

CALCULATING TEENS

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"You mean I will pay \$161,214 in interest for a 30 year mortgage on a house? Get real!"

"A monthly car payment of \$352. No way!! I can't afford that much."

"You mean, if I save \$50 per month for 20 years, I will have \$21,781. Allllllright!!!!"

These are typical of the comments made by secondary students in Montana who learned the impact of the time-value of money on savings, investments, and credit through a program entitled, "How a Financial Calculator Can Help Secondary Students Make Decisions About Their Finances." Through the program students had interactive, hands-on classroom experience using a financial calculator to solve financial problems.

Montana State University (MSU) Extension faculty initiated the program in response to a County Extension Program Advisory Committee's concern about the limited financial management skills of teenagers in their community. Parents had learned through a series of newspaper articles about the discretionary spending power held by teens. For example, between 1979 and 1989 teenage spending increased from \$36 billion to \$65 billion, the number of driving-age teens who owned a car tripled, the number who owned a phone doubled, and the number who owned a television grew 62 percent [1]. In 1987, teens from age 15 to 19 years had a median income of just under \$2,000 [4]. A survey by the College for Financial Planning in Denver found that 58 percent of the students had their own savings accounts and 14 percent had their own investments [2].

According to another 1991 survey of high school students by the College for Financial Planning [1], the average weekly allowance stood at \$20 with an average net weekly earnings of \$85. Despite the generous allowances reported by many students, 43 percent said they depended on after-school or weekend jobs for the major part of their income. Only 13 percent indicated that an allowance was their major source of

spending money. Others relied on gifts or other funds from their parents. When asked how they spent most of their allowance or earnings, 29 percent of students said entertainment, 17 percent mentioned savings, and 15 percent named car expenses.

Teens can generally spend their income on themselves, since parents finance the basic costs of living for most teens. Teens need opportunities in schools and extension youth programs to learn to allocate money for present and long-range satisfaction. A financial calculator can help them to realize the financial consequences of a variety of credit and savings alternatives as they move on to the financial realities of adulthood.

Program Development

"How a Financial Calculator Can Help Secondary Students Make Decisions About Their Finances" was adapted from a self-study manual that was written by a County Extension Home Economist and an Extension Family Economics Specialist who were studying to be Certified Financial Planners. Because they believed others would appreciate the information financial calculators could provide about the economic consequences of decisions, they wrote a "simple" self-study manual. The goal was to teach adults how to use a financial calculator to make informed decisions about retirement, savings, and credit alternatives.

The secondary program incorporated many of the same time-value of money concepts as the adults' self-study manual. However, the secondary program was specifically written for teachers' use with students. The notebook includes an instructor's guide, overhead transparencies, and mini-case problems for the students. The materials were piloted during 1990 by Bernie Mason, Yellowstone County Extension Agent and co-author of the program, in the spring semester family life and accounting classes at West and Senior High Schools in Billings. A business high school teacher and a university mathematics professor reviewed the teaching guide and student problems to determine if the materials were at the appropriate level for the age group.

The pilot materials were substantially revised and introduced at the Montana Vocational Association Conference in Fall, 1990. Forty teachers of vocational agriculture participated in the session. Ten later ordered the teaching unit and financial calculators for use in their classes. The program was also publicized in a newsletter for state mathematics teachers. As a result, 10 teachers attended a workshop where the financial calculators were demonstrated during a statewide educators conference.

MSU Extension also acquired financial calculators to loan to teachers. Funding to buy the calculators came from a variety of sources, including local banks, savings and loan associations, credit unions, an instructional media grant, and Texas Instruments.

Program Use

In the program, teachers use examples on overhead transparencies to demonstrate the process for solving a variety of time-value of money problems. Most students in the program are familiar with a regular calculator that adds, subtracts, divides, and multiplies. But few have used a financial calculator with special keys (n , $\%i$, pmt , pv , fv) that allow them to find the answers to complicated time-value of money problems. To reinforce the time saving value of the financial calculator, students work one problem the "ole' fashioned way" with paper and pencil. When they do the same problem on the financial calculator, the teachers often hear comments like, "Wow, it's magic."

During class, students use the financial calculators to determine economic consequences of alternative decisions about finances. The following is an example from the student problems section:

Julie Kristy has found a bargain on a used car. The cost is \$5,000. Her dad will let her use the second family car as a trade in. The salesman has offered \$2,000 as the trade-in value. What will her monthly payment be if she finances a four-year loan at 7 percent? How much will Julie pay in interest over the life of the loan?

Julie found the interest rate at the credit union was only 5.9 percent. What is her monthly payment if she finances a four-year loan at the credit union rate? How much will she pay in interest over the life of the loan to the credit union?

Some teachers assigned additional problems and allowed students to take the financial calculators home. Several parents became interested and requested the "adult" version (self-study manual) of the program.

The secondary financial calculator program has been used by 31 teachers and 10 Extension agents as well as in the Young Families Program for Pregnant Teens in Billings. The total number of youth who have benefited from the program thus far is estimated to be about 1,000. In addition, the program has been purchased and used by 31 teachers and Extension agents in 11 other states.

Program Evaluation

To evaluate the program, questionnaires were sent to Montana teachers and Extension agents who used the program during 1990. On a scale of one to five (with five representing excellence), the usefulness of the program was rated as 4.17. Sixty-seven percent of the respondents indicated they had purchased a financial calculator for themselves.

Extension agents who taught classes reported that students especially like the hands-on approach. A teacher from Red Lodge reported that her evaluations of the semester revealed the financial calculator session was the students' favorite. Teachers described various benefits of the program including increased awareness of the cost of credit, a greater appreciation of parents' financial problems, and increased self-esteem. Some students used the calculator in simulated purchases of major items such as a car or furniture, while other teachers reported students had used the calculator to make actual purchases.

Secondary students reported that they were able to work problems using a "tool" that none of them had ever used before, that they acquired important skills that will last a lifetime, and that they wanted to have more time to use the calculators. Learning about the impact of various annual percentage rates on the amount paid in interest impressed many students.

During the 1992 program year, 52 Montana Extension agents and secondary teachers are using the financial calculator lesson as a part of the High School Financial Planning Program co-sponsored by the College for Financial Planning in Denver. The program was developed into a college-level unit in the Personal and Family Finance class at Montana State University during 1991. The materials were substantially revised for incorporation in the class during spring semester, 1992.

Conclusions

Secondary students can readily learn to use a financial calculator, which has broad potential to significantly affect their financial planning and decision-making ability. The insights that use of the calculator generates are fundamental to many other components of financial education. The program is a cornerstone project, one that can serve as a long-term building block for a variety of other programs on goal setting, savings, investments, and credit. Skill development on the financial calculator to learn economic consequences of decision-making will be a continuing element of the MSU Extension financial education program for youth.

References

1. Schiever, E., Cansler, C., and Skurnik, L., "High School Financial Awareness Survey," (August) 1991, Research Report 91-15, College for Financial Planning.
2. Skurnik, L., and Schiever, E., "Spring 1991 Student Evaluation of the High School Financial Planning Program," (August) 1991, Research Report 91-16, College for Financial Planning.
3. "Teenagers-The New Big Spenders," Fall 1990, MEMO, Money Management Institute.
4. U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 162, *Money Income of Households, Families, and Persons in the U.S.: 1987*, Washington, D.C.: U.S. Government Printing Office, 1989 (February), Table No. 27, p. 104.

Notes

"How a Financial Calculator Can Help Secondary Students Make Decisions About Their Finances" is available from the Montana State University Extension Service, 207B Linfield Hall, Bozeman, MT 59717-0280. The notebook includes a teaching guide (22 pages), student problems (17 pages), self-study manual (60 pages), and masters for overhead transparencies (38 pages). Write to MSU for cost information. A financial calculator costs \$20 to \$50.

For more information about the High School Financial Planning Program, contact your local Cooperative Extension Service Office.

National Consumer Week is October 25-31, 1992. The theme is "Operation Wise Buy."

Congratulations to Cherie Kertz, Riverdale High School, the 1992 recipient of the Gladys Bahr Award.

Guest Reviewers

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