THE EFFECTIVENESS OF *THE PARENTING CURRICULUM*: AN EVALUATION OF HIGH SCHOOL STUDENTS' QUESTIONNAIRE RESPONSES

Tyanna K. Sasso
Victor J. Andrew High School

Sally K. Williams
Iowa State University

The primary purpose of this study was to determine the effectiveness of The Parenting Curriculum *(1995), developed at Iowa State University by Williams, Brun, Trost, and Wasike in the Department of Family and Consumer Sciences Education and Studies, and implemented in the family and consumer sciences programs in Iowa high schools. The degree of agreement or disagreement among knowledge statements, attitudes, and future decisions regarding parenting, as reported by high school students who were enrolled in this parenting course were compared with those students who were not enrolled and had never been enrolled in a parenting course. The study involved 162 high school students from five randomly selected Iowa high schools, an experimental group of 107 and a control group of 55. Descriptive statistics were computed on the questionnaire responses, as well as the use of randomized complete five-block designs with two treatments. Although there were no statistically significant differences in this study between the experimental and the control groups, these results indicated students in the experimental group agreed more with the items related to the eight units from* The Parenting Curriculum*, the four categories of the Adult Adolescent Parenting Inventory, and future decisions regarding parenting. This study revealed that The Parenting Curriculum had a positive effect on the experimental groups' perceptions of the knowledge statements, attitudes, and future decisions regarding parenting.*

The Need for Parent Education

The following review of literature relates to the need for evaluating parent education because large numbers of adolescents are becoming parents. One in nine of all females aged 15 to 19 become pregnant each year. By the age of 18, 24 percent of adolescent females will become pregnant at least once. Nearly one in five teenagers who experience a pregnancy for the first time become pregnant again within a year (Deaver, 1994).

The above statistics show that understanding how children develop is very important for all parents, but especially for adolescent parents. The reason is some adolescent mothers demonstrate abusive behaviors, such as emotional, physical, and intellectual neglect of their children. For instance, adolescent mothers sometimes are less sensitive, less responsive, provide less verbal and physical stimulation, and demonstrate less acceptance of infant behavior (Raeff, 1994; Spieker & Bensley, 1994; Whiteside-Mansell, Pope, & Bradley 1996). Because parenting skills are learned at such an early age, it is imperative that students are taught childrearing techniques, so that vicious cycles will not continue. Because of their lack of caregiving experience, teenage mothers may not have a realistic understanding of infant development.

Compared to older mothers, researchers have found younger mothers to overestimate their children's developmental progressions (Brooks-Gunn & Chase-Lansdale, 1995). Because newborns are completely dependent upon others to maintain life and healthy development, it is important that parents understand their child's abilities, so that the parents can provide the care and stimulation the child needs (Mawhinney & Petersen, 1990).

Contributing to this lack of knowledge is the fact that many young people grow up in homes where there is little opportunity to observe parenting taking place and to learn parenting skills from their own parents. Their parents are frequently away from the home while at work. Therefore, it is essential that these young parents or future parents develop the knowledge they need about parenting from other sources.

Pehrson and Robinson (1990) believed the key aspect of being a successful parent was preparation.

> Effective parenting is no accident. It comes as a matter of hard work and skill in balancing all components of one's life in the process. One's willingness to make significant sacrifices in all areas of human endeavor- physical, psychological, social and spiritual- will determine in large part success as a parent. Throughout our lives, we undertake few more important responsibilities than those which accompany parenthood. However, in few areas of life are we so poorly prepared. No test must be passed or license acquired to become a parent. Yet, the responsibility carries with it requirements that are of monumental significance in our lives and the lives of our children. (p. 232)

Evaluation of Parenting Education

Trost and Williams (1998) conducted a study on the effectiveness of *The Parenting Curriculum* from the teachers' point of view. The curriculum was developed in the Department of Family and Consumer Sciences Education and Studies at Iowa State University. In this study, questionnaires were administered to 46 teachers in the Iowa school districts who were implementing *The Parenting Curriculum*. There were a total of 35 respondents. The questionnaire items related to the new curriculum. The results indicated positive responses from the teachers regarding the unit outcomes specified in the curriculum. Teachers perceived the outcomes to be highly significant for their students' future lives. The findings also indicated that there was a positive relationship between activities and teachers' understanding of the units, and the implementation of particular activity units.

Other studies have been done on evaluating parent education, and research shows parent programs to be an effective method for parent education (Middlemiss, 1996). For example, Pehrson and Robinson (1990) discovered that even though there were no statistically significant differences found to establish that one model or method of parent education was more effective than another, the significant factor was that parent education has consistently been reported to be a positive issue in influencing the attitudes of parents.

Also, Stobier and Houghton (1993) conducted a study on the relationship of adolescent mothers' parental expectations, child development knowledge, and parental beliefs regarding their young children's coping behavior. The researchers concluded the following: (1) positive parental expectations and more flexible child-rearing beliefs were correlated with mothers with greater levels of knowledge of child development; (2) adolescent mothers who reported more positive, more realistic, and more mature expectations about parenting children and the parent-child relationship had children who were more adaptive, and they had more effective sensori-motor and reactive behavior coping capacities. These findings indicated adolescent mothers' knowledge and beliefs were significantly related to predicting self-initiated child behaviors.

Purpose of the Study

The primary purpose of this study was to determine the effectiveness of *The Parenting Curriculum,* from the students' point of view, which was developed at Iowa State University by Williams, Brun, Trost, and Wasike (1995) in the Department of Family and Consumer Sciences Education and Studies, and implemented in family and consumer sciences programs in Iowa high schools. "*The Parenting Curriculum* combined parenting education, family living, and child development in an eight-unit package" (Trost, B. & Williams, S.K. ,1998). The titles of the eight units were 1) Parenting that Enriches Lives; 2) Caring: As a Person . . . As a Parent; 3) Providing a Positive Environment for Development; 4) Providing a Positive Environment for Development: One Year to Eighteen Years; 5) Language, Communication, and Socialization; 6) Families: Structures and Stressors; 7) Challenges of Teen Parenting; and 8) The Total Picture (Trost, B. & Williams, S.K. ,1998).

The specific objectives of this research study were to:

1) Compare the differences in agreement or disagreement with the knowledge statements, related to the content of the curriculum, between the experimental group (students who were enrolled in the parenting course) with the control group (those students who were not enrolled and had never been enrolled in any parenting course).
2) Compare differences in expectations of parenting practices and children's development between the experimental group and the control group.
3) Compare the differences in responses between the experimental group and control group concerning future decisions to be made regarding parenting.

Method

In this study two groups of students were compared. The study involved 162 high school students. The experimental group received treatment, which in this study was enrollment in the class where the parenting curriculum was being taught, while the control group had no exposure to the curriculum. The five selected rural Iowa high schools had an approximate average city population of 3,000. The age range was 15-19. The experimental group consisted of 107 respondents who were enrolled in parenting, child development, or a family living class in which *The Parenting Curriculum* was being taught as a nine-week or semester course. The five teachers randomly selected the control group by administering the test to classes where the students had no previous knowledge of parenting. The control group consisted of 55 respondents who were not enrolled and had never been enrolled in a parenting course.

A list of 46 registrants who participated in a two-day, graduate-credit workshop focused on *The Parenting Curriculum* was provided to assist in determining which teachers were implementing the curriculum in their classrooms and how it was being implemented. Names were then selected randomly from the list provided, and phone calls were made to those high school Family and Consumer Sciences teachers to determine which of the individuals taught *The Parenting Curriculum*. After selecting the first five teachers who agreed to administer the 73-item questionnaire to their parenting, child development, or family living classes, and to those students who had not been involved in any type of parenting class, the questionnaires were sent out. The five teachers agreed to assist in the study by administering questionnaires to 133 students in the parenting classes and to 96 students not in a parenting class for a total of 229.

Instrument Development

The first 41 items and the last 7 items out of the 73-item questionnaire were designed by the researcher to evaluate the effectiveness of *The Parenting Curriculum* from the students' point of view. The items that came from the curriculum were reviewed and constructed throughout the questionnaire development process by the researcher and one professor. The questions were constructed on the basis of the information provided in the different units and future decisions. The items directly related to each of eight units. For example, from Unit 1, Parenting that Enriches Lives, one of the items stated "The total cost to raise a child from birth to age eighteen is about $124,000". The students then responded using a Likert-type scale. The goal of Unit 1 was to assess students' knowledge about the roles and responsibilities of parents.

The additional 32 items came from the Adult-Adolescent Parenting Inventory (AAPI) to assess individual strengths and weaknesses involved in raising children (Bavolek, 1984). The AAPI measures inappropriate parental expectations of the child, lack of empathy towards children's needs, parental value of physical punishment, and parent-child role reversal (Bavolek). The AAPI has been administered to over 2,000 adults, and 6,500 adolescents. Experts from disciplines related to child rearing, parenting education, child abuse, family life, and test construction, analyzing the item pool, established content validity. There was 100% agreement among the experts indicating the items accurately measured what they were intended to measure. In this study the Likert-type scale was used to record the students' responses to items about their perceptions about parenting knowledge and attitudes, and future decisions regarding parenting. The response categories were A = strongly agree, B = agree, C = uncertain, D = disagree, E = strongly disagree. The testing procedures also used a randomized complete five-block design. The five blocks represent the five different schools that were selected. "The randomized block design is the simplest and most popular experimental design . . . In this design, the sample of experimental units are divided into groups or blocks and then treatments are randomly assigned to units in each block" (Freund & Wilson, 1997, p. 464). The statistical analyses used in this study was to compare population means to determine if there was a significant difference between experimental group and the control group by looking at each of the five schools students' responses from both groups. Each school was designated with a number 1 through 5. Then each of the eight units of the curriculum, each of the four categories from the Adult-Adolescent Parenting Inventory, the seven items related to future decisions, and one overall measurement were tested for both experimental group and the control group according to the school they attended.

Data Collection and Procedures

Prior to the data collection, one letter was addressed to each teacher and hand signed by the researchers. A second letter was not personally addressed, but signed and copied for each student. The two letters explained the purpose of the study, the approximate time it would take, the importance of students' participation in the study, directions needed to complete and return the questionnaires, and the confidentiality of their responses. The teachers were instructed to have the students place the questionnaires in the envelope provided to assure confidentiality. A code number was used to classify each questionnaire and answer sheet. A 13-item survey was also administered to the five Family and Consumer Sciences teachers to determine the degree to which each of the units of the curriculum were taught. The teachers' cover letter and questionnaire, the students' questionnaire booklets, answer sheets, and a self-addressed postage paid envelope were mailed to each teacher. The teacher response rate was 100%, and 162 out of

229 (71%) for the total student response. The final response rate was 107 out of 133 usable questionnaires from those studying from *The Parenting Curriculum*, and 57% or 55 out of 96 usable questionnaires from those students who had never taken a parenting course.

Data Analysis

Descriptive statistics including frequencies, percentages, means, and standard deviations were computed. The researcher also used a statistical analysis program to analyze the data. Statistical analysis including randomized complete five-block design was selected to compare the means of the treatment group and control group, and determine if there were significant differences in the students' responses from each of the two groups from the five different schools. All the questions were analyzed as positive statements. For instance, when a statement was negatively worded the computer reversed the data so that it was analyzed as a positive question.

Findings

Table 1 compares the differences in agreement or disagreement on the knowledge statements between the experimental group (students who were enrolled in the parenting course) and the control group (those students who were not enrolled and had never been enrolled in any parenting course). These results illustrated that the students in the experimental group obtained lower means in Units 1 –7. This table provides evidence that the experimental group had a tendency to agree more with the items or obtained more preferred means related to knowledge.

Table 1
Overall mean performance and standard deviation on the knowledge statements between the experimental and control group

Unit Outcomes	Experimental group		Control group	
	M	*SD*	*M*	*SD*
Unit 1	1.87	.74	1.94	.83
Unit 2	1.65	.78	1.75	.88
Unit 3	2.18	.97	2.39	1.04
Unit 4	2.04	.88	2.06	.96
Unit 5	2.19	.85	2.35	.94
Unit 6	2.35	.82	2.43	.78
Unit 7	1.92	.87	2.07	.99
Unit 8	2.52	.97	2.51	1.00

A = strongly agree B = agree C = uncertain D = disagree E = strongly disagree

The results of the Adult Adolescent Parenting Inventory data are illustrated in Table 2. This table shows a comparison in differences in attitudes toward parenting between students who were enrolled in the parenting course with those students who were not enrolled and had never been enrolled in any parenting course. The experimental group obtained lower means in all four categories of the Adult-Adolescent Parenting Inventory. The most significant difference was the data representing the Parent-Child Role Reversal. These findings suggested that the experimental group were more aware of parenting responsibilities than the control group.

Table 2
Overall mean performance and standard deviation on the attitude statements between the experimental and control group

(AAPI) Adult-Adolescent Parenting Inventory	Experimental group		Control group	
	M	*SD*	*M*	*SD*
Inappropriate parental expectations of the child	2.40	1.05	2.53	1.19
Lack of Empathy Towards Children's Needs	2.37	1.03	2.39	1.21
Parental Value on Physical Punishment	2.76	1.18	2.81	1.28
Parent-Child Role Reversal	2.54	1.03	2.69	1.11

A = strongly agree B = agree C = uncertain D = disagree E = strongly disagree

Table 3 compares the experimental and control group concerning future decisions to be made regarding parenting. The students were asked to answer in terms of how they thought they would behave in the future as parents. Students in the experimental group obtained a lower mean indicating a slight tendency to agree more with the items or obtained more preferred means related to future decisions compared to the control group. The difference was not statistically significant.

Table 3
Overall mean performance and standard deviation on the future decisions statements between the experimental and control group

	Experimental group		Control group	
	M	*SD*	*M*	*SD*
Future Decision regarding parenting	2.06	.91	2.04	1.16

A = strongly agree B = agree C = uncertain D = disagree E = strongly disagree

Teacher questionnaire

Five teachers participated in the study. Most of the teachers taught only selected activities from the curriculum, except for Unit 3, and three of the five respondents taught the entire unit with some revisions, see Table 4.

Table 4
Teacher Questionnaire: The extent to which each of units in the curriculum were taught

Unit Outcomes	Exactly as written	All but with some revisions	Most of the unit	Only selected activities	None	n =
Unit 1	1	1		3		5
Unit 2	1	1		3		5
Unit 3		3	1	1		5
Unit 4	1		1	3		5
Unit 5		2		2	1	5
Unit 6		1		3	1	5
Unit 7			1	1	2	4
Unit 8			1	2	1	4

The teachers were also asked whether the curriculum was taught in an eight-or nine-week course, semester course, full year, or other. One teacher taught from the curriculum in a nine-week course, and the other four used portions of the curriculum in a semester course. The respondents also were asked in which classes the Parenting Curriculum had been utilized: Child Development, Family Living, GRADS, Parenting, or other. Three of the teachers taught the

curriculum in their Child Development classes, three teachers utilized the curriculum in their Parenting classes. One teacher used the curriculum in the Family Living class.

Additional questions were also asked of the teachers. "Does the school you teach at require parent education to be offered to the students?" Five teachers responded "no" to that question. The final question asked, "Is the school requiring parenting education for graduation in the future?" one teacher did not respond and the other four marked "no".

Findings by Schools

Fourteen tests were conducted using a randomized complete five-block design. Each block represented one of the schools in the study and was designated with a number 1 through 5. The statistical analysis compared population means by looking at the students' responses from both groups in each of the five schools to determine if there was a significant difference between the experimental group and the control group. Tests were conducted for both groups according to the school they attended for each of the eight units of the curriculum, the four categories from the Adult-Adolescent Parenting Inventory, the seven items related to future decisions, and one overall measurement. Although the overall results showed no statistically significant differences for Units 1- 8, $p = .20$, Table 5 provides evidence that the experimental group had a tendency to agree more with the items or obtain more preferred means when the unit was taught in it's entirety.

For Unit 1, which related to parents' responsibilities, children's rights, and reasons people choose to become parents, the experimental group at schools 1, 3, 5 agreed more with the items than the control group. For Unit 2, Caring as a person . . . as a parent, the experimental group from three out of the five schools (1, 2, 3) obtained more preferred means relating to parents responsibilities as a caregiver, than the control group. Unit 3 results exhibited the students in the experimental group possessed lower means than the control group for four out of the five schools (1, 2, 3, 4) indicating agreement with more of the items relating to development: conception to one year, than students in the control group. The results for Unit 4 illustrated that the students in the experimental group possessed lower means than the control group for four of the five schools (1, 2, 3, 5). These students agreed more with items related to growth and development of children ages 1-6, 6-12, and 12-18. For Unit 5, students in the experimental group obtained lower means than the control group at four out of the five schools (1, 3, 4, 5). The findings demonstrated that the experimental group agreed more with items related to language, communication, and socialization. Unit 6, family stress, exhibited that the experimental group possessed a lower mean than the control group only at school 5. Unit 7 illustrated that the students in the experimental group possessed more preferred means than the control group at schools 2, 3, 4, 5 regarding challenges of teen parenting. The results for Unit 8, you in a parental role, revealed that the students in the experimental group at schools 1, 2, 4, 5 exhibited lower means than the control group.

There were also no statistically significant differences in the means between the experimental group and the control group for the Adult-Adolescent Parenting Inventory: Inappropriate Expectations, Lack of Empathy, Physical Punishment, and Parent-Child Role Reversal, the comparison of means were broken down by each individual school and are represented in Table 6. However, the following data illustrated that the students in the experimental group from schools 1, 4, 5 exhibited lower means for Inappropriate Expectations than their respective control group. This indicated that these students agreed more with the items related to children's developmental capabilities than the control group. For Lack of Empathy,

the students in the experimental group from three out of the five schools (2, 3, 4), agreed more with the items related to needs of children than the control group. For the questions that related to physical punishment, four out of the five schools (1, 2, 3, 4) agreed more with the items related to what physical punishment entails and the importance of utilizing alternative non-abusive discipline techniques compared to the control group. The students in the experimental

Table 5
Relationship between the experimental group and control group unit outcomes according to school and the extent to which each of the units in the curriculum were taught

School	Exactly as written	All but with some revisions	Most of the unit	Only selected activities	None	A = School # & Means	SD	B = School # & Mean	SD
Unit 1	School #1	School #2		School #3, #4, #5		#1 = 1.93 #2 = 1.87 #3 = 1.83 #4 = 1.90 #5 = 1.83	#1 = .42 #2 = .38 #3 = .44 #4 = .50 #5 = .54	#1 = 2.00 #2 = 1.83 #3 = 2.13 #4 = 1.32 #5 = 2.10	#1 = .35 #2 = .35 #3 = .35 #4 = .35 #5 = .40
Unit 2	School #1	School #2		School #3, #4, #5		#1 = 1.70 #2 = 1.66 #3 = 1.40 #4 = 1.62 #5 = 1.76	#1 = .68 #2 = .54 #3 = .40 #4 = .43 #5 = .79	#1 = 2.16 #2 = 1.77 #3 = 1.69 #4 = 1.33 #5 = 1.76	#1 = .50 #2 = .82 #3 = .38 #4 = .33 #5 = .53
Unit 3		School #1, #2, #3	School #5	School #4		#1 = 2.33 #2 = 2.14 #3 = 2.00 #4 = 2.06 #5 = 2.35	#1 = .38 #2 = .22 #3 = .40 #4 = .33 #5 = .32	#1 = 2.69 #2 = 2.41 #3 = 2.39 #4 = 2.11 #5 = 2.35	#1 = .51 #2 = .41 #3 = .46 #4 = .51 #5 = .30
Unit 4	School #1		School #2	School #3, #4, #5		#1 = 2.17 #2 = 2.04 #3 = 1.92 #4 = 2.12 #5 = 1.98	#1 = .38 #2 = .31 #3 = .43 #4 = .46 #5 = .47	#1 = 2.30 #2 = 2.13 #3 = 2.00 #4 = 2.00 #5 = 2.01	#1 = .39 #2 = .64 #3 = .42 #4 = .44 #5 = .38
Unit 5		School #1, #3		School #4, #5	School #2	#1 = 2.32 #2 = 2.22 #3 = 2.02 #4 = 2.23 #5 = 2.16	#1 = .49 #2 = .22 #3 = .51 #4 = .36 #5 = .44	#1 = 2.70 #2 = 2.18 #3 = 2.38 #4 = 2.30 #5 = 2.27	#1 = .30 #2 = .40 #3 = .37 #4 = .52 #5 = .50
Unit 6		School #1		School #3, #4, #5	School #2	#1 = 2.31 #2 = 2.95 #3 = 2.56 #4 = 2.10 #5 = 2.36	#1 = .53 #2 = .72 #3 = .65 #4 = .62 #5 = .54	#1 = 2.25 #2 = 2.38 #3 = 2.53 #4 = 2.07 #5 = 2.58	#1 = .53 #2 = .60 #3 = .54 #4 = .45 #5 = .44
Unit 7			School #5	School #4	School #2, #3	#1 = 2.12 #2 = 1.50 #3 = 1.80 #4 = 2.10 #5 = 1.83	#1 = .99 #2 = .97 #3 = .77 #4 = 1.00 #5 = .65	#1 = 2.00 #2 = 1.88 #3 = 1.92 #4 = 2.28 #5 = 2.23	#1 = 1.06 #2 = 1.05 #3 = 1.00 #4 = 1.38 #5 = .83
Unit 8	School #1			School #4, #5	School #2	#1 = 2.31 #2 = 2.15 #3 = 2.80 #4 = 2.52 #5 = 2.54	#1 = .65 #2 = .75 #3 = .75 #4 = .63 #5 = .73	#1 = 2.50 #2 = 2.50 #3 = 2.75 #4 = 2.28 #5 = 2.52	#1 = .53 #2 = 1.19 #3 = .51 #4 = .81 #5 = .57

A = experimental group B= control group
A = strongly agree B = agree C = uncertain D = disagree E = strongly disagree

group at four out of the five schools (1, 2, 3, 4) agreed more with the items related to the needs of children and self, and that children should be allowed to be children and not caregivers.

Table 6
Adult-Adolescent Parenting Inventory: Relationship between the experimental group and control group according to school and AAPI topics

	Experimental Group School # & *Ms*	Control Group School # & *M*	Experimental Group= School # & *SD*	Control Group = School # & *SD*
Inappropriate Expectations	#1 = 2.58	#1 = 2.59	#1 = .53	#1 = .54
	#2 = 2.88	#2 = 2.58	#2 = .33	#2 = .30
	#3 = 2.22	#3 = 2.20	#3 = .48	#3 = .49
	#4 = 2.36	#4 = 2.83	#4 = .58	#4 = .88
	#5 = 2.32	#5 = 2.41	#5 = .55	#5 = .70
Lack of Empathy	#1 = 2.55	#1 = 2.45	#1 = 1.15	#1 = .58
	#2 = 2.38	#2 = 2.93	#2 = .71	#2 = .70
	#3 = 1.93	#3 = 2.29	#3 = .42	#3 = .58
	#4 = 2.47	#4 = 2.64	#4 = .56	#4 = .78
	#5 = 2.40	#5 = 2.27	#5 = .58	#5 = .58
Physical Punishment	#1 = 2.94	#1 = 3.18	#1 = .95	#1 = .89
	#2 = 2.50	#2 = 2.90	#2 = .66	#2 = .48
	#3 = 2.69	#3 = 2.88	#3 = .55	#3 = .72
	#4 = 2.59	#4 = 3.12	#4 = .60	#4 = .36
	#5 = 3.00	#5 = 2.56	#5 = .57	#5 = .68
Role Reversal	#1 = 2.47	#1 = 2.97	#1 = .53	#1 = .83
	#2 = 2.48	#2 = 3.01	#2 = .64	#2 = .38
	#3 = 2.43	#3 = 2.61	#3 = .50	#3 = .47
	#4 = 2.53	#4 = 2.73	#4 = .69	#4 = .86
	#5 = 2.63	#5 = 2.61	#5 = .61	#5 = .64

A = strongly agree B = agree C = uncertain D = disagree E = strongly disagree

For items related to Future Decisions, the students in the experimental group acquired lower means than the control group for three out of the five schools, as represented in Table 7. These findings illustrated that although there were no significant differences, students in the experimental group at schools 1, 3, and 4 feel that they will be ready to take care of not only their needs, but also the needs of their child.

Table 7
Relationships between control group and treatment group on the Future Decisions outcomes

	Experimental Group School & *M*	Control Group Schools & *M*	Experimental Group = *SD*	Control Group = *SD*
Future Decisions	#1 = 1.95	#1 = 2.32	#1 = .65	#1 = .75
	#2 = 2.14	#2 = 2.00	#2 = .60	#2 = .57
	#3 = 1.76	#3 = 2.26	#3 = .45	#3 = .51
	#4 = 2.03	#4 = 2.06	#4 = .41	#4 = .70
	#5 = 2.28	#5 = 2.04	#5 = .38	#5 = .63

A = strongly agree B = agree C = uncertain D = disagree E = strongly disagree

The difference in means between the experimental group and the control group, and the *p-value* for the overall study are illustrated in Table 8. Students in the experimental group obtained lower means than the control group for four out of the five schools (1, 2, 3, 4). Although there were no statistically significant differences for the overall data, these findings indicated that *The Parenting Curriculum* had a positive effect on the experimental groups' perceptions of the knowledge statements, attitudes, and future decisions regarding parenting.

Table 8
Relationships between control group and treatment group on overall outcomes.

School	Experimental group		Control group		p value
	M	*SD*	*M*	*SD*	
1	2.38	.37	2.57	.08	
2	2.30	.20	2.50	.35	
3	2.15	.24	2.37	.36	
4	2.26	.29	2.46	.35	
5	2.35	.24	2.28	.23	
					.20

A = strongly agree B = agree C = uncertain D = disagree E = strongly disagree

Summary and Conclusions

Although there were no statistically significant differences found between the control and experimental groups in this study, the results indicated that overall the students in the experimental group who had been exposed to *The Parenting Curriculum*, responded more positively to the eight units from *The Parenting Curriculum*, the four categories from the AAPI, and future decisions regarding parenting than those students who had not been exposed to the curriculum. This study provides evidence that students in the experimental group had a tendency to agree more with the items or obtain more preferred means related to knowledge and realistic expectations of what is involved in parenting compared to the control group, especially when the curriculum was taught in its entirety.

The Parenting Curriculum had some effect on the students taking the courses in which the teachers used it. A strong recommendation would be to ask teachers to use the curriculum in its entirety as written and to repeat the research comparing students in this situation with those never having been involved in a parenting class. Some of the impact of the curriculum is lost when only parts are taught. During curricula development much reflection is given to developing a total document in which the parts related to and build upon each other. When activities are used out of the context of the entire curriculum, the meaning and continuity may be lost and thus the effectiveness of the learning is reduced.

References

Bavolek, S. J. (1984). Adult-adolescent parenting inventory (AAPI). Park City, UT: Family Development Resources, Inc.

Brooks-Gunn, J. & Chase-Lansdale, P. (1995). Adolescent parenthood. *Handbook of Parenting, 3,* 113-149.

Deaver, A. (1994). The center for population options: fact sheet. *Adolescent Sexual Behavior, Pregnancy and Parenthood*. Washington DC: The Center for Population Options.

Freund, R. & Wilson, W. (1997). *Statistical methods.* San Diego CA: Academic Press

Mawhinney, T. & Petersen, C. (1990). *Child development parenting and teaching.* Cincinnati, OH: South Western.

Middlemiss, W. (1996). Parental educational program effectiveness and retention. *Psychological Reports, 78,* 1307-1310.

Pehrson, K. & Robinson C. (1990). Parent education: Does it make a difference. *Child Study Journal, 2(4),* 221-236.

Raeff, C. (1994). Viewing adolescent mothers on their own terms: Linking self conceptualization and adolescent motherhood. *Developmental Review, 14*, 215-244.

Spieker, S. & Bensley, L. (1994). Roles of living arrangements and grandmother social support in adolescent mothering and infant attachment. *Developmental Psychology, 30*(1), 102-111.

Stobier, K. & Houghton, T. (1993). The relationship of adolescents mothers' expectations, knowledge, and beliefs to their young children's coping behavior. *Infant Mental Health Journal, 14*(1), 61-79.

Trost, B. & Williams, S.K. (1998). Teacher's evaluation of an integrated parenting and language arts curriculum. *Journal of Family and Consumer Sciences Education, 16(1),* 55-70.

Whiteside-Mansell, L., Pope S., & Bradley, R.(1996). Pattern of parenting behavior in young mothers. *Family Relations, 45,* 273-281.

Williams, S., Brun, J., Trost, B., & Wasike, G.(1995). *The Parenting Curriculum, A Family and Consumer Sciences and Language Arts Partnership*. Ames, IA: Department of Family and Consumer Sciences Education and Studies, Iowa State University.

About the Authors

Tyanna K. Sasso is a graduate of Iowa State University and is working as a Family and Consumer Sciences Teacher at Victor J. Andrew High School. Sally K. Williams, Professor Emeritus, Family and Consumer Sciences Education, Iowa State University.

Journal of Family and Consumer Sciences Education, Vol. 20, No. 2, Fall/Winter 2002

NATIONAL JUMP$TART COALITION FOR FINANCIAL LITERACY BENCHMARKS: CURRICULUM INCLUSION AND PEDAGOGICAL PRACTICE IN WISCONSIN

Diane Klemme
University of Wisconsin – Stout

Current middle school and high school family and consumer sciences teachers responded to a survey that asked the amount of time devoted to various financial topics as identified by the National Jump$tart Coalition. Results suggested that courses included in high school programs provide instruction time on most topics identified by the Jump$tart Coalition. Classes at the junior high level provided less instruction on financial topics.

The Goals 2000 Educate America Act of 1994 motivated many organizations to write national content standards to guide America's schools. A practical reason to write standards was to increase the likelihood that schools would voluntarily review and adopt these standards. National standards for elementary and secondary schools have been identified in 10 disciplines within the K-12 curriculum (Buckles & Watts, 1998).

The National Standards for Family and Consumer Sciences Education published in 1998 included extensive consumer economic standards in sections 2.0 and 3.0. These standards identified specific competencies, academic proficiencies, and process questions that focused on both services and practices.

The National Jump$tart Coalition for Personal Financial Literacy also identified consumer education/financial management topics for youth. This coalition consists of various organizations including the American Association of Family and Consumer Sciences, the National Council of Economic Education, and the Foundation for Teaching Economics. These standards outline a general rationale and identify benchmarks and achievement levels for grades 4, 8, and 12.

Detailed economic standards were published in 1997 by a coalition of representatives from the National Council on Economic Education, the National Association of Economics Educators, the Foundation for Teaching Economics, and the American Economic Association's Committee on Economic Education. These standards also contain a general rationale and identify benchmarks and achievement levels for grades 4, 8 and 12.

Ideally, part of the national reform movement was to coordinate content material across disciplines (Siegfried & Meszaros, 1998); not unlike the 1968 amendment to the 1963 Vocational Act that mandated all vocational approved consumer and homemaking programs integrate consumer education into all coursework. However, coordination on the development of the standards is not evident (Buckles & Watts, 1998). Voluntary standards may not be adopted unless they can be integrated into a current school curriculum, which is already quite crowded. Past history suggest that groups do not consider the competing demands for time.

The Consortium for Policy Research in Education (CPRE, 1993) stated:

> Coherence across subject-matter standards (not just within) is necessary to ensure that a collective the standards are "doable" during a school day and a year. Most

> of the National Science Foundation's 1950s and 1960 science curriculums did not take into consideration the competing demands and interest which fight for time and resource within a school. Additional time for science meant that time for other subjects had to be reduced, and science did not win out in the end. (p. 4)

Currently, Family and Consumer Sciences educators who teach consumer education/financial management topics have several overlapping standards to consider when developing curriculum. In addition, these educators and students live in an economic environment that is more diverse and complex than previous generations.

Although several national standards have been developed and published, recent surveys (Jump$tart 1997, 2001; Madell, 1998) suggest that students are leaving our secondary schools without adequate basic skills in personal finance. Without the proper financial education and skills children and young adults can be very vulnerable to poor financial planning and a wide range of deceptive practices. Martin and Oliva (2001) suggest that young adults' inability to understand financial issues leads to long-range difficulties in financial security and responsibility.

Educators and parents need to provide opportunities for students to develop knowledge and skills about personal finance. A recent review of family and consumer sciences curriculum (Pauley, 1996) suggests that contemporary family and consumer sciences classes may not be addressing current needs. However, some family and consumer sciences programs do include financial topics, and these programs could benefit by publicizing to parents and administration the fact that these programs are helping students develop basic financial education and skills.

This study was conducted to assess the current status of consumer economics classes and topics taught in Wisconsin's family and consumer sciences secondary programs. The results of the study will be used in a required consumer economics college course for family and consumer sciences majors. In addition, family and consumer sciences instructors and professionals could use the results to critique their curriculum or market their consumer programs to administration and parents.

Survey Development and Pilot Test

A survey was developed that listed consumer education/financial management topics and teaching processes for high school programs and middle school programs. The consumer education/financial management topics were generated after a review of Jump$tart Coalition benchmarks for the 8^{th} grade and 12^{th} grade level.

The teaching processes list was taken from the *Wisconsin's Model for Academic Standards for Family and Consumer Education* (1997). Identical teaching processes lists were used in the high school and middle school sections of the survey. Participants were asked to indicate the time of instruction on each topic or process used based on the following choices: a good deal, some, slightly, or not at all.

The survey also included open-ended questions. These questions asked for any additional information; if the courses were required; suggestions for in-services or conference topics; and the school name, address, and other relevant information**.** A pilot test utilizing nine family and consumer sciences teachers was conducted. Based on feedback from the pilot test participants, three items (questions 27, 28, 29) were added to the high school section. The source of the teaching processes was also identified.

Sample

A purposive sampling of Wisconsin's approximately 880 family and consumer sciences teachers was used for the study. Mailing labels ordered from the State Department of Public Instruction were counted, and every third label was included to reach a total of 175 high schools/community schools (51% high schools/community schools) and 125 middle schools/junior highs (51% of middle schools/junior highs).

Only one survey was sent to a school. The recipient of the survey was asked to consult with other members of the department, if applicable, prior to completing the survey.

Data Collection and Analysis

Data were collected in the spring of 2001. The surveys were mailed to the instructor. The mailing included an introductory letter, the survey, and a prepaid postage envelope in which to return the survey.

Ninety-nine surveys were mailed back representing a return rate of 33%. Twenty-five surveys were from only middle schools, 28 surveys from only high schools, and 46 surveys were a combination of middle/high schools. The data analysis represented 74 high schools/community schools and 71 middle schools/junior highs. Twenty-six high schools had a two or more person department; only nine middle schools reported having two or more instructors.

To generate mean scores for each of the consumer education/financial management topics and teaching processes numbers were assigned to each choice as follows "A good deal" = 4, "Some" = 3, "Slightly"= 2, and "Not at all"= 1. The software program SPSS was used to record the scores for each topic (Table 1). All open-ended responses were compiled and reviewed for any continuing themes.

Findings

The mean score of 2.8 for all high school consumer education/financial management topics suggested that the high school classes address topics more in-depth than middle school classes for which the mean score was 2.3. The top three high school survey topics included "factors influencing decision-making process" ($M = 3.50$); "signs of credit problems" ($M = 3.36$); and "individual decision about money management" ($M = 3.36$). The top three selections from the middle school survey included "needs vs. wants" ($M = 2.99$); "using product information to make choices" ($M = 2.91$); and "ways to earn money" ($M = 2.81$). However, the topics- investment options, interest rates, inflation rates, and government influence on interest and inflation rates–received lower rating on both surveys suggesting that less time was spent on these topics at both levels.

Table 1

Mean score for high school and middle school consumer education/financial management topics

HIGH SCHOOL PROGRAM	
Consumer Education/ Financial Management Topics	M
1. Individual decision about money management	3.36
2. Family decision about money management	2.96
3. Factors influencing decision-making process	3.50
4. Types of resources (human, financial, etc.)	3.16
5. Career options and earning potentials	3.31

6. Developing and using a budget	3.2
7. Fixed and variable expenses	3.15
8. Disposable income	3.01
9. Taxes	2.50
10. Different types of insurance (car, home, etc.)	2.91
11. Transportation costs	2.89
12. Housing options and costs	3.14
13. Interest rates	2.62
14. Inflation rates	2.16
15. Governmental influence interest & inflation rates	1.84
16. Pros and cons of high/low interest & inflation rates	1.96
17. What is a credit report	2.69
18. Factors influencing a credit rating	2.91
19. Signs of credit problems	3.39
20. Types of financial services	2.81
21. Basic financial operations (balance checkbook, figure interest costs, etc.)	3.00
22. Use product information to make choices	3.27
23. Consumer protection laws	2.85
24. Sources of consumer information	2.99
25. Cost of using credit-annual percentage rate	2.70
26. Using technology resources and information	3.09
27. Investment options	2.36
28. Employment considerations (deductions, etc.)	3.31
29. Entrepreneurship	2.45
High School Grand Mean	2.80
MIDDLE SCHOOL PROGRAM	
Consumer Education/ Financial Management Topics	
40. Needs versus wants	2.99
41. Entrepreneurship	2.36
42. Career options and income potential	2.71
43. Types of financial services	1.93
44. Use of goals in financial planning	2.39
45. Budgeting for expenses or wants	2.49
46. Pros and cons of saving versus spending	2.34
47. Factors that influence personal credit worthiness	1.93
48. Simple interest	1.76
49. Ways to earn money	2.81
50. Using product information to make choices	2.91
51. Consumer rights and responsibilities	2.50
52. Consumer Protection Laws	2.13
53. Investment options	1.57
54. Inflation	1.59
55. Using technology resources and information	2.64
Middle School Grand Mean	2.30

A variety of teaching processes are being used in the high schools ($M = 3.25$) and middle schools ($M = 2.97$). At each level service learning and management processes were both ranked toward the bottom.

A paired *t*-test (Table 2) was used to compare the means of the teaching processes at the high school level and the middle school level. The paired *t*-test found that a statistically significant difference between middle school and high school instructors in the time that was spent on service learning activities with high school instructors spend more time on service learning activities. However, the middle school teachers do spend significant more time than the at the high school teachers when it came to using leadership processes in their instruction.

Many middle school programs include a basic food and nutrition/food preparation unit, a sewing unit, and personal skills unit. The personal skills unit typically includes discussion of the role of leadership and skills needed. After instruction in these areas, instructors may have little time left for additional topics such as service learning**.**

Table 2
Teaching Processes Paired t-test

	High School M	Middle School M	t-test	p
30. Problem solving	3.50	3.26	3.536	.001
31. Informed decision making	3.50	3.03	4.102	.000
32. Practical reasoning	3.35	2.93	3.463	.001
33. Critical thinking	3.41	3.06	3.715	.001
34. Creative thinking	3.35	3.01	3.739	.001
35. Management processes	3.15	2.49	5.205	.000
36. Communication processes	3.36	3.11	3.842	.000
37. Leadership processes	2.92	3.29	2.402	.021
38. Service learning activities	2.73	2.55	1.729	.091
Average Mean	3.25	2.97	2.985	.017

Table 3
Additional consumer education/financial management topics taught or process used (high school level).

- many of these topics are taught in business and math classes
- stock market game on internet
- food budgeting, clothing budgeting/comparisons, child care cost comparisons
- I use simulations
- spread sheets, clothing purchases and care, food purchases and care
- basically integrate consumer discussion in all foods, sewing, child development, and interior design classes
- Most of the above topics and processes are taught in other departments
- College financial aid, child care options, cost and selection, food cost comparisons, home furnishing and equipment comparison
- furniture buying, history of consumer movement, advertising, food: menu, list, shopping

Table 4
Additional consumer education/financial management topics or process used (middle school level).

- When we teach financial management topics it is integrated with career exploration and entrepreneurship. It does not stand alone
- Consumer economics is offered at the high school level
- Consumer education - financial management is not taught as a separate course in our department (taught by social studies in high school)
- Living on you open simulation (not the disk one)
- We have been without a middle school teacher for 1 year. One has been hired for fall - unable to complete section at this time.
- I only have 7th graders for 6 weeks
- Through entrepreneurship this information is taught
- Technological changes and influence on society/family, change in laws, family structure
- Budgeting Project - Find a place to live--either mortgage or rent they can afford based on income given, grocery shopping & planning, a week's worth of meals, buying a car with payments, insurance and gas
- Cooperation

One middle school teacher commented (Table 4) that instructional time was usually limited, thus there may not be time allotted for service learning activities. This is not unlike the concern expressed by Conrad (1998) that standards should be taught as a collective across the entire school curriculum so they are "doable" within a year. Instructors may need to look at reprioritizing or restructuring curriculum within the school system.

Only 46 schools, the majority of which were high schools, offered a specific consumer education class. Many respondents stated that several of the consumer topics were incorporated into content-specific materials (i.e., food budgeting/shopping, clothing purchases, child care cost, home furnishings and equipment). Career exploration and entrepreneurship activities are taught by other departments (business, math, and social studies). Although this survey did not specifically address the issue of vocational and general programs, the comments suggest that instructors have integrated consumer topics into many courses as mandated by the 1968 amendment to the 1963 Vocational Act.

Implications

Survey results revealed that high school programs are likely to provide more in-depth discussion on a variety of consumer education/financial management topics than middle school programs. Undoubtedly, middle school teachers are constrained by the limited instructional time. In the "additional comments" section of the survey, several respondents specifically requested middle school curriculum and activities suggesting a willingness to incorporate consumer education/financial management topics in the middle school curriculum in Wisconsin. A revision of middle school curriculum may be desirable to ensure the curriculum is addressing the needs of students for financial/consumer education.

Some respondents also suggested a state requirement to increase consumer education at the secondary level. A state requirement could have the effect of boosting enrollment in family and consumer sciences programs, assuming state and local administrators are fully aware that

family and consumer sciences teachers are prepared to teach consumer education/financial management topics.

Several respondents identified a lack of family and consumer sciences instructors to fill positions. Unfortunately, a predicted shortage of family and consumer teachers (Miller & Meszaros, 1996; Stout, Couch,& Fowler, 1998) exists throughout most of the United States. Any state requirement will be difficult to meet when teachers are not available to fill teaching positions. Recruiting individuals to enroll in the family and consumer sciences education must be a high priority for the profession.

Other respondents suggested that current school budget issues are limiting their programs. Obviously, school budget issues are complex problems involving politics, people, and priorities. Family and consumer sciences teachers must be willing to market their programs and educate local administrators and school boards that they are prepared to teach a variety of topics including consumer education.

Teacher preparation programs must continue to provide a broad base of consumer information including investments options, interest rates, and inflation rates in addition to teaching processes. The results of the survey suggested the following recommendations for undergraduate courses:

- Continue providing content on a wide range of consumer topics including interest rates, inflation rates, and the influence of government on economic indicators.
- Highlight investment opportunities--include advantages and disadvantages.
- List appropriate consumer economic/financial management topics for middle school and high school curriculum.
- Identify teaching resource available to middle school and high school instructor--including internet resources and web sites.
- Discuss teaching processes that could be used to teach the curriculum--including management processes/theories, entrepreneurship, and service learning activities.
- Encourage students to market their ability to teach consumer economic/financial management classes.

Suggestions for Future Research

This study used the National Jump$tart Coalition for Financial Literacy benchmarks to assess topics taught in family and consumer sciences classes. A future study could use the National Standards for Family and Consumer Sciences Education to assess topics. Additionally, a comparison of the various national standards that identifies overlapping standards could help educators develop a set of standards that are “doable” during a school year.

References

Buckles, S., & Watts, M. (1998). National standards in economics, history, social studies, civics and geography: Complementarities, competition or peaceful coexistence? *Journal of Economic Education,* 157-166.

Conrad, C. A. (1998). National standards or Economic Imperialism? *Journal of Economic Education*, 167- 169.

Consortium for Policy Research in Education (1993). Developing content standards: Creation process for changer CPRE policy Brief. Washington, D.C. [online August 08, 2002]. Available from http://www.ed.gov/pubs/CPRE/rb10stan.html

Madell, L. (1998). *Our vulnerable youth: The financial literacy of American 12th graders*. Washington, DC: Jump$tart Coalition.

Martin, A., & Oliva, J. C. (2001) Teaching children about money: Applications of social learning and cognitive learning developmental theories. *Journal of Family and Consumer Sciences, 93,* 26-29.

Miller, S. H., & Meszaros, P. S. (1996). Study of national incoming supply and demand for family and consumer sciences teachers and extension educators. *Journal of Family and Sciences, 88* (1), 51-54.

National Standards for Family and Consumer Sciences Education. (1998). National Association of State Administrators for Family and Consumer Sciences. Decatur: GA: Vocational-Technical Education Consortium of States.

Pauley, E. D. (1996). Family and consumer sciences curricula: What do students, parents, faculty, and community want? *Journal of Family and Consumer Sciences, 88(1)*, 11-14.

Parents, Youth & Money Survey. (1997). Washington, DC: Jump$tart Coalition for Personal Financial Literacy Jump$start.

Parents, Youth & Money Survey. (2001). Washington, DC: Jump$tart Coalition for Personal Financial Literacy Jump$tart.

Siegfried, J., and Meszaros, B. (1997). National voluntary content standard for pre-college economics education. *American Economics Review, 87,* 247-53.

Stout, B., Couch, S., & Fowler, D. (1998). The demand for family and consumer sciences educators: Call to action. *Journal of Family and Consumer Sciences, 90*(2), 7-11.

Wisconsin's Model Academic Standards for Family and Consumer Education*. (1997).* Milwaukee, WI; Wisconsin Department of Public Instruction.

About the Author

Diane Klemme is an Associate Professor at the University of Wisconsin – Stout**,** Menomonie, Wisconsin.

COMPARISON OF INTERNET AND TRADITIONAL CLASSROOM INSTRUCTION IN A CONSUMER ECONOMICS COURSE

Debbie Johnson
Southeastern Louisiana University

Michael Burnett
Louisiana State University

Peggy Rolling
Southeastern Louisiana University

The purpose of this study was to compare students enrolled in an introductory family and consumer sciences undergraduate consumer economics course on selected academic, perceptual, and demographic characteristics by whether they received instruction in a traditional classroom setting or through an electronic classroom format (specifically the Internet). Students enrolled in the online section of the course scored higher on the achievement posttest after controlling for pretest differences in the groups. In addition, students in the online section self-reported that they spent more time working on the course assignments. Researchers recommended that future research incorporate more extensive demographic characteristics to determine if they interact with the type of instruction received. In addition, experimental methods were recommended for further studies to more effectively remove the effects of extraneous variables.

In the past decade there has been a dramatic increase in the number of distance education courses offered at the post-secondary level. Technology-supported distance education is "the delivery of instruction over a distance to individuals located in one or more venues" (U.S. Department of Education, 1999). Distance learning in the American higher education system has become a significant delivery mechanism due to rapid advances in technology and increasing affordability (Bower, 2000, p. 4)

According to the National Center for Education Statistics, in 1997-1998 ne third of 2-year and 4-year post-secondary education institutions offered some type of distance education courses with approximately 1,363,670 enrollments in college-level, credit-granting distance education courses (U.S. Department of Education, 1999, p. 17). Of these institutions that offered distance education courses, Internet technologies were used by various types of institutions with numbers ranging from 16% to 22% for synchronous Internet instruction and from 57% to 61% for asynchronous Internet instruction.

In a study conducted by International Data Corporation, it was predicted that the number of college students enrolled in distance-learning courses will reach 2.2 million in 2002 (as cited in Aase, 2000). The National Center for Education Statistics (U.S. Department of Education, 1999, p. 39) reports that 82% of post-secondary institutions plan to start using or increase their use of Internet instruction. Online instruction offers students and instructors flexibility in regard to time, place, and programs offered (Brown, 2000; Cooper, 2001; Gray & Palmer, 2001; Robertson & Stanforth, 1999; Ryan, Carlton & Ali, 1999).

As online programs proliferate, questions of accuracy, quality, and comparability of

online instruction with traditional methods arise (Borland, Lockhart, & Howard, 2000; Busacco, 2001; Schulman & Sims, 1999). Researchers disagree on which is better, distance learning or traditional instruction. Russell (as cited in Caudron, 2001) examined 365 studies of distance-education methods and found that most studies showed "no significant difference" in quality of education received through distance learning versus the classroom. Not all researchers agree with Russell. In the report commissioned by the American Federation of Teachers and the National Education Association (Institute for Higher Ed Policy, 1999), research on distance education is criticized for being questionable and, therefore, inconclusive.

Family and Consumer Sciences as a profession has recognized the need to study the effectiveness of technology in the educational process. At a distance education, capacity-building LearnShop held by the Great Plains Interactive Distance Education Alliance, it was recognized that faculty members are “interested in hearing the experiences of students who have participated in distance education” (Draper, Laughlin, Stammen, & Gregory, 1999, p. 107). Ehrmann (1999) recommends that Family and Consumer Sciences study “how, how much and how well technologies are being used” (p. 39).

With the increase in internet courses comes the need to assess the effectiveness of as well as the student satisfaction with these courses. The primary purpose of this study was to compare students enrolled in a family and consumer sciences undergraduate course on selected academic, perceptual, and demographic characteristics by whether they received instruction in a traditional setting or through an electronic classroom format (specifically the Internet). Specific objectives established to guide the researchers included:

1. To describe and compare students enrolled in an introductory family and consumer sciences undergraduate consumer economics course on their achievement in the course as measured by scores on an instructor developed end-of-course examination by whether they received instruction in a traditional classroom setting or through an electronic classroom format (specifically the Internet).
2. To describe and compare students enrolled in an introductory family and consumer sciences consumer economics undergraduate course on their perceptions of the course and the effectiveness of the instructional delivery by whether they received instruction in a traditional classroom setting or through an electronic classroom format (specifically the Internet).
3. To describe and compare students enrolled in an introductory family and consumer sciences consumer economics undergraduate course on the following selected characteristics by whether they received instruction in a traditional classroom setting or through an electronic classroom format (specifically the Internet):
    a. the self-reported number of hours that they were employed while enrolled in the course and;
    b. the self-reported time spent weekly in preparation of course activities and assignments.

Method

The target population for this study was defined as students currently enrolled in a family and consumer sciences curriculum at a public-funded university in the southern portion of the United States. The sample consisted of students currently enrolled in a section of one family and consumer sciences undergraduate course of which sections were being taught both through

traditional means and through electronic media (specifically Internet). The course selected was a Consumer Economics course taught during the Spring 2001 semester. The basis for selection of this course was that there were two sections of the course taught during the same semester, one of which was taught in a traditional format and the other taught in an online format. In addition, the same instructor taught both sections of the course, which removed the potential instructor effects on the outcome measures. Both the traditional and online courses consisted of an instructor's outline, problems to be completed, and various tests. The instructor developed the course materials utilizing the various teacher resources developed for the traditional lecture course. The number of students enrolled in the two sections of the course for whom complete useable data was available was 25 in the traditional section of the course and 13 in the online section of the course. Two of the 13 students in the online course section declined to provide responses to the course survey.

Measurement of the variables of investigation in the study was accomplished using two instruments. The first of these was an instructor-designed, 70-item multiple-choice achievement test which was administered to both groups as a pretest and a posttest. The second instrument was a survey designed to measure the student's perceptions regarding the influence of the course format on their learning, problems encountered, and satisfaction with the course. This survey was developed as a modified version of an instrument designed by Carter (2001). Content validity of the survey was established through a review by a panel of experts consisting of three university faculty members with expertise in the content of Family and Consumer Sciences and research design.

Data collection was conducted in the traditional course section by administering the achievement test to the students enrolled at the first class session and again as a posttest at the last regularly scheduled class session. In the online section of the course, the same general time frame was used for administration of the instruments; however, each of the instruments was completed online.

Findings

The first objective of the study was to describe and compare students enrolled in an introductory family and consumer sciences undergraduate consumer economics course on their achievement in the course as measured by scores on an instructor-developed, end-of-course exam by whether they received instruction in a traditional classroom setting or through an electronic classroom format (specifically the Internet). The achievement test was administered to the subjects in the study as a pretest in an attempt to establish the equivalence of the groups in the study on this outcome measure. Both the traditional group and the online group had a time limit of 1 hour and 15 minutes. The traditional group was found to have a mean achievement pretest score of 38.28 (SD = 7.41), and the online section of the course had a mean pretest score of 45.62 (SD = 6.42). When the groups were compared on their pretest achievement scores, the online group was found to have significantly higher achievement levels prior to the beginning of the course ($t_{27.73} = 3.16, p = .004$) (See Table 1).

Because of the identified preexisting differences between the study groups, the analysis of covariance procedure was used to compare the posttest scores of the groups. The unadjusted group means were 54.15 (n = 13) for the online group and 44.20 (n = 25) for the traditional group. The pretest was found to be a significant covariate ($F_{(1,35)} = 132.013, p < .001$) in the analysis (See Table 2) and the adjusted group means based on this covariate were 49.89 (SD = 2.08) for the online group and 46.42 (SD = 1.48) for the traditional group. Based on this analysis,

students in the online group were found to have significantly higher levels of performance on the end-of-course achievement test ($F_{(1,35)} = 4.971$, $p = .032$) than the students in the traditional group.

Table 1
Comparison of Pretest Achievement of Students Enrolled in an Undergraduate Consumer Economics Course by Method of Instructional Delivery

	Online Group[a]		Traditional Group[b]			
	M	*SD*	*M*	*SD*	*t*	*p*
Pretest	45.62	6.42	38.28	7.41	3.16	.004

[a]n = 13; Range of scores: 36-56
[b]n = 33; Range of scores: 20-51

Table 2
Comparison of Posttest Achievement of Students Enrolled in an Undergraduate Consumer Economics Course by Method of Instructional Delivery Controlling for Pretest Differences

Factor	*df*	Mean Square	*f*	*p*
Covariate Pretest	1	2182.32	132.01	<.001
Group	1	82.17	4.97	.032
Error	35	16.53		

Note. Unadjusted means: Online group = 54.15 (*SD* = 2.08), Traditional Group = 44.20 (*SD* = 1.48) Adjusted means: Online group = 49.89 (*SD* = 2.08), Traditional Group = 46.42 (*SD* = 1.48)

Student Opinion Survey

The second objective was to describe and compare students enrolled in an introductory family and consumer sciences undergraduate consumer economics course on their perceptions of the course and the effectiveness of the instructional delivery by whether they received instruction in a traditional classroom setting or through an electronic classroom format (specifically the Internet). A survey was administered to measure student perceptions of the instruction at the end of the course. The survey consisted of 15 questions that were measured using appropriate 5-point anchored scales. Items 1 through 5 included questions concerning "How did you learn?" had response values of 1 to 5 with 1 = No Value, 2 = Some Value, 3 = Average Value, 4 = Much Value, 5 = Great Value. Item 6 was a question relating to the concept of "What problems did you encounter?" and had response values of 1 to 5 with 1 = None, 2 = Some, 3 = Average, 4 = Much, 5 = Great. Items 7-16 included questions about "How satisfied are you with the course?" and had a response scale of 1 = Poor, 2 = Fair, 3 = Average, 4 = Good, 5 = Excellent (See Table 3).

The online course survey responses to the 15 questions from the online group were compared with the traditional group using independent samples t-test with an a'priori established alpha level of .05. Since the objective was primarily exploratory in nature, two-tailed tests were utilized. The only item for which a significant difference was found between the groups was "Rate the value of interaction using e-mail in learning concepts and principles covered in the course." The t-test results indicated that the online students scored significantly higher than the traditional classroom students on the question ($t_{(34)} = 3.352$; $p < .05$). However, this difference might logically have been expected given the increased emphasis on e-mail in the electronic

group.

Table 3
Mean Scores for Survey Questions Internet Versus Traditional Instruction

Question	Internet M^a	Traditional M^b	t value
How did you learn?			
Rate the value of the Instructor's Outline in learning concepts and principles covered in this course.	4.36	4.24	0.455
Rate the value of the Textbook in learning concepts and principles covered in this course.	3.63	3.28	1.037
Rate the value of interaction using e-mail in learning concepts and principles covered in the course.	3.82	2.17	**3.352
Rate the value of the Internet links to external resource in learning concepts and principles covered in the course.	3.82	3.12	1.740
Rate the value of the course assignments in learning concepts and principles covered in the course.	4.36	3.88	1.432
What problems did you encounter?[d]			
Rate the extent that computers and software caused you difficulty in completing the course.	1.91	1.68	0.630
How satisfied are you with the course?[e]			
Was the course content challenging?	4.45	4.28	0.930
Did the course meet your expectations?	4.55	4.32	0.869
Was grading clear and fair?	4.73	4.83	-0.531
Were course requirements relevant?	4.64	4.44	1.008
Were course requirements realistic?	4.55	4.72	-0.630
Were you satisfied with the role of the instructor teaching the course?	4.82	4.88	-0.467
How would you rate the course overall?	4.55	4.52	0.111
How would you rate the instructor's interest and enthusiasm?	4.82	4.92	0.086
How would you rate the instructor?	5.0	4.92	0.950

[a]n = 11
[b]n = 25
[c]Range 1 to 5, 1 = No Value, 5 = Great Value.
[d]Range 1 to 5, 1=None, 5 = Great.
[e]Range 1 to 5, 1 = Poor, 5 = Excellent

Demographics of Classes

The third objective was to describe and compare students enrolled in an introductory family and consumer sciences undergraduate consumer economics course on the following selected characteristics by whether they received instruction in a traditional classroom setting or through an electronic classroom format (specifically the Internet):

a. the self-reported number of hours that they were employed while enrolled in the course;

b. the self-reported time spent weekly in preparation of course activities and assignments.

Seventy-three percent (n = 8) of the online students had not taken an online course prior to this course. Three of the responding students in the online course section (27%) indicated that they had previously taken an online course. Data from the traditional group indicated that 76% (n = 19) had not previously taken an on-line course while 24% (n = 6) indicated that they had been previously enrolled in an online course. When the groups were compared on this characteristic, the computed Chi Square valued ($X^2 = .036$) was not significant, indicating that the treatment group and whether or not the students had been previously enrolled in an online course were independent.

Students were asked to indicate the average number of hours per week they worked at a paying job. Twenty-seven percent (n = 3) of the students in the online course averaged 21-25 hours of work per week with another 27% (n = 3) averaging more than 40 hours of work per week. In the traditional classroom, 32% (n = 8) worked an average of 26-30 hours per week with 16% (n = 4) working an average of 16-20 hours per week. Sixteen percent (n = 4) of the traditional classroom students worked more than 40 hours per week (See Table 4).

Table 4

Average Number of Hours Per Week Worked at a Paying Job

Number of Hours Worked	Online Students[a]		Traditional Classroom Students[b]	
	n	%	n	%
0	1	9	2	
1-5	0	0	1	4
6-10	0	0	0	0
11-15	1	9	2	8
16-20	1	9	4	16
21-25	3	27	2	8
26-30	1	9	8	32
31-35	1	9	0	0
36-40	0	0	2	8
More than 40	3	27	4	16

$p > .05$

[a]n = 11

[b]n = 25

In addition to describing students in the groups on the variable number of hours worked, this objective also sought to compare the groups. However, because the number of categories of response was too large for the number of subjects and this situation would cause large numbers

of empty cells in the analysis, the researchers collapsed the response categories into three groups including 10 hours or less, 11-25 hours, and 26 hours or more. The frequencies in these reformed categories were then used to compute a Chi-square analysis to determine if the variables, number of hours employed per week, and group (traditional or online instruction) were independent. The results of this analysis revealed that the variables were independent (X^2 = 0.726, $p > .05$).

When asked "How much time did you spend on this course per week?" 64% (n = 7) of the online students indicated they spent 6-10 hours per week, and 36% (n = 4) indicated they spent less than 5 hours per week. Seventy-eight percent (n = 19) of the traditional classroom students indicated they spent 5 hours per week or less, and 20% (5) indicated they spent 6-10 hours per week (See Table 5).

Table 5
Time Spent on Course Per Week

Hours per Week	Online Students[a]		Traditional Classroom Students[b]	
	n	%	n	%
5 hours per week or less	4	36	19	79
6-10 hours per week	7	64	5	21
11-15 hours per week	0	0	0	0

Note. $X^2 = 6.211$, $p < .05$
[a]n = 11
[b]n = 25

In addition to describing all students on the number of self-reported hours spent on the course, the researchers also compared the students in the traditional and online groups on the reported number of hours spent on the course. The most appropriate analysis technique to accomplish this portion of the objective was determined to be the Chi-square test of independence. The calculated Chi-square value ($X^2 = 6.211$, $p < .05$) was found to be significant indicating that the variables number of self-reported hours spent on the course and group (traditional or online) were not independent. The nature of the association between the variables was such that the majority of the students in the online group (64%) indicated that they spent 6 to 10 hours per week working on the course while the majority of the students in the traditional group (79%) indicated that they spent 5 hours or less working on the course (See Table 5).

Discussion

The findings from this study present several issues. The results of the study indicate that the online students scored significantly higher than those students in the traditional classroom setting on the posttest, even after controlling for significant pretest differences. One reason might be that the students in the online course reported that they spent 6-10 hours per week working on the course while the traditional classroom students reported working only 5 hours per week or less. The novelty of the Internet may be one reason that students in the online section spent more time on the course. If this is the reason for the greater number of hours spent on the course, the difference would probably be diminished as the student use of the Internet became routine.

Another possible reason for the differences in both the students' achievement levels and the number of hours spent on the course is that the difference in the online method of instruction places more of the responsibility for learning on the student. This concept could be referred to as psychological independence, and the experience of the researchers has shown that if higher levels of psychological independence can be achieved, students not only learn more in the course, but they also develop a sense of ownership for their learning which enhances their involvement in continued learning after their formal education is completed.

Demographic differences in students may also be a factor. The researchers could have attempted to collect further demographic information, but the concern was that students in the online section of the course would become reluctant to participate with large amounts of personal data because the numbers were very limited. The pretest differences that existed in the groups could have been related to group differences that are historically related to academic achievement, such as age (traditional versus nontraditional students), previous academic achievement, and educational goals.

The researchers recommend that further research be conducted to ascertain if these findings can be confirmed as well as to examine a more extensive set of demographic comparisons. In addition, if possible, research should be conducted using a true experimental design. With this design, researchers could remove the effects of the pre-existing differences through full randomization, and the problem of unequal group sizes would also be removed since equal numbers of subjects would be randomly assigned to each treatment group. It should be noted, however, that mortality could create inequalities in the groups at the time of measurement of the posttest. In addition, further research is needed to determine if and why additional groups of students spend more time on the online course.

References

Aase, S. (2000). Higher learning goes the distance. *Computer Use,18,* 19.

Borland, K.W., Lockhart, M. S., & Howard, R. D. (2000). Assessing distance teaching and learning. Aca*demic Exchange Quarterly, 4*, 4.

Bower, B. L., (2000). Community college student satisfaction with the online and teleclass experience. *Academic Exchange Quarterly, 4*, 54.

Brown, B. L., (2000). *Web-based training.* Columbus, OH: Center on Educational Training for Employment. (ERIC Digest No. 218).

Busacco, D. (2001). Learning at a distance - Technology and the new professional. *American Speech Hearing Association Leader, 6*, 4.

Carter, R. I. (2001, January). *Internet course survey*. Available from Dr. Richard I. Carter, Professor and Director, Brenton Center for Agricultural Instruction and Technology Transfer, Department of Agricultural Education and Studies, 201 Curtiss Hall, Iowa State University, Ames, IA 50011.

Caudron, S. (2001). Evaluating e-degrees. *Workforce, 80,* 44.

Cooper, L. W. (2001). A comparison of online and traditional computer applications classes. *Technological Horizons in Education Journal, 28,* 52.

Draper, D., Laughlin, J., Stammen, R., & Gregory, F., (1999). Capacity building of educators for

distance education. *Journal of Family and Consumer Sciences, 91,* 104.

Ehrmann, S. C. (1999). Asking the hard questions about technology use and education. *Journal of Family and Consumer Sciences, 91*, 31.

Gray, D., & Palmer, J. (2001). Learning styles and web-based learning: The 4-MAT methodology. *WebNet Journal, 3,* 43.

Institute for Higher Education Policy, (1999). *What's the difference? A review of Contemporary research on the effectiveness of distance learning in higher education.* (IHEC report).

Robertson, L. J., & Stanforth, N. (1999). College students' computer attitudes and interest in web based distance education. *Journal of Family and Consumer Sciences, 91,* 60-64.

Ryan, M., Carlton, K. H., & Ali, N. S. (1999). Evaluation of traditional classroom teaching methods versus course delivery via the world wide web. *Journal of Nursing Education, 38*, 272-277.

Schulman, A. H. & Sims, R. L. (1999). Learning in an online format versus an in-class format: An experimental study. *THE Journal (Technological Horizons in Education,26,* 54.

U.S. Department of Education, National Center for Educational Statistics. (1999). *Distance education at postsecondary education institutions: 1997-98* (NCES Report No. 2000-013). Jessup, MD.

TAKING STEPS FOR FAMILY AND CONSUMER SCIENCES EDUCATORS IN CONNECTICUT: A MODEL FOR CHANGE

Nancy H. Bull
University of Connecticut

Merrilyn N. Cummings
New Mexico State University

The Family and Consumer Sciences (FCS) classroom provides one of the few places where young people receive life-skills training. Middle and high school FCS programs today prepare youth for the dual roles of family leader and wage earner. In a recent survey of Connecticut FCS teachers, 77% of those responding indicated that they would retire by 2012. Many constituent groups expressed concern that without a FCS teacher education program at a public institution in Connecticut, secondary programs would be eliminated due to a lack of qualified professionals. The Cooperative Extension Service would also be confronted with a lack of new professionals. A consultant worked with various constituents to develop a proposal and to form coalitions for reinstatement of the teacher education program. The development and implementation of this process provide a model for other institutions.

Family and Consumer Sciences (FCS) educators are the front line professionals helping to solve real-life problems at a time when families in our society are faced with major crises and limited life skills (American Association of Family and Consumer Sciences, [AAFCS], 1999). These professionals convey information to various audiences on topics such as personal, financial, and consumer management; parenting and child development; nutrition and wellness; housing and clothing decisions; and career preparation. FCS programs provide the education needed to reduce welfare dependency and increase self-sufficiency by empowering individuals with the knowledge and skills to manage their personal and family lives as well as their work responsibilities. The mission of the FCS profession is to affect the optimal well being of families and individuals (AAFCS, 2001).

Today's focus in middle and high school FCS programs is on the preparation of youth for the dual roles of family leader and wage earner. In the past, the family passed many life skill concepts from generation to generation, but times have changed. American families are facing numerous new challenges in the 21st century. The structure of many families has been reconfigured, and resource constraints often do not allow for multi-generational interactions to occur where youth learn adult roles.

Today, the FCS classroom provides one of the very few places where youth receive life skills training. FCS teachers are the link in preparing youth for their roles as adults, parents, and wage earners. Prevention of unwanted teen pregnancies, wise credit use, building positive relationships, buying insurance, and avoiding eating disorders are just a few of the contemporary issues being addressed in FCS classrooms. Cooperative extension programs train community agency personnel to work with their clientele on issues such as money management, lead

poisoning prevention, parenting skills, and nutrition. At the same time, declines continue in the number of collegiate teacher preparation programs for the very professionals now needed.

The premise of the FCS profession has always been that prevention is better than rehabilitation. One of the core values of the American Association of Family and Consumer Sciences is holistic interdisciplinary, interpretive, and preventative perspectives in addressing the issues of individuals and families as consumers (AAFCS, 2001). This premise provides the foundation for public school and extension FCS programs.

Trends in Family and Consumer Sciences Education

National Trends

Issues of supply and demand for FCS educators have been of concern for at least the last decade (AAFCS, 1999; Bowman, 1998; Burge & Stewart, 1991; Miller & Meszaros, 1996; Miller & Tulloch, 1999; Stout, Couch & Fowler, 1998; Travers, 1999; & Zehr, M.A., 1998). Serious declines have been evident in both the number of institutions offering FCS education programs and the number of individuals choosing to enroll in and graduate from these programs. At the same time, the demand for FCS educators in the public schools, the cooperative extension system, and community agencies have remained high (Miller & Meszaros, 1996; AAFCS, 1999; Stout, Couch & Fowler, 1998). A variety of strategies have been proposed for the maintenance of programs and the recruitment of majors into FCS teacher education programs (Burge & Stewart, 1991; Bowman, 1998; & Travers, 1999; Lozado, 1999). However, critical to recruitment and retention is the availability of such programs which research shows have significantly declined (AAFCS, 1999). In 1984 there were 281 FCS pre-service teacher education programs in the United States. In 1995 there were only 171 such programs, a decline of 40%. In the 1968-69 academic year, 7,002 baccalaureate degrees were awarded in FCS education. In 1990-1991 there were only 426 degrees awarded to individuals with a major in FCS education. This represented a 94% decrease. Since 1990 the number of undergraduates choosing to major in FCS education has decreased 22%. The demand for educators is estimated to be four times the supply. With anticipated retirements, in 1996 it was projected that a minimum of 6,976 (or 77%) of all FCS positions would not be filled due to a lack of qualified applicants in the ensuing five year (Miller & Meszaros, 1996; Hall & Miller, 1989).

New England Trends

One location where the shortage of FCS teachers and lack of programs is most evident is in New England. In 2000 there were only three FCS teacher education programs in New England. The teacher education program in Home Economics at the University of Connecticut (UConn) closed in the late 1980's.

In a recent study (AAFCS, 1999) professionals in Connecticut, Maine, New Hampshire, and Vermont projected that between 1999-2003, there would be a need for 590 new FCS educators. The maximum number of new teachers to fill this need was projected to be only 70 individuals over the same four-year period.

A 1997 survey indicated that in the 1995-1996 school year, 1,613 students were turned away from FCS public school classes in Connecticut due to a lack of qualified teachers. In 1996-97, the estimate increased to 1,772. During 1995-96, sixteen vacancies existed for FCS teachers with some of these positions being filled by non-certified teachers (Bull, Uerz, & Yoakum, 2000). In 1997, 15% of the Connecticut FCS teachers reported they planned to retire in the next five years with an additional 29.5% planning retirement in ten years. By 2012, 77% of those

surveyed will have retired (Bull, Urez, Yoakem, 2000). It was clear that immediate and sustained action was needed to prepare future FCS teachers for Connecticut.

Action in Connecticut

Based on the results of this survey, the Dean of the School of Family Studies (SFS) at UConn formed a subcommittee of the newly created School of Family Studies Alumni Society to address this issue. At the same time, a faculty member from another state elected to spend her sabbatical leave working as a consultant on this problem. This individual is a University of Connecticut alumnus who is currently a FCS teacher educator at New Mexico State University. The plan was to lay the groundwork for reinstatement of the teacher education program at the University of Connecticut.

Questions the task force members and consultant explored were:

- Who needed to collaborate?
- What would be the best possible curriculum?
- What resources would be needed?
- Was it possible to re-instate a FCS teacher education program that would cross two schools and one college at UConn?

The following sections outline the major steps taken to address these issues.

Listening Forum

One of the first steps was to open communication among the University of Connecticut School of Family Studies faculty, the School of Family Studies Alumni Society subcommittee, FCS public school teachers, and administrators in the public schools. On March 28, 2000, a FCS Teacher Listening Forum was held on the UConn Campus. A panel of current middle and secondary FCS teachers as well as an urban school district superintendent presented a strong case for the relevance of the current K-12 FCS curriculum offerings. Representatives of the School of Family Studies and the Department of Nutritional Sciences in the College of Agriculture and Natural Resources at UConn presented their course offerings, which were relevant to the secondary FCS teachers' needs.

In structured groups, the following topics were discussed:

- FCS content areas that were being and should continue to be taught in the K-12 system,
- Program needs for K-12 FCS educators,
- The perceived role of the University of Connecticut in FCS teacher education, and
- FCS teacher certification issues.

Among the 50 Forum participants, there was consensus that the following content areas should continue to be taught at the secondary level in FCS: textiles and design, foods and nutrition, consumerism, housing and interior design, human development and, career exploration. Subtopics were delineated for each of these major topics. This information was important in determining the components perceived as necessary in a FCS teacher education program.

Program needs identified included a forum for curricula sharing among FCS teachers in the state, dissemination and usage of national standards and state frameworks in planning FCS curricula, enhanced public relations efforts on behalf of FCS programs, support for middle school FCS programs, the continued development of and articulation to tech prep programs for the post-secondary student, and recruitment of future teachers to FCS.

When the role of the University of Connecticut was explored, participants at the Forum clearly supported the reopening of the FCS teacher education program at UConn, with the concurrent establishment of a faculty position to teach the FCS methods and curriculum courses. Proposals to facilitate the reinstatement of the program included linkages with education programs currently in existence throughout the state; options for certification at both the undergraduate and graduate levels; intensive summer, evening, and distance education components; networking with units across campus to make the best use of available courses and allowing students from various programs to consider this teacher certification option; and increasing opportunities for high school students to experience the University of Connecticut and its programs.

Suggestions related to certification issues were the exploration of dual certification possibilities, provision for life experiences to count towards certification, internships in FCS secondary school programs as a mode of meeting the student teaching requirement, the use of high school FCS teachers as adjunct faculty to teach college courses in high school facilities, and linkages with neighboring states where components of the teacher education programs might be available. An overriding goal was to maintain high standards.

Based on these discussions, the School of Family Studies faculty decided to move forward on the initiative for reinstatement of a FCS Teacher Education program at UConn. In July 2000, the consultant initiated action on several fronts aimed at moving the teacher preparation program forward.

Contacts for Collaboration

The consultant contacted a wide variety of constituents in order to assess the political climate and provide a broad-based sense of ownership in this reinstatement endeavor. Discussions were held with the following groups and individuals:

- Personnel in the State Department of Education Certification Unit were contacted and alerted to the interest in the reestablishment of a FCS teacher education program at the University of Connecticut. Input was sought on the components of state certification that had to be met through the new curriculum. Ideas were sought on the flexibility that would be permitted by the Certification Unit.
- Leaders at the state level in FCS programming were contacted and brought into the initial discussions. Their support and suggestions were solicited.
- Faculty members and administrators in the School of Family Studies dialogued on the issue. In particular, these discussions focused on the implications for current programming if a teacher education program was reinstated in FCS.
- Faculty members at the only other institution (a private college) in Connecticut offering a FCS teacher education program provided input and ideas for collaboration.
- State FCS consultants from the two other New England states with FCS teacher education programs were contacted for suggestions and input.
- Information was gathered to assess possibilities for collaboration on teacher education efforts across various disciplines within the University.
- On-campus discussions were held with faculty in the School of Education and in the School of Fine Arts Music Education program, which offered a model similar to ideas being explored for FCS education.
- Faculty in the College of Agriculture and Natural Resources, which houses the Department of Nutritional Sciences, were actively involved in exploring ways that

students might feed into a certification program in FCS education. These individuals had long been interested in certification options for their majors. The Dean of the College of Agriculture and Natural Resources and Director of the Extension System was kept apprised of the efforts.

- The subcommittee members of the School of Family Studies Alumni Society were continually involved in dialogue. This core group led meetings with specific subgroups of FCS teachers in the state as issues surrounding certification and the pragmatics of offering specific courses arose.
- The Dean of the School of Family Studies was a strong supporter of this program thrust, working to identify resources for this effort. During the same time period, the University of Connecticut initiated a Capital Campaign. The Dean targeted an endowed chair in Family and Consumer Sciences Education as one of the thrusts of the School of Family Studies' Campaign efforts.
- Alumni of the former Home Economics Education program were contacted and subsequently lent support and personal financial resources to this effort.
- A presentation on progress on the initiative was made to the Connecticut Affiliate of the American Association of Family and Consumer Sciences at the 2000 Fall Meeting. One book company representative exhibiting at the meeting donated all the books he was exhibiting to the new program-to-be!

The Curriculum Proposal

The curriculum proposal for a teacher education program in FCS took advantage of existing program strengths and resources on the University of Connecticut campus as well as an emerging network of alliances with existing FCS teachers in the Connecticut secondary schools. The program was designed to be minimally draining on already strained financial resources but to remain viable for the future.

The proposed curriculum was a high quality, integrated baccalaureate and master of science program that would normally take an enrollee five years of study. Upon completion of the program, the student would be qualified to apply for teacher certification in FCS under the auspices of the School of Education. Students following the plan would earn either a Bachelor of Science in Human Development and Family Studies or in Nutritional Sciences. In each case, there would be a designated concentration in FCS Education at the baccalaureate level.

Students who completed the Bachelor of Science degree would then pursue the Master of Arts degree in Human Development and Family Studies with a concentration in FCS Education to attain certification. The proposal provided a seamless curriculum from one degree program to the next.

The proposal incorporated relevant courses currently existing at the University of Connecticut for the baccalaureate degree. The program consists of common General Education courses meeting University requirements, FCS content courses, and FCS professional education courses. There are some slight differences in course requirements, depending on whether the student is working towards a baccalaureate degree in Human Development and Family Studies or Nutritional Sciences. The content courses for both baccalaureate degrees cover human development across the lifespan, family development and interaction, nutrition, food science, family resource management, housing, interior design, and clothing and textiles.

At the undergraduate level, professional development courses cover exceptional learners, curriculum and methodology for FCS teaching, and management of teaching responsibilities. At

the graduate level, further work in curriculum and methodology would occur as well as the student teaching experience. Research methods and a lifespan human development course would also be required. Guided electives would assist in the completion of the Master of Arts program. The professional education courses in FCS education cover the competency areas identified in the regulations of the Connecticut State Board of Education.

The need exists for only two new content courses in order to implement the program. These are clothing and textiles and housing and interior design. Secondary FCS teachers may work as adjunct faculty to provide these courses as well as the student teaching experience supervision. Five new FCS education classes will be required, one of which would be student teaching. Depending on electives and science background, the student pursuing the plan may be able to earn cross certification endorsements in health and/or science.

Proposal Revisions

At the end of the consultant's sabbatical, the Dean of the School of Family Studies began negotiations with campus administrators to implement the proposal. In the process some proposal adjustments were made in the professional education classes to take advantage of courses currently offered in the School of Education as a part of their new Master of Arts certification program. These proposal changes were based on the assumption that the School of Family Studies would hire a faculty member in teacher education who would have a joint appointment in the School of Education. The subcommittee of the School of Family Studies that initiated this work continues to meet and assist the Dean as progress is made. The consultant has returned for meetings and continues to provide input.

Looking Ahead

The School of Family Studies Alumni Society teacher education subcommittee remains vigilant. The subcommittee has developed a case statement and a campaign strategy. The goal is to raise $1 million dollars that would be matched 50% by state dollars as part of a generous UConn 2000 initiative. The resulting $1.5 million would permit a FCS teacher educator position to be reestablished in the School of Family Studies.

In May 2001 the School of Family Studies faculty officially endorsed the proposal for a program in FCS education. The faculty in the Department of Nutritional Sciences will vote on the proposal during the fall of 2001.

Without the education courses in place, students are not yet being recruited. However, one student is doing the nutritional science and family studies courses understanding that the education courses may have to be taken at another institution.

Work has begun in the School of Family Studies to develop promotional materials for the teacher education program. The only barrier now is the need to generate resources for this position. This barrier that will be overcome!

References

American Association of Family and Consumer Sciences, (2001). Who we are. Retrieved August, 20, 2001 from: www.aafcs.org/who/index.html.

American Association of Family and Consumer Sciences (1999). *Recruiting family and consumer sciences educators*. Alexandria, VA: author.

Bowman Q. (1998). A deciding moment: Recruiting family and consumer sciences educators. *Journal of Family and Consumer Sciences 90 (4),* 30-32.

Bull, N., Uerz, J., & Yoakum, J. (2000) Meeting the future need for family and consumer science educators in Connecticut. *Journal of Family and Consumer Sciences Education 18(2).* Retreived July 20, 2000 from: www.natefacs.org/journal/vol18no2.htm

Burge, P. & Stewart D. (1991)Recruitment of home economics teachers. *Journal of Vocational Home Economics Education 9 (2),* 1-9.

Hall, H. & Miller, S.(1989) Home economics teacher education into the 21st century. *Journal of Home Economics 81(2),*7-14.

Lozada, M. (1999)Learning survival skills-together. *Techniques 74(5),* 13-64.

Miller S. & Meszaros P. (1996). Study of national incoming supply and demand for family and consumer sciences educators. *Journal of Family and Consumers Sciences 88 (1),* 51-54.

Miller, S. & Tulloch, C. (1999). *Taking action to recruit family and consumer sciences teachers* (Publication #261-08492) Ellensburg WA: Family and Consumer Sciences Education Association.

Stout, B., Couch, S., & Fowler, D. (1998). The demand for family and consumer sciences educators: A call to action. *Journal of Family and Consumer Sciences 90(2),* 7-11.

Travers, R. (1999). Teacher recruitment: Turning the tide. *Journal of Family and Consumer Sciences Education 17(2),* 48-55.

Zehr, M. A. (1998). Shortage of consumer sciences teachers hitting home. *Education Week 18*(9), 6-7.

About The Authors

Nancy H. Bull, Ph.D., CFCS, is Associate Dean, Outreach & Public Service, University of Connecticut, Storrs, Connecticut and Merrilyn N. Cummings, Ph.D., CFCS is Professor and Director of Family & Consumer Sciences Teacher Education at New Mexico State University, Las Cruces, New Mexico.

Special appreciation is extended to all School of Family Studies Alumni Society members, who participated in this effort, and Dean Charles Super without whose support and courage this would not have been possible.

COMPUTER APPLICATIONS IN THE FIELD OF FAMILY AND CONSUMER SCIENCE

Kjrsten Keane
University of Maryland University College

Trends in technology have had a great impact on the field of Home Economics. Curriculum in the field has been in a state of evolution since it began to receive federal funding in 1917. This transformation has been reflective of changes in society. Today the field has been renamed Family and Consumer Sciences (FCS) to more adequately represent its current teachings. Technology has a wide range of uses in the FCS classroom. Professionals have been able to teach their future consumers valuable lessons involving the latest trends in hardware purchases. They have been able to enhance their lesson plans through Internet research and activities. New software titles implement national Family and Consumer Science curriculum standards in a fresh and exciting way. The evolution from Home Economics to Family and Consumer Science can be illustrated through advancements in computer applications in the classroom.

The field of Home Economics has been in a constant state of evolution since the passage of the Smith-Hughes Vocational Education Act in 1917, when it became one of the first three disciplines to receive federal funding (Thaler-Carter, 2000). Since 1917, curriculum in this field has changed with the times to reflect new trends in society. By the 1980s, computers were beginning to significantly change the presentation of information in the Home Economics classroom. Advancements in computer hardware and software provided valuable tools in teaching consumer tactics, calculating nutritional content, and aiding in fashion design. These advancements most directly impacted the middle and high school curriculums. Professionals in the field were encouraged to embrace the new technology in their instruction (Browning & Durbin, 1985). By 1994, changes in the field had become significant enough to warrant a name change. Home Economics became Family and Consumer Sciences (FCS) through a vote by the American Association of Home Economics (Warren, n.d.). Today, changes and updates in the field continue to occur, and FCS professionals are using the latest developments in computer technology to help students grasp the important concepts they teach.

By 1984, the computer had become smaller, less expensive, and generally more practical for personal and educational use (Thomas, 1984). The field of Home Economics embraced this new technology in a variety of ways. Classroom kitchens and sewing rooms in the 1980s were home to the latest appliances equipped with computer programming. New microwaves, such as the R-8340, had surfaced on the market and were able to perform the majority of calculations for cooking food items on their own. Users provided some basic information, such as item name, weight, and degree of doneness desired and the microwave took care of the rest. The computer chip also enhanced the technology available in dish washers, washers and dryers, and sewing machines. These appliances were more specifically programmable than ever before, and they found a welcome home in the Home Economics classroom (Thomas, 1984).

By 1985, Janice Morgan, President of the Home Economics Education Association, stated, “I believe that the lifestyle of America will be impacted upon greatly by the new information technology. You, as a home economics teacher, must decide rather quickly whether

you will be a consumer or producer of the new information technology. But, you will not be allowed the privilege of being a neutral in the movement" (Browning & Durbin, 1985, p. i). Many Home Economics teachers heeded Morgan's advice and began to adapt advancements in computer technology into their instruction in ways beyond the use of modern appliances.

Hardware Consumers

Though computers were not available in large numbers for many classrooms in the mid-1980s, Home Economics teachers could still educate students about their significance (Grogan, 1984). Many teachers focused on educating students about different types of computer hardware. Early hardware commonly presented in the Home Economics classroom included a keyboard, monitor, memory processor, and disk drive or cassette tape recorder. "A disk drive is easier to use than a cassette recorder and most home economics software comes on a floppy disk. A device called a mouse is available with some computers to control data" (Browning & Durbin, 1985, p. 2). Additional hardware, such as printers, modems, and acoustic couplers could be purchased after careful consideration of how the computer would be utilized (Browning & Durbin, 1985).

Students were encouraged in many Home Economics classes to view information on computer hardware as smart consumers. They studied different types of advertising for the latest computers, and compared prices and options. They were encouraged to distinguish needs from wants as a consumer, and in the area of computers many found that pocket calculators were much more appropriate for their needs than the latest desktop model. Many teachers also incorporated the impact of computers on families into their curriculum. Predictions were made about a future where a great deal of professional work would be accomplished on a small computer at home. The prediction inspired many class discussions involving the topic of the work-at-home adult, computers, and their impact on home design, child-care, family relationships, and transportation (Grogan, 1984).

Software Programs

For those Home Economics classrooms with computer access, a wide variety of software titles were available in the 1980s to aid in course instruction. Home Economics covered a wide variety of areas, and there was a range of correlating software available for the teacher to choose from. In the area of career development there was *Career Directions*, from System Design Associates, Inc. The software was made for the Apple computer and allowed users to identify career interests, skills and abilities. The cost was $59.00. In the area of child development and child care there was *The Babysitter's Manual,* from Intellectual Software. The software was made for the Apple and IBM computers, and covered the responsibilities of babysitting, dealing with parents, and providing for the needs and safety of children. The cost was $34.95. In the area of housing, there was *Home Safe Home,* from MCE, Inc, for the Apple computer. The software helped users identify common home hazards and techniques for preventing them. The cost was $165 for four disks. In the area of foods and nutrition there was *The Eating Machine,* from Muse Software, Inc. The software was made for the Apple computer and contained a comprehensive nutrient analysis program. The cost was $49.50 for two disks. *The Eating Machine* is a good example of a software package where teachers were dealing with different types of disks: a program disk and a data disk. The disks had to be used together for the program to run. The program disk differed from the data disk, however, in that it could not be altered or copied. This served to protect the program from illegal copying. The data disk, on the other

hand, had to have altering capabilities since it contained the data for food analysis. All of these software titles helped teachers provide a more exciting and in-depth look at the topics they were covering (Browning & Durbin, 1985).

Research

The rising trends in computer usage among home economists in 1984 prompted the American Home Economics Association (AHEA) to create a computer software task force to help educate teachers about the best software available (Burkhart, Muller & O'Neill, 1985). Until then, teachers had been choosing their programs without any official guidance or suggestions. Research on specific types of computer usage among home economists also began to develop. This was the focus of research conducted by the New Jersey Home Economics Association (NJHEA) in 1984 (Burkhart et al., 1985). One survey published in the *Forecast for Home Economic* magazine received responses from 300 readers. The study found that while teachers were purchasing and using software, the programs were often only used for enhancement of classroom instruction. Teachers were not widely using the array of administrative software available for tasks such as grade keeping or attendance. Upon further investigation the NJHEA discovered that the biggest reason for non-use of these programs was lack of knowledge about them or how they worked. "How do we know what software programs we should buy if they are sealed in cellophane" (Burkhart et al., 1985, p. 29)? Efforts by the AHEA encouraged teachers to share their favorite program names with others by word of mouth and by developing recommended title lists. Administrative software use began to grow in popularity (Burkhart, et al., 1985).

Curricular Implications

By the early 1990s, Home Economics teachers were regular users of computers in the classroom, and were familiar with a variety of software in their discipline. The curriculum had been changing along with the advancements in technology. Spankie Lou Basset, President of the American Home Economics Association in 1994, summed up the changes: "basically, in the past 10 to 15 years, major changes have happened to make the image of our profession more oriented to meeting the needs of students seeking career offerings. Students today want validity. By offering career information, we are fulfilling their needs" (Thaler-Carter, 2000, p. 2). The focus turned from developing home making skills to preparing students to manage a home, family, a career, as well as themselves responsibly. Technology enhanced the transition by making "classroom experiences more like the television and video-game productions students are so used to seeing. Teachers no longer have to figure out a way to 'sing and dance' to make learning exciting" (Thaler-Carter, 2000, p. 3).

Family and Consumer Sciences

By 1998, the name of Home Economics had officially retired and the National Standards for Family and Consumer Sciences had been developed to officially implement changes in curriculum. "The National Standards for FCS Education present a vision for the future and provide FCS educators with a structure for identifying what learners should be able to do. (They) are based on the knowledge and skills needed for home and family life as well as those needed to succeed in related careers" (Warren, n.d., p. 1). Standards are arranged in the following 16 categories:

- Career, Community, and Family Connections

- Consumer and Family Resources
- Consumer Services
- Early Childhood, Education, and Services
- Facilities Management and Maintenance
- Family
- Family and Community Services
- Food Production and Services
- Food Science, Dietetics, and Nutrition
- Hospitality, Tourism, and Recreation
- Housing, Interiors and Furnishing
- Human Development
- Interpersonal Relationships
- Nutrition and Wellness
- Parenting
- Textiles and Apparel

Today, almost all teachers have access to computers, even if numbers are limited, for teaching purposes. "The United States Department of Education personnel have established a goal of having one computer for every five students in American schools. Currently, the average ratio is one computer for every seven students" (Croxall & Cummings, 2000 p. 1).

Software Programs

Software is available for different computers and in different forms, for the middle and high school grades. The Educational Software Institute (ESI) online (http://www.edsoft.com/c/@eK40R93pRrBuQ/index.html) offers programs for the following platforms: IBM PC, Windows, Macintosh, Power Macintosh, Apple II, Apple II GS, CD-ROM PC, MPC, CD-ROM Macintosh, and Power Macintosh, as well as programs on Laserdisc, VHS Tape, and in book form. In the area of housing, interiors and furnishing, ESI offers the software *Design Your Own Home,* a program that allows students to use patterns to create a home within a budget. The program is made for Macs and PCs and is on CD ROM or a 3.5" diskette. The software is regularly $49.95. In the area of consumer services, ESI offers *Deals On Wheels*, a program that introduces students to the fundamentals of purchasing a car. The program is made for Macs and PCs and is available on a 3.5" diskette. The cost is $59.95.

Evalutech online (http://www.evalutech.sreb.org/) offers reviews for a large number of software titles in different fields. In the area of nutrition and wellness, DK multimedia offers *My Amazing Human Body,* a program that allows students to explore parts of the human body and how they work. The program is made for Macs and PCs and is on one hybrid CD ROM. The product description for *My Amazing Human Body* specifies hardware requirements to run the program: microcomputer (486/66MHz, 12MB RAM, Windows 95), hard drive with 26MB free, SVGA monitor (256 colors), double-speed CD-ROM drive, sound card, amplified speakers or headphones and printer (optional). The cost is $29.95. In the area of food production and services, CORD Communications offers *Cyber Snacks,* a program in which students are introduced to a simulated business world by role-playing as snack cart vendors. The program is intended for Macs or PCs with Windows 3.1 or higher and is on CD ROM. Hardware requirements for *Cyber Snacks* include: microcomputer (68040CPU or better, 4MB RAM,

System 7.0 or higher), hard drive with 10-20MB free, monitor (256 colors), double-speed CD-ROM drive. The cost is $49.95, or $225 for a five-copy lab pack.

The Internet

The rise in usage of these programs is indicative of an overall higher level of technology use by professionals in the field of Family and Consumer Science. In fall of 1999, the University of Georgia Department of Family and Consumer Science conducted a study of Internet usage by Georgia affiliates of the American Association for Family and Consumer Science (GAFCS) (Manley, Sweaney & Valente, 2000). "When comparing educators to non-educators, educators were significantly more likely than non-educators to use the Internet for activities such as e-mail, research, exploration of websites, education, and communication" (Manley et al., 2000, p. 5). Results also found that 93% of educators used the Internet, and 86% used e-mail (Manley et al., 2000, p. 5).

As FCS instructors become more familiar with the usage of the Internet, they gain even greater access to technology that will enhance their curriculum. The research opportunities in their field have become virtually limitless. "By becoming active users of and contributors to electronic means of research, today's family and consumer science researchers have the opportunity to help shape the technology that will, in turn, shape our world" (Abdel-Ghany, 1995, p. 7). Teachers can contact other professionals all over the world to discuss changes in their field, get lesson plan ideas and receive advice. Many professional journals are available online, as are other vehicles for formal information dissemination. Opportunities to gather more knowledge in the field have grown immensely. Teachers can also begin to provide some of their knowledge for others through personal and professional websites. In 2001, *Family Relations* magazine published an article entitled "A Process Evaluation of a Website for Family Life Educators" (Hughes). The article discusses ways to provide the information in newsletters and bulletins to a larger audience by posting the information on a well-designed website. The broader dissemination of the information would lead to professionals becoming more knowledgeable in their field. "The future strength of family life education is dependent on continued exploration of the Internet as a tool for helping professionals learn" (Hughes, 2001, p. 11).

Resources

FCS teachers do not need to share all of this new-found information regarding technology with students all at once. They can begin with basic consumer education, engaging students in activities such as "financial management, price comparisons, and product reviews" (Manley et al., 2000, p. 6), just as they did in the 1980s. Today teachers can also cover online purchases and security issues. There are many websites available as resources for use in the FCS classroom. Some websites provide access to a variety of software that can easily be directly downloaded, some of it without cost. There are many comprehensive sites available that list links to FCS resources. In South Dakota, the East Side Union High School District provides their students and teachers with such a site at http://teacher.esuhsd.org/resources/home_economics.html. This site provides links to the following resources: The American Dietetic Association, Arbor Nutrition Guide, a list of cooking schools, The Craft Resource Guide, Delicious Magazine, and the Home Owners Finance Center, among others. The American Association of Family and Consumer Science homepage provides a list of links related to the discipline for teacher use at http://www.aafcs.org/resources/links.html. The list includes sites for the following: Financial

Literacy 2001, the Johnson & Johnson Pediatric Institute, the National Institute on Media and the Family, the USDA, and ParentsConnected, among others. Many teachers have compiled their own personal list of resources on the web as well.

Higher Education

Education of FCS professionals in the beneficial uses of technology is beginning much earlier in their career. Universities are adopting specific courses on how to best utilize the computer in the field of FCS for their students. "Teacher educators at the university level need to ensure that all teachers receive training in the use of computers, a basic teaching skill. Teacher educators in FCS at the university level should also incorporate teaching with computers into the methods classes students take during their teacher preparation" (Croxall & Cummings, 2000, p. 12).

This rising population of professionals will have an edge that their predecessors did not. The University of Akron in Ohio offers a course entitled *Computer Applications in Family and Consumer Sciences* (http://www3.uakron.edu/hefe/comapps/commapps.htm). Objectives in the course include being capable of doing incredible things on a computer, getting around the Internet and the world wide web with facility and ease, investigating, researching and troubleshooting, and gaining skills and knowledge that will enhance scholarship, employability, and job performance.

Curricular Implications

Some states have decided to take the national standards for FCS one step further and specifically tailor them to their needs in the areas of technology. These measures are in part due to the Carl D. Perkins Vocational-Technical Education Act of 1998 (Smith & Hall, 1999, p. 1). The Act is the latest update of the 1984 Carl D. Perkins Vocational Education Act. The previous Acts have focused on "improving vocational programs and serving special populations such as the underemployed, unemployed, and disadvantaged. They strongly advocate the integration of occupational and academic skills to better compete in the world's economy" (Smith & Hall, 1999, p. 1). The most recent update is expected to "give states and local districts greater flexibility to develop programs while making them more accountable for student performance" (Smith & Hall, 1999, p. 1).

In accordance with the Perkins Act, the state of Virginia has adopted specific computer/technology standards within FCS that must be met by the end of grade 12 (http://www.cteresource.org/VDOE/CTE/CTMatrix/fcsmatrix.pdf). In all areas of FCS, students meet specific criteria to:

- demonstrate a basic understanding of fundamental computer operations and concepts
- use application software to accomplish a variety of learning tasks
- develop skills in the use of telecommunication networks
- demonstrate skills in the selection and use of appropriate technologies to gather, process, and analyze data and to report information related to an investigation

The state of Pennsylvania has also adopted technology standards taught through FCS that must be accomplished by grade 12, though they are not as specific or necessarily computer oriented as those required in Virginia. For instance, by grade 12, students must "assess the availability of emerging technology that is designed to do the work of the family and evaluate the

impact of its use on individuals, families and communities" (http://www.pde.psu.edu/standard/fcswhole.pdf). Other states have a more general technology curriculum that must be followed but is not yet specifically adapted to the FCS classroom.

Curriculum in the field of Family and Consumer Science will continue to be in a constant state of revision because FCS teachings will have no validity if they do not reflect current societal trends. As technology use continues to rise, it is essential that FCS professionals grasp the latest concepts for use in their classroom. FCS professionals are in a unique position of incorporating technology into their classroom even when a limited budget prevents the purchase of the latest gear. Lesson plans can focus on the consumer aspects of technology and its impact on society, family life, and individuals (Grogan, 1984). If there is just one computer in the FCS classroom, students can take turns doing Internet research, or work in teams to utilize a software program. Teachers can also present the programs via overhead projection for total class involvement.

As the focus of many K-12 institutions turns towards strengthening skills in Language Arts and Mathematics, the importance of FCS has dwindled, to the point of extinction in many cases. One way to ensure its survival is through proving its applications in the real world. Technology use in the classroom is essential to achieve this goal. Teachers can research the latest trends and develop ways to incorporate them into their lesson plans. Administrators can support these efforts with workshops and through the purchase of modern equipment. Educators in each state who are committed to the survival of FCS can help develop computer and technology standards to be implemented specifically in the FCS classroom, similar to those in the state of Virginia. Surveys of graduating seniors and their experiences with FCS can provide directional feedback. Keeping curriculum in FCS current with trends in society, including technological advancements, is an important step in solidifying its place in the K-12 setting.

References

Abdel-Ghany, M. (1995). Cruising the Information Highway: Challenges and Opportunities of Electronic Media in Research. *Family Economics and Resource Management Bienniel 1995*, 5-7. Retrieved April 10, 2002, from http://www.hec.ohio-state.edu/hanna/ferm/abdel.pdf

American Association of Family and Consumer Sciences. (2001). Retrieved April 12, 2002, from http://www.aafcs.org/resources/links.html

Browning, R. & Durbin, S. (1985). *Computers in the Home Economics Classroom*. Washington D.C.: Home Economics Education Association.

Burkart, A. C., Muller, E. & O'Neill, B. (1985). Computers in the Home Economics Classroom: Present Uses and Future Implications. *Journal of Home Economics, 77,* 24-31.

Computer Applications in Family & Consumer Science. (1999). Retrieved on April 22, 2002, from http://www3.uakron.edu/hefe/comapps/commapps.htm

Croxall, K. & Cummings, M. N. (2000). Computer Usage in Family and Consumer Sciences Classrooms. *Journal of Family and Consumer Science Education, 18,* 1-12. Retrieved April 25, 2002, from http://www.natefacs.org/

Educational Software Institute Online. (n.d.). Retrieved April 12, 2002, from http://www.edsoft.com/c/@5TM3t8Apb_4aQ/index.html

East Side Union High School District Home Economics Resources. (1997). Retrieved on April 12, 2002, from http://teacher.esuhsd.org/resources/home_economics.html

Evalutech. (n.d.). Retrieved April 12, 2002, from http://www.evalutech.sreb.org/

Family and Consumer Sciences Computer/Technology Standards By the End of Grade 12. (2001). Retrieved on April 25, 2002, from http://www.cteresource.org/VDOE/CTE/CTMatrix/fcsmatrix.pdf

Grogan, J. P. (1984). Teaching About Computers in Home Economics-Without a Computer. *Journal of Home Economics, 76,* 46-47.

Hughes, R. (2001). A Process Evaluation of a Website for Family Life Educators. *Family Relations, 50,* 164. Retrieved April 12, 2002, from Academic Search Premier.

Manley, K. S, Sweaney, A. L. & Valente, J. S. (2000). Internet Usage Among Family and Consumer Sciences Education Professionals. *Journal of Family and Consumer Science Education, 18,* 1-9. Retrieved April 12, 2002, from http://www.natefacs.org/

Proposed Academic Standards for Family and Consumer Sciences. (2001). Retrieved April 25, 2002, from http://www.pde.psu.edu/standard/fcswhole.pdf

Smith, B. P. & Hall, H. C. (1999). Explanatory Style of Family and Consumer Sciences Teachers. *Journal of Family and Consumer Science Education, 17,* 1-8. Retrieved April 25, 2002, from http://www.natefacs.org/

Thaler-Carter, R. E. (2000). Leaving Home Economics in the Past. *Techniques: Connecting Education and Careers, 75,* 2-3. Retrieved April 5, 2002, from MasterFILE Premier, EBSCOhost.

Thomas, D. (1984). Using Computers to Change Home Economics. *Journal of Home Economics, 76,* 38-39.

Warren, N. (n.d.). *Standards and State Frameworks: Family and Consumer Science Education.* Retrieved April 22, 2002, from http://www.ridoe.net/standards/frameworks/famconsumersciencesed.htm