

## Effects of Methods of Teaching Computerized Family Budgeting to Literate and Non-literate Women in Puerto Rico

Research done in the last 12 years indicates that low literate learners can perform better when using appropriate teaching methods. As a result of technological innovations, computers have been used as educational tools for low literate consumers. Budgeting Computer Assisted Instruction (BCAI) was developed to be used as a method for teaching family budgeting.

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### Introduction and Purpose

The Budgeting Computer Assisted Instruction was designed as a method for teaching family budgeting to non-literate and literate women in Puerto Rico. Two pieces of budgeting computer software were designed, one with text only and one with special enhancements of graphics and voice.

### Needs and Purpose of BCAI

The economic situation of women in Puerto Rico is difficult especially for less educated, divorced, and widowed women. In Puerto Rico, high percentages of women's educational levels are still in pre and illiterate stages. Even with the economic situation of Puerto Rican families and households, a literature review showed no evidence of valid educational computerized budget programs. Budgeting computer software is one of the technologically innovative resources available to help women to improve their own and their families' economic well-being. This study focused on testing BCAI which had not previously been done.

### Methodology

The purpose of this study was to investigate the effect of two computerized methods of teaching on knowledge of budgeting for literate and non-literate women. The research design is true experimental, with randomized pretest-posttest control group design. Women were randomly selected from the Extension Homemakers Clubs of Maunabo, Puerto Rico ( $n = 123$ ) and were divided into three groups: the control, the text only, and the voice and graphics groups.

The instruments used were Budgeting Knowledge Questionnaire, Attitudes toward Budgeting

Computer Assisted Instruction Scale, and Demographic Characteristics Instrument.

### Findings

ANOVA resulted in significant differences among groups on the demographic variables, age and number of dependents on participants' income. There were no significant differences among groups on the continuous variables age, number of children, and attitudes toward computer and residence. No relationships were found between group and the categorical variables literacy, place of residence, marital status, employment status and workplace. Women's perceived alternatives to cope with life situations that create financial crises were family help and find a job. Correlation analysis showed statistically significant positive moderate associations between pretest budgeting knowledge scores and literacy ( $r = .30$ ), general attitudes toward BCAI ( $r = .32$ ) and attitudes toward BCAI graphics ( $r = .35$ ).

Women who received the BCAI with voice and graphics had higher budgeting knowledge scores ( $M = 10.10$ ), when compared with those women who received the BCAI with text only ( $M = 9.05$ ) and those women in the control group ( $M = 9.46$ ).

### Conclusions

The Homemakers Club members who participate in this study have the following characteristics: middle aged with a median age of 36; more likely to live in rural areas; mean educational level of 11th grade; more than two-thirds of them are literate; fewer than one third are low literate; their economic situation is poor and below the poverty level; the majority of them are married; have an average of three children.

They perceive budgeting and saving as important in home management; more than half of them feel unhappy about their economic situation; and think that budgeting cannot help them to meet needs, attain goals and desires.

Pretest budgeting knowledge scores show that those members with low pretest budgeting knowledge gained more budgeting knowledge with the BCAI with voice and graphics than those with high pretest budgeting scores. BCAI with voice and graphics is an effective method to teach budgeting concepts to those women with low pretest budgeting knowledge. Attitudes toward graphics and pre budgeting knowledge scores explain the posttest budgeting scores. General attitudes toward BCAI and attitudes toward voice do not explain variability in the posttest budgeting knowledge scores.

### **Implications of this Study**

Corporations and policy makers need to maximize the use of national human resources, especially in our contemporary society, where corporation marketing strategies use advanced technology to influence consumer decisions. Consequently, corporations and policymakers need to be responsible in providing educational resources to help consumers make rational decisions. Subsequently corporations must become more socially responsible for funding educational materials and programs such as the BCAI. The BCAI can be used as a part of financial management counselling program that can be used in work place settings.

Currently, the BCAI is the only computer program designed for low literate consumers and women that is available in U.S. Cooperative Extension System. This program can be tested and used in other states that have Hispanic audiences. Cooperation between family resource management specialists in the States and other countries is needed to improve the quality of the program. Puerto Rico Extension belongs to the U.S. Cooperative Extension Service (CES). Therefore, can invest more of their resources to improve the effectiveness of the BCAI as a method of teaching adult learners.

### **Recommendations for Future Research**

The instruments need to be evaluated for validity and reliability with similar audiences. The budgeting knowledge test needs to be reviewed to improve the quality of marginal and poor items. Repeat this study in other places where Extension serves Puerto Rican audiences, using quasi experimental design. Duplicate this study in states that have Mexicans, Cubans

or other Hispanic people in order to determine how understandable the Spanish used in the BCAI is to people of different Hispanic origins.

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### **References**

- Overbaught, R. (1991). Research guidelines for computer based instruction development. Paper presented at the Eastern Educational Research Association meeting. Boston, Massachusset. Washington, DC.: Department of Education, Resource Information Center.
- Rodenstein, J. & Lambert, R. (1982). Microcomputer application in vocational education. Wisconsin University, Wisconsin Vocational Studies Center. (ERIC Document Reproduction Service No. 239052).

### **Endnotes**

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