DOES THE TEACHING OF HOME ECONOMICS SKILLS HAVE AN ECONOMIC PAYOFF? THE CASE OF CLOTHING CONSTRUCTION

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In recent years secondary schools have begun to view their home economics programs as an increasing marginal portion of their overall curricula. Because no payments are made for goods produced at home, gauging the economic value of taking a home economics class has been difficult for students, parents, and administrators. This paper illustrates the use of two frequently proposed valuation techniques to assess the economic gains of taking a home economics course. In the calculations, specific reference is given to the case of clothing construction. Implications for school resource allocations and curriculum development are discussed.

For years home economists have recognized that homemaking activities contribute to the economic as well as the sociological and psychological well-being of a family (Reid, 1934). However, not until the birth of the New Home Economics (Becker,

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1965) did researchers begin to focus on calculating the actual dollar value of these nonmarket activities (Gauger and Walker, 1980; Gronau, 1978; Zick and Bryant, 1983). The motivation for this valuation research comes from a variety of sources (Haurylyshyn, 1982). The most frequently cited reasons for valuing homemaking are to improve on current measures of household economic well-being or to investigate the antecedents of married women's market work patterns. Very few home economists have used these estimates to develop educational materials that would assist families and schools in making more informed decisions about where to invest their limited resources.

Families, teachers, and students are all aware of the payoff to a student who takes computer programming or chemistry courses. They can see the (hoped for) investment returns in the form of higher employment earnings later in life. Seeing the economic gains of taking a home economics class has been more difficult. Because no payments are made for goods produced at home, one cannot easily quote a dollar return. As a result home economics classes are frequently viewed as a relatively inferior investment option for students from both the family and the school perspective. The recent development of techniques that allow researchers to place a dollar value on homemaking skills could provide evidence with which to challenge this commonly held view.

This paper illustrates the use of two frequently proposed valuation techniques to assess the economic gains that are made by constructing clothing at home and points out some of the implications this could have for curriculum development. The example of clothing construction was chosen for two reasons. First, sewing is a home production skill which is not easily acquired independently of a classroom or tutorial situation. Second, under the recent pressures of ever-shrinking resources, clothing construction programs in junior and senior high school have begun to be viewed as an increasingly marginal portion of curricula (Margerum, 1981; MacCleave-Fraiser and Murry, 1984). Decisions to de-emphasize or eliminate clothing construction in home economics programs should not be made without first evaluating the economic value of such classes in terms of the skills students gain within them.

Measuring the Economic Value of Clothing Construction

To measure the value of acquiring skills used in the marketplace a researcher looks at the market wage rate associated with a particular skill. In an analogous manner, researchers who seek to place a value on work in the home calculate the home wage rate which reflects the dollar value of skills used in homemaking activities. The problem is that there is no one correct way of valuing home time. As a consequence, the amount a researcher obtains for the home wage rate depends to some extent on the valuation technique that is used.

For example, what is the economic value of knowing how to sew? More specifically, suppose the cost of purchasing a sport shirt is compared to the cost of the same garment constructed at home[1]. Assume that the value of the home sewn shirt is comparable to its market substitute. Assume also that the price of a good shirt is $36.[2] Fabric and notions used in the construction of a similar shirt are $14.03.[3] What then is the economic return if the shirt is constructed rather than purchased?

Two output-based methods are used here to answer this question.[4] In both examples, the quality of the fabric inputs has been standardized and so the main focus is on the value of corresponding time inputs. The first method is the most common one. The starting point is the market value of the home production output, which in this scenario is a shirt whose market counterpart would sell for an average price of $36.[2] The value added by the individual who undertakes to make the shirt is thus the difference between the estimated market value of the output and the out-of-pocket expenses that were incurred during the construction process (Goldschmidt-Clermont, 1983). In such a value-added approach this difference is commonly referred to as the "savings" and here it amounts to $21.97. If it took five hours to make the shirt that would translate into a home wage of $4.39 per hour.

The second valuation also takes an output-related approach. However, this approach differs from the first in its recognition that household production activities, like sewing, are nontaxable (Dowd, 1984; Maynes, 1976; Morgan and Duncan, 1980).

If it is assumed that the household's total 1983 adjusted gross income is $26,000 then it is in a 25 percent marginal tax bracket (U.S. Internal Revenue Service, 1984). That is, for every added dollar earned, 25 cents is taken away by the federal government. If an individual lives in a state that has its own income tax, another five percent of income may be diverted to the state. In addition, one would most likely pay another five percent of gross income in sales tax and 6.7 percent in Social Security taxes.[5] When these figures are totaled it becomes clear that for every added dollar earned, a family nets 58.7 cents ($1 minus the 41.3 cents for all taxes). This means that $61.74 would have to be earned before taxes in order to purchase the shirt in the store ($36 x [$1 - $0.413]; solving for X). Likewise, $23.90 would have to be earned as before-tax income in order to purchase the fabric and notions required to construct the shirt. Thus, the total before tax savings is equal to $61.74 minus $23.90, or $37.84. If it is again assumed to take five hours to construct the shirt this is equal to a nontaxable home wage of $7.57 per hour.

Economists argue that individuals should choose to invest in skills which do the most to enhance productivity. Productivity in the market place is measured by the wage an individual commands. The two techniques used to value home productivity both illustrates that acquiring skills has an economic payoff as well. Indeed, in some instances individuals may be more productive constructing their own shirt than they are while they are employed. That is, the economic value of an hour spent sewing is greater than the hourly wages they command in the market. It is readily recognized that most people who choose to invest in such skills will not remain at home and construct clothing in lieu of paid employment. Rather, the point is that generally people engage in household production as well as market work. To a large extent schools today emphasize the acquisition of market skills over home production skills. The exercise presented here illustrates that there is economic value in having students invest in both.

Variations in the Economic Payoff

In the above scenario the estimates of the value of an hour spent sewing a shirt range from $4.39 to $7.57. Of course, the hourly figures computed vary depending not only on the cost of the market counterpart, but also with the costs of construction materials, the amount of time required to construct the shirt, and, in the case of the second technique, the marginal tax rate that the family faces. Table 1 illustrates how the hourly home wage would vary under other scenarios using the two output-based valuation techniques.

The "sewing" wage rates presented in Table 1 vary from a low of $2.20 to a high of $12.61. These figures can be contrasted with the 1983 estimated median hourly earnings figures for each of the 10 occupational categories presented in Table 2. The data in Tables 1 and 2 demonstrate that the rate of compensation for home sewing can be competitive with many employment options. The relative competitiveness of home sewing clearly depends on several factors including the price of the ready-made counterpart and the individual's marginal tax rate. In both instances, the higher these figures are, the greater the payoff of home clothing construction. Likewise, an individual highly skilled in clothing construction (i.e., sews accurately, can use a pattern more than once, and/or sews quickly) stands to gain more from constructing an article of clothing than does someone whose skills are marginal.

Furthermore, the figures presented here are conservative. A simple sewing task with a reasonably priced counterpart was chosen to illustrate that even the acquisition of basic sewing skills in school can have a significant economic payoff. The economic compensation, in the form of savings, in many instances would be much greater. For example, if sewing skills were developed to the degree that a tailored garment could be competently produced, then an individual could realize an even greater economic payoff (Dowd, 1984). On the other hand, only simple sewing skills need be used to produce window curtains, yet they too would translate into significant real savings because of the high prices of their ready-made couterparts.

Table 1

The Hourly Home Wage Associated With Constructing a Shirt Using Various Scenarios

Scenario Variations	Hourly Wage Excluding Tax Considerations	Hourly Wage Including Tax Considerations
Base Line Scenario[a]	$4.39	$7.57
Ten Hours Required to Sew the Shirt	$2.20	$3.78
Three Hours Required to Sew the Shirt	$7.32	$12.61
Federal Marginal Tax Rate of 33%	$4.39	$8.63
Pattern Used Three Times[b]	$4.83	$8.31
Market Counterpart Priced at $26	$2.39	$4.08
Market Counterpart Priced at $46	$6.39	$10.89

[a]The base line scenario is the one discussed in the text. That is, the store price of a shirt if $36. The cost of the materials totals $14.03 and the shirt takes five hours to construct. Finally for every extra dollar earned in the market, 41.3 cents is paid in taxes. In the scenario variations described in this table, only one factor is altered at a time.

[b]In the base line scenario the $3.25 shirt pattern is used only once. If it is used three times then its contribution to material costs for this sewing project is reduced by two-thirds to $1.08. This brings down the total material cost to $11.86, which translates into a change in the output valuation of the hourly home wage.

Table 2
Median Hourly Earnings of Employees by Occupation[a]

Occupation	Hourly Earnings[b]
Professional and Technical	$10.23
Managers and Administrators	$10.95
Sales Workers	$ 8.29
Clerical Workers	$ 6.32
Craft and Kindred Workers	$ 9.54
Operatives (excluding transportation)	$ 6.56
Transportation Equipment Operatives	$ 8.22
Nonfarm Labor	$ 6.45
Service Workers	$ 5.20
Farm Workers	$ 4.86

[a]These figures were calculated by taking data on median weekly earnings for full time wage and salary workers (U.S. Department of Commerce, 1983) and dividing them by 40 hours. Originally these data were in 1981 dollars, but they have been transformed into December 1983 dollars using the Consumer Price Index (Board of Governors, 1984).

[b]As another reference point, the reader should note that the current minimum wage is $3.35.

If clothing prices and marginal tax rates continue to rise, the economic justification for teaching clothing construction in secondary schools would be even stronger in the years to come. Possibly the greatest responsibility in demonstrating the merit of such skills lies with the teacher. Curricula must be developed that meet the student's needs to develop proficiency and efficiency as quickly and easily as possible. The task then becomes teaching students how to compute the payoff so they come to an economically informed decision about constructing versus purchasing an article of clothing.

Students, parents, and administrators need to be made aware of the economic merit associated with acquiring such skills. While there is some evidence which points to a growing awareness of the economic value of sewing to families ("Utahns are Sewing," 1984), it often pales or is completely forgotten when schools examine the costs of maintaining clothing construction labs. Those home economics programs that discontinue clothing construction classes may be denying their students the option of investing in a valuable skill.

Footnotes

[1]The construction of a sports shirt (i.e., a shirt with an open collar) was chosen for two reasons: first, construction of a sports shirt is a reasonable sewing task even for someone who has had limited instruction (i.e., one class), and second, since a shirt is a gender-neutral garment, sex bias is avoided in the scenario. It should also be noted that the discussion which follows assumes that the quality of the home sewn garment is equal to that of the purchased garment.

[2]After conducting a price check of shirts at a leading department store in Salt Lake City, the price range was found to be $18.50-$58.00.

[3]This figure is arrived at by totaling the cost of two yards of fabric @ $4.49 per yard, one pattern @ $3.25, one spool of thread @ 55 cents, 8 buttons @ 4 cents each, and interfacing for

one shirt @ 88 cents. Note that the cost of the sewing machine usage is not included here because it is viewed as a fixed cost which can be spread out over an infinite number of sewing projects. Thus, the cost of using the machine for any one project (and any other pieces of equipment that can be repeatedly used) would be small enough that it can be safely ignored.

[4]A third valuation technique is based on an input rather than an output evaluation methodology. The basic argument of this technique is that it is not appropriate to assume that a shirt produced at home would necessarily have an economic value equal to a shirt sold in a department store. The home sewn shirt may have a higher or lower dollar value than its department store counterpart depending on the quality of the inputs (e.g., the skill level of the person who is sewing and the quality of the materials) used in putting it together. Within the context of the New Home Economics (Becker, 1965), the quality of an individual's homemaking time is reflected in its dollar value to the household.

For employed individuals, the opportunity cost of sewing (i.e., the cost of giving up activities so that an individual may sew a shirt) or doing any other productive activity in the home is their own market wage rate. For individuals who instead are full-time homemakers, their opportunity cost of sewing is equal to their "shadow wage rate." This shadow wage is the wage they would have to be offered in order to be enticed to begin working outside of the home. Little empirical work has been done using this input evaluation methodology because the statistical techniques that are used in arriving at the figures have only recently been developed. One recent piece of research estimates the average shadow wage of a nonemployed mother of two children to be $7 per hour in 1983 dollars (Zick and Bryant, 1983). If this average rate is applied to the 5-hour sewing task, then the total value of the shirt sewn at home is $49.03 ($7 x 5 hours + $14.03 = $49.03).

[5]These figures have been chosen to illustrate one scenario. The figures will vary depending on the city and state of residence.

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