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Consumption Benefits of Education  
*Walter W. McMahon*

College of Commerce and Business Administration  
Bureau of Economic and Business Research  
University of Illinois, Urbana-Champaign



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Walter W. McMahon, Professor  
Department of Economics  
Department of Education





## Abstract

New developments in the economic theory of household production of final consumption satisfactions has led to a vast outpouring of new research on the contribution made by education to the efficiency of production of these final consumption satisfactions during leisure time hours within the family.

The results of careful research must hold constant the benefits of education in the form of higher earnings, so that these are not counted indirectly when measuring non-monetary consumption benefits. Results of the studies surveyed here point to strong evidence that the better education of the woman in a family contributes to her own better health and the better health of her husband and children. There is also evidence that education contributes positively to the education of the children, to earning a higher rate of return on savings, and to more efficient home management (e.g. purchasing behavior, tele-banking, or efficient appliance repairs). But other studies find that education is counter-productive in those aspects of housekeeping where the cognitive and affective attributes it develops contribute less to productivity and therefore encourage substitution of time away from activities such as dishwashing, mending, and the more time-intensive aspects of child rearing. This is somewhat analogous to the effects of education on productivity and on time substitution within and among jobs in the marketplace.



## Consumption Benefits of Education

The consumption benefits of education are regarded here as the non-monetary returns accruing from education to the individual throughout the life cycle. As such, they include not only the non-monetary satisfactions enjoyed by the student while in school, but also the contribution made by education to the efficiency of household production of final consumer satisfactions during leisure time hours before and after retirement, plus the contribution made by homemakers during the non-market time spent in household management and child rearing.

Many of these consumption benefits have been measured in a vast outpouring of recent research. This research has largely followed the lament by T. W. Schultz in surveying the earlier literature that "all these studies omit the consumption value of education...It is a serious omission...The available estimates of earnings from education in this respect all underestimate the real value of education" (Schultz, 1967, p. 300). The most fruitful empirical results have been achieved by use of the theory of household production as developed primarily by Gary Becker (1975, pp. 67-8, and 1976, Ch. 7) and as extended and recently surveyed by Robert Michael (1972, 1982), in an excellent survey which the reader is encouraged to see. The results of recent research which are summarized below find education to make positive contributions to many types of non-market activities involving significant cognitive or education-related affective attributes, activities such as maintaining the health of family members, earning a higher rate of return on savings, improving the children's school achievement and pre-school IQ, increasing the efficiency of household purchasing, and staying out of jail. Some studies find education

counterproductive for the more mundane household (and workforce) tasks, inducing time to be shifted away from those tasks where education contributes less to productivity, such as dishwashing, mending, ironing, and the more time-intensive aspects of child rearing--e.g., Lemennicier (1978) and Levy-Garbona (1978), analogous to similar counterproductive effects found for analogous time-intensive tasks in the workplace found by Rumberger (1981), Levin, and others.

The following focuses on those studies that control in some way for the purely market benefits of education to avoid double counting the satisfactions secured through the use of education in the workplace. This summary excludes non-monetary satisfactions on the job, e.g., Duncan (1976), since these derive from the use of market time. The private consumption benefits from education considered below exclude externalities and spill-over benefits which accrue to the society (or to other jurisdictions) above and beyond those that accrue to the individual--both are treated in separate articles. We will also focus on these microeconomic studies that test for measurable non-market effects--there is some work on the macro level, however, by Eisner (1981), McMahon (1981), and Kendrick (1979) that expands imputed values in the national income and product accounts to include an imputed value for the services of the education of homemakers in total consumption and hence in total product and total productivity.

#### I. Research on Measured Consumption Benefits

Consumption benefits of education can be regarded as those that fall within the "new theory of consumer behavior," even though most

occur later in the life cycle and therefore can alternatively be viewed as a non-monetary return on an investment. Higher earnings are a pure investment return, however, and hence are considered separately under investment returns and under expected rates of return to education (which see), by Psacharopoulos (1973), and by McMahon and Wagner (1982)). In considering consumption benefits, those studies will not be included that do not eliminate the benefits from education due to higher earnings.

Pure current consumption effects are the current satisfactions enjoyed when schooling itself is enjoyable--particularly at high school and college levels and in leisure-time courses--plus current services provided by local schools to the family such as hot lunches, community center services, and child care. Although these can be observed, little has been done to measure them beyond one study by Lazear (1977) and aspects of some cost-benefit studies of day-care services by Gustafson (1978) and others. More work on this is needed.

Health. There is strong evidence that education contributes to better health. Numerous studies show that education is highly correlated with good health, and highly significant work by Grossman (1976) considerably refines this. He controls for the individual's income, IQ, health status as a teenager, and wife's schooling, to find an effect of education on health status by age 46 that is about 40% as strong as the effect of education on wages. He finds that the wife's schooling has an even bigger positive effect on the man's health than does his own schooling. Those with more education live longer; each additional year of schooling lowers the probability of death by 0.4 percentage

points. Lando (1975) finds less work disability, and in a later study Grossman (1982), again holding income and other factors constant, finds that the children of more educated women tend to have healthier teeth, are less likely to be anemic, and are less likely to be obese. Although the positive effects of schooling on the individual's own health, of the wife's schooling on her husband's health, and of the woman's education on the health of her children are now well documented, nobody yet has studied the effect of the education of the husband on his wife's health.

Effects on Further Learning. Leibowitz (1974), using Ben-Porath's well known model of the household production of human capital over time, <sup>finds</sup> that a mother's education and pre-school home investments in children significantly raise the child's IQ. Benson (1982) finds that high SES families tend to limit TV viewing and pay more attention to whether or not the child does his homework, a factor positively related to school achievement. The number of years of college planned by white male and by black male college freshmen has been found by McMahon (1976, p. 322), after controlling for family income, ability, and all financial aids, to be positively influenced by the education of the parents.

Ben-Porath neutrality implies that the young person's past education is productive in further education as every school admissions officer knows, but also that this is only at the cost of its equal productivity in the market. This is not an issue when considering the productivity of education in the home during leisure time hours however (since in this case there are no foregone earnings), or as the education of the

parents contributes to the further education of the child in exchanges within the family.

Returns on Savings. Solomon (1975) finds that the level of education among respondents in a survey of members of the Consumers Union, after controlling for income and occupation, has the strongest relation to choosing the best inflation hedge for their savings.

Consumption Behavior. Michael (1972, 1982) finds that those consumers with higher levels of education shift their spending patterns among consumption items, behaving as if they have more real income, (over and above the higher money earnings that they also have). He estimates this real income effect of schooling on non-market production of consumption satisfaction to have an elasticity of .5, an effect about 60 percent as great as the comparable relation of schooling to money earnings.

Expected consumption benefits also appear, in preliminary evidence, to average 50-60% of the monetary returns expected by students from their higher education. When 5,000 students were each asked to appraise the value of the non-monetary, leisure time returns to them, relative to the expected monetary returns, McMahon (1974) finds that students in fields like music placed the expected non-monetary returns above the expected monetary returns, and those in medicine and business tended to place them at far less. McMahon (1982) also finds that expected earnings tend to have the relatively stronger influence on most student and family educational investment decisions, an influence that is even more pronounced at the more advanced levels.

But within the sphere of non-market behavior, education is more productive in some household activities than in others. Bertrand Lemerçier (1979) challenges Michael's important simplifying assumption that education is technologically neutral among these activities-- an assumption that eventually had to be challenged--which <sup>allows</sup> schooling to affect the relative price of time within the household. He finds that this causes time to be shifted away from those types of activities which are time-intensive, so that in these activities education is counterproductive. He finds, for example, that a very large proportion of the time budgets of French housewives is occupied by dishwashing, and although he agrees with the positive effects of education on health, schooling, and saving behavior which require cognitive and affective skills, the overall shifts away from dishwashing, mending, ironing, and analogous activities in the time budgets of the more educated French housewives leads him to conclude that education is counterproductive in these forms of household production. This is consistent with the now numerous research studies by Gustafson (1978), Levy-Garbona (1978), Ferber and McMahon (1979), and others documenting the time shifts of the more educated women in Sweden, France, and the U.S., toward entry into the labor force.

Home Management. The simultaneous technological revolution within the home however may require even less time-intensive labor and increasing levels of education for effective home management using fewer hours. The rapid swing to dishwashers, automatic washing machines, wash and wear clothing, and monthly bill paying by check require less time than the earlier methods. But they do require knowledge of home



repairs and repair management, plus some accounting skills. Tele-shopping for groceries and sundries is now in use in 217 U.S. cities, tele-bill paying and tele-banking are spreading, and Apple computers are now available at increasingly reasonable cost for managing household energy use, adjusting savings portfolios, teaching the children, doing the income tax, and even life-cycle planning--all requiring more (and changing) education for their effective use.

There are many studies, not all accompanied by adequate controls for differences in money income, that offer evidence that those with more education tend to adopt new products more quickly. Of those that do attempt to hold real income constant, Mandell (1972) finds that those with more education adopted credit cards faster, Michael (1982) reports on several studies including his own that indicate that more educated women are more likely to use contraception and to have fewer "unwanted" births; and Hettich (1972) finds that more educated women are more efficient in market search, with potential savings as the result of more efficient purchasing behavior that raises the estimated rate of return to a college education by 1.5 percentage points. Nobody yet has studied whether or not persons with more education realize more of the deductions to which they are entitled on their income tax.

Affective Attributes Created By Education, as distinguished from the more cognitive attributes, affect productivity in consumption in addition to their affect on earnings.

The clearest measures are of the comparative advantage schooling confers in the selection of a desirable spouse. Michael (1982) develops

the point that own-schooling and the schooling of one's mate are positively correlated by at least .4, making education a good investment in securing a spouse whose earning capacity and presumably other attributes are more desirable. The amount of college education planned by students is also found to be positively and significantly related to "finding a spouse with college values" in a study by McMahon (1982b), who controls for expected monetary returns, as well as for financial aids and other influences on student decisions. It is interesting that the coefficient for this expected non-monetary return is four times as large, and the t-statistic is twice as large, for men as it is for women students. Benham (1974) and Welch (1974) find that a wife's schooling raises her husband's annual earnings by about 3.5%.

Such affective returns from education as meeting and conversing with more interesting people, capacities for entertaining guests, and community service (although the latter is an external benefit discussed elsewhere) are recognized by students and expected to be positive, although only meeting more interesting people was found by McMahon (1982b) to have significant effects on student decisions. Becker (1981, Ch. 4) suggests that schooling can contribute to greater happiness in marriage since it facilitates a more nearly optimal sorting among mates in the marriage market. But women with more education also are more prone to divorce, generating disutilities for the husband and children, a fact that Becker (1981, p. 231) and others have usually associated with the growth in women's earnings that lessen the economic advantages of marriage rather than with education per se.

Education facilitates readjustment for divorced persons with more education who are known to remarry more quickly. Also in the broader role stressed by Schultz (1975), it allows individuals to adapt more easily to changes on the job, disequilibria in the market, and new technology in the home. It also changes tastes--from drag racing or horse racing, for example, toward concerts and reading editorials. But the net effects of pure shifts in tastes on consumer satisfaction cancel out to some extent. Rather than concentrate on taste shifts, the research focusing on the effects on productivity in household production has been far more fruitful.

In summary, all that goes before suggests that there are now many good studies offering evidence of positive consumption benefits of education--benefits (after holding earnings constant) to the family's health, schooling, return on savings, purchasing efficiency, home management skills, and affective sources of happiness. Against this, the counterproductive effects relating to divorce and to the time intensive activities in the home requiring less skill must be netted out. Beyond testing for additional effects, needed next steps include extending the work by Michael and others using shadow prices to impute values (both positive and negative) to each of these non-monetary benefits for individual families, and also for total consumption and total product at the macro level in the national income and product accounts. These would have to include the value of education in facilitating adjustment to disequilibria, whether they be caused by market opportunities, divorce, or new technology within the family.

Walter W. McMahon  
University of Illinois

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