would consider approaching his Board of Directors with recommendations for change unless he first had a clear picture of the company's financial condition. Yet, lacking any systematic information on what students are learning or how they are spending their time, school and college administrators routinely make recommendations to their Boards for changes in staff, physical plant, and even the curriculum. In such circumstances, it is hard to see how school administrators can hope to provide meaningful educational leadership.

In short, this discussion suggests that the excellence of our schools and colleges can be significantly enhanced by implementation of a value-added approach, which would provide students, teachers, and administrators with regular feedback on how students spend their time and how much they are actually learning in their courses and programs.

Excellence and Equity: Some Unsolved Problems

I have attempted to point out that the value added approach to excellence, unlike the reputational and resource approaches, does not limit educational opportunity by identifying only a limited number of schools and colleges as "the best." I have also attempted to argue that the value-added approach makes it possible to justify an educational investment in students at any ability level, as long as the investment pays off in the form of continued intellectual growth and development. The reputational and resource approaches, on the other hand, tend to limit educational opportunity among the less-well-prepared students by restricting entry to "the best" schools and colleges.

But merely embracing the value-added approach to excellence does not necessarily resolve all questions of equity. One fundamental issue about which little is known is the causal relationship between resource investments and "value added." How much educational value added results from a given investment of financial resources? Do equal investments produce equivalent value added for students at differing levels of achievement? That is, will low-achieving students benefit as much educationally from a given investment as high-achieving students? And if greater investments are needed to produce an equivalent educational gain among low-achieving students, is the society prepared to make such investments?

And even if it could be shown that a given investment has an equal value-added payoff at all points on the achievement spectrum, virtually nothing is known about the relationship between educational value added, on the one hand, and individual and societal benefits, on the other. To what extent does a given increment in knowledge or competence lead to increased earnings or greater life satisfaction? What is the payoff to the society in terms of increased productivity or reduced costs of welfare or crime? Is the ultimate societal payoff different at different points on the ability spectrum? These

are clearly issues that need much further research, and public policy in the field of education will continue to operate largely in the dark as long as such questions remain unanswered.

Excellence and the Public Image of Education

My strong impression is that how we define "excellence" in education has important implications for how the public views education and, indeed, for how willing the public is to provide support for education. Since the reputational and resource approaches tend to generate a good deal of competitiveness among schools and colleges, is it possible that reliance on these approaches may have hindered the quest for excellence? Could it be that the relentless quest by institutions to enhance their reputations and to grab off the largest possible share of limited resources has permitted them to neglect the educational process itself? Could it be that the public image of education could be strengthened if schools and colleges were to focus their energies more on a value-added approach?

Although many of my colleagues in academe would deny it, it may be that the decline of education in the public eye has to some extent been brought on by the academy itself. In many subtle and sometimes not-so-subtle ways, academics manage to convey the impression that teaching and learning--the educational process itself--are unimportant, low-level activities. Let me list a few concrete manifestations of this attitude:

1. Despite claims to the contrary, undergraduate teaching still takes a back seat to research in the reward system of most universities. Even the language here is revealing: Faculty commonly speak of the teaching or advising "load," but I've yet to hear my colleagues talk about their "research load."

2. Almost all of the investment in graduate education is devoted to training in research; very little, if any, effort is devoted to the development of teaching skills in most graduate departments.

3. Twenty-five years ago there were more than 200 teachers colleges in the country; today there are virtually none. Most of them have become so-called state universities. Whether intended or not, the message here is clear: Institutions devoted exclusively or even primarily to the training of teachers are somehow unworthy and need to be replaced by more worthy educational forms.

4. Very few of the institutions with the greatest prestige and the most resources--and I mean the Ivy League schools and some of the major state universities--offer a baccalaureate in education. The same goes for the private liberal arts colleges: Almost none of the most selective and elite offers an education degree.

5. In most universities, schools of education are at the bottom of the academic pecking order. This same academic snobbery about education operates even <u>within</u> specific disciplines: In my own field of psychology, for example, educational psychologists and school psychologists have the lowest prestige.

6. School teaching remains one of the lowest-paying occupations for college-educated individuals. College faculty and administrators, moreover, seldom if ever actively support school teachers when they lobby for higher pay.

My main point is that these attitudes toward the art and profession of teaching have not gone unnoticed by those students who have passed through our

institutions over the past two or three decades. Many of our voting citizens, and practically all of our politicians and policymakers, have been exposed to four or more years of higher education and have almost certainly acquired some of their professors' attitudes about education. It also seems likely that this academic snobbery about education has discouraged many bright undergraduates from pursuing careers in teaching, and many talented graduate students from doing their research on educational problems. Undergraduate students pursuing school teaching as a career, it should be noted, have poorer academic skills than almost any other career group (Astin, 1982). In this regard, the increasingly poor academic preparation of high school graduates--a common complaint of many university faculty these days--may be partially their own doing: Could these poorly prepared students in fact be the chickens coming home to roost?

Summary

In this essay I have attempted to effect a rapprochement between the concepts of excellence and equity in education primarily by suggesting that our traditional notions of excellence or quality are in need of revision. As long as we cling to traditional notions of excellence based on institutional reputations or on simplistic measures of institutional resources, conflicts between excellence and equity are inevitable. If only a limited number of institutions and programs can be considered "the best," then student demand for these programs will be high and some form of selection will be required. Students thus denied entry into "the best" institutions will necessarily be consigned to institutions of lesser "quality" and thereby be denied an equal opportunity. At the same time, the total amount of "excellence" that we can have in our educational system will necessarily be limited because resources are finite. Competition among schools and colleges for these limited resources may result in a redistribution of existing resources, but not necessarily in an increase in the total size of the pool.

If, on the other hand, we embrace a value-added definition of excellence, then attention is diverted away from mere acquisition of resources and focused instead on their effective utilization. In value-added terms, any school or college is capable of attaining a significant degree of "excellence," provided that it uses its resources wisely and that it monitors the development of its individual students over time to ensure that they are progressing at a reasonable pace. Such an approach requires, at a minimum, that schools and colleges at all levels of education make before-and-after assessments of their students' knowledge and competence to provide concrete evidence on the extent of student progress over time.

Concentrating our existing resources on the development of student competencies and skills could prove to be one of the most productive and self-protective activities that colleges and schools can engage in during the next decade. If the quality of the learning environment for students can thus be enhanced by embracing a value-added approach to excellence, then the public image of education should improve as well.

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