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SINGLE MOTHERS: THE IMPACT OF WORK ON HOME AND THE IMPACT OF HOME ON WORK

Lenore Rasmussen Robbins
Utah State University

Joan R. McFadden
Ball State University

The purpose of this study was to assess the relationships between family/home satisfaction and job satisfaction of single working mothers with at least one child under the age of 18 living at home. The principal objectives were to identify the stressful situations in the lives of working single mothers and the factors that contributed to home satisfaction and work satisfaction. Data were gathered by self-report questionnaire from single working mothers. Factor analysis was used to reduce data into home and work satisfaction factors. These factors were then analyzed by multiple regression to determine the variance explained. Using stepwise multiple regression the following three factors predicted both satisfaction with home life and satisfaction with work 1) family interaction, 2) income, housing, and health, and 3) family diet and money management. Two additional factors, 1) time commitments and 2) family and community support, can predict satisfaction with work. The work factors that predicted home life satisfaction were 1) work schedule, 2) work environment, and 3) salary and advancement. Work factors that predict satisfaction with work were 1) breaks and control, 2) schedule and salary, and 3) commuting and friends at work. Working single mothers identified single parenting, financial problems, major changes in work or family, and problems with children as the situations causing stress in their lives. Using analysis of variance a statistically significant relationship was found with income and 1) education, 2) perception of enough income, 3) satisfaction with home life, and 4) work satisfaction.

Balancing work and family roles has become a key personal and family issue for American society (Dubeck, 1998; Burge & Culver, 1989). Employers and family studies specialists find that the changing American family structure is a major source of stress and role strain in both the work place and the home.

The literature indicates that some of the most significant differences between traditional two-parent families and single-parent families are that the latter experience reduced income and/or poverty, lack of a support system, lowered self-esteem, reduced personal satisfaction, and increased time pressures (Besharov, 1992; McLanahan & Booth, 1989; Richards, 1989).

As an individual attempts to balance work and family, role strain, conflict and stress often result. Voydanoff and Donnelly (1989) conceptualized role strain as the individuals appraisal of the level of conflicts between roles and of the degree of experienced from attempting to meet multiple role demands.

Consequences to the children of single parent families included less support, greater high school dropout, less parental attention and supervision at home, and less money for their needs.

Work is the cause of conflict and many and various types of stress among single working mothers. It is associated with long, irregular, rigid working hours, travel away from home, and "spillover" of fatigue, preoccupation, and irritability from work to family and family to work (Pleck, 1985).

This study focuses on the single mother family. Evidence shows that these families face a greater variety of hardships (stressors) than do the two-parent families (Parcel, 1998; McLanahan & Booth, 1989; Quinn & Allen, 1989; Richards, 1989; Burden, 1986; Rubin, 1976). Both work and family are valued in American society. Questions of how these single mothers perceived work demands influencing their family and family demands influencing work have been addressed. This study has examined how conflicting demands have caused stress, whether this stress is exacerbated by the exhausting lives the single parent leads or is simply a matter of stress from the conflict between work and family demands.

Danes (1998) studied role satisfaction in farm women. She investigated the possibility that one of two conflicting theories, role scarcity or role enhancement was at work in this sample:

> The role scarcity model posits that people do not have enough energy to fulfill role obligations; thus, it implies that the more roles one accumulates, the greater the probability of exhausting one's supply of time and energy and of confronting conflicting obligations. The role enhancement theory on the other hand posits that multiple role involvement can be energy generating; it assumes that people find energy for that to which they are highly committed and they often feel more energetic after doing those activities. (pp.403)

After this investigation, Danes (1998) determined that using a measure of well being that included satisfaction was more appropriate than either of the role theories she studied.

Changes in Family Structure

The traditional American family with a working husband, a homemaker wife, and two or more children made up only 7% of the nation's families in the 90's (Duxbury & Higgins, 1991). While single parent families comprised 11 percent of American families in 1970, this proportion increased to 25.7 percent by 1984 (Norton & Glick, 1986) and 26.6 % in 1994 (Blau, Ferber & Winkler, 1998). Another way to assess the increase in single parent families in the U.S. is to consider that one of every 3.8 families with children under 18 years of age in 1998 was a single parent family (March census 1998). This was up from five in every family in 1984 and from one of every ten families in 1970 (Norton & Glick, 1986).

A study at the Center on Budget and Policy Priorities based on Census data shows the average incomes of the poorest 20 percent of female-headed families with children fell from 1995 to 1997 despite continued economic growth in America (Primus, 1999). According to Schuchardt and Guadagno (1991), 8% of all two-parent families in the U.S. are living in poverty compared to 40% of the white single-mother families who are living in poverty. In Utah between 1980 and 1990, the number of female-headed families with children increased by 38% and the number in poverty increased to over 50% (Report To The Governor; Poverty in Utah, 1991). Since 1970, the number of single-parent families has increased from 13% of the 29.6 million total families to 34.7% in 1990 (U.S. Department of Commerce, Bureau of the Census, 1990). These figures indicate that single-parent families have almost tripled in number from

1970 to 1990. Of the 8.6 million single-parent families with children under age 18 in 1989, 79% were maintained by women and 21% were maintained by men (U.S. Department of Housing and Urban Development and U.S. Department of Commerce Current Housing Report, 1992). The importance of employment becomes evident. Problems single-parents experience, in association with having to go to work, include the lack of support in managing the home and children (Burden, 1986). Single parents are constantly pressed for time. Work, shopping, cooking, and housekeeping are fixed time consumers, leaving nurturing, emotional support, and cognitive stimulation to suffer by default. (Garrett, Ng'andu, & Ferron, 1994).

Family Satisfaction and Work Performance

The need to examine the effects of home on work as well as to study the many complex relationships among elements of work and the family is now recognized. Renshaw (1976) was one of the first to document the interactive nature of work and family. His findings demonstrated a strong relationship between a satisfying family life and high levels of job satisfaction. According to Duxbury and Higgins (1991) the concern for work-family conflict as a source of stress has been correlated with the following dysfunctional negative consequences: increased health risks, poorer performance of the parenting role, decreased productivity, tardiness, absenteeism, turnover, poor morale, reduced life satisfaction, and lower mental health.

Holtzman and Glass (1999) found that declines in job satisfaction routinely accompany the birth of a child. Having an intellectually engaging and challenging job and higher wages increased job satisfaction as did the flexibility to alter one's schedule and having a supervisor support.

Conversely, Hanson and Sloane (1992) found that young children had no effect on the job satisfaction of men and women workers regardless of time period, work status, or marital status. They found this to be true for women working in the labor market as well as in the home. They explain that perhaps working women with young children do experience role conflicts, but they also derive satisfaction from their work.

Single-parent mothers were found by Burden (1986) to suffer the most strain between family life satisfaction and job satisfaction. London (1996) found, as did McLanahan, & Booth in 1998 that his population of single mothers had reduced chances of completing school, decreased opportunities for marriage, and increased risks that public assistance will be needed to maintain the economic viability of the family. Two important domains of existence, the family and the workplace, come into conflict as single mothers struggle to live well in both areas. Family life may make demands on work that the work role must accommodate, just as work may require adjustments in family life (Dubeck, 1998, Felstehausen et al., 1986). The literature clearly implicates the reciprocal influence of the two roles.

Reducing Stress and Education

People have less stress in their lives, both at home and at work when they have the skills necessary to put balance in their lives. In favorable circumstances, adolescents acquire critical adaptive skills in the family, among friends, and in the neighborhood but most will need added skills gained through systematic instruction and practice in the classroom. Teaching skills in the areas of time and finance management, health and nutrition, parenting and family relations, job preparedness, decision making, and coping strategies would help children acquire the knowledge, ability, and attitudes necessary for success in life.

Felstehausen and Couch (1989) developed a model for linking research to practice. The model emerged from data collected from teachers who indicated if and where they included work and family issues in the secondary curriculum. Work and family concepts were most likely to be included in 1) family relations and 2) parenting and child development classes.

The results of a follow-up to two major work and family satisfaction surveys were used by Felstehausen, Couch, and Wragg (1993) as the basis of a curriculum to teach life skills to adolescents. They defined life-skills as the skills needed to be a healthy and productive member of the community. These skills enable the adolescent to become a self-sufficient and productive citizen. A single parent mother who has learned these skills as an adolescent will be better able to cope with the rigors of her new role in life.

Method

The target population for this study was the single working mothers living in Iron County, Utah, with at least one child under the age of 18 living at home. Effort was made to identify these individuals through churches, government and other family social services agencies, and University departments working with single women. An invitation to respond was included in the local newspaper and names were volunteered by family, neighbors, friends, and business associates.

The data were gathered by a self-report instrument developed at Texas Tech University (Felstehausen et al., 1986). Using the pilot data, a reliability of .95 to .98 was established for the instrument (Felstehausen et al.,1986). Reliability was calculated using Cronback's Coefficients Alphas.

This instrument included family and work satisfaction scales and inventories and is conceptually grouped into four major sections: personal and family data, stress factors, work hours and scheduling (labeled work factors), and conditions relating to work and family environments (labeled home and family factors). The following questions guided this study in assessing relationships between family/home satisfaction and job satisfaction in single mother families: 1) What are the stressful situations in the lives of working single mothers? 2) How stressful is the home life of working single mothers? 3) What are the home and family factors that contribute to home satisfaction of working single mothers? 4) What are the home and family factors that contribute to work satisfaction of working single mothers? 5) How satisfied are working single mothers with their home life? 6) What are the work factors that contribute to satisfaction with work of working single mothers? 7) What are the work factors that contribute to the satisfaction of home life of the working single mothers?

The self-report format includes a semantic differential scale after each item. For example, if the respondent answered "yes, the situation caused stress" the amount of stress was indicated on a Likert scale from 1 to 7 where 1 equaled "not stressful at all" and 7 equaled "very stressful."

In addition to individual factors, respondents were asked to give an overall rating of satisfaction with their home and family life and an overall satisfaction rating with their work. Likewise, they were asked to report the overall effect of their work on the quality of their home life. Finally, a global question ("How difficult is it for you to combine work and family responsibilities?"), is included as a summary item. Respondents replied on a Likert-type scale from 1 to 7 where 1 equaled "not difficult" and 7 equaled "very difficult."

The data were analyzed to provide frequency counts and percentages to describe the population. Factor analysis was used to reduce data into three or four underlying home

satisfaction and work satisfaction factors that were analyzed to determine the variables that were highly correlated. These new factors were entered into a multiple regression to determine the variance explained by the factors (treated as independent variables). A stepwise regression procedure was used in order to determine the linear combination of independent variables that will best predict work and home satisfaction. Analysis of variance identified the significance and Spearman correlation coefficient established the strength of the correlation.

Findings

Since a random sample was not practical, a purposive sample of single working mothers with at least one child under the age of 18 living at home was used (Vogt, 1993). A total of 59 persons responded to the 73 survey's sent out making it an acceptable return rate of 80%. The profile of the respondents included 3.4% minority women. All respondents had at least a high school education with 49% having college degrees.

The average number of children per family in this study was 2.3, with the range being from 1 to 9. The average family annual income was between $10,000 to $15,000. The lower amount is just below the 1998 poverty level of $10,915 (Poverty in Utah 1998). This level has only increased by $1,219 from the 1987 poverty level of $9,696. When respondents were asked to indicate their perception of the adequacy of their income, 31% said they could only meet necessities and 42% said their income allowed them to afford more than just necessities. The remaining 27% reported that their incomes were not at all adequate.

The respondents reported the hours they worked each week ranged from 3-77. The mean hours worked was 33 hours. The average age of the respondents was 42 years. Age ranged from 21 to 53. Working single mothers identified (in order of most frequent response) single parenting, financial problems, major changes in work or family, and problems with children as the situations that were causing stress in their lives.

Factor Analysis

Factor analyses were conducted on 28 home and family variables and 22 work variables to identify clusters of variables that were related to home satisfaction and work satisfaction. The analyses in this study determined that the following six home and family factors were related to satisfaction with home life (listed in order of variance explained) (see Table 1):

1. family interaction;
2. time commitments;
3. health, housing, and income;
4. family support;
5. family diet and money management; and
6. community support.

Home and family factors related to satisfaction with work were (listed in order of variance explained) (See Table 1):

1. family interaction;
2. housing, health, and income;
3. time commitments;
4. family and community support;
5. family diet and money management;

6. child care and family drug and alcohol abuse; and
7. family communication.

Table 1
Factors that Influence Satisfaction with Home and Work

Factors	Satisfaction with Home	**	Satisfaction with Work	**
Home and Family				
Family Interaction	*1	24.8%	1	31.1%
Time Commitments	2	9.8%	3	8.2%
Health, Housing and Income	3	8.7%	2	9.0%
Family Support	4	6.5%	4a	7.1%
Family Diet and Money Mgt	5	6.0%	5	6.1%
Community Support	6	5.5%	4b	
Child Care			6	5.1%
Family Communication			7	4.0%
Accumulative % Variance explained		61.3%		70.6%

*Numbers indicate order of variance explained
**Percent of variance explained

Listed, in order of the variance explained, are the work factors that were related to satisfaction with home life (see Table 2):

1. work environment;
2. salary and advancement;
3. breaks and parking;
4. benefits and security;
5. commuting and friends at work; and
6. work schedule.

Work factors related to satisfaction with work were identified as (listed in order of variance explained) (See Table 2):

1. work environment;
2. schedule and salary;
3. break and control;
4. commuting and friends at work;
5. benefits and security; and
6. work conditions.

Table 2
Factors that Influence Satisfaction with Home and Work

Factors		Satisfaction with Home	**	Satisfaction with Work	**
Work					
	Work Environment	*1	37.3%	1	38.5%
	Salary	2	9.0%	2a	10.2%
	Breaks	3	7.9%	3	7.2%
	Benefits and Security	4	6.3%	5	4.8%
	Commuting and Friends at Work	5	4.9%	4	6.6%
	Work Conditions			6	4.6%
	Work Schedule	6	4.6%	2b	
	Accumulative % Variance explained		70.0%		71.9%

*Numbers indicate order of variance explained
**Percent of variance explained

Stepwise Multiple Regression

A subsequent series of regression analyses were conducted to find which of the new factors could predict home life satisfaction and work satisfaction. Findings indicate that home and family factors accounted for 63% of the variance (R^2=.63) in predicting satisfaction with home life. They were:

Factors		β	t	p value
1.	family interaction;	.63	7.64	.00**
2.	income, housing, and health; and	.42	5.05	.00**
3.	family diet and money management.	.24	2.92	.01**

*<p.05 **p< .01

Home and family factors that entered the regression equation and explained 38% (R^2=.38) of the variance in predicting satisfaction with work were:

Factors		β	t	p value
1.	family interaction;	.37	3.37	.00**
2.	time commitments;	-.26	-2.43	.02*
3.	housing, health, and income;	.26	2.37	.02*
4.	family and community support; and	.25	2.35	.02*
5.	family diet and money management.		2.02	.05

*<p.05 **p< .01

Forty-two percent of the variance (R^2 = .42) in satisfaction with home life could be accounted for in the following work factors:

Factors		β	t	p value
1.	work schedule;	.40	3.82	.00**
2.	work environment; and	.38	3.69	.00**
3.	salary and advancement.	.34	3.28	.00**

*<p.05 **p< .01

The work factors that could explain 40% of the variance (R^2 = .40) in predicting satisfaction with work were:

Factors		β	t	p value
1.	breaks and control;	.38	3.6	.00**
2.	schedule and salary; and	.36	3.43	.00**
3.	commuting and friends at work.	.35	3.29	.00**

*<p.05 **p< .01

Analysis of Variance and Spearman's Correlation Coefficient

Spearman correlation, which shows the degree of monotonic relationship between two variables that are arranged in rank order, was conducted because the variables were measured using a Likert scale. A statistically significant relationship was found with income and 1) education (F=19.72, df=9, p< .008), 2) perception of enough income (F=24.67, df=6, p< .000), 3) satisfaction with home life (F=18.50, df=15, p< .022), and 4) work satisfaction (F=27.86, df=18, p< .006). The research indicated a significant relationship (at .02 or above) between income and four factors: education, perception of enough income, satisfaction with home life, and work satisfaction.

Conclusions

Consistent with other research, findings, this study suggest that income is correlated with education and perception of enough income to meet family needs. Income is also correlated with satisfaction with home life and work satisfaction. Implications of this study point to the importance of making educational programs available for lower income and the lesser educated, single working mothers. These programs should include parenting and employment skills, time and financial management, health and nutritional information, and ways to cope with change. The study reinforces the importance of friends at work and family interactions. It would be important to make socializing with peers a strong component of these educational programs. These findings would indicate a need to begin vocational classes in the early years in high school for at-risk youth or pregnant unmarried teen women.

Educators, especially those concerned with family relations and/or family resource management, can help guide families to improve current job skills or develop new skills aimed at securing better-paying jobs. Policy makers and educators need to become cognitive of the magnitude of the problem and aware that intervention through education is less expensive than teen pregnancy and long-term public assistance. Findings in this study are consistent with previous studies regarding the importance of intervention through education (Felstehausen, Couch, and Wragg, 1993; Schuchardt & Guadagno, 1991).

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About the Authors

Lenore Rasmussen Robbins, PhD, is an Extension Educator at Utah State University, Logan, Utah. Joan R. McFadden, PhD, is a Professor of Family and Consumer Sciences Education at Ball State University, Muncie, Indiana.

TEACHERS' ATTITUDES TOWARD CHARACTER EDUCATION AND INCLUSION IN FAMILY AND CONSUMER SCIENCES EDUCATION CURRICULUM

Darby Thompson Sewell
Abraham Baldwin College

Helen C. Hall
The University of Georgia

Character education is a hotly debated topic and is receiving much attention among educators and policy makers. The purpose of this study was to examine in-service family and consumer sciences education teachers' attitudes toward character education and the inclusion of character education in family and consumer sciences education curriculum. One hundred ninety-five surveys were completed and returned. The family and consumer sciences teachers responding to this survey indicated that they were including 22 of the 27 character traits of the Georgia character curriculum as important or major concepts in their teaching. For the most part, they reported the concepts were taught in the Nutrition and Wellness and Parenting curriculum. Overwhelmingly, teachers agreed that character education can be and should be integrated in the family and consumer sciences curriculum. The teachers responding to this survey indicated that they had extensive knowledge of the character traits and how to teach character traits.

Introduction and Conceptual Framework

There is a growing concern and much discussion about the need for schools to do more to foster character development in students (Jones, Ryan, & Bohlin, 1998) and to educate today's youth on character and values. Character education is helping students to know the good, love the good, and do the good (Ryan, 1993). Character education is a hotly debated topic and is receiving much attention among educators and policy makers. A study released by *U.S. News and World Report* found that "teaching children values and discipline ranked the highest among issues Americans considered most important to reforming our schools" (Jones, Ryan, & Bohlin, 1998, p. 11).

In order to effectively provide an innovative teaching and learning environment, teachers must be knowledgeable of the common character traits that are the core of character education (Anderson, 2000). Anderson (2000) listed (a) respect, (b) responsibility, (c) fairness, and (d) hard work as four core character traits. According to Nodding (1995), "The greatest structural obstacle, however, may simply be legitimizing the inclusion of themes of care in the curriculum" (p. 191). Those involved with planning and implementing education, such as politicians, state education departments, parents, and schools are searching for ways to effectively include and integrate character education (Anderson, 2000).

Throughout history there have been three social institutions that have shared in the responsibility of character and moral education (a) the home, (b) the church, and (c) the school (Lickona, 1991). Historically, character development was a central theme in teacher training programs in America (Jones, Ryan, & Bohlin, 1998). "Character education" is the prevalent term used today by policy makers and educators, but historically, there have been several terms used

to convey the concept of teaching morals and values in the educational system. These terms include (a) moral education, (b) moral reasoning, (c)values education, (d) values clarification, and (d) ethics (Jones, Ryan, & Bohlin, 1998).

The idea of teaching character and care has been prevalent in the early childhood curriculum for a length of time. But secondary schools, where violence and apathy are concerns, have done little in the past to develop the capacity to care among students (Nodding, 1993). According to Lickona (1993), "Character education is far more complex than teaching math or reading; it requires personal growth as well as skills development" (p. 336). After a period of decline, character education is experiencing a resurgence of interest in the public school system (Jones, Ryan, & Bohlin, 1998).

Over the past decade, most of the discussion has focused on efforts at the public school level to develop character traits in students. According to Jones, Ryan, and Bohlin (1998), "Little scholarly attention has been given to what is currently being done at the level of teacher preparation to equip future teachers with the skills and knowledge they need to work effectively as "character educators" (p. 11). Teachers across all subject areas often do not receive adequate preservice or inservice training on how to teach character issues. By receiving little or no training, teachers result in feeling uncomfortable or less competent in the values domain (Lickona, 1993).

In 1997, the Georgia Legislature enacted a law supporting the development of a "character curriculum" to be developed by the State Board of Education. The character curriculum includes 27 character traits: character, courage, patriotism, citizenship, honesty, fairness, respect for others, kindness, cooperation, self-respect, self-control, courtesy, compassion, tolerance, diligence, generosity, punctuality, cleanliness, cheerfulness, school pride, respect for the environment, respect for the creator, patience, creativity, sportsmanship, loyalty, perseverance, and virtue. The character curriculum became part of the Georgia Quality Core Curriculum Standards required in elementary, middle schools, and high schools in the state. Throughout the state, teachers in every field are teaching character education with the decision related to amount of time and method of teaching left to the local school. Many of the 27 character traits outlined by the Georgia Department of Education may be included and integrated by family and consumer sciences teachers in different content areas. Teachers' attitudes toward the character education traits and inclusion in the curriculum is important to understanding the role of family and consumer sciences education in promoting character education.

Purpose and Objectives

The purpose of this study was to examine in-service family and consumer sciences education teachers' attitudes toward character education and the inclusion of character education in family and consumer sciences education curriculum. Three objectives addressed the purpose of the study. The first objective was to determine the extent to which the 27 character traits were included as objectives in family and consumer sciences curriculum. The second objective was to determine teachers' attitudes toward teaching character education as part of family and consumer sciences programs. The third objective was to identify the curriculum areas in family and consumer sciences where character education concepts were being included and integrated.

Methodology and Findings

The study's participants consisted of family and consumer sciences teachers in Georgia. A character education survey instrument was distributed to 300 teachers attending the January

2001 Georgia Family and Consumer Sciences Teacher Winter In-Service meeting. One hundred ninety-five surveys were completed and returned resulting in a 65% response rate. The survey instrument consisted of a total of 36 items including 27 items on the inclusion of character education in family and consumer sciences education classes, six items on the attitude of teachers toward character education, and three demographic questions. The data were collected and analyzed using descriptive statistics. Mean, standard deviation, and frequencies are reported for the survey items.

The three demographic questions on the survey instrument inquired about the grade level taught, years of teaching experience, and the content areas in which the participant was teaching character traits. The responses for grade level taught and years of experience are indicated in Table 1. Seventy-five percent of participants taught in grades 10, 11, or 12. The number of years of teaching experience ranged from 1 to 39 years with a mean of 14.5 years.

Table 1
Demographic Characteristics of Georgia Family and Consumer Sciences Teachers

Variable	N	%
Grade Level Taught	195	
6	53	27.2
7	50	25.6
8	49	25.1
9	144	73.8
10	147	75.4
11	147	75.4
12	148	75.9
Years of Experience	136	100
1 - 5	29	21.3
6 - 10	23	16.9
11 - 15	23	16.9
16 - 20	13	9.6
21 - 25	33	24.3
26 - 30	9	6.6
31 and over	6	4.4

Twenty-seven items asked participants to indicate the extent to which the character education concepts were included in their teaching of family and consumer sciences education. Each item listed the character traits and a phrase defining the trait as identified in Georgia Quality Core Curriculum Standards. For example, the item for courage read as follows, The character trait of courage: Willingness to face danger with determination. There were four response choices as follows:

A. This is <u>not a concept</u> in my teaching. This concept is never taught as part of my FCS class.
B. This is an <u>incidental concept</u> in my teaching. I teach this concept occasionally (monthly) in a FCS class.

C. This is an important concept in my teaching. I teach this concept often, 2-4 times a month in a FCS class.
D. This is a major concept in my teaching. I teach this concept often, weekly in a FCS class.

Response values were assigned A = 1, B = 2, C =3, and D = 4. Means on the 27 character trait items ranged from a low of 2.46 for the character traits courage and patriotism to a high 3.81 for the character trait of cooperation. The mean rating of 22 of the 27 traits were rated 3.0 or above indicating the concepts were *important* or *major* concepts in the teaching of the family and consumer sciences teachers responding to this survey. Ten of the items had a mean of 3.5 and above. The results are summarized in rank order in Table 2. *Respect for others* and *cooperation* were ranked one and two respectively as *major concepts* taught. This finding is consistent with the historical emphasis placed on cooperation in the family and consumer sciences education curriculum and student organization. It is interesting to note that of the 27 character traits surveyed, *courage* and *patriotism* received the lowest score. It is likely that since the terrorists' attacks of September 11, 2001, the extent to which courage and patriotism are discussed in the classroom is likely to have increased. This survey was completed before the attack and does not reflect the recent national resurgence of patriotism.

Table 2
Rank Order of Means & Standard Deviations for Character Education Concepts Inclusion in Secondary Family & Consumer Sciences Education Programs

Character Trait	*M**	*SD*
1. Respect for others: Concern for and motivation to act for the welfare of others.	3.84	.45
2. Cooperation: Recognition of mutual interdependence with others resulting in polite treatment and respect	3.81	.46
3. Courtesy: Recognition of mutual interdependence with others resulting in polite treatment and respect for them	3.74	.50
4. Punctuality: Being on time for attendance and tasks	3.72	.56
5. Self-Respect: Responsibility for one's actions and their consequences and being emotionally, physically or intellectually bound to something	3.72	.59
6. Self-Control: Exercising authority over one's emotions and actions	3.71	.59
7. Honesty: Truthfulness and Sincerity	3.70	.59
8. Cleanliness: Good habits of personal hygiene and grooming	3.68	.62
9. Kindness: Concern for suffering or distress of others and response to their feelings and needs	3.65	.64
10. Fairness: Freedom from favoritism, self-interest, or indulgence of one's likes and dislikes	3.62	.68
11. Compassion: Concern for suffering or distress of others and response to their feeling and needs	3.41	.72
12. Tolerance: The allowable deviation from a standard and indulgence for beliefs or practices differing from or conflicting with one's own	3.40	.74
13. Creativity: Exhibiting an entrepreneurial spirit inventiveness, originality, not bound by the norm	3.39	.76
14. Diligence: Attentiveness, persistence, perseverance	3.37	.76

15. Patience: Not being hasty or impetuous	3.36	.74
16. Perseverance: Persistence, adherence, to actions and their	3.34	.77
17. Cheerfulness: Courtesy and politeness in action of speech	3.32	.74
18. Virtue: Exercising authority over one's emotions and actions	3.23	.84
19. Generosity: Concern for suffering or distress of others and response to their feelings and needs	3.19	.84
20. School Pride: Playing a contributing role in maintaining and improving all aspects of a school's environment, programs and activities within the context of contributing to the betterment of the city, county and state	3.18	.87
21. Loyalty: Steadfastness or faithfulness to a person, institution, custom or idea to which one is tied by duty, pledge or a promise	3.12	.97
22. Citizenship: Democracy, respect for and acceptance of authority, equality, freedom of conscience and expression, justice, liberty	3.08	.90
23. Respect of the Environment: Care for and conservation of land, trees, clean air and pure water and of all living inhabitants	2.91	.91
24. Sportsmanship: Abiding by the rules of a contest and accepts victory or defeat graciously	2.90	.92
25. Respect for the Creator: Our most basic freedoms and rights are not granted to us form the government but they are intrinsically ours	2.61	1.1
26. Patriotism: Support for the U.S. Constitution and love for the U.S.A. with zealous guarding of their authority and interests	2.46	.98
27. Courage: Willingness to face danger with determination	2.46	.93

* Note: 1 = Not a Concept, 2 = Incidental Concept, 3 = Important Concept, and 4 = Major Concept.

The family and consumer sciences content areas that were listed on the survey were taken from the National Standards for Family and Consumer Sciences Education's website. The two courses that received the highest ratings for character education already being included and integrated were Nutrition Wellness and Parenting both having a 58.5% score. The findings for this question are indicated in Table 3.

Table 3

Content Areas Where Character Education is Already Included & Integrated in Family and Consumer Sciences Courses, N = 195

Content Area	Frequency	%
Career, Community, & Family Connections	109	55.9
Consumer & Family Resources	60	30.8
Consumer Services	31	15.9
Early Childhood, Education, and Service	75	38.5
Facilities Management & Maintenance	12	6.2
Family	94	48.2
Family & Community Services	62	31.8
Food Productions & Services	30	15.4
Food Science, Dietetics, & Nutrition	43	22.1
Hospitality, Tourism, & Recreation	19	9.7
Housing, Interiors, & Furnishings	63	32.3
Human Development	79	40.5

Interpersonal Relationships	86	44.1
Nutrition Wellness	114	58.5
Parenting	114	58.5
Textiles & Apparel	90	46.2

Six items asked teachers to indicate the degree to which they felt that character education is needed by a majority of students, the degree to which it can be integrated into the Family and Consumer Sciences (FCS) curriculum, the degree that it should be integrated in the FCS curriculum, the level of knowledge that FCS teachers have of character traits, the level of knowledge that FCS teachers have of how to teach character traits, and the degree to which FCS teachers felt that character education should be a separate class taught by FCS teachers. For the first question in this category, the responses on the Likert type item ranged from *strongly needed (1) to not needed at all (4).* The responses on questions 2 through 6 on these six Likert type items ranged from *strongly agree (1)*, to *strongly disagree (5).* Frequency and percent for each item are reported in Table 4.

The first statement asked teachers to indicate the degree to which they felt character education was needed by a majority of students. Eighty-six percent indicated that character education was *strongly needed*. Overwhelmingly, teachers agreed that character education *can be* (Strongly Agree & Agree = 98.9%) and *should be* (Strongly Agree & Agree = 87.1%) integrated in the family and consumer sciences curriculum. The teachers responding to this survey indicated that they had *extensive knowledge* of the character traits (Strongly Agree & Agree = 95.4%) and *how to teach* (Strongly Agree & Agree = 88.2) character traits. The last statement in this section asked teachers to indicate if they thought that all students should be required to take character education as a separate class taught by family and consumer sciences teachers. Thirty percent indicated that they were *undecided*.

Table 4

Family and Consumer Sciences Teacher Attitude Toward Character Education

Variable	SN N (%)	MN N (%)	U N (%)	NN N (%)	
1. To what degree do you feel that Character Education is <u>needed</u> by a majority of students?	162 (86.6)	19 (10.2)	6 (3.1)	0 (0)	
	SA	A	U	D	SD
2. Character Education <u>can be</u> integrated in the curriculum of Family & Consumer Sciences.	141 (75.8)	43 (23.1)	2 (1.0)	0 (0)	0 (0)
3. Character Education <u>should be</u> integrated in the curriculum of Family and Consumer Sciences.	126 (64.9)	43 (22.2)	18 (9.3)	2 (1.0)	4 (2.1)
4. FCS Teachers have an extensive <u>knowledge</u> of the character traits.	135 (69.2)	51 (26.2)	5 (2.6)	1 (.5)	2 (1.0)
5. FCS Teachers have an extensive knowledge of how <u>to teach</u> the character traits.	111 (56.9)	61 (31.3)	15 (7.7)	6 (3.1)	2 (1.0)
6. All students should be required to take Character Education as a <u>separate class</u> taught by FCS teachers.	52 (27.1)	37 (19.3)	59 (30.7)	27 (14.1)	17 (8.9)

* Note: 1= Strongly Needed (SN), 2= Moderately Needed (MN), 3 = Undecided (U), 4 = Not needed (NN)
** Note: 1= Strongly Agree (SA), 2 = Agree (A), 3 = Undecided (U), 4 = Disagree (D), 5 = Strongly Disagree (SD)

Implications, Recommendations, and Conclusions

This study was conducted to provide a descriptive analysis of family and consumer sciences teachers' attitudes toward character education and the inclusion of character education in family and consumer sciences curriculum. There is much debate among politicians, administrators, parents, and teachers on how character education should be implemented and taught. Anderson (2000), stated that "Character education should not be taught as a separate curriculum, but must be entwined in all curriculums" (p. 140). The family and consumer sciences teachers responding to this survey indicated that they were including 22 of the 27 character traits of the Georgia character curriculum as *important* or *major* concepts in their teaching. For the most part, they reported the concepts were taught in the Nutrition and Wellness and Parenting curriculum. Overwhelmingly, teachers agreed that character education *can be* and *should be* integrated in the family and consumer sciences curriculum. The teachers responding to this survey indicated that they had *extensive knowledge* of the character traits and *how to teach* character traits. Teachers are encouraged to notify state and local school administrators and parents of the contribution of family and consumer sciences to the development of character traits of youth in Georgia. Further research is needed to determine specific content and teaching strategies used to integrate character traits in the family and consumer sciences curriculum.

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About the Authors

Darby Thompson Sewell, MEd, is a Family and Consumer Sciences Instructor at Abraham Baldwin College in Tifton, GA. Helen C. Hall, PhD, is a Professor in the Department of Occupational Studies at The University of Georgia in Athens. GA.

THE IMPACT OF TECHNOLOGY TRAINING ON FAMILY AND CONSUMER SCIENCES TEACHER ATTITUDES TOWARD USING COMPUTERS AS AN INSTRUCTIONAL MEDIUM

Sheri L. Lokken
Mississippi State University

Wanda K. Cheek
Mississippi State University

Shirley W. Hastings
University of Tennessee

With the introduction of technology in the family and consumer sciences (FACS) secondary classroom, the need for training teachers to use technology and integrate it effectively into the curriculum has increased. This transition has not come without challenges. FACS teachers, like their colleagues from other disciplines, have attitudes toward technology that impact the outcome of training. In this article, FACS teacher attitudes toward technology and the effect of a two-week, hands-on training were investigated. The relationship of pre-existing teacher characteristics to technology attitudes was also assessed. Teacher attitudes toward technology improved after training on three of four measures. Age, computer use, and computer experience were related to teacher attitudes toward technology. Findings from this study are helpful in planning professional development technology training for FACS teachers.

Over the past two decades, the quantum strides made in computer technology have impacted not only personal, family, and work lives, but the education of the nation's children. Improvements in technology have created a movement away from computer labs to integration of computers in the classroom (Scheffler & Logan, 1999). Technology has forced a re-evaluation of the teacher's role in learning (Chin & Hortin, 1993-94). In family and consumer sciences (FACS), teachers have been encouraged to emphasize strategies whereby students learn to ask questions and then seek solutions to practical problems (Redick et al., 1998). Use of technology in the classroom is a useful tool for accomplishing this goal. "[T]eachers and technology must be viewed in tandem" (Way & Montgomery, 1995, p. 12).

Morrison, Lowther, and DeMeulle (1999) note that the transition to computer-based instruction and student-centered learning environments should have been a relatively smooth process. Instead, major advancements in student learning with infusion of the new technology have not occurred. Several causes for this situation have been cited in the literature including lack of school and administrative support and teacher anxiety about computers (Bradley & Russell, 1997). In earlier research, Cuban (1986) presented a more comprehensive view. He stated that for a long time teachers have been uncomfortable with the use of technology in the classroom. He suggested this resistance stemmed from "the organizational realities of school and classroom life and the teacher's holistic perspective on what's important to young people" (p. 90). He asserted further that a general lack of consensus existed on how students should learn and how teachers should teach.

Preparing in-service teachers to integrate the technology has brought many challenges. Teacher anxiety about computers and overall attitude toward technology can influence the use of computers in the classroom, and, thus, the success of technology integration into the curriculum. Teachers can be expected to have the same traits as adult learners in general: (a) their past experiences serve as a resource to support new learning, (b) they are ready to learn when there is an identified need to know, and (c) they also learn what they perceive to have importance in helping them deal with problems they confront in life (Knowles, 1990). Thus, adult learners with limited experiences in technology-based environments can be expected to hold feelings of anxiety. Teachers as adult learners may experience anxiety and poor attitudes toward computers, and excessive levels may lead to reduced use of computers.

The integration of computers in secondary FACS classrooms has been investigated in several studies. Daulton (1997) found in a longitudinal study that the rates of adoption of computer technology in the curriculum by FACS teachers increased from 5% in 1983 to 83% in 1993, a respectable improvement. Longstreth, Kelly, and Paris (1989) found that approximately one half of the FACS teachers in their study who had access to school computers had adopted them as instructional tools. However, in a national study of all vocational teacher educators, Miller (1997) found that home economics respondents reported lower levels of computer experience than teacher educators in other vocational areas. Kotrlik, Harrison, and Redmann (2000) concluded from a study of secondary vocational educators that FACS teachers self-reported average to below average knowledge and skill in both general and software technology, as did teachers in other vocational areas.

Research on computer anxiety and negative attitudes toward computers by FACS teachers needs investigation. High school teachers exhibiting computer anxiety can be a hindrance to helping students form positive attitudes toward computers, gain knowledge about computer technology, and develop requisite computer skills. Jordan and Follman (1993) suggest that teacher computer anxiety must first be addressed in order to change their attitudes about technology use.

Will intensive technology training better prepare FACS teachers to integrate technology in the classroom and impact their attitudes toward computers? Martin and Lundstrom (1988) found that FACS teachers' attitudes toward computers improved following training. In a recent study of technology training completed by vocational teachers, self training, including personal experience received on the job, written materials, and formal in-service training provided by school districts were the most frequently cited sources of information (Kotrlik, Harrison, & Redmann, 2000).

The intent of this study was to gain an understanding of FACS high school teacher anxieties about and attitudes toward using technology in their classrooms. Specifically, researchers examined characteristics of teachers that were correlated with computer anxiety and technology attitudes and whether an intensive, two-week training workshop on integrating current technology in FACS curriculum had an effect on these attitudes.

Review of Literature

Computer Anxiety and Attitudes Toward Computers

Computer anxiety has been defined as a fear of interaction with a computer that is unnecessarily high compared to the genuine danger presented by the computer (Howard, 1986). McInerney, McInerney, and Sinclair (1994) add, "[n]egative cognitions and attitudes toward

computers may also accompany such feelings of anxiety and include worries about embarrassment, looking foolish or even damaging computer equipment" (p. 28).

Prior computer experience has been the most commonly cited variable correlated to lower computer anxiety (Bradley & Russell, 1997; Chu & Spires, 1991; Fletcher & Deeds, 1995; Liu & Reed, 1992; McInerney et al., 1994; Reed & Overbaugh, 1993; Ropp, 1999; Woodrow, 1992). A strong negative correlation has been found between computer anxiety and increased computer use (Larner & Timberlake, 1995). McInerney et al. also reported positive attitudes toward computing, good perceptions of self-efficacy, and high expectations of success to be correlated with decreased levels of computer anxiety. Cognitive styles based on the Myers Briggs Type Indicator were discovered to be determinants of computer anxiety by Chu and Spires (1991). Still, other researchers have found dislike of change, negative perceptions of technology, and poor mechanical attitude as correlates to higher computer anxiety (Heinssen, Glass, & Knight, 1987; Weil, Rosen, & Wulgalter, 1990). Some studies have reported that females were more likely to have computer anxiety than males (Bradley & Russell, 1997; Liu & Reed, 1992; McInerney et al., 1994).

Conflicting results about the correlation of age and computer anxiety have been published. Dyck and Smither (1994) found that the older participants in their study (55 and older) had less computer anxiety, had more positive attitudes toward computers, and had more liking for computers than the younger participants (30 and younger). Jones and Wall (1989) and Rosen, Sears, and Weil (1980), on the other hand, determined age was significantly related to computer anxiety, indicating older participants had higher levels of computer anxiety. Rosen and Maguire (1990) in a meta-analysis of research on age and computerphobia noted no correlation between the variables although this conclusion was drawn from a small number of studies. Still, other researchers have documented no significant correlations for computer anxiety with any background characteristic variable (age, computer experience, education, or gender) (Harris & Grandgenett, 1996; Honeyman & White, 1987; Yang, Mohamed, & Beyerbach, 1999).

Attitudes and attitude change are concepts that have been discussed in the literature for nearly 100 years. However, one universally-accepted definition of attitude is difficult to cite. Simonson (1995) described attitudes as "latent and not directly observable in themselves, but they act to organize, or to provide direction to, actions and behaviors that are observable" (p. 366). Thus, attitudes toward technology can impact interaction with technology. Attitudes toward technology include variables such as confidence, liking, interest, awareness, comfort, and usefulness (Chou, 1997). Woodrow (1992) found correlations between gender, previous computer experience, locus of control, and attitudes toward technology. Chou also found that previous computer experience influenced teacher attitudes toward computers. Ropp (1999) determined computer access and hours of computer use per week to be correlated to computer attitude.

In summary, background characteristics of teachers have not been consistently correlated to computer anxiety or attitudes toward computers. Teacher attitudes toward computers can greatly influence the learning process for both the teacher and the student. The relationships that may exist make technology training more of a challenge. It would appear that teachers who need training the most—those with the least amount of computer competence and most negative attitudes toward computers—are also the most anxious about learning to use computers.

Impact of Training on Computer Anxiety and Attitudes

Research supports the idea that the biggest obstacle to teachers using technology in their classrooms is the lack of adequate teacher training (Yildirim, 2000; Vagle, 1995). In a study of accomplished teachers who integrated computers in their classrooms, Sheingold and Hadley (1990) found that teachers in their study had taken advantage of in-service training opportunities as well as completing training on their own time. In an extensive review of research on the impact of training on teachers' use of technology in the classroom, Chin and Hortin (1993-94) concluded that teacher attitudes toward technology can change if proper staff development training and support are provided.

What are the anticipated impacts of providing technology training for teachers? It would appear that computer anxiety is lessened by exposure to computers through training and use. Yildirim (2000) found that technology-competent teachers had significantly more positive attitudes, more confidence, and less anxiety toward computers than less competent teachers prior to completing a computer literacy course. Following the completion of the course, however, group differences disappeared, indicating training made a difference. In another pre-test post-test study of computer anxiety and attitudes toward computers, Hakkinen (1994-95) found that the pre-service teachers in his sample had reduced computer anxiety, higher estimation of their own computer skills, and more positive thoughts and feelings related to computers after completing a basic computer course. Ropp (1999) and Reed and Overbaugh (1993) also found significantly reduced computer anxiety following instruction. Kluever, Lam, Hoffman, Green, and Swearingen (1994) concluded that teachers who participated in technology training also showed improvement on attitudes toward computer post-test scores. From this research, it would seem that exposure to training would reduce or minimize computer anxiety.

Research Purpose and Hypotheses

The purpose of the study was two-fold: (a) to determine what characteristics of FACS teachers were related to their attitudes toward technology, and (b) to assess whether there was a change in teachers' attitudes toward technology after completing an intensive, two-week technology training workshop. Teacher characteristics evaluated were age, computer use, and computer experience. Attitudes of teachers were measured as anxiety toward computers, confidence in ability to use or learn about computers, liking of computers, and the views of the importance of computers as a learning method.

Based on the literature, it was hypothesized that as teachers' computer experience and computer use increase, computer anxiety will decrease and their attitudes of confidence, liking, and importance as a learning method will become more positive. It was also hypothesized that older teachers would have higher levels of computer anxiety and their attitudes of confidence, liking, and importance as a learning method would be less positive. A third hypothesis related to the effect of training on teachers' attitudes toward technology was constructed. It was hypothesized that training would affect teachers' computer anxiety, their liking of computers , their confidence in ability to use or learn about computers, and their view on the importance of computers as a learning method.

Method

Sample

Data for this study were collected over a three-year period from FACS teacher participants from high schools designated to receive funding from the Mississippi Department of

Education for a new technology-based classroom and curriculum, resulting in a non-random, convenience sample of 42 teachers. Sixteen schools participated in 1997, 11 schools in 1998, and 12 schools in 1999 (some schools had two FACS teachers). FACS teachers from each of these schools were required to attend a two-week intensive training on use of the technology and curriculum (see Cheek, Hastings, & Lokken, 2001). All teachers completing the training participated in the study.

The 42 teacher participants ranged in age from 23 to 64 years old with a mean of 46.45 (see Table 1). A total of 18 teachers (42.9%) had a master's or education specialist degree, and the remaining 24 teachers (57.1%) had a bachelor's degree. Seventeen teachers participated in the program in 1997, 13 in 1998, and 12 in 1999.

Table 1
Characteristics of Sample

Characteristics	1997 (*n*=17)	1998 (*n*=13)	1999 (*n*=12)	Total (*N* = 42)
Age				
23-34	1	1	4	6
35-49	6	7	6	19
50 & older	10	5	2	17
Education				
Bachelor's	9	7	8	24
Master's	7	5	4	16
Education Specialist	1	1	0	2
Computer Use Score[a]				
m	21.82	21.62	22.75	22.02
s.d.	2.19	2.75	3.49	2.75
Computer Experience Score[b]				
m	53.53	145.92	158.17	112.02
s.d.	56.03	127.86	144.17	118.29

[a] Calculated by summing scores on three questions: (a) hours per day of home computer use, (b) days per week of home computer use, and (c) number of tasks a home computer is used for.
[b] Calculated by sum of scores on: (a) days in the past year spent entering data into a computer, (b) number of software packages proficient in, (c) typing speed, (d) number of high school computer courses, and (e) number of college computer courses.

Procedures

A pre-test post-test design was employed to investigate the attitudes toward computers held by teachers and the impact of training on these attitudes. The pre-test and post-test were administered respectively on the first and last day of the two-week workshop. For purposes of this study, the technology-training workshop served as the treatment for the participants.

The purpose of the training was to prepare teachers to teach six FACS courses including prescribed technology prior to opening their new classroom. The six courses were: Family and Individual Health, Nutrition and Wellness, Child Development, Family Dynamics, Resource

Management, and Personal Development. The key outcome was to ensure that all teachers had the technology skills required to implement the curriculum and improved confidence in their ability to implement the technology. The participants' levels of computer skill were assessed prior to the workshop through a mail questionnaire. It was determined from this instrument that most teachers had only basic computer skills, and few had experience with recent teaching technology and software.

The training was conducted by a team of three university faculty members over three consecutive summer training sessions. Measures were taken to ensure consistency in training procedures, which took place at one of the pilot sites. This training allowed teachers to gain hands-on experience in a setting that closely simulated their local teaching environment. During the two-week workshop, approximately 40 hours was devoted to technology training and discussion interspersed with 30 hours of hands-on practice. The remaining time was spent on curriculum review and integration of the technology. The training site and each teacher's home classroom contained 16 student computer stations, a teaching station, and multiple software to support the curriculum. In addition, the teaching station had other technology equipment (i.e., scanner, digital camera) for which training was also provided (see Cheek, Hastings, & Lokken, 2001 for description of curriculum, software and technology-based classroom). It should be noted that some teachers were actively involved in getting the programs in their schools, whereas others were told the program was coming after the fact and advised they would need to complete the training, particularly during the first year.

The training was planned with the needs of adult learners in mind and allowed teachers to progress at their own pace following periods of explanation and instruction. During the two-week period, participants learned to use all software, completed projects using the software, learned classroom presentation technologies, and gained skill in basic computer functions. Upon completion of the training, each teacher was assessed by the researchers on proficiency in the operation, management, and use of all equipment, software and technology. In addition, each teacher prepared and presented a 20-minute PowerPoint® slide show based on a lesson plan from the curriculum.

Instrument

An existing instrument, the Computer Anxiety and Attitudes Toward Computers measure (Chou, 1997), was used in the study. The instrument was developed from a review of the literature of existing computer anxiety and attitudes toward computers scales and used in a national study of agriculture education teachers, a comparable group to the present study participants. Chou reported that the instrument was validated by members of the dissertation committee. The instrument was pilot-tested with a student sample, refined, and then pilot-tested with a simple random sample of secondary agriculture teachers not included in the final study.

The questionnaire was composed of three sections. Part I, the Computer Anxiety (CA) Questionnaire, consisted of 12 computer anxiety-laden statements (see Figure 1) with a four-point Likert type scale: "1" (strongly disagree), "2" (somewhat disagree), "3" (somewhat agree), and "4" (strongly agree). Chou (1997) reported selecting a four-point scale instead of a five-point scale based on Smith's (1993) conclusion that "a 4-point scale results in a forced-choice response in either the developmentally based or traditional direction, with no room for a neutral response" (p. 25). Chou reported a reliability coefficient (Cronbach's α) of .86 for the 12-item Computer Anxiety section. The possible range of sub-scores was 12-48 for the Computer Anxiety section.

Part II, the Attitudes toward Computers (ATC) Questionnaire, contained 26 items (see Figure 1), all derived from a review of the literature. Again, the four-point Likert type scale was used. Statements measured confidence in ability to use or learn about computers, liking or enjoying computers, and attitudes toward the importance and effectiveness of computers as an educational medium. Chou reported a reliability coefficient of .94 for the 26-item Attitude towards Computers section. Cronbach's α was .84 for computer confidence, .92 for computer liking, and .84 for attitude toward using the computer as an instructional medium. The possible range of sub-scores were 10-40 for liking of computers, 10-40 for confidence in ability to use or learn about computers, and 6-24 for importance of computers as a learning method.

To facilitate measurement of the attitude variables for this study, global measures of computer anxiety, liking, confidence, and importance as a learning method were created by summing the applicable Likert-scale ratings. Cronbach's α was computed to evaluate internal reliability of the global measures. In this study, Cronbach's α was .75 for pre-test anxiety, .72 for pre-test liking, .73 for pre-test confidence, .78 for pre-test importance of computers as a learning method, .74 for post-test anxiety, .67 for post-test liking, .64 for post-test confidence, and .70 for post-test importance as a learning method.

Figure 1
Individual Attitude Items

Anxiety (12 items, score range = 12–48)
I understand the technical aspects of computers. *
It scares me to think that I could cause the computer to destroy a large amount of information by hitting the wrong key.
I feel secure about my ability to interpret a computer manual. *
I feel confident about using computers. *
I have avoided computers because they are unfamiliar to me.
I hesitate to use a computer for fear of making mistakes that I cannot correct.
I am afraid that if I begin to use computers I will become dependent upon them and lose some of my reasoning skills.
I dislike working with machines that are smarter than I am.
I feel hostile toward computers.
Computers make me feel uneasy and confused.
Working with computers makes me feel cut off from other people.
I like walking into a room filled with computers. *
Liking of Computers (10 items, score range = 10–40)
I dislike working with computers. *
The challenge of solving problems with computers does not appeal to me. *
I think working with computers is enjoyable.
When there is a problem with a computer that I can't immediately solve I would stick with it until I have the answer.
I find it hard to stop once I start to work with a computer.
If I had a computer problem that I couldn't solve, I would continue to think about it afterward.
I do not enjoy talking to others about computers. *
I dislike using computers to learn. *
A job using computers would be very interesting.
I do not feel comfortable using computers. *

Confidence in Ability to Use or Learn about Computers (10 items, score range = 10–40)
I feel confident learning terms relating to computer software.
I feel confident learning terms relating to computer hardware.
I feel confident troubleshooting computer problems.
Generally, I would feel OK about trying a new program on the computer.
I have a lot of self-confidence when it comes to working with computers.
I am not sure I could learn a computer language. *
I am happy when I can make a computer do what I want.
I learn a lot with computers.
Computers can eliminate a lot of tedious work for people.
I could learn to use a new type of software I hadn't seen before.
Importance as a Learning Method (6 items, score range = 6–24)
Schools should use computers for instruction.
Learning by computer adds something to regular instruction.
Learning by computers is more enjoyable than with a teacher.
Computers motivate students to do better work.
Computers can improve learning of higher order thinking skills.
Computers improve education.

* Reverse coded variable.

Part III, Background Characteristics, consisted of ten questions concerning age, level of education, years of teaching, computer use, and computer experience. To measure computer use and computer experience, construct loadings from Chou's research were used (1997). Computer use was calculated by summing scores on three questions: (a) hours per day of home computer use, (b) days per week of home computer use, and (c) number of tasks a home computer is used for. To measure computer experience, scores on five questions were summed: (a) days in the past year spent entering data into a computer, (b) number of software packages proficient in, (c) typing speed, (d) number of high school computer courses, and (e) number of college computer courses. Cronbach's α was computed to evaluate internal reliability of these measures as well. An α of .40 was found for computer use and an α of .56 was found for computer experience in this study. These low reliabilities may be due to the small number of questionnaire items used to calculate these variables.

Results

Computer Experience and Use

Pearson correlations were run to test for relationships among variables for the first two hypotheses. The significance level for all analyses was .05. Higher scores on computer experience and computer use were expected to be related to low computer anxiety and to positive technology attitudes, as measured on the pre-test. As shown in Table 2, there was a significant negative relationship between computer use and anxiety (r = -.326, $p \leq .05$). However, the negative relationship between computer use and technology attitudes (liking of computers, confidence in ability to use or learn about computers, and importance as a learning method) was not significant, and computer experience was not significantly correlated with any of the attitude variables.

Age

It was expected that age would be related to anxiety and the three technology attitude variables. Pre-test measures of the attitudes were used in the correlation. As shown in Table 2, age of the teacher and anxiety with computers was correlated ($r = .429$, $p \leq .01$), suggesting older teachers in this sample had higher computer anxiety. Teachers' age and the three technology attitude variables were negatively correlated (Table 2), but only age and confidence were statistically significant ($r = -.345$, $p < .01$). Thus, older teachers in this sample had lower confidence in their ability to use computers.

Table 2

Pearson Correlations Between Teacher Characteristics and Technology Attitudes (Pre-test)

	1	2	3	4	5	6	7
1. Age	1.00						
2. Experience	-.194	1.00					
3. Use	-.260	.380*	1.00				
4. Anxiety	.429**	-.097	-.326*	1.00			
5. Liking	-.294	.261	.299	-.789***	1.00		
6. Confidence	-.345*	.254	.285	-.734***	.804***	1.00	
7. Importance	-.126	-.085	.142	-.530***	.581***	.667***	1.00

***$p \leq .001$, **$p \leq .01$, *$p \leq .05$

$N = 42$

Impact of Training

Changes in teacher computer anxiety, confidence in ability to use or learn about computers, liking of computers, and importance of computers as a learning method were compared using paired-sample *t*-tests to analyze differences from pre-test scores to post-test scores. Paired-sample *t*-tests were chosen because a significant change in scores would indicate attitudes were changed regardless of participant characteristics such as age, education, and previous computer experience and use.

Results of the paired *t*-tests (Table 3) showed a significant difference in the mean pre- and post-test scores for computer anxiety ($t = 4.264$, $p \leq .001$). Thus, the mean computer anxiety scores (the sum of participants' responses to 12 questionnaire items) decreased after training.

Liking of computers and confidence in ability to use or learn about computers also showed a significant difference in the mean pre- and post-test scores. Participants' mean scores on liking of computers increased from the pre-test to the post-test ($t = -5.532$, $p \leq .001$). Liking of computers score was a sum of ten questionnaire items. Results of the paired *t*-test mean scores for computer confidence (sum of participants' responses on ten questionnaire items) indicated a statistically significant increase in teacher confidence ($t = -3.129$, $p \leq .01$).

Paired *t*-test results indicated scores for attitude toward importance of using computers as a learning method increased, but it was not statistically significant. These scores were a sum of six questionnaire items. Figure 1 details the individual items used to sum the scores.

Table 3
Paired t-test Analyses of Pre- and Post-test Attitude Scores

	Pre-test		Post-test			
	m	*s.d.*	*m*	*s.d.*	*df*	*t*
Computer Anxiety	23.2	6.2	18.6	5.13	41	4.264***
Confidence	31.5	5.71	34.4	4.11	41	-3.129**
Liking of Computers	30.5	5.79	35.5	3.68	41	-5.532***
Importance as a Learning Method	19.5	3.01	20.5	1.93	41	-1.906

$^{**}p \leq .01$, $^{***}p \leq .001$
$N = 42$

Implications and Conclusions

This study investigated correlates of computer anxiety and attitudes of confidence, liking, and importance of computers as a learning method in a group of high school FACS teachers. In addition, the impact of technology training on their computer anxiety and attitudes toward computers was also examined. Caution should be exercised in extrapolating the findings of this study to other populations, however, given the limitations of using a non-random, convenience sample. Also, a control group was not used for comparison because this was not a part of the training model. A further limitation is that the post-test was administered immediately following the two-week training. Therefore, the teachers did not have ample opportunity to practice skills and implement technology in their classrooms. A second follow-up post-test a year later could have provided additional information on retention of knowledge and possible changes in attitudes toward computers as an educational medium.

Findings from this study show higher frequency of computer use by teachers appears to be correlated with less computer anxiety prior to any technology training. However, previous computer experience was not related to computer anxiety in this study, contrary to previous research (Bradley & Russell, 1997; Chu & Spires, 1991; Fletcher & Deeds, 1995; Liu & Reed, 1992; McInerney et al., 1994; Reed & Overbaugh, 1993; Ropp, 1999; Woodrow, 1992). This result may be due to the definition of computer use and computer experience developed by the author of the instrument (Chou, 1997) and used in this study. Also, internal reliability for the computer experience and computer use variables is suspect, due to the low Cronbach's α previously reported for computer use (.40) and computer experience (.56). Neither computer use nor computer experience was found to be related to technology attitudes (liking, confidence, and importance of computers as a learning method).

Older teachers in this study had more anxiety toward computers. This supports some previous research findings on the correlation between age and anxiety (Jones & Wall, 1989; Rosen, Sears, & Weil, 1980). However, others have found no correlation between age and anxiety (Bradley & Russell, 1997; Harris & Grandgenett, 1996; Honeyman & White, 1987; Rosen & Maguire, 1990; Yang, Mohamed, & Beyerbach, 1999). Older teachers in this study also had less confidence in their ability to use computers. This is similar to findings of Dyck and Smither (1994) who found computer confidence was lower for older adults.

The finding that older teachers exhibited highest levels of computer anxiety and had less confidence in technology is also of concern given that the nation has an aging teaching workforce. Therefore, characteristics of older teachers and their corresponding relationship to computer anxiety, attitudes toward technology, and confidence in using computers should be taken into account by trainers in preparing technology instruction for teachers. Training should

be based on best practices identified for reaching adult learners (Knowles, 1990). Several of the older teachers in the present study who reported little or no computer experience prior to the workshop chose to seek additional computer training beyond the basic training provided in this study. This was perceived to be an indicator that they were more confident in their ability to use computers and desired to learn more. The age factor has implications for the FACS teacher cadre. In Mississippi, for instance, 45% of teachers holding FACS endorsements have 20 or more years of teaching experience (Cheek, 2002), indicating an aging FACS teaching force.

Results of this study indicate that computer training can be helpful for teachers in overcoming their anxieties about using computers in the classroom. This finding supports previous research by Ropp (1999) and Reed and Overbaugh (1993) who found significantly reduced computer anxiety following instruction. Technology training can also help improve teachers' confidence in their ability to use or learn about computers and their liking or enjoyment of computers. In the current study, teacher computer anxiety decreased while their confidence in ability to use or learn about computers and liking of computers increased following technology training.

Trainers who plan technology workshops for in-service teachers, however, should be cautioned about assuming "a simplistic belief that increased computer experience alone will reduce computer anxiety" (McInerney et al., 1994, p. 27). Quality of training as opposed to quantity of training is the key (Bradley & Russell, 1997). However, even long-term computer use will not eliminate the need for training, and even teachers who are currently technologically proficient will need update training on new technology (Scheffler & Logan, 1999).

In the present study, two weeks of technology training did not appear to have an influence on teacher attitudes toward the importance and effectiveness of computers as an educational medium. This finding may be expected because teachers did not yet have the opportunity to incorporate technology in their classrooms at the time the post-test was given. If their attitudes had been assessed at a later time, perhaps they would have viewed computers as an educational medium more positively.

Although extensive planning for the training occurred prior to the study to ensure that participants were given ample time to practice using software during the two-week period, follow-up training is advised. This supports Honeyman and White's (1987) conclusion that teachers with limited computer experience "require adequate time working with the computer to allow these anxiety levels to lower, and educators should be cautious about using short-term inservice activities which allow minimal computer contact when working with beginning adults" (p. 129). In the present model, an optional two-day session was provided one year later for the first two groups. This training was well received and provided an opportunity for study participants to learn new technology applications and build on the basic skills acquired in the two-week training. A side benefit was the strengthening of the esprit de corps among the trainees.

Given the increasing amount of technology available for use in high school FACS classrooms, more technology training experiences need to be provided for practicing teachers. Teachers who have not received support training can be expected to be reluctant to incorporate technology in the classroom. The model used in this study, whereby training was developed and provided by university FACS faculty, was credible and can be replicated in other states.

Finally, faculty in university teacher education programs should also evaluate current curriculum to assure adequate technology education and experiences for pre-service FACS teachers. This conclusion is important in view of the fact that the National Council for

Accreditation of Teacher Education (NCATE) has added a technology component to its standards to help ensure that teacher education candidates have adequate preparation for using technology in teaching (National Council for Accreditation of Teacher Education, 2001). Further, the International Society for Technology in Education (1998) has released the national educational technology standards for students for grades Pre-K through 12, which necessitate that educators be skilled in the use of technology for student learning. According to a special report by the U.S. Congress Office of Technology Assessment (1995), new teacher education graduates are not being prepared to use technology as a teaching tool.

Technology is a reality, and teaching with technology is an expectation in the FACS classroom. As Rosen and Weil (1995) concluded, "[students] must be taught about technology by adults who are comfortable with the technology and confident in their technological skills" (p. 27).

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About the Authors

Sheri Lokken, Ph.D. and Wanda K. Cheek, Ph.D. are Assistant Professors in the School of Human Sciences at Mississippi State University. Shirley W. Hastings, Ph.D. is Professor and Associate Dean at The University of Tennessee Agricultural Extension Service (formerly director of the School of Human Sciences at Mississippi State University). The authors served as members of the university training team for the study.

THE INTERNET AND CRITICAL ISSUES FOR FAMILIES[1]

Marsha L. Rehm
Florida State University

Barbara N. Allison
Florida State University

Linda D. Johnson
Fort Valley State University

A survey questionnaire was used to examine 104 Family and Consumer Sciences (FCS) educators' perceptions of how the Internet positively and negatively affects issues important to families. Fifteen of the 104 respondents with Internet skills were interviewed about their views on critical Internet issues and ways educators can assist families. Issues identified as most positively affected by the Internet included (a) access to knowledge, (b) personal empowerment,(c) understanding of people from varied backgrounds, and (d) economic success. Issues identified as most negatively affected included (a) development of values, (b) family unity and strength,(c) emotional development, and (d) sense of community. Results imply that FCS educators must promote reflective and critical thinking skills, particularly those related to the affective areas of life, so that family members can most wisely reap the benefits and avoid the risks associated with the Internet.

The Internet is a rapidly growing cultural phenomenon that offers unprecedented opportunities and challenges for individuals and families. As a worldwide electronic system for communication and information exchange, the Internet poses critical issues for individuals and families. For example, they must learn to judge and use an increasing deluge of information. They must determine how the Internet potentially changes their relationships with both friends and strangers.

According to Foster (1997), the Internet is creating a "redefinition of both the public and the private self" (p. 35). Positive redefinition includes access to information from seemingly unlimited sources, new opportunities to find specific information to solve problems, and global communication free of physical boundaries. Yet the Internet is negatively redefining experience to the extent that deceptive information, questionable values, and misguided social interactions proliferate (Lockhard, 1997; Seel, 1997). Because Family and Consumer Sciences (FCS) educators seek to improve everyday life, they have an exciting opportunity to provide valuable leadership to help learners and their families think critically, creatively, and wisely regarding Internet use.

Purpose of Study

Because the Internet is "foremost among new information technologies that promise to significantly impact the day to day circumstances of all social relations" (Foster, 1997, p. 23), it can be viewed as a practical problem with unprecedented benefits and risks for individuals and families (Rehm, 1999). This study was designed to identify FCS educators' perceptions of (a)

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issues positively affected by the Internet, (b) issues negatively affected, (c) relationships between issues, and (d) ways educators can assist learners in wise Internet use.

Review of Literature

Research indicates that the Internet is becoming a powerful technological, informational, and even cultural system with both positive and negative effects on everyday life (Lockhard, 1997; Seel, 1997; Streibel, 1998). One of the most beneficial effects is that the Internet extends our ability to obtain state-of-the-art information on any topic at any time of the day. Individuals who tap into the unlimited information available through ever-growing numbers of web sites have the potential to expand their knowledge, synthesize information, and deepen understanding about various issues and topics. Topics generating interest among FCS professionals include (a) retirement planning, (b) health, leadership, and (c) education; others show interest in expanded economic power when individuals (a) comparison shop, (b) develop a home business, or (c) conduct job searches online (Devaney, 1999; Kapica, 1999; Kato & Hackman, 1997; Laughlin, 1999; Quilling, 1999).

New information gained over the Internet also positively improves awareness of diversity, contributes personal and social understanding of alternative views, and provides opportunities to propose new ideas. Anyone with Internet access can become involved in global discussions, debate issues, engage in political processes, and promote change from the grassroots level. Because good ideas theoretically shine forth on their merits, individuals are freed from gender, race, or disability biases that have historically limited opportunities (Lockhard, 1997; Stratton, 1997). Because shared narratives may be more important than physical proximity (Giese, 1998; Iseke-Barnes, 1997), nurturing communities can develop if individuals meet frequently in cyberspace (Garner & Gillingham, 1996).

The Internet also is negatively redefining human experience in a number of troublesome ways. "Surfing" bombards a computer user with a rapid succession of bits of information--a process that facilitates random and trivial types of thinking rather than the reflection, creative effort, and logical connections that contribute to knowledgeable expertise and wisdom (Seel, 1997). Virtual communities may encourage selfishness and manipulation over dialogue and civic responsibility (Foster, 1997; Streibel, 1998). According to Wilbur (1997), "many computer users seem to experience the movement 'into' cyberspace as an unshackling from real life constraints" (p. 11). They present false personalities, promote antisocial values, and stalk or harass children and others (Lockhard, 1997).

Some scholars claim that the Internet is misnamed as a "global community." Elkind (1994) argues that "with so many sources of information and avenues of communication available at our fingertips, we run the risk of a loss of community, of a shared view of the common good" (p. 25). Individuals who lack writing and literacy skills may be particularly disadvantaged in virtual communities. Those who do not have access to computers cannot participate in electronic public debate (Stratton, 1997).

In summary, families are challenged to ask reflective and critical questions concerning the Internet's consequences on the ways they process and apply information, conduct everyday life, and participate in the community. This study investigated views of FCS educators regarding the Internet's positive and negative effects on such critical issues.

Methodology

Sample

A list of all Education and Technology Section members of the American Association of Family and Consumer Sciences was purchased because of the research purpose to survey educators; this list included teachers at from middle school to university levels, extension agents, and educators in administrative/program roles. A total of 230 names were randomly selected from the list of approximately 2,300 and mailed survey questionnaires, with 104 usable surveys (45%) returned. The sample was considered large enough to provide initial insight into significant Internet issues. Twenty respondents who indicated skill with the Internet additionally volunteered for a brief follow-up interview, and the researchers were able to reach and interview 15 participants.

Instrumentation and Procedures

The researchers developed a survey questionnaire based on significant issues--such as access to knowledge, effects on emotions and values, and the types and quality of relationships--identified by Internet scholars and writers. Respondents provided demographic data, then used a Likert scale to rate the Internet's perceived effect on each issue listed as important to families. Ratings ranged from 5 indicating an extremely positive effect to 1 indicating an extremely negative effect, with 3 indicating no effect or not sure. The survey included open-ended questions to allow respondents to describe additional positive or negative effects that they associated with the Internet.

All survey respondents who felt skilled with the Internet were invited to participate in a follow-up interview concerning their views on critical issues for families and their views on ways FCS educators can promote beneficial Internet use. Two key open-ended questions were asked via email interviews or through 15-minute telephone interviews (depending on participant preference) to identify what participants thought were the most critical Internet-related issues (positive or negative) facing families and to suggest leadership roles for FCS educators.

Descriptive statistics were used to analyze the demographic data. Means for the rated effects were calculated for each issue, then ranked from the most positive to the most negatively affected issue. The Tukey HSD test for multiple comparisons was conducted to determine significant differences regarding positively and negatively affected issues. Content analysis was used to identify categories and themes resulting from open-ended comments on the survey and the interviews.

Findings

The survey questionnaire sample primarily consisted of individuals in educational and administrative positions. Professional roles included 70 (66%) middle or high school teachers; 15 (14%) university employees including a president, deans, and professors; 14 (13%) administrators such as school principals, supervisors at state or county agencies, curriculum coordinators, and editors; and 5 (5%) extension agents. The majority had been in the FCS profession for an extended time. Only 13 respondents (12%) had10 or fewer years, 35 (33%) had between 11 and 20 years, 39 (37%) had between 21 and 30 years, and 19 (18%) had over 31 years of experience. Professional roles of the interviewed participants included: 10 secondary school teachers, three college teachers, one educational administrator, and one retired teacher. All had at least 10 years of experience in the profession.

Positive Effects of the Internet According to Survey Questionnaire Results

Respondents viewed the overall effects of the Internet as more positive than negative with a mean rating of 3.25. Given 18 issues to consider on the survey, this sample perceived that the Internet was affecting 10 issues in a positive way (See Table 1). Analysis revealed two broad categories of positive Internet effects (a) enhancing opportunities for knowledge and personal empowerment, and (b) supporting certain types of relationships.

Table 1
Perceived Effect of the Internet on Issues Important to Families
(Issues listed in order from most positively affected to most negatively affected)

Critical Issues	Internet Effect Score (1-5)
Positively Affected Issues (Above 3)	
Equitable access to knowledge	4.16
Personal empowerment and autonomy	3.90
Ability to understand people	3.90
Ability to succeed economically	3.79
Ability to form relationships	3.69
Pace of life	3.51
Creativity and imagination	3.50
Capacity for reflective problem solving	3.49
Participation in grass-roots social action	3.49
Personal responsibility and commitment	3.28
Negatively Affected Issues (Below 3)	
Justice and fairness	2.98
Problems already in society	2.78
Sense of community, caring, relationships	2.77
Emotional development of adults	2.74
Standards of moral thinking/behavior	2.67
Emotional development of children/youth	2.65
Family unity and strength	2.60
Development of values	2.56
n=104 Mean	3.25

Access to knowledge and personal empowerment. Equitable access to knowledge was viewed as the issue most positively affected by the Internet, with a 4.16 rating and the only issue with a mean above four on a 5 - point scale. Respondents indicated that the Internet positively affected the ability to empower oneself with more choices and autonomy with a 3.90 score. Thirty of the 60 respondents adding open-ended comments seemed to associate the Internet's abundant information with the opportunity to expand knowledge, knowledge that can in turn be used in practical ways for self-empowerment. As one respondent wrote, "Everything is at your finger tips!" Another liked the "ready information when requested and needed--not intrusive."

Respondents indicated that abundant information helps people "make better choices," "make better use of resources," "make wise decisions," and "research personal areas of interest." Some specifically mentioned that the Internet enhances "availability of consumer and nutrition

information," and "helps with easy access to comparative shopping." Such comments also relate to the relatively high numerical score of 3.79 for the ability to succeed economically. In short, this sample believed that the Internet allows access to the information and knowledge that can expand personal power to solve problems and enrich life.

Improved understanding of others and relationships. The Internet's role in understanding people from other backgrounds was rated with a positive mean of 3.90, as was the related opportunity to form relationships with people from other backgrounds with a 3.69 rating. One person commented that the Internet "creates the ability to join chat rooms with individuals who have experienced similar situations such as loss of family members, cancer, bankruptcy." Although getting to know and understand people were rated as positively affected by the Internet, it is notable that only two open-ended comments specifically related to "global thinking" and "bringing people together around the world, to understand people from other countries and cultures."

Seventeen comments focused on the Internet's positive impact on improved relationships with extended family members. Respondents liked the Internet's role in facilitating "discussion with distant family members" and "spontaneous communication between far-flung family members." Others believed that the Internet created more time to build family relationships: "Meaningless tasks go quicker, leaving more quality family time," and "Shopping online can free up family time."

Issues considered to be positively affected by the Internet and slightly above the neutral score of 3 included (a) pace of life (3.51), (b) creativity (3.50), (c) capacity for logical and reflective problem-solving (3.49), (d) participation in grass roots social action (3.49), and (e) personal responsibility and commitment (3.28). The sample seemed to believe that the Internet can assist individuals as they try to save time, engage in creative efforts, solve problems, participate in social action, and pursue other commitments but it does not have a particularly strong effect.

Negative Effects of the Internet According to Survey Questionnaire Results

Of 18 issues provided on the survey, this sample believed that the Internet was affecting eight issues slightly or somewhat negatively. Analysis showed two major categories of negative effects: detracting from good values, emotional development, and morals, as well as decreasing family unity and other social relationships.

Questionable morals, emotions, and values. As displayed in Table 1, the Internet was viewed somewhat negatively for its impact on affective areas of life (a) value development (2.56), (b) emotional development of children (2.65) and adults (2.74), and (c) moral standards (2.67). Thirteen of the 64 respondents with additional comments indicated concern that much of the available information promotes poor standards or destructive values: "Misuse of the Internet to communicate violent and immoral information is a serious concern." "What you have access to creates poor values, with the ease of getting to raunchiness." "I'd love to see this junk of gambling and pornography tossed out, because they are real negatives for family harmony."

Respondents expressed concern about broader justice and ethical issues, with a 2.98 rating. Several commentators noted that individuals with Internet access have a new privilege over those who do not: "Some do not have the money to keep up," and "Access by inner city and lower income families limits their opportunity." Other respondents expressed concern about the ability of strangers to invade our lives: "It is too easy for others to get private information," and "It is a new avenue for crime."

Detracting from family and other meaningful relationships. Respondents rated the Internet negatively for its effect on family unity and strength, with a mean score of 2.60. Respondents also believed that the Internet negatively affected existing social problems such as addictions and marital discord (2.78) and detracted from a general sense of community, caring, and relationship (2.77). It is notable that all these particular issues relate in some way to a negative effect on the quality of relationships.

Twenty-eight out of the 64 respondents with written comments reflected a major theme: family time and family strengths are threatened when individual members spend too much time on Internet. Illustrative comments included: "Social interaction will decrease. People need the human touch!" "Too much time on the Internet will take away from family time, just like the television has done!" "It emphasizes personal fulfillment and time away from family, and we lose the appreciation of simple enjoyments."

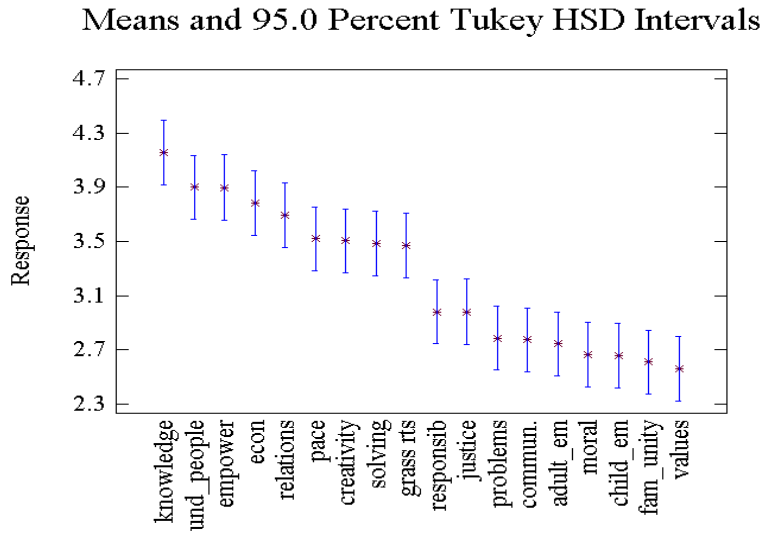
Many respondents mentioned that children in particular suffer from too much time online with "decreased social skills," "negative impact on physical fitness," "stifled creativity," "neglected chores," and "addictive unless carefully monitored and channeled appropriately." The sample agreed that time on the Internet is not bad in itself, but it is easy to spend too much time, which in turn detracts from more valuable pursuits.

Relationships Between Issues On Survey Questionnaire

The Tukey HSD multiple comparison test was conducted to determine the significance of relationship and difference among the Internet's perceived effects on the critical issues listed in Table 1. Table 2 visually depicts the statistical test results: Intervals of issues that do not overlap are those that resulted in significant differences ($p < .05$). Issues with overlapping intervals share some commonality.

Table 2

Multiple Comparisons of Perceived Effects of the Internet on Issues Important to Families



Note: Statistical Test: Tukey HSD ($p<.05$)

As the issue most positively affected by the Internet, expanded knowledge was related to positive understanding and relationships with people, personal autonomy and choice, and economic success. Certainly, knowledge can be used to improve understanding and relationships, financial decisions, and almost any other type of personal or family experience. It is interesting that knowledge was statistically different from experiences related to the pace of life, creativity, logical and reflective problem solving, and grass roots social action. However, the difference was not extremely wide. Respondents may have viewed the pace of life, creativity, logic, reflection, and social involvement as more complex issues that include, but extend beyond, knowledge.

The most distinct pattern revealed by the Tukey HSD multiple comparison test was the clear differentiation of knowledge from the affective areas of emotional development, morals, family unity, social problems, and values. Respondents were concerned about the Internet's negative effect on qualities we typically associate with character and meaning; they did not think that improved cognitive knowledge enhanced emotional quality or values in life. Interestingly, the positive association of the Internet with understanding people and forming relationships with others of different backgrounds also was clearly distinct from the Internet's negative association with the moral and emotional value of relationships. While respondents seem to enjoy the Internet's role in expanding social linkages, they paradoxically appear cautious about the ways these new connections affect emotions, morals, and values.

Critical Internet Issues and Educator Roles According to Interview Results

All 15 interviewed educators were active in using the Internet for professional purposes such as staying knowledgeable about family and work trends and issues, identifying current research in areas of their responsibility (ranging from housing data to variables important in strengthening marriage to nutrition information), and communicating with other professionals. Because the interview questions were more open-ended and not specifically asking for a choice of either positive or negative effects, the comments add further insights into the beliefs of professionals.

Critical Internet issues. The most commonly identified critical Internet issue related to the theme of increased access to information, reflecting the focus of the larger survey sample. However, it is interesting that these 15 participants focused entirely on the caveats related to knowledge, with nine raising concerns about the emotional protection of children from pornography, enticements such as gambling, and dangers in chat rooms. As one person summarized, "Families have a hard time controlling the interaction of older children with inappropriate materials, pornography, and contacts that they might make through chat rooms." Added to the problematic "ease of getting into areas and chat rooms where children shouldn't be in," participants expressed worry that "children are often left alone without parental supervision."

Other concerns were raised about poor quality of information that students often include in classroom assignments and whether this confuses their overall understanding. Several teachers complained that "I have often seen students find information that includes great graphics and animation but is not backed up by research and is not reliable or valid." Indeed, what one person called the "massive overload" of information was thought to present a serious challenge to the ability to cull information, identify evidence to separate the valuable from the useless, and simply keep up with the latest research.

Another more specific theme of critical Internet importance related to potential problems with consumer activities and choices. Close to half of the participants were concerned about the

ease of purchasing without full knowledge of the quality and value of goods and services. For example, they stated that the Internet "makes it too easy to purchase items using credit cards" and "there is often a privacy issue there." They seemed to feel that credit and other personal information was not confidential and individuals could be susceptible to consumer fraud if they were not careful.

Finally, whereas all those interviewed indicated that the Internet was "useful as a tool," they illustrated the theme of vulnerability to "too much time on the Internet." Consequently, a critical issue was viewed as the need to learn to manage information and structure time purposively and rationally. Several stated that family time "must come first" and that the Internet should always be interpreted within the context of its effect on the quality of the family. Ironically, one person who taught in an inner city school felt that the most critical issue faced by her students was the lack of access. Whereas many educators are becoming concerned about overuse of the Internet, a few are still concerned about those who are disadvantaged by lack of access. Inequity remains a problem and perhaps is even widening.

What FCS educators should contribute to positive Internet use. A second key interview question related to the ways FCS educators and other professionals should help learners and their families use the Internet wisely. One important theme was the belief that educators should act as "gatekeepers" and identify helpful sites that families can use: "We can recommend sites that we know are reliable." "I have helped conduct workshops throughout our county in which we go online, share sites, and share what we have learned." "We could develop systematic ways to review sites and disseminate user-friendly information to families."

A second theme emerging from interview respondents was that FCS educators must go beyond disseminating good sites to share and promote "critical thinking principles and guidelines for problem solving." Because "sites change so rapidly," they argued that FCS educators must "educate about Internet management" and "help families know how to put knowledge gained from the Internet into their real lives." Other comments included: "We can assist families in creating criteria about what to seek and ways to ensure quality regarding Internet communication and activities." "Teachers need to help students go to a site and evaluate the information, whether or not it is useful and applicable to other ideas they have discussed." "Teach students common sense, that not everyone thinks the way they do and they need to be careful. We are all allowed to have opinions, but we don't always need to agree."

Time management skills were also suggested as a leadership theme. "The Internet can demand, take, and use more time than families realize. We need to teach how to structure your life so that you are using the Internet for the most value without infringing on other valuable parts of family life." In summary, FCS educators can work with families so they can "help themselves, take responsibility, and gain tremendous power."

Discussion and Implications

In a broad analysis, this sample of FCS educators believed that the Internet affects individuals and families somewhat more positively than negatively, both in number of issues and strength of beliefs. They associated knowledge with personal empowerment, choice and autonomy, economic benefit, and relating to others from different backgrounds. This finding is consistent with other research that suggests the Internet offers a wide knowledge base that individuals and groups can then apply to accomplish goals and enhance the quality of life (Croxall & Cummings, 2000; Devaney, 1999; Kapica, 1999; Kato & Hackman, 1997; Manley, Sweaney, & Valente, 2000; Meszaros, 2002).

Although the sample believed that the Internet positively affects the ability to solve problems and relate to people, they simultaneously expressed concern over questionable values and morals suggested and advocated over the Internet. Comments about isolation, loss of privacy, illegal gambling, excessive pornography, negative emotional development, and loss of family unity reflect the concerns of other writers (Lockhard, 1997; Seel, 1997). Given the FCS mission, it is not surprising that professionals think that the Internet empowers choice and autonomy but cannot replace the nurturing, caring, and intimacy functions of the family.

Several interesting contradictions appeared between the numerical scores and the written comments within the questionnaire. First, in light of the positive numerical ratings for better understanding and relationships with others from different backgrounds, only two commentators mentioned global thinking and improved cultural relationships. Although information and chat opportunities over the Internet theoretically foster multicultural relationships, communication with immediate family members and friends likely is more emotionally binding for people. Second, although the Internet was rated as having a negative effect on family unity, many commentators wrote about the ways that the Internet enriches family life among distant family members and can free up more time for family activities. They seemed to like the Internet as a way to communicate primarily when physical time together was impossible and liked some of the time saving conveniences--but were guarded about the amount of time one should spend on the Internet.

At the same time this study underscores FCS educators' beliefs that the Internet is affecting families in both positive and negative ways, the study points to a number of implications for future practice and research:

- Families need critical thinking skills regarding wise Internet use (Croxall & Cummings, 2000; Manley et al., 2000), and teachers in the FCS profession are poised to take leadership concerning the evaluation and direction of the Internet's role in the home (Meszaros, 2002). Educators can create and offer hands-on workshops, formal classes, sessions at local, state, and national conferences, print and video resources, and community programs. We must continue to offer a variety of formats that teach people how to evaluate information, seek evidence, determine reliability of web sites, and predict consequences on the quality of everyday life.
- Educational programs and resources should be developed to focus on evaluating issues related to morals, values, and emotions promoted by the Internet--both in terms of individual students as family members as well as the family as a whole. For example, child development teachers could teach proactive ways to address the vulnerability of children in chat rooms; family extension specialists could help families reflect upon and identify solutions to concerns about family unity and privacy identified by this sample.
- Family and Consumer Sciences educators should provide leadership in the analysis and development of Internet policies that affect families. This study brings to light specific issues that have implications for policies (a) protection of children, (b) prevention and control of illegal gambling and pornography, and (c) equitable Internet access in education. Educators can identify valuable findings and gain a better understanding about legislative issues from sources such as The David and Lucile Packard Foundation. A recent "Children and Computer Technology" issue of their online journal (available at <http://www.futureofchildren.org/homepage2824/index.htm>) provides information and insights into significant issues and federal initiatives.

- As Meszaros points out, there are unlimited challenges that demand to be addressed with future research: "Technology-impact questions about the environment, life cycle possibilities, and attitudes, values, and ethics abound and are virtually unexplored" (p. 14). Action research should be conducted to "clarify and articulate realities and problems, analyze alternative possible actions, identify resources, reach consensus, take action, reflect on actions taken, and plan future actions and policies" (Peterat, 1997, p. 103).
- Interpretive studies (Daines, 1989) would reveal the meanings involved when the Internet is introduced into the student's family, the nature of Internet experience, and what it is like to experience positive and negative effects as an individual and family. Critical studies (Strom & Plihal, 1989) would illuminate how the Internet is transforming power relationships among families and within society; researchers should critique Internet interactions and suggest ways to promote stronger intercultural relationships.

Conclusion

Family and Consumer Sciences educators firmly believe that the Internet is a useful tool for expanding knowledge and facilitating interpersonal understanding. However, they show concern about the Internet's impact on morals, emotions, values, family unity, and ability to gather valid information. As one respondent noted, "Family members must be aware of the importance of communicating daily and spending real time together." Family and Consumer Sciences Education should take leadership by promoting and critiquing the Internet within the much richer context of meaningful family and community life.

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About the Authors

Marsha L. Rehm, Ph.D., is Associate Professor in the Department of Family and Child Sciences, Florida State University. Barbara N. Allison, Ph.D., is Assistant Professor in the Department of Family and Child Sciences, Florida State University. Linda D. Johnson, Ph.D., is Interim Department Head and Assistant Professor of Family and Consumer Sciences at Fort Valley State University.

MEETING NATIONAL STANDARDS FOR FAMILY AND CONSUMER SCIENCES THROUGH HOME EQUIPMENT EDUCATION

Melissa W. Chase
Virginia Polytechnic Institute and State University

JoAnn Emmel
Virginia Polytechnic Institute and State University

Today's youth are preparing a number of their own meals and snacks, completing household chores, and laundering their own clothing. Often, these tasks are performed using home equipment while home alone or without adult supervision. Fewer home equipment courses are taught within secondary Family and Consumer Sciences curriculum and students may graduate without suitable skills to help them operate equipment properly. And, lack of knowledge in many areas of household equipment can make first time purchases, paying utilities, or understanding the role of household technology challenging for young adults.

Furthermore, teachers are challenged to find resources and time to incorporate these needed skills into their courses. This paper will provide a preface for family and consumer science teachers to integrate home equipment concepts into their courses while fulfilling many of the requirements for the National Standards for Family and Consumer Sciences, provide sources of teaching materials, and suggest lesson plan ideas.

Home equipment courses, that usually concentrate on home appliances, are seldom a part of today's secondary Family and Consumer Sciences (FCS) curriculum, and even small units on appliances are taught infrequently. Yet, today's youth, more than ever, are using appliances to prepare their own snacks and meals, complete household chores, and launder their own clothing. According to the 2001 Nickelodeon/Yankelovich Youth MONITOR™, 88% of youth aged 6 to 17 at times fix their own meals. Children many times perform these tasks while home alone without adult supervision or while providing childcare away from home. The question then arises, "Are children knowledgeable enough about this equipment to operate it safely and properly?"

Lack of appliance knowledge can challenge these youth once again as young adults in their first apartment or home. Whether they are using appliances for the first time away from home, purchasing their first appliances, and/or paying utility costs to operate them, a lack of basic knowledge about appliance selection, use, and care can handicap young adults as they face these decisions. Home equipment also accounts for much of the new technological advances in homes, and understanding the role of technology in our lives is essential. Ergonomic design, energy efficiency, and indoor air quality are other factors related to appliances and equipment in the home. These factors may also influence equipment purchase decisions. Additional consideration of appliance quality and the impact on the environment can influence the types of equipment purchased (Goldsmith, 1992).

When deciding which concepts to incorporate into their courses, secondary FCS teachers are guided by the National Standards for Family and Consumer Sciences, established by the American Association of Family and Consumer Sciences. Including home equipment education

into FCS classes is one means of preparing youth and young adults for the future, as well as helping teachers incorporate some of the concepts included in these standards.

In attempting to teach home equipment principles to family and consumer sciences students, however, teachers are challenged to find time in the curriculum as well as educational materials to do so. The purpose of this paper is to introduce teachers to possible home equipment concepts, sources of home appliance teaching materials, and lesson plan ideas for incorporating household equipment concepts into many of the subject matter areas of Family and Consumer Sciences, many of which can satisfy requirements of the National Standards for Family and Consumer Sciences. These subject matter areas include: nutrition/food occupations, housing/interiors/furnishings, child development, clothing and textiles, and consumer education. Ideas for interdisciplinary activities are also included.

Background

Home appliance courses may not be taught at the secondary level, but many Family and Consumer Science teachers are interested in the topic and feel it includes important concepts for students to know. A 1988 Vocational Assessment of New Mexico FCS teachers (Emmel & Cummings, 1988) found that 61% of the teachers surveyed felt knowledge of home appliances would be very important to students in the year 2000. A similar survey of New Mexico FCS teachers in 1996 (Emmel & Cummings, 1999) indicated a slightly larger proportion of the teachers (65%) felt home appliance knowledge would be important in the year 2010. The related topics of home safety and sanitation (82%), energy conservation (81%), and maintaining equipment (70%) were also considered very important for students to know by 2010.

Despite the feeling home appliance knowledge will be important for students, only 24% of teachers in the 1988 study (Emmel & Cummings, 1988) and only 30% in the 1996 study (Emmel & Cummings, 1999) reported emphasizing home equipment in their classes. With the absence of home equipment courses, these concepts were usually included in housing and food preparation courses.

Other important factors for teaching home equipment concepts are background and comfort teaching the topic. Sixty-five percent of the FCS teachers in the 1988 New Mexico teacher survey (Emmel & Cummings, 1988) felt they had an adequate background to teach home equipment, but that percentage decreased to 58% in the 1996 New Mexico study (Emmel & Cummings, 1999). A study in 2000 of Virginia FCS teachers found only 39% of the respondents indicated they were very knowledgeable about appliance selection use and care (Emmel & Lovingood, 2000).

When asked how comfortable they felt teaching about home equipment, teacher responses for the two New Mexico studies were very similar. Eighty-eight percent of the teacher in both studies (Emmel & Cummings, 1988, 1999) felt comfortable teaching about selection, use, and care of small appliances, whereas 84% of the 1988 study and 78% of the 1996 study felt comfortable teaching about the selection, use, and care of major appliances.

As teachers search for new ways to teach FCS concepts, information resources and teaching lesson ideas are valuable. A survey of 2,022 Family and Consumer Sciences professionals was conducted by the Whirlpool Corporation in 1992 to determine the need for updated household equipment teaching resources. Ninety-seven percent of the respondents indicated they needed new resources, and they requested that the resources be easy to use and understand (at all levels) and be affordable (Yust & Dunrud, 1994). Teachers in the 1988 New Mexico study (Emmel & Cummings, 1988) listed textbooks as the most commonly used

reference for housing, interior design, and home equipment class work. Other teaching resources considered helpful by more than 50% of the teachers were videotapes, models/samples, and ideas for activities. A recent electronic survey (Chase, 2001) of secondary FCS teachers in Virginia suggested that many teachers also rely on their own experiences in teaching family and consumer sciences concepts. Although the response sample was small, most teachers agreed that textbooks were commonly used as references only and some teachers are now using the Internet for lesson plan ideas.

In the past, appliance manufacturers have been supporters of home equipment education, providing training and materials for educators. Support in recent years, however, has dwindled. Major appliance manufacturers were recently contacted by the author to determine the availability of home equipment educational materials for teachers. Most companies no longer provide these materials; and if they do, it seems few requests are made to receive them. Today, general appliance information, use and care suggestions, and selection criteria are many times listed on the Internet web sites of major appliance manufacturers. Even though these web sites do not present specific lesson plans, teachers have been found to incorporate the information into lessons (Chase, 2001).

Because teachers rely on textbooks as a teaching resource, three current FCS texts were reviewed for home equipment content. One text found to contain activities on choosing and purchasing appliances (purchase and operating costs, quality, and safety), energy costs, and understanding energy guide labels is *Housing Decisions* by Lewis and Turner (2000). A chapter on home appliances including buying, determining needs, energy efficiency and activities to demonstrate how to purchase appliances was also included in *The Confident Consumer* by Campbell (2000). This text specifically correlates its lessons with the National Standards for Family and Consumer Sciences (for the Consumer and Family Resources area) which can be helpful in designing lesson plans to meet these standards. The third text examined was *Creative Living* by Glosson, Meek, and Smock (1997). It provides suggestions and ideas for incorporating critical thinking skills into lesson plans (as part of their Resources Kit for life skills, decision making, etc.). Specific chapters also include kitchen appliances concepts (cookware/bakeware, appliance materials, variables in cooking and safety considerations). Whether using a textbook, the Internet, or other sources, home equipment or appliance concepts can be incorporated into many of the topic areas covered by the National Standards for Family and Consumer Sciences.

Home Appliance Concepts and Lesson Ideas

Home equipment education can assist teachers with meeting National Standards for Family and Consumer Sciences in many subject matter areas. Five of the areas are discussed below, and each contains important concepts related to home equipment and teaching ideas for incorporating some of the concepts into a lesson. Topic areas, as listed in the National Standards for Family and Consumer Sciences, include: Housing, Interiors and Furnishings; Early Childhood, Education, and Services; Consumer and Family Resources; Textiles and Apparel; and Food Science, Dietetics, and Nutrition.

Housing, Interiors and Furnishings

Introduction

The Housing, Interiors and Furnishing area of Family and Consumer Sciences prepares students to make better home buying decisions, including the selection, use, and care of home appliances. Many careers related to this topic area involve the specification and use of appliances. Such careers include: residential property management; interior design; kitchen, bath, and lighting design; appliance sales; real estate sales; and home building.

Important Lesson Concepts

Housing expenses make up the largest portion of a family's budget, and the purchase of a home can be the single most expensive item a person will purchase in their lifetime. A significant proportion of these expenses are for the purchase and/or operation of home equipment, including energy costs. To become a knowledgeable consumer, students must learn how to select home equipment to meet their needs, use it properly, safely and efficiently, and maintain it for long service. This equipment includes kitchen appliances and laundry equipment, as well as heating and cooling systems, water treatment devices, water heaters, and lighting.

Home equipment knowledge is essential for any home-related careers. Residential property managers must specify equipment for their residences and keep them maintained. Kitchen and bath designers, as well as interior designers, not only specify appliances, but also plan their placement related to adjacent counter and storage requirements. Appliance and real estate sales personnel must be familiar with home equipment functions and features to assist other consumers in their purchasing decisions. Lighting is another important element of home design and use, with which all of these professionals are involved.

Lesson Plan Ideas

- Ask students to find information about one of the appliances they have at home. Have them locate the nameplate and copy the information. Is a use and care book available? Do they understand how to use all of the controls?
- Take a field trip to a large home improvement store or appliance store to evaluate some of the home equipment products on the market.
- Give students a set of equipment specifications and have them shop on the Internet for a product that meets these guidelines.
- Have students interview a residential property manager, builder, or kitchen and bath designer to find out how they use information about appliances and equipment in their profession.
- Interior design students can select appliance models and styles to fit a certain home design theme.
- Students can interview their family or another individual and inquire about their appliance needs and preferences.
- Have student research which appliance choices are best for universal design or aged individuals.
- Have students place appliances into a kitchen plan and explain why they placed them as they did.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences Education could be met:

11.0 Integrate knowledge, skills, and practices required for careers in housing, interiors, and furnishings.
11.1 Analyze career paths within the housing, interiors, and furnishings industry.
11.2 Evaluate housing decisions in relation to available resources and options.
11.3 Evaluate the use of housing and interior furnishings and products in meeting specific design needs.
11.6 Evaluate client's needs, goals, and resources in creating design plans for housing, interiors, and furnishings.
11.7 Demonstrate design ideas through visual presentation.

Early Childhood, Education, and Services

Introduction

The Early Childhood, Education, and Services area of the family and consumer science curriculum concentrates on knowledge and activities that assist students as they prepare for their role as a child sitter, parent, or future child care employee or teacher. Within this subject matter area, knowledge of home equipment is essential for proper food storage, safe food preparation, the safe use of appliances, issues of indoor air quality, and proper cleaning and sanitation. Understanding food safety principles during food preparation and storage becomes crucial for meals or snacks prepared at home, in childcare centers, or food taken from the home such as packed lunches.

Important Lesson Concept

Proper food storage and handling are essential concepts to know whenever you are working with food to be consumed by humans, especially children. Whether at home, child sitting at another residence, or working in a childcare facility, students must know how to properly use and clean equipment to safely prepare and store food. Students should be aware of how foods must be packaged for cold storage and the recommended refrigerator and freezer temperatures to keep food fresh. Tips on preparing safe sack lunches for school or daycare children would be beneficial.

Instruct students on how to safely prepare snacks in the microwave so they do not need to use a heating appliance while child sitting. Procedures for heating baby food and baby bottles in the microwave should be discussed. Home equipment, such as a dishwasher, is important for sanitizing utensils when illnesses are present. Students also must be aware of the hazards appliances can pose for young children and how to select appliances accordingly. Hot surfaces, accessible controls, sharp corners, and tempting cavities to crawl into are all aspects of appliances that must be carefully considered. The improper use of a gas burning or air depleting appliance or the limited use of ventilation can impact indoor air quality and mold growth, which can be especially problematic for children with respiratory problems.

Lesson Plan Ideas

- A group activity on lunch preparation will illustrate the care needed for preparation and storage of lunch items. Divide the class into three groups. Group one could be given ingredients to fix lunch for children at a home or in a daycare facility (such as a hot dog and fruit). Group two could prepare a deli type lunch that would not require cooking, but would emphasize proper food handling and storage time. Group three would represent a childcare provider that would require families to bring bag lunches and the parent who is preparing

such a lunch. Each group would prepare their lunch according to a preset menu and demonstrate the proper procedures and equipment used in the prepartion and storage. The group must explain why it would be necessary to follow this specific procedure.

- Demonstrate the use of a dishwasher for proper sanitation of dishes vs. regular hand washing, especially for knives, cutting boards, and utensils for handling baby food.
- Have students inspect their kitchens at home for any equipment hazards accessible to small children. They should look for such things as hot surfaces, sharp corners, accessible controls, etc. Discuss what they found in class.
- Examine baby food containers and foods for microwave instructions.
- Heat baby food and baby bottles in the microwave oven for varying amounts of time and test the temperature with a thermometer and by taste.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences Education could be met in this area:

4.4 Demonstrate a safe and healthy learning environment for children.
4.4.2 Apply safe and healthy practices that comply with state regulations.
4.4.4 Provide safe and healthy meals and snacks.
4.4.6 Implement basic health practices and prevention procedures for workers and children regarding childhood illness and communicable diseases.

Consumer and Family Resources

Introduction

As future homeowners and home equipment users, knowledge of home equipment selection, efficient use, and redress issues are important for wise consumer resource management. In the Consumer and Family Resources area of family and consumer sciences, students learn strategies for managing their resources through well planned and knowledgeable consumption decisions.

Important Lesson Concepts

With the wide availability of home equipment products and retailers in the marketplace, as well as on the Internet and TV shopping programs, comparison-shopping can be overwhelming if the consumer is not aware of the considerations that should be part of the purchasing decision. Selecting the proper equipment to meet the needs of the family and the tasks at hand will provide the consumer with product satisfaction. In addition, students can learn the value of budgeting for appliance purchases and evaluating which appliance features are needed within this budget range.

Consumer responsibilities do not end with the equipment purchase. Equipment operating costs can make up a large portion of a family's budget. Students can also make better-informed choices related to the lifecycle costs of appliances by gaining an understanding of energy efficiency guides ratings, such as the EnergyGuide label and the Energy Star label. Redress issues and product warranties must also be considered. Students, as consumers, must understand their rights and how to handle problems with equipment when they arise. Warranties, extended warranties in particular, must be scrutinized.

Lesson Plan Ideas

- Have each student simulate replacing an appliance in his or her home. Ask students to interview their family members to find out which features and characteristics (color, size, safety standards, cost, space, energy use, installation, and ease of use) are important to them. A target budget should be set by a parent or guardian. The student should take a family member with him/her to a local retailer or dealer to participate in a simulated shopping trip.
- Have students report on how consumer protection agencies like the Consumers Products Safety Commission and the Federal Trade Commission protect consumers against faulty equipment.
- Involve students in a comparison-shopping simulation. Set a few parameters for a particular appliance (capacity, features, options, etc.). Have the students either compare products from two manufacturers on the Internet or two stores in their community. They should then identify the appliance that would be the best choice. Upon completing the activity, the student could give a five-minute presentation on their shopping experience and how they arrived at their final choice.
- If the classroom has access to the Internet, ask the students to visit the web site http://www.energystar.gov to find a list of appliances that carry the Energy Star label. What makes these appliances more energy efficient than other appliances of their type?
- At a local appliance retail store, ask students to compare EnergyGuide labels on two similar appliances to see how much energy costs can vary. Have the students write down the energy consumption figures and the purchase price for each appliance. In the classroom, calculate the lifecycle cost of each appliance to see the differences.
- Have the students shop for an appliance with and without the Energy Star label and compare the difference in energy cost.
- Have students shop for an appliance on the Internet. What information is available online? Is there a way to actually buy the product online?
- Ask students to obtain a use and care manual for an appliance of his/her choice. Use and care manuals for appliances can provide invaluable information for helping family and consumer sciences educators. These manuals can instruct proper procedures in using appliances (cleaning, maintenance), provide troubleshooting sections that consumers can use for help before calling for service, and some manuals include recipes. Extra manuals can be obtained from http://www.techmanual.com/appliances.html. Have students examine the manual to see what information they can find. What information is missing? Develop a worksheet that contains questions about the manual.
- Collect examples of appliance warranties and extended warranties from different companies. Discuss the merits and drawbacks of each, especially the cost to purchase extended warranties.
- Have students view a TV shopping network ad for an appliance. In class or on paper, have the students discuss purchasing an appliance in this manner.

Meeting National Standards of Family and Consumer Sciences Education

The following National Standards for Family and Consumer Education could be met:

2.1 Demonstrate management of individual and family resources, including food, clothing, shelter, health care, recreation, and transportation.

2.1.2 Examine how individuals and families make choices to satisfy needs and wants.

2.1.3 Implement decisions about providing safe and nutritious food for individuals and families.
2.1.5 Implement decisions about housing and furnishings.
2.3 Analyze policies that support consumer rights and responsibilities.
2.3.1 Examine state and federal policies and laws providing consumer protection.
2.3.3 Examine skills used in seeking information related to consumer rights.
2.4 Evaluate the impact of technology on individual and family resources.
2.4.2 Examine how media and technological advances impact family and consumer decisions.

Textiles and Apparel

Introduction

Learning about the proper use of clothes washers and dryers can help students understand the value of taking care of their clothing and learn how to take full advantage of equipment for specific laundry situations. Clothes can last longer with proper care and laundering, thus saving budget dollars long-term for the family's clothing budget.

Important Lesson Concepts

Proper laundry procedures are important for protecting fabrics and helping them to stay looking new longer. With new fibers being introduced on a continuous basis, students and other consumers must become aware of their proper care. In addition to learning about how washers and dryers work, students must become familiar with differences in detergents and the effects of hard water on clothing. For specific laundry situations, students should be aware of how to use equipment for stain removal, the importance of proper temperature and laundry cycles, and the need for proper sorting. In addition, students can learn how to reduce ironing by using the proper drying cycles.

Lesson Plan Ideas

- Have students experiment with varying fabrics and laundry techniques. Find inexpensive garments at a local thrift store or yard sale. Select both dry clean only and washable items, and the washable garments can be a combination of hand wash, cold water only wash, and wrinkle free fabric garment items. Cut the garments in half so that two exact pieces are formed. Some students should be given a dry-clean-only garment and asked to demonstrate what happens when one half is washed while leaving the other half as is. Other experiments could involve mixing whites and colors, washing cold water only fabrics in hot, laundering hand wash only items in the clothes washer, and washing permanent press items with two different cycles to evaluate wrinkling. For classrooms without washers and dryers, students could complete the same activity at home and present their results to the entire class. If it is not feasible to use clothing for the activities, swatches of fabric might be substituted in the proper fabrics to be tested.
- Provide students with garments that do not have care labels. Based on what they have learned about textiles, have students evaluate the fabrics and suggest the proper clothes washer and dryer cycles for their care.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences could be met:

16.0 Evaluate fiber and textiles materials.
16.2.4 Assess effects of textiles characteristics on design, construction, care, use, and maintenance of products.
16.2.5 Select appropriate procedures for care of textiles products.

Food Science, Dietetics, and Nutrition

Introduction

There are many ways in which the study of home equipment can be incorporated into the area of food science, dietetics and nutrition. In addition to food safety discussed earlier in the Early Childhood, Education, and Services section, food quality and nutrition can be affected by the proper selection and use of appliances.

Important Lesson Concepts

Numerous relationships exist between food quality and the methods of cooking, and the appliance choice and its use can directly affect the outcome. One important aspect of food quality many times impacted by food preparation is nutritional value.

Concepts to teach include: gas vs electric cooking, the effects of convection cooking, microwave vs conventional cooking, the relationship of cookware to cooking appliance, speed cooking vs microwave vs conventional, cooktop vs small appliance, and lid vs no lid cooking. In addition to food quality, preparation time can be another variable for comparison. To insure a safe food product, students must learn to keep cold foods cold and hot foods hot. This is especially important when handling leftovers.

Lesson Plan Ideas

- Experiment with preparation methods by comparing products cooked in a microwave oven, conventional oven, and on a cooktop.
- Test different types of ovens (gas, electric, convection) to determine their effect on the quality of food when prepared with various types of cookware and bakeware, i.e., glass, aluminum, stainless steel. Prepare a food such as sugar cookies or biscuits. Their light color will show browning patterns more easily. This activity will analyze the effect of different baking modes and different baking pans on browning.
- Surface cookware could be tested on various range tops and compared as to speed and evenness of cooking. Many times poor results may be the fault of the cookware and not the cooking appliance.
- Have students prepare a food like pudding by different methods (cooktop vs microwave) or on different types of cooktops using a variety of cookware (glass, aluminum and stainless steel). Compare the products related to time, easy of use and evenness of cooking. The object here is to analyze heat transfer using the various materials and methods.
- Illustrate the importance of proper food storage on food quality and food safety. Have students monitor freezer and refrigerator temperatures using thermometers to make sure they are at proper levels to keep food safe. Instruct students to find food expiration dates on packages. Place wrapped and unwrapped food items in the refrigerator and check to see how they look after a few days.
- Ask students to prepare and load a dishwasher using various types of dishes and containers and demonstrate the consequences of improper loading (broken dishes, soap residue, etc.). Point out the use of heat in sanitation of eating utensils.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences Education could be met:

9.2 Apply risk management procedures to food safety, food testing, and sanitation.

9.2.1 Determine factors that contribute to food borne illness (5).

9.2.5 Practice good personal hygiene/health procedures (4).

9.2.6 Demonstrate procedures for receiving and storage of raw and prepared foods (4).

In addition, portions of other areas of family and consumer sciences could be met in the following areas:

Food production and services:

8.2 Demonstrate food safety and sanitation procedures.

8.2.7 Demonstrate food handling and preparation techniques that prevent cross contamination between raw and ready-to-eat food and between animal or fish sources and other food products (5)(3).

Nutrition and Wellness:

14.4 Evaluate factors that affect food safety, from production through consumption.

14.4.1 Determine conditions and practices that promote safe food handling.

14.4.2 Appraise safety and sanitation practices throughout the food chain.

Interdisciplinary Approaches to Equipment Education

Other areas of a secondary school curriculum - such as language arts, mathematics, and science - can be integrated with the family and consumer sciences curriculum through the use of household equipment concepts. Family and consumer science teachers can work with the teachers of other subjects to prepare problems or homework that contain real life examples for students that incorporate home equipment concepts.

Science has always been an integral part of family and consumer sciences. Chemistry lessons can incorporate the study of soaps, detergents, and household cleaners and their effect on dirt and germs. The caramelization process can be illustrated by cooking a honey cake in the microwave and observing the browning of the cake's top (Cobb, 1994).

Physics principles are present in many activities using household equipment (DeMerchant, Lytton, Lovingood, & Lytton, 1995). Heat transfer in an oven or on a cooktop, the conductivity of various cookware materials, the reflectance of waves in a microwave oven, and the functioning of a refrigeration systems are just a few of the concepts that can bring physics to life in the kitchen.

Mathematics instructors can use temperature change or energy use calculations for appliances to practice mathematical equations. Language arts assignments could require reports on appliance comparisons or the results of various experiments. Use and Care manuals can be evaluated for their ease of understanding.

Standards of Learning Requirements

We would be remiss not to mention the influence of state mandated standards of learning tests, or other similar student assessment tests, on curriculum. The aforementioned activities related to home equipment concepts could be used to meet these standards, including the areas of

language arts (writing), mathematics (measuring and amounts), and science (chemistry and physics).

Higher Order Thinking Skills

Home equipment education can also be used to incorporate higher order thinking skills into a curriculum. Since we live in a world of constant change, higher order thinking skills are needed for more complex tasks as future adults, and these skills are essential for problem solving and decision-making. Higher order thinking skills help students become better consumers (DeMerchant, Lytton, Lovingood, & Lytton, 1995). Educators can include higher order thinking skills by using the suggested activities listed in this paper. Troubleshooting problems, following instructions in the use and care manuals, and product comparisons, are a few examples of how these skills can be emphasized.

Summary

Household equipment concepts are an important component of a family and consumer sciences curriculum. Teachers feel these concepts are important; however, many teachers do not actually incorporate them into their curriculum. Reasons for this may include limited time in teaching exploratory and high school courses, a lack of teaching materials and ideas, or more emphasis on state standards of learning (Chase, 2001).

A list of resources that may be helpful in designing home equipment lesson plans has been compiled and included below. In addition to providing home equipment information, some of the latest textbooks also include ideas for meeting the requirements of the National Standards. Following is a list of possible resources:

- Appliance manufacturers users manuals, http://www.techmanual.com/appliances.html
- Consumer's Resource Handbook, Consumer Information Center, (phone) 1-888-878-3256, http://www.pueblo.gsa.gov
- Energy Star Labels: http://www.energystar.gov
- Glencoe-McGraw Hill Publishers, (phone) 800-334-7344, http://www.glencoe.com
- Instructional Materials Laboratory, University of Missouri-Columbia, (phone) 800-669-2465 http://www.iml.coe.missouri.edu
- University of Nebraska-Lincoln, Information on purchasing home equipment, http://www.ianr.unl.edu/pubs/housing/
- V-TECS, Southern Association of Colleges & Schools, (phone) 404-679-4501 ext. 543, http://www.v-tecs.org/

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About the Authors

Melissa Chase is an Extension Project Associate, Department of Apparel, Housing, and Resource Management, Virginia Polytechnic Institute and State University, Blacksburg, Virginia and JoAnn Emmel is an Assistant Professor, Department of Apparel, Housing, and Resource Management, Virginia Polytechnic Institute and State University, Blacksburg, Virginia

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FAMILY AND CONSUMER SCIENCES TEACHERS: THE BEST RESOURCE FOR RECRUITING NEW TEACHERS

Jacquelyn W. Jensen
Eastern Kentucky University

Maxine Rowley
Brigham Young University

Jason Skidmore
Jordan School District

Shirley Hymon-Parker
University of Maryland - Eastern Shore

A host of publications provide evidence for the teacher shortage (e.g., Jackman, 1996; Miller & Meszaros, 1996) and list suggestions that various groups of FCS educators can use to effectively recruit new professionals (e.g., Miller & Tulloch, 1999; Tulloch & Miller, 1999). Of these suggestions, the involvement of teachers is "perhaps the most critical component in attracting students into the profession" (Miller & Tulloch, 1999, p. 2). The purpose of this article, therefore, is to vividly describe a teacher recruitment project in which secondary teachers played a vital role. Recommendations for future efforts are included.

A host of publications provide evidence for the Family and Consumer Sciences (FCS) teacher shortage[1] (e.g., Jackman, 1996; Miller & Meszaros, 1996) and list suggestions that various groups of FCS educators can use to effectively recruit new professionals (e.g., Miller & Tulloch, 1999; Tulloch & Miller, 1999). Our ideas for involving teachers in past and future recruiting efforts grew out of having read these publications. What is now needed in the literature are detailed accounts that describe how these suggestions have been used.

"Teachers are perhaps the most critical component in attracting students into the profession" (Miller & Tulloch, 1999, p. 2). The purpose of this article, therefore, is to describe the FCS Teacher Recruitment Project that was carried out at Brigham Young University in November of 2000. The focus of the project was to hold a recruiting reception. Our hope is that such vivid, concrete accounts will make it easier for teachers and other professionals to take action. Many more strategic, united efforts are needed to address the national crisis in the supply of family and consumer sciences educators (American Association of Family and Consumer Sciences, 1999).

Preparations for an On-Campus Reception

We spent much time and effort preparing to hold a reception that lasted approximately 90 minutes. The goal of the reception was to help students learn more about what it would be like to be an FCS educator. Preliminary activities included (a) obtaining funding, (b) inviting students, c) creating a multimedia presentation, (d) selecting teachers to speak, and (e) preparing the physical facility. We describe each of these activities in hopes that they can be used in or adapted for other settings.

Obtaining Funding

In July we contacted Renee Hyer, state specialist at the Utah State Office of Education, to see if grant monies were available for a teacher recruitment project. We submitted the project objectives and a budget to develop recruitment materials that would be used at the reception. Given that the multimedia presentation shown at the reception could eventually be shared with other professionals in the nation, and that three Utah universities would be represented at the reception, the project was awarded a small grant through the federal Carl Perkins Act. Note that the project was easily funded because it was a small grant, and the money went a long ways.

Inviting Students

A telephone network was implemented midsummer. One or more high school teachers in various regions of the state contacted other teachers. The message sent through the network updated teachers about the shortage, informed them about the reception, and requested that they each submit the names, addresses and phone numbers of at least four outstanding seniors who would then receive an invitation to attend the reception. We used a telephone contact, not email, because we wanted immediate questions, answers and replies that could be highly personalized. Further, at an FCS conference sponsored by the Utah State Office of Education in August, a teacher educator briefly spoke at a general session about the teacher shortage and plans to hold a reception in a central location in the state. Teachers were again asked to submit information for at least four outstanding seniors by the end of September so that each could be mailed an invitation. A brightly colored index card with information about where to mail the student information was then distributed to each teacher.

One of the teachers who critically reviewed the project pointed out that junior high school students should be included. Therefore, we decided to also encourage each junior high teacher to bring two ninth graders, or to send them with a parent. Information about the project was now sent to teachers in writing: (a) through the state office's email mailing list, (b) in the regular mailing from the state office, and c) in a letter. Teachers responded by submitting the requested information. The names submitted numbered 331 students, of which 304 were seniors. The remaining 27 students included freshmen, sophomores and juniors. Each student was mailed a formal invitation and a map with directions on how to reach the reception location. There were approximately 107 high schools in the state. The number participating was 45%.

Creating a Multimedia Presentation

When we first decided to create a multimedia presentation to show at the reception, we felt that it should capitalize on students' background knowledge from having been students in FCS classrooms. One of the teachers on the committee telephoned selected teachers across the state and requested photos of students actively engaged in FCS classrooms. Teachers were specifically asked for photos in which it was immediately apparent (to an observer) that the students were participating in an FCS-related learning activity. Some teachers sent photos in the mail, and two of the central committee also drove to various teachers' homes to get their photos. Approximately 800 photographs were submitted.

A small committee comprised of (a) two high school teachers, (b) a junior high school teacher, and c) a teacher educator then met to decide how to use the pictures in the presentation. The main goal of the presentation was to depict what it is like to be a teacher in junior high and high school classrooms. We decided to organize the pictures to show a six-period teacher's day.

Each of the first four class periods spotlighted a different FCS subject matter area, i.e., foods and nutrition, family relationships and human development, apparel and textiles, housing and interior design. The fifth period depicted what teachers do during their preparation period. The last period of the day showcased Family, Career and Community Leaders of America (FCCLA).

A content analysis process helped to select and organize the pictures. This process began by brainstorming many of the topics commonly taught on the secondary level for each subject matter area, the tasks that teachers engage in during their preparation period, and the kinds of activities students participate in as members of FCCLA. For each class period, we then selected a letter of the alphabet and tried to match the topics with that letter. For example, the letter "C" was selected for second period -- family relationships and human development. A few of the "C" topics generated for this class period included confidence (self-esteem), choices (decision making), coping (stress management), common "cents" (money management), and communication. We had in mind that as each topic was flashed on the screen, that corresponding photos would then appear. In organizing the photos according to subject matter area, we noticed that some topics lacked corresponding photos. For these topics, we brainstormed various scenes that could be staged, and we photographed them. Finally, we decided on short captions that would appear on the screen throughout the presentation.

The title selected for the presentation was "Family and Consumer Sciences Education: Teaching Students to Build Better Homes and Stronger Families One Class at a Time." The title was followed with a blank picture frame and the caption, "Family and Consumer Sciences Teacher. This Could Be You!" To introduce the six-period day, the next caption read, "A Day in the Life of a Family and Consumer Sciences Student." Pictures of family and consumer sciences teachers accompany the last caption, "Family and Consumer Sciences Teachers: Inspiring Students, One Class at a Time. To provide the background music for the presentation, each committee member submitted music thought to appeal to secondary students.

At this point, the teacher educator on the committee appointed another committee to critically review the multimedia presentation and reception agenda. The review committee consisted of (a) a teacher educator, (b) a junior high school teacher, and c) a high school teacher. A few of the suggestions that came from the review included obtaining many more pictures of students who were members of minority ethnic and/or racial groups, staging specific pictures for various topics, and placing on display enlarged pictures of college students enrolled in FCS courses.

The committee made another suggestion that we not use any of the music that had been submitted. Instead, they suggested that we obtain permission from Disney to use music from various films to help create vivid images of each period, e.g., "When You Wish Upon a Star" for the beginning and ending, "We're Family" for family relationships and human development, "The Spectrum Song" for housing and interior design, "Be Our Guest" for foods and nutrition, "The Work Song" for apparel and textiles, "Bibbidi-Bobbidi-Boo" for the teacher's preparation period, "Go the Distance" for FCCLA.

To increase the diversity depicted in the presentation, we contacted a professor from Maryland. We told her about the project and the need for additional photos. Rather than requesting that Maryland teachers submit photos to her, she staged various photos at schools with relatively diverse student populations. Finally, we enlisted the help of a teacher, known for her skill in creating presentations, and she put the presentation together on Microsoft PowerPoint.

Selecting Teachers to Speak

We asked four teachers to speak at the reception. Two of them were seasoned teachers who had taught for at least 20 years. The other two had entered teaching within the last 2 to 4 years. Three of the teachers were female, and the one newest to the profession was male. We asked all of them to address two questions that included: (1) Why is it satisfying to teach family and consumer sciences? and (2) Why is the subject matter needed in today's world? To capitalize on the teachers' unique strengths, we also asked each of them to address one or more specific ideas. Some of these were the advantages of selecting teaching as a career, FCS education as preparation for a career and participation in a family, and males electing to major in FCS education. We intended that the teachers' videotaped presentations would be integrated into the multimedia presentation at a later date.

Preparing the Physical Facility

The recruiting reception was held in two rooms and a hallway. Refreshments were first served in a large room. Students then moved to an auditorium next door. At the conclusion of the reception, faculty from the three teacher licensing institutions in our state, Brigham Young University, Utah State University, and Southern Utah University talked informally with students and parents outside these rooms in a large hallway.

A month before the reception, faculty members from each university submitted pictures of their students in various college courses. The four subject matter areas were represented, and, once again, we specifically focused on using photos where it was immediately apparent what students were doing. The pictures not taken with a digital camera were scanned onto a disk. Forty-two of the best pictures were enlarged to13X22 using a computer program called Adobe Photo Shop 6.0, and the pictures were printed using a plotter. We then mounted each of them on various colors of posterboard. The pictures were placed on standing easels along the walls of the room where refreshments were served, and they were also mounted on a wall of windows in the hallway outside the two rooms.

Table cloths, utensils, and refreshments were ordered through the campus catering service. Four faculty members created centerpieces using objects from their homes and the department. Various other faculty members served refreshments. The presentation in the auditorium required a computer, a projection unit, sound equipment, a screen or projection wall, and microphones. We also enlisted various individuals to control the lighting and to film each of the speakers. Further, tables with centerpieces were set up in the hallway with program literature from each university.

The Reception

Several university faculty formed a receiving line and greeted secondary students and their parents as they arrived. Students then enjoyed refreshments and perused the mounted pictures of college students in FCS courses. About 25 minutes into the reception, students were formally welcomed to the reception and asked to move to the auditorium next door.

When students were all seated, Renee Hyer, our State Office of Education Supervisor for Family and Consumer Sciences, gave a brief greeting. Dr. Maxine Rowley, a teacher educator, then talked about why students had been invited to the reception, and she introduced a high school student who would help her share one of the traditions in the profession. The two of them lit a Betty Lamp, and Dr. Rowley explained the history and symbolism of the lamp, and told a story of its use in Colonial America. Dr. Rowley focused her remarks on teaching, and

concluded by introducing Chris Moore, an FCS teacher of 27 years. All of this took about 7 minutes.

Chris's presentation most emphasized how she came to be a professional home economist (FCS teacher), how her curriculum had changed over the years, and how she has seen family and consumer sciences transform her students' lives. Chris encouraged students to consider choosing FCS education as a major, and then introduced the multimedia presentation.

In the middle of the multimedia presentation, the word, "School Assembly" flashed on the screen. At this point, Diana Hendricksen, also a veteran teacher, had two football players from her outdoor clothing class act out the lyrics of a song by Jonny Seww (2000) entitled, "Made to Measure." Diana then addressed the audience wearing many completed samples of the projects that her students make, e.g., a fleece jacket and hat, boxer shorts, pajamas, socks. She emphasized how much fun she has had changing her curriculum based on new research and fashion trends. Diana also mentioned that teaching is enjoyable because the students in her classes are highly motivated to participate in learning activities that apply to everyday life. Further, she focused on the impact that FCS has had on her students' lives.

Following Diana's remarks, the multimedia presentation continued. When it concluded, Jason Skidmore, a teacher from one of Utah's largest high schools, spoke. Like Chris and Diana, he too emphasized how FCS teachers have the opportunity to change what they do over time so that they can make a difference in a changing world. He specifically talked about family structure and how he can make a difference by teaching skills in family relationships that prevent child abuse and divorce now and in the future. Jason further emphasized that teaching FCS is not just for females. To convey his thinking about the profession, he then performed the following rap.

> We are the rapping teachers from BYU
> Family-–Consumer Science is what we do!
> Across the nation it's an organization
> It used to be called Home Ec-onomics Education.
>
> You'll say to yourself is this really for me?
> Listen to these words very carefully!
> The first thing is that you should know
> It's not just cooking or learning how to sew.
>
> You learn a lot things about the family
> Getting along takes some responsibility!
> You gonna grow up be a momma or a dad
> Adult roles class you wish you would a had?
>
> Child development is where you should be
> learning all you can about the-- baby.
> Physical, social, and intellectually
> Everything in between A and Z!
>
> The home's an important place to be
> it's got to look nice don't you agree

Come on down don't be a whiner
You gonna be an Interior Designer!

If this isn't enticing you
hold on wait let me give you the news!
There's one other item - if you don't care
only one minute and I will share.
These skills will be with you for life
They might even help you find a husband or a wife!
Come on down and take a little peek
Become a FACS Teacher that's the way to be!

Marci Morgan, the concluding speaker, acknowledged the students in the audience as being outstanding, and pointed out that the teachers in attendance were once making the same career decisions. She indicated that her decision had been a good one because it enabled her to be a successful family member and to have a career that changes the lives of others. She recalled having studied several subject areas in college rather than just one, and that other people have often relied on her for the valuable knowledge that she gained. Finally, to help her emphasize the mission of the profession, Marci quoted various parts of the FCCLA Creed. Students were then invited to move out into the hall and meet with representatives from each of the universities.

Results

To determine the career plans of the 304 seniors who were invited to the reception, we again contacted teachers near the end of the year in May, 2001. We mentioned that we were writing this article, and that we needed to know what these students had decided to do upon graduation from high school, i.e., if they planned to go to college, the university they would attend, the major they had selected.

Teachers submitted information for 50% of the seniors. Teachers' comments suggest that the time of year, their being heavily involved in closing out the school year, affected the response rate. Several patterns, nevertheless, are clear. Nine students had no plans to attend college. Of those who plan to attend college, two-fifths of students' responses indicate that they intend to major in related disciplines (frequency = 28), FCS specialty areas (f = 22), and related occupations (f = 6). One-fourth of the students were undecided as to their major (f = 38). One-fifth of the students planned to major in other areas or disciplines (f = 31). Further, one-eighth of the students planned to major in FCS education (f = 18). Table 1 displays frequency counts for specific responses.

Table 1
High School Senior's Career Plans

Responses	Frequency	Total Frequency
Related Disciplines		28
1. Elementary education	18	
2. Special education	3	
3. Psychology	3	

4. Social work	2	
5. Art	1	
6. History	1	
FCS Specialty Areas		22
1. Child and family development/ early childhood education	12	
2. Housing and interior design	7	
3. Apparel and textiles	2	
4. Food science and nutrition	1	
Related Occupations		6
1. Cosmetology	5	
2. Culinary arts	1	
Undecided About a Major		38
Other Areas or Disciplines		31
1. Music	4	
2. Business	4	
3. Nursing	4	
4. Communications	2	
5. Physical education	2	
6. Physical therapy	2	
7. Accounting	1	
8. Biomedical engineer	1	
9. Broadcast journalism	1	
10. Computer science	1	
11. Dance	1	
12. Dental assisting	1	
13. English	1	
14. Humanities	1	
15. Mechanic	1	
16. Meteorology	1	
17. Neonatology	1	
18. Photography	1	
19. Pre-med	1	
FCS Education		18

Note. Teachers submitted information for 152 seniors. This table reports the frequency of various responses for the 143 students who planned to attend college.

These results suggest that teachers focus most of their time on FCS specialty areas or related disciplines such as elementary education as they integrate career education into the curriculum. Most of the students enrolled in child care courses, for example, planned to major in elementary education or child and family development/early childhood education. A comment

from a teacher of fashion merchandising and housing and interior design provides evidence of her emphasis on FCS specialty areas. She stated, "I think that the majority of my students are more interested in interior design or fashion. … We visited a business college recently and looked at the design portfolios. They seemed very interested in their program." The teacher did not mention having explored a teaching career in FCS with her students. The need to specifically focus on teaching FCS is also apparent given the large number of students who were undecided as to their major, or who had decided to major in other areas or disciplines.

Conclusion

Teachers were a critical component in our recruiting efforts. While the reception and program focused on teacher experiences with FCS programs and the differences that it had made in the lives of their students, greater emphasis could have been placed on the shortage of FCS teacher educators, while also stressing the personal and professional rewards of the profession and how it would affect people's lives if FCS curriculum ceased to exist. It is clear that the teacher shortage is not unique to Utah, however, successes in this initial effort can help other FCS units increase enrollment and preparation of future FCS teacher educators.

Several suggestions will help to either simplify or improve similar, future efforts. First, the reception would have been much easier to prepare for had we not invested so much time preparing the multimedia presentation. Nevertheless, others will be able to use it to recruit majors when it has undergone several more reviews and revisions. Much time was also spent creating the large, mounted photographs of college students. In retrospect, we should have held the reception in the building on campus that houses FCS education because the halls have many display cases and bulletin boards that focus on the major. Further, teachers and parents need to be enlisted to bring students to a reception. We sensed from conversations with teachers that some students were hesitant to attend the reception alone. Finally, we suggest that future receptions also include various portions of the program that are affective. The Betty Lamp ceremony, the students acting out the song lyrics, and the rap helped to hook students emotionally.

Results from the follow-up survey provide additional insights concerning future recruitment efforts. For more than a decade, one of the authors, a longtime teacher educator, has been aware of an impending teacher shortage. She sensed, early on, that a factor fueling the shortage was students' difficulty in finding FCS education on college campuses because of the vast number of department names in use. Then in the early 1990's, she identified an added deterrent during a conversation with one of the coauthors who, at that time, was a high school teacher.

The teacher proudly declared that she had helped a number of her housing and interior design students to apply for college scholarships in interior design. The teacher educator inquired about the number of students who were planning to major in FCS education. The answer was, "None." In this instance, the teacher had not emphasized the possibility of obtaining a degree in the generalist major, but had only promoted the specialty area that she taught and most enjoyed. Prior to carrying out the FCS Teacher Recruitment Project, we sensed that this scenario is a common phenomenon. Findings from the follow-up survey suggest that this is the case. The distribution and use of lesson plans such as the one included in the monograph by Miller and Tulloch (1999) could help teachers to educate students about the career option of teaching FCS.

Not only should teachers help their students understand what teaching FCS is like, they

also need to help students make connections between individual courses and the discipline. When we go into secondary schools and ask students where we can find the family and consumer sciences department, they do not know. If, in contrast, we ask students to direct us to child development, they do so without hesitation. Students do not associate individual FCS courses with the discipline.

Further, a future consideration should be the age of the students who are included in recruitment projects. Our efforts focused mostly on seniors. We were thinking primarily about enrollment rates for the following year. College admission deadlines, therefore, were our motivation for holding the reception in early November. More information is needed concerning the effects of targeting secondary students at various grade levels.

In conclusion, we encourage others to engage in FCS teacher recruitment projects, and publish vivid, concrete accounts of their efforts. With many more such accounts, we can encourage others to take action, begin to identify the benefits and costs of various strategies, and determine their effectiveness.

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About the Authors

Jacquelyn W. Jensen, Ph.D. is an Assistant Professor and Program Coordinator for Family and Consumer Sciences Education in the Department of Family and Consumer Sciences, Eastern Kentucky University. Maxine Rowley, Ph.D. is an Associate Professor in the Department of Marriage, Family and Human Development, Brigham Young University. Jason Skidmore is an Family and Consumer Sciences teacher at Alta High School, Jordan School District. Shirley Hymon-Parker, Ph.D. is an Associate Professor and Chair in the Department of Human Ecology, University of Maryland-Eastern Shore.

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Footnotes

Congruent with other programs nationwide, the number of Family and Consumer Sciences education graduates in Utah has declined sharply over the past three decades. Brigham Young University (BYU) has one of the largest FCS education programs nationally. The enrollment, however, is one-seventh its size prior to the feminist movement's peak in the 1980's. BYU used to supply a large number of the teachers for the intermountain area. Now the university is barely supplying enough teachers for Utah. Efforts to recruit majors have focused on taking action before an acute shortage occurs. Other universities in Utah have teamed with us to recruit majors in spite of studies reporting that Utah is not experiencing a teacher shortage (e.g., American Association of Family and Consumer Sciences, 1999; Miller & Tulloch, 1999).