

## IS EDUCATION CONSUMPTION? : THE SEARCH FOR EVIDENCE

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### 1. Historical Overview ; The Nature of Education

#### 1.1. The Consumption Aspect of Education

First, we will review briefly the traditional stance of economists on the consumption aspects of college education.

We accept Schultz's formal definition of the consumption component of education : "The satisfaction that people obtain from schooling is the consumption component. It consists of values associated with education that are not as a rule vocational, occupational, or professional. Schooling to acquire abilities to increase future earnings is not consumption. When it is consumption, its value can be moral, or refinement in taste, or some other source of satisfaction."<sup>1</sup>

Schultz contradicts himself by admitting, on the one hand, that "It is not so much the logical basis of distinguishing among the benefits of schooling that is beset with difficulties as it is to identify and to measure them,"<sup>2</sup> but, in another place, by claiming that the magnitude of present consumption component is virtually nil as if it is readily measurable.

Our position is that (1) there is no theoretical basis to ascertain whether an observed example or the individual's schooling behavior belongs to either present or future consumption and (2) therefore it is completely an empirical matter to characterize a certain school-going behavior either consumption or investment. The definition involves knowledge of facts: facts about the behavior of decision makers or facts about the economic consequences of decisions.<sup>3</sup>

College education is partly carried out for investment and partly for consumption motives. This means, not that educational expenditures are either investment or consumption, but rather that they are both. Educational expenditures can be regarded from either point of view, depending on the nature of the problem that is

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being investigated : if the question is one evaluating the contribution of education to income gain, the relevant framework is the investment view; if the question is instead that of measuring the private demand for education, the relevant framework is the combined consumption and investment view.<sup>4</sup>

Keynes adopted the Marshall-Pigou view of national output and linked it firmly to the behavior of households and enterprises as distinct motivations for their actions. In the Keynesian theory, therefore, there can be no problem as to whether education is consumption or investment : since expenditures on education are made by households or by the government acting on behalf of households out of taxes collected from them, formal education is clearly consumption.<sup>5</sup>

The very same quantum of education, say, a year's schooling for someone, invariably shares both consumption and investment aspects. For example, a household decides to acquire an additional year of schooling for one of its younger members. This is consumption in the Keynesian theory. But it turns out that the additional schooling renders the member of the household more productive once he enters the labor market. This makes it investment according to the classical definition. On the other hand, if both the student and his parents are unaware that additional education acts to increase the future productivity and hence the lifetime earnings expectations of the student, the expenditure is consumption again because it emphasizes the personal motive for an expenditure. We have now come back to Blaug's old point : the definition of consumption or investment involves knowledge of facts, i. e. , facts about the behavior of decision makers or facts about the economic consequence of decisions.

## 1.2. Current Consumption Benefits

There exists no doubt about the value of the current consumption enjoyed by the student who may say that his college years were "the best years of his life." It is true that there may be some students who regard college education as a painful process to be endured for the sake of future income gain, but such students would no doubt turn out to be in the minority, especially if forced to contrast the net attractions of being a college student with the net attractions of what in fact they would be doing if they were not students rather than with the attractions of what they would like to be doing.<sup>6</sup>

There also exist, although only a minority, the genuine students who can derive utility from learning per se. The college student who finances his own educa-

tion will probably enroll in many courses and read many books that would bear only a remote relation, if any, to future expected or realized income. Although some of these may be required for graduation and therefore may be of indirect economic value, it is in all probability still a fair evaluation of human motivation that the prospects of achieving more subtle satisfaction from mastering a higher education are more compelling to many students than the prospects of greater financial success.<sup>7</sup>

Parents no doubt derive immediate pleasure from having the children in school rather than at home, apart from that felt by the children. The decision to choose more or less education is indeed made by someone who places an ambiguously positive value on the consumption benefits of college education. This is a question of fact about household choices with respect to education.

Many parents who would not think of spending thousands of dollars to establish their son in business do not hesitate to spend an equal amount on their son's education without expecting any monetary return for themselves. They may send their children to "better" private colleges. Such expenditures are at least in part consumption expenditures as far as both the economic motivation of the spender and the economic effects on the individual and on society are concerned.

### 1.3. Education as a Durable Consumer Good

It is also generally agreed that education confers long and lasting benefits of a consumption variety by extending the range of activities which an individual is able to enjoy during his leisure hours. For many individuals, education has no doubt awakened interests which have been a source of pleasure over an entire lifetime. In this sense, education can be thought of as conferring a durable consumer good of great value.

Blaug as well as Schultz have suggested a threefold category of education: education may be acquired by individuals as if it were (a) a nondurable consumer good, (b) a durable consumer good and (c) a capital good.<sup>8</sup>

Both Schultz and, to a lesser extent, Blaug (who is more sympathetic) have dismissed the relative importance of present consumption. Schultz commented, concerning the three conceptual boxes of present consumption, future consumption and future producer capability, that only a small box (almost empty) is required for consumption in the present, while two large ones are needed for the other two classes of contributions of schooling, both of which are investment. Schultz thinks that

the third box may be very large. Blaug also suggests that a large part of what is usually thought of as the consumption component of education is forward-looking, anticipated consumption. It should be pointed out, however, neither of these claims has an empirical basis.

#### 1. 4. Disutility from College Education ?

The sort of consumption benefit of education derived from the anticipated enjoyment of a higher psychic income in the future is almost certainly positive. Very few individuals enjoy life less for being educated. This fact points out two implications : first, higher lifetime earnings are not the only motives that impel individuals to acquire more education but other motives, consumption motives must be equally emphasized ; second, college education seems to be a normal good.

However, the same thing is not necessarily true of the current consumption of education. Exams and class attendance in the required courses may actually carry negative utility for the average student. This implies that college education may be a “bad.” On the other hand, no one denies how enjoyable those long vacations are, which students are privileged to have both in summer and in winter. Thus the current consumption benefit of college education may not be unequivocally positive but the net positive benefit is more likely when all the negative and positive elements are considered.

This discussion brings out the danger of hasty conclusions provided by some economists. Lazear<sup>9</sup> claims that education (i. e. , elementary, secondary, etc. , any level of schooling) is a consumption bad. His argument runs as follows (comments in the parentheses are the author's). It is found (assuming it is an empirically valid result) that most individuals stop short of acquiring education to their wealth-maximizing levels. It must then be because individuals are willing to forego wealth in order to avoid the consumption of education. It follows that although there are some aspects of education that clearly affect utility positively (conceptually), on balance, education must give more disutility than utility. Therefore education is a bad. This implies further that since education is such a “nuisance” nobody goes to school in the absence of a wealth-augmentation effect.

But if the investment model used is inadequate, then the inferences are incorrect. In order to avoid such misleading inferences, the characterization of college education must be made within an analytical framework in which both consumption and investment aspects enter as determinants of the demand for education. Further,

it appears more fruitful to investigate both aspects rather than try to label education either as a consumption good or as an investment good.

### 1.5. Changes of Tastes

In the empirical work on the labor force participation of women, education is included as an explanatory variable in the equation because education is thought of as widening women's scope for the world of work and of motivating them to participate in the labor market. In the field of marketing research, investigators take heed of the educational level of the consumers in question since education is expected to change their tastes. When asked, "why do you go to college despite the possibility that a skilled carpenter can make more money than a white-collar job in the office?," many college students will answer "What I am looking for is the quality of life, not necessarily the money wage."

Since tastes are directly affected by schooling, the assertions about the consumption benefits of education involve intertemporal comparisons of utility with a yardstick that is itself constantly changing. The value that a sixteen-year old high school student places on the future enjoyment of a university education is surely different from his appraisal after graduation. The assessment of the value of a university education may differ between two years after and fifteen years after college graduation even for the same individual.

It is true that there is a consensus in the society on the positive psychic benefits of education but, of course, it is a consensus of educated individuals whose taste for learning has been affected by the learning process itself. The belief that education makes for a richer life is *ex post facto* and hence of a different kind from the *ex ante* value judgment that governs the choice to acquire college education.<sup>10</sup>

We argue that to the extent parents have developed taste for learning through their own educational process, this acquired taste for college learning is transmitted to their children and is also reflected in their choice of the kind of major field.

## 2. Demand for Higher Education through Curricula

### 2.1. Human Capital Theory of Curriculum Choice

About 40 percent of freshman students in American colleges switch their

major subjects somewhere between the freshman and senior year. Over the four-year period, such subjects as engineering and natural science are net losers, while education and social science subjects are net gainers.<sup>11</sup>

The explanation for this phenomenon has been to date scarce in the literature. Human capital theorists are perplexed by this phenomenon which is to say that the net flow is from subjects with higher to subjects with lower income expectations. It can be argued that it has much to do with the lower probability of surviving a course in engineering and natural science, owing to the fact that these subjects have higher grading norms than education and social science.<sup>12</sup> In so far as Freeman explains such switches of majors by relative wages and salaries,<sup>13</sup> he must be assuming that relative nonpecuniary benefits, including the chances of surviving a course, do not change across majors over the period of observation.

Other human capital studies on student choice of undergraduate major field of study have produced conflicting results.<sup>14</sup> This disarray of evidence may not refute the human-capital explanation of the curriculum choice behavior but it certainly complicates it and it may even reveal the weaknesses of the standard investment theoretic approach.

## 2.2. Consumer Demand Theory as an Alternative

Freiden and Staaf,<sup>15</sup> followed by McKenzie and Staaf,<sup>16</sup> argue that the distribution of grades across majors changes much more frequently than do relative salaries, and they therefore explain the switches between majors by the economic logic of consumer behavior theory applied to the student's choice between university subjects.

Schaafsma also calls attention to some empirical evidence that suggests that nonmonetary as well as monetary benefits are important factors in the demand for education.<sup>17</sup> Schaafsma estimated the optimal or equilibrium amount of education given both the consumption and investment nature of education in general measured in terms of years of schooling, but he did not attempt to analyze the college students' behavior resulting from their consumption and investment motives.

## 2.3. The Freiden-Staaf Model of Curriculum Choice

Dissatisfied with the approach taken by educational psychologists,<sup>18</sup> Freiden and Staaf set out a theory of choice based on the maximization of utility subject to time and ability constraints, and tested the hypothesis that the probability

of a given student switching curricula is negatively related to the level of his aptitude.

Their evidence supports the view that students are channeled into the curriculum groups for which they have a comparative advantage measured by the SAT verbal and quantitative scores. Freiden and Staaf suggest that student curriculum switching is a completely rational response to various time and ability constraints, and interpret performance standards as analogous to prices in terms of resource allocation.

The Freiden-Staaf model needs to be extended both analytically and empirically. An extended and refined version would be useful to study the demand for university curricula in which nonpecuniary as well as pecuniary benefits are considered explicitly. For example, the following factors need more attention: expected future monetary returns to alternative degree programs, expected value of GPA in terms of employability and graduate school admission, institutional quality differences, sex differences, the extent of matching between college field of study and job, job characteristics, and socioeconomic background.

#### 2.4. Analysis for Female College-Going Behavior

In the studies of the demand for curricula, an interesting and perplexing result has emerged. An analysis for females failed to achieve a satisfactory level of significance both in Freiden-Staaf and Freeman's studies. Radner and Miller also commented, "We were somewhat surprised to find sex does not appear to be a powerful additional explanatory factor."<sup>19</sup>

However, there exists a literature which emphasizes the sex differences in the college attendance behavior. In those studies it is conventional that the following assumptions are made.<sup>20</sup> Males and females expect the same nonmonetary returns from higher education because there is no available evidence to distinguish by sex the various nonmonetary aspects of higher education. Males expect higher monetary returns from higher education than do females because males expect to work during larger fractions of their lives than females. Since females have considerably less social pressure than males to enter the labor force, they are more likely to enter the labor force and earn money with their skills on the basis of purely nonmonetary enjoyment of using their skills. Moreover, it is conventionally claimed that males and females both have relatively low expected nonmonetary returns from higher education.

These conclusions or hypotheses are derived from a set of empirically untested assumptions. These issues should be investigated further because a careful empirical analysis may reveal that some of these conclusions are untenable in light of the facts.

## 2.5. Polachek's Analysis of Sex Differences in College Major

Polachek observes that males specialize in physical science, engineering, and business; and females specialize in education, nursing, and such liberal arts fields as English, speech drama, fine arts, and music.<sup>21</sup> His chi-square tests indicate that male-female dissimilarity of majors is statistically significant. Given that the observed distribution of college major seems to reflect sex differences, Polachek develops an investment model to examine whether such differences remain after adjusting for possible determinants of educational choice (ability and intended labor-force commitment). Polachek assumes that education is an investment. Consequently, the demand for education is derived from the investment decision. Individual differences in investment costs and expected benefits should affect educational choices. Hence, holding levels of education constant, one can assume that each individual chooses a major in order to maximize his benefit-cost ratio and that these costs and benefits can be accounted for by including ability and labor market expectations.

Ability differences reflect differences in net investment costs: a person with greater quantitative ability can obtain more "learning" in a quantitative field for a given effort than someone with less quantitative ability. Thus, *ceteris paribus*, those with greater quantitative aptitudes should major in quantitative fields, and those with higher verbal aptitudes should opt for verbal fields.

Lifetime differences in work commitments reflect differences in benefits derived from a particular major. *Ceteris paribus*, students expecting to have only intermittent labor-force participation would presumably avoid fields (such as science) that require high levels of on-the-job training, while those with the greatest labor-force commitment would tend to choose such fields. Polachek found that even when accounting for ability and labor-force expectations, a large amount of sex differences remain in major choice.

This finding indicates that factors other than ability and labor-force expectations influence educational choices. These factors may be: discrimination by teachers or administrators (either prejudice or misinformation of school administrators and teachers in influencing students in their choice of major); innate or cultural

sex differences in tastes; or student reactions to expected discrimination in the future labor market. This finding, Polachek interprets, implies further that there may exist links between sex differences in the labor market and sex differences in the human capital market.

The implications of this result is that if the motivation for these differences in choice of major stems from differences in preferences or rational expectations of labor market differences after schooling, then policies based on attributing sex differences in the labor market to market discrimination would be economically inefficient. On the other hand, if discrimination in the labor market causes females to specialize differently in the human capital market, then policy recommendations can be focused upon the market governing educational choices, instead of looking only at the labor market.

Polachek's approach to the question of sex differences in college major aside, he mentions discernible patterns observed. Females take significantly fewer high school mathematics and science courses but are faster readers. They spend more time in summer school taking advanced courses, doing volunteer work, and taking art and music courses. They are less likely to go to college to earn more; instead they wanted to develop socially and marry well. Their high school as well as college grades exceed males'. If one takes parents' education levels as a measure of permanent income, females attending college come from wealthier families than males. Presumably, consistent with market expectations, parents prefer to finance their son's college education to a greater extent than their daughter's

### **3. Some Results from Sociology and Psychology**

#### **3.1. Students' Educational and Occupational Choice**

There has been a large volume of sociological and psychological literature on career choice and educational attainment, but this literature has not been policy-oriented and has been difficult to integrate with economic theories of the demand for education.

There exists ample evidence, in the sociological and psychological literature, that socioeconomic origin, family support, race, sex, and intelligence all play a part in the educational and occupational decisions made by students. Some of the relevant findings are briefly mentioned here.<sup>22</sup>

When ability is held constant, social origins have a stronger effect than sex on plans to attend college and then on attendance and graduation from college. When social origins are combined with intelligence, nearly all the differences in student achievement have been accounted for. The combined effect is, for example, more important than the effects of neighborhood, religious background, schools, and peers.

The implementation of educational and occupational plans differs by socioeconomic origins. The courses studied in school differ, and so does the prestige of schools attended, which in turn has consequences for future occupational status. College attendance and college graduation are both directly influenced by social origins. Social class and ethnicity, including religious background, affect career choices and achievements. Well-educated parents are perceived by their children as more encouraging and more interested in school and in the children's specific subject and career choices.

Academic ability and performance have a good deal to do with a student's desire to continue in school and with whether higher institutions will select that student. Class rankings can affect vocational opportunities (e. g., admission to a law or medical school.). The measure of performance (i. e., a mark or grade) expresses something to a student about ability, performance, and others' assessments of him. However, Jencks et al. showed that college grades have little relation to later occupational success.<sup>23</sup> Completion of a course of study has far more effect. Schools, then, provide a complex context of opportunities and constraints within which choices are both shaped and made.

Academic performance and intelligence are related to each other, and each is related to educational plans, college attendance, graduation, decisions to attend graduate school, and decisions to pursue various high-level careers.

Psychologists have studied such aptitudes as perceptual speed and accuracy, manual dexterity, spatial visualization, mechanical comprehension, aesthetic judgment, musical talents, and many other characteristics. Certain special aptitudes have some value for the prediction of entry into occupational training or employment.

Holland's postulate that students tend to choose occupations congruent with their personality structures<sup>24</sup> has been confirmed by some studies but not by others. Validity may depend on the sex of the student and the subject matter under discussion.

### 3.2. Is Female Schooling Behavior Helplessly Unpredictable ?

It has been found that women's careers are more complex than those of men and that theories partially explaining men's behavior do not work as well for women.

Women realistically make contingency plans in relation to marital ambitions. It is shown that occupational development of women paralleled that of men until the college level, when the women began to concentrate on planning for marriage. Young men of 18 and 19 are taking stock of what they had learned about themselves and the world of work and are selecting broad paths to follow because fairly soon they would not have the opportunity to introduce major changes.<sup>25</sup> Women's plans must take into consideration what they have learned about themselves and the world of work and also allow for the possibility of a marriage.

The literature of the educational and career plans of college women show that college women take courses in "esoteric" fields such as French literature or philosophy. Moreover, some college women revealed that they were most interested in marriage although they would like to work later on. These facts indicate that college women have a strong motive for present consumption while in college.

Women making educational may be influenced by a "fear" of discrimination. They are from time to time reminded that their chances of being accepted in medical school or of achieving a high position in industry or commerce are much less favorable than are men.

The fact that women do not achieve as high an occupational level as men cannot be accounted for by differences in abilities. Given the similar abilities, fewer women are working full time. Fewer Women complete college and graduate school than men, but this disparity is not nearly as great as that for occupation.

When interests are examined, it appears that by the mid-teens most girls begin to stay away from mathematical and scientific subjects and choose subjects appropriate for entering education, the humanities, and office work.

There are differences not only in interests but also in the background and the experiences of women entering professions atypical or typical for women. Adeline Levine described a group of 79 young women at Yale. Those preparing for careers in nursing and teaching were compared with women preparing to become physicians and lawyers. There were differences in their backgrounds. For example, the level of mother's education was higher for the law and medical students. That

group had known about and tried out more jobs than had the students in nursing and teaching. The law and medical students had decided on their careers later than had the nursing and teaching students. A majority of the future nurses and teachers had made their decisions before their junior year in high school, while most of the other group had made their decisions after their junior year in college. Their experiences in professional schools were quite different as well. The women in men's career fields were essentially learning to combine sex roles and occupational roles, while women in women's fields were learning to separate them. As a corollary, the former group indicated more commitment to work than did the latter.

The perception of familial encouragement is a more pronounced factor in the case of women's educational attainment. The men's-career-field group had better-educated mothers than the the women's-career-field group when social class was held constant. The future nurses and teachers were more likely to say that their families were major sources of information about these traditional careers, while the future physicians and lawyers selected persons outside the family as influential in the choice of careers more unusual for women.

### 3.3. Hidden Dimensions

Several non-economic studies have revealed how college students view various educational goals. R. Goldsen, M. Rosenberg et al. prepared the six categorical answers to the question "Consider what educational goals you think the ideal college or university ought to emphasize:"

(1) Provide a basic general education and appreciation of ideas; (2) Develop your ability to get along with different kinds of people; (3) Provide vocational training, develop skills and techniques directly applicable to your career; (4) Develop your knowledge and interest in community and world problems; (5) Help develop your moral capacities, ethical standards and values; and (6) Prepare you for a happy marriage and family life.<sup>26</sup>

A summary of some of their results is shown in Table 1. The striking findings of this survey are that (1) educational goals as students perceive them are such multi-dimensional; (2) Item 1 (liberal arts education) and Item 3 (practical training) received almost the identical percentages (35% vs. 36%) of students ranking of "Highly Important."; (3) As many as 30 percent of "Highly Important" ranks were reserved for the remaining items of 2, 4, 5 and 6; (4) More students ranked Item 1 (liberal arts education) as "Important" over Item 3 (Practical Training) (74%

vs. 60%).

Because the questionnaire was conceived by quantitative sociologists and psychometricians, economic questions are completely missing.

Although no one questions that Item 3 falls in the investment motive and Items 4, 5, and 6 belong to consumption motives, which motives Items 1 and 2 belong to is certainly debatable. One can argue that a basic general education and appreciation of ideas, or ability to get along with different kinds of people will at least indirectly help one's career, therefore these items belong to investment motives.

On the other hand, one can say that these aspects provide more of satisfaction on the part of students. If this is the case, students would not be too much disappointed even if college education does not give the kind of job they expect or aspire.

Based upon the above discussion, it can be tentatively concluded that among incumbent students at eleven universities (Cornell, California, Wesleyan, Texas, Harvard, Yale, North Carolina, Dartmouth, Wayne, Fisk and Michigan), consumption motives are as strong as investment motives. Another result in the same report may also support this view. In the freshman and sophomore classes the opinion that vocational education should be the most important aim of college education takes precedence over all others. Among juniors emphasis on vocational education or general education as principal aims of education is about equally balanced. But in the senior year, the point of view that college ought to provide chiefly a "basic education and appreciation of ideas" is far more prevalent than any other. This topic requires a further investigation.

#### **4. Concluding Remarks**

In this paper, I have outlined the recent developments of the concept of 'consumptive education' and presented the best available evidence for the consumption component of education.

I conclude that (1) whether education looks a consumption or an investment crucially depends on how it is defined; there are many undeniable circumstances that support the consumption aspect of education, (2) in reality, however, both consumption and investment nature are mutually existent, and therefore any statistical attempt to single out the nature of education requires a logically consistent eco-

nomics framework, and (3) the demand model for university curricula seems one of the most promising among such frameworks, since it describes a theory of choice based on the maximization of utility subject to time and ability constraints.

To focus on certain statistical data, I have used the U.S.A. studies from which most of the hitherto convincing evidence are derived. If my argument is correct, the same conclusion should apply to the data for other countries. This is the urgent agenda for future research.

### NOTES

- 1 See Schults [25], p. 8.
- 2 Schultz, *op. cit.*, p. 68.
- 3 This position of ours basically agrees with a remark by Blaug in a slightly different context. See Blaug [2], p. 20.
- 4 This is the view advocated by Blaug in his analogies of the economics of education with the economics of health. See Blaug, *op. cit.*, pp. 317-318.
- 5 Blaug, *op. cit.*, p. 17.
- 6 Bowen made this incisive point in his paper [3].
- 7 For this and other aspects of higher education, see Shaffer [26].
- 8 For this point, see Blaug, *op. cit.*, p. 20 and Schultz, *op. cit.*, p. 38.
- 9 Lazear [15], p. 571. Schaafsma makes a similar argument. See [23], p.185.
- 10 For this point, see Mark Blaug, *op. cit.*, p. 21.
- 11 See, for example, Davis [4].
- 12 Despite this prevalent myth, available evidence suggests that in neither of engineering and education field is academic performance associated with career changes and neither field at graduation is appreciably higher or lower in academic performance than students in general. See on this point Davis, *ibid.*, p. 49.
- 13 Freeman [6]. Also see his Ph. D. dissertation [7].
- 14 Using a sample of Canadian males, Wilkinson [27] found that expected net present values of investment in education may be important determinants of major area enrollments and occupational selection (e. g., education vs. engineering). Koch [14] found from enrollment at Illinois State University that some students are influenced in their decisions regarding selection of their undergraduate major by expected internal rates of return from their investment in education. On the other hand, in a replication of Koch's study on data from Western Michi-

gan University, Ross [22] found no significant relationship between internal rates of return and changes in enrollments. In a study restricted to ten academic majors, Bell [1] calculated correlation coefficients between the change in net present values accruing to investment in undergraduate degrees and the percentage change in degrees granted after a time lag. None of the correlation coefficients derived were significant. The results of Greer's analysis [11] also indicate that the human capital based theory of major area selection does not predict.

- 15 Freiden and Staaf [8].
- 16 Mckenzie and Staaf [17].
- 17 Schaafsma [23], [24]. Reece [21].
- 18 Educational psychologists have studied the dynamic changes in student preferences and have generally concluded that students tend to sort themselves out in major fields fairly well in line with the predictions based on opinion, attitudes and interest.

Educational psychologists appear to place emphasis on survey instruments rather than a choice model framework. For example, James A. Davis used indices of people-money-originality orientation. Pemberton and Simons have used the Opinion, Attitudes, Interest Survey (OAIS). See Davis [4] and Pemberton and Simons [18].

This preference-oriented approach suffers at least in two aspects. First, it does not take into account the monetary and institutional constraints placed upon students' preferences. Second, it is difficult to deal with this framework operationally and it cannot give exact recommendations of 'what' and 'how much.' In contrast, the economic theory of choice stresses not only preferences but also the constraints which limit the set of feasible alternatives available. Moreover, the conditional logit estimation technique has made it possible to quantify the qualitative response behavior of students.

- 19 Radner and Miller [20] , pp. 54-55.
- 20 For example, see Feldman and Hoenack [5].
- 21 Polachek [19].
- 22 The following discussion leans heavily on [16].
- 23 Jencks, et al [13].

- 24 Holland [12].
- 25 See Ginzberg [9].
- 26 Goldsen, et al [10].

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Table 1. Importance of Various Educational Goals  
(Eleven Universities : Number of Respondents = 2975)

| ... consider what educational goals you think the ideal college or university ought to emphasize | Percentages of Students Ranking Each Goal as |    |        |     |
|--------------------------------------------------------------------------------------------------|----------------------------------------------|----|--------|-----|
|                                                                                                  | Highly Important<br>(First Other High)       |    | Medium | Low |
| 1. Provide a basic general education and appreciation of ideas                                   | 35                                           | 39 | 24     | 3   |
| 2. Develop your ability to get along with different kinds of people                              | 17                                           | 55 | 26     | 3   |
| 3. Provide vocational training, develop skills and techniques directly applicable to your career | 36                                           | 24 | 31     | 9   |
| 4. Develop your knowledge and interest in community and world problems                           | 3                                            | 47 | 44     | 6   |
| 5. Help develop your moral capacities, ethical standards and values                              | 8                                            | 37 | 40     | 15  |
| 6. Prepare you for a happy marriage and family life                                              | 1                                            | 21 | 42     | 36  |

Note : Percentages in this table may add to 99 or 101 due to rounding of decimal places. Note that percents in this table are to be added horizontally.

Source : R. K. Goldsen, M. Rosenberg, R. M. Williams, and E. A. Suchman, What College Students Think, Princeton, N. J. , 1960 , Table 1-1, p. 7 :