Teacher Education Priorities of Family and Consumer Sciences Teacher Education Programs: A Modified Delphi Study

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The Delphi Method, a research strategy incorporating both qualitative and quantitative research methods, was utilized to develop a list of content (knowledge), skills and experiences seen as priorities needed in Family and Consumer Sciences (FCS) teacher education preparation, according to experts in the field. The subsequent priority list was then compared by experts, FCS teacher educators, with the National Standards for Teachers of Family and Consumer Sciences (National Association of Teacher Educators for Family and Consumer Sciences, 2004) to determine the degree of congruency. The results of this review can be used by FCS teacher educators to insure that FCS teacher education programs are teaching the content (knowledge) and skills and providing experiences that meet the National Standards. These findings may be used to improve teacher education programs and the FCS teachers they produce.

The purpose of this research was to determine Family and Consumer Sciences (FCS) teacher education content (knowledge), skills and experiences that are priorities from the perspective of the FCS teacher educator. This was an attempt to answer the question: Do FCS teacher educators concur that the *National Standards for Teachers of Family and Consumer Sciences* (hereafter referred to as National Standards) are priorities in FCS teacher education?

The objective of this article is to report the research findings and compare the identified priorities with the *National Standards* (National Association of Teacher Educators for Family and Consumer Sciences [NATEFACS], 2004). Determining the priorities was considered important in order to verify that FCS teacher education programs are preparing new FCS teachers, as recommended by NATEFACS. The importance of this verification cannot be overstated: If the information obtained from FCS teacher educators revealed a disparity between their priorities and the National Standards, the quality of the product (the FCS student) could be called into question.

Like essential knowledge and skills identified for the graduate of every profession, National Standards for teachers of FCS are regarded as gold standards for the content and competencies deemed necessary for teacher educators to impart to their students. They are considered benchmarks for the knowledge and skills expected of the graduate. To assure consistency in the quality of the product (the new FCS teacher), it was deemed necessary to explore the extent to which the *National Standards* are believed to be important in FCS teacher education programs.

National Standards Background

The development of *National Standards* for teachers of family and consumer sciences was preceded in 1998 by the development of National Standards which outlined objectives for middle school and high school student learning. These standards were developed in an effort to address the many changes that had impacted the discipline over the years, as it evolved from a focus on home economics to a broader focus on the issues inherent in family and consumer

sciences. It was logical, then, to develop National Standards for teachers of family and consumer sciences (Fox, Stewart, & Erickson, 2008).

Over a two year period, the *National Standards* were developed in response to the Interstate New Teacher Assessment and Support Consortium (INTASC, 1992) which proposed 10 principles that described knowledge, disposition and performance deemed essential for new teachers. Specific standards for discipline areas such as Family and Consumer Sciences Education were to be added, later.

In 2001, NATEFACS officers initiated the development of discipline-specific national standards to meet the needs of the increasingly standards-based k-12 and higher education environments. The "Exploration Phase" included communication among the officers on the management of the process and review of newly developed standards for several states and national organizations connected to teacher standards. At the 2002 Association of Career and Technology Education conference, a session investigating need for and support of the development of the National Standards resulted in their confirmation (Fox et al., 2008).

In 2003, the current president, president-elect, and past-president of NATEFACS (Wanda Fox, Daisy Stewart, and Patricia Erickson, respectively) accepted the responsibilities of leadership. This marked the start of the second phase in the development of the National Standards---the Foundations Phase, which became known as the "Project to Develop National Standards for Teachers of Family and Consumer Sciences." Through feedback obtained at conference presentations, NATEFACS officer meetings, project committees, a variety of professional communications and face-to-face work, a draft of the National Standards was developed (Fox et al., 2008).

The third phase entitled the Framework Phase began in January of 2004. A draft was developed and disseminated for review through emails and NATAFACS and American Association of Family and Consumer Sciences 2004 meetings (Fox et al., 2008).

The Final Design Phase included obtaining input via an on-line survey from stakeholders who had attended conference meetings or had expressed interest. A smaller panel then reviewed and synthesized the data collected. This meeting yielded the National Standards which were approved in December of 2004 (Fox et al., 2008).

Since the *National Standards* had been around since 2004, it was decided to investigate the degree to which these standards are now valued by FCS teacher educators. In 2010, the question concerning the extent to which FCS teacher educators value the National Standards was addressed.

The rationale for developing *National Standards* came from the awareness that such standards for family and consumer sciences teachers were necessary to allow the discipline to take part in the national trend toward standards-based teacher licensure, teacher education and accreditation of programs. The same rationale exists today.

Two primary concepts provide the structure for the *National Standards*, Content and Professional Practice. Standards number 1 through 4 focus on FCS content while Standards number 5 through 10 relate to professional practice. Content includes all of the subject matter a beginning teacher in family and consumer sciences should know. Whereas, professional practice refers to all that a beginning teacher in family and consumer sciences should be able to do (National Association of Teacher Educators for Family and Consumer Sciences, 2004). Thus, the…

The National Standards should impact undergraduate FCS teacher education curricula.

Becoming an effective teacher relies on qualities ranging from general pedagogical

competencies to content-specific knowledge and skills (Danielson, 1996; Fox et al., 2008; Shulman, 1987).

Producing highly qualified teachers is a major goal of education reform. No Child Left Behind legislation calls for prepared teachers who know "what to teach, how to teach and [have] command of the subject matter being taught" (U.S. Department of Education, n.d., ¶2). If FCS teacher educators are to play a meaningful role in the workforce of the future, FCS teacher education programs must answer the call for the preparation of highly qualified teachers.

The research was conducted using the Delphi Method, a research strategy that employs both qualitative and quantitative methodologies—and involves sequential administration of a series of questionnaires to enable a group of experts (in this case, FCS teacher educators) to reach consensus on an issue. The Delphi method can be characterized as including (a) consultation with a group of experts serving as panel members who respond anonymously; (b) a number of different rounds; (c) feedback of results; and (d) participants being given the opportunity to revise their opinions (Linstone & Turoff, 1975).

The Delphi Method has previously been utilized in Family and Consumer Sciences research. Combs and Hall (1996) attempted to characterize anticipated postsecondary and adult FCS education programs using this method. Couch, Felstehausen and Webber (1998) used the Delphi Method in their research, rating the importance of employability skills across child care competency areas. Neill and Stout (1998) used the method to identify portfolio evidences that would show mastery of the proficiencies adopted by the state. Meanwhile, Miller (1997) used the method to identify approaches preferred to teach nutrition by FCS teachers.

Methodology

The 2008 membership roster of the National Association of Teacher Educators for Family and Consumer Sciences (NATEFACS) was used to identify possible members of a panel of experts (M.J. Pickard, NATEFACS treasurer, March, 2009). Members were surveyed during the summer months of 2009. An email containing an invitation to participate in the study went out to 164 NATEFACS members. Forty teacher educators (24.4%) contacted by email participated in Round One. The panel of experts completing both Rounds Two and Three consisted of 21 (53%) of the Round One respondents. While there is no one panel size advocated for Delphi Method studies, it is recommended that 15-30 carefully selected panel members are appropriate for a heterogeneous population (Martino, 1972).

In total, the study included three rounds. In Round One, the online questionnaire included the following open-ended item to which a panel of experts was asked to generate responses: "Identify up to 10 content (knowledge), skills and experiences that are important for professional preparation of 6-12th grade Family and Consumer Sciences teachers." From the responses generated, the researchers, two FCS teacher educators with 16 years combined experience at the post-secondary level and 12 combined years of high school classroom teaching experience, collapsed 178 qualitative responses received from 40 teacher educators into 33 content (knowledge), skills and experiences based on commonalities.

In Round Two, panel members rated the 33 identified content (knowledge), skills and experiences based on importance using the following scale: Strongly agree = 6, Agree = 5, Somewhat Agree = 4, Somewhat Disagree = 3, Disagree = 2 and Strongly Disagree = 1 (see Table 1). The researchers then calculated means of the responses for each of the identified content, skills and experiences. The panel was asked to review the means generated in Round Two. These means represented the collective opinions of the panel as to the importance of rated content, skills and experiences.

In Round Three, the panel was asked to review these means (collective opinions) and again rate the 33 identified content, skills and experiences based on importance using the scale utilized in Round Two (see Table 2).

One month prior to the close of each round, an e-mail reminder was sent to each panel member who participated in the previous round. Approximately three months passed between Rounds One and Two and roughly one month passed between Rounds Two and Three. Descriptive statistics, including means and standard deviations (SD) for the ratings were computed for each priority topic. Topics were ranked in descending order based on means. The mean was chosen as the primary measurement for comparing rating scores. For most distributions the mean is the most accurate and efficient estimate of a population (Murray & Jarman, 1987; Hsu & Sandford, 2007)**.**

The second criterion chosen to interpret the results of the study was the interquartile range (IQR), a useful measure of variability which is equal to the difference between the third and first quartiles (Heather, Dallolio, Hutchings, Kaner, & White, 2004; Tierney & Fox, 2009). Following an approach used by Heather et al. to interpret the IQR findings, teacher education priorities with an IQR of 0.0 were determined to have very high consensus; those with an IQR of $\leq$1.0 were determined to have consensus; and those with an IQR >1.0 were determined to have little or no consensus. According to Murphy et al. (1998)**,** as long as a study includes eight or more participants, the IQR provides an appropriate way to aggregate judgments, as they are independent of extreme values and are less susceptible to a skew in the distribution of responses.

Lastly, the percentage of agreement for each research topic was used to establish the reliability of an observer's judgment by comparing it to the observations of other observers. Consistency of responses was used to determine inter-rater reliability among the panel members. Percent agreement reflected the degree of consistency among members' responses. As recommended by Hayes and Hatch (1999), 62.5% was used as the minimum level of agreement to establish reliability among panel members' responses on a six-point scale.

Findings

The findings of this study demonstrate that the Delphi Method was effective in developing a consensus regarding the importance of concepts covered in the *National Standards* among FCS teacher educators**.** Descriptive data from Round Two are reported in Table 1, with the 33 priority topics listed in descending order by means. Standard deviations ranged from 0.3 to 1.25, thus showing negligible variation in the panel members' responses. Percent of agreement ranged from 20% to 82% with 62.5% used as the minimum level of agreement to establish reliability among panel members' responses on a six-point scale.

Table 1
Importance of Teacher Education Priorities -- Delphi Method/Round Two

Rank	Content (knowledge), Skills and Experience	Mean	SD	IQR	% of Agreement
1	Teaching methods, curriculum and resources	5.90	0.30	0	82%
2	Personal financial literacy	5.86	0.36	0	74%
3	Parenting skills	5.86	0.36	0	74%
4	Relationship skills	5.86	0.36	0	74%
5	Health, nutrition and wellness	5.81	0.40	0	68%
6	Critical thinking including ethical decision making and problem solving	5.81	0.40	0	68%
7	Family communication skills	5.79	0.42	0	65%
8	Written and oral communication skills	5.76	0.44	0.5	62%
9	Strong student teaching experience	5.75	0.44	0.75	61%
10	Child and human development	5.71	0.46	1	57%
11	Consumer economics and resource management	5.62	0.50	1	50%
12	Adolescent growth and development	5.62	0.50	1	50%
13	Reflection on classroom performance	5.62	0.59	1	50%
14	Food science, theory, techniques and food preparation skills	5.48	0.75	1	43%
15	Interpersonal skills across the life span	5.48	0.68	1	42%
16	Professional organization involvement and participation at some level	5.48	0.60	1	43%
17	Marketing of the FCS program	5.38	0.67	1	39%
18	Students need FCS skills to stay healthy and productive	5.29	0.64	1	40%
19	Basic job hunting skills, interviewing, resumes, portfolio development (job requisition skills)	5.29	0.72	1	36%
20	Obtaining observation hours in secondary schools, early in students' course work	5.29	0.85	1.5	36%
21	Understanding of cultural differences	5.29	0.72	1	36%
22	Development of written lesson and unit plans based on the National Standards	5.14	0.73	1	44%
23	Practicum experiences in all areas and grade levels of FCS	5.10	0.77	1.5	32%
24	Experiences with FCCLA	5.10	1.04	2	30%
25	Program funding rules and regulations	5.0	0.63	0	43%
26	Clothing selection, care and repair	4.95	1.02	2	28%

27	Historical and current perspective of FCS	4.95	0.67	0.5	39%
28	Technology application for personal use and career	4.79	0.85	1	36%
29	Housing needs and design of interior space	4.76	0.62	1	42%
30	Grant writing	4.76	0.89	0.5	28%
31	Gerontology	4.43	0.98	1	30%
32	Apparel and textiles	4.19	1.25	1.5	22%
33	Basic clothing and construction techniques	4.05	1.23	2	20%

Note. N = 21

The IQR ranged from 0.0 to 2.0 indicating very high consensus to little or no consensus. The top 7 ranked priorities met the 62.5% of agreement standard required to establish reliability among panel members' responses as well as achieved very high consensus among panel members by achieving an IQR of 0.0.

Descriptive data from Round Two are reported in Table 2; topics are listed in descending order by means. Revisions in ranking by panel members were made on the bases of reconsideration of the items and the respective statistics provided. Standard deviations ranged from 0.0 to 1.17 thus showing negligible variation in the panel members' responses. Percent of agreement ranged from 20% to 82% with 62.5% used as the minimum level of agreement to establish reliability among panel members' responses on a six-point scale. The IQR proved to be 0.0 to 1.0, indicating very high consensus to consensus for 32 of the priorities, and only one of the priorities showed little or no consensus (IQR = 2.0). The top 12 ranked priorities met the 62.5% of agreement standard required to establish reliability among panel members' responses as well as achieved very high consensus among panel members by achieving an IQR of 0.0.

The top three ranked priorities following Round Three were as follows: first, critical thinking (including ethical decision making and problem solving), second, relationship skills and third, family communication skills. Each of these met 100% of agreement among panel members. In addition, the SD proved to be 0.0, meaning no variation existed in the panel members' responses.

Teacher education priorities ranked fourth through eighth included teaching methods, curriculum and resources (4th); written and oral communications (5th); health, nutrition and wellness (6th); parenting skills (7th); and strong student teaching experiences (8th). The five priorities ranged from 80% to 90% of agreement among panel members, with an SD ranging from 0.22 to 0.44.

The priorities ranked ninth through twelfth included adolescent growth and development (9th), personal financial literacy (10th), child and human development (11th) and reflection on classroom performance (12th). These ranged from 68% to 74% of agreement among panel members with an SD ranging from 0.36 to 0.51.

Table 2

Importance of Teacher Education Priorities -- Delphi Method/Round Three

Rank	Content (knowledge), Skills and Experience	Mean	SD	IQR	% of Agreement
1	Critical thinking including ethical decision making and problem solving	6	0	0	100%
2	Relationship skills	6	0	0	100%
3	Family communication skills	6	0	0	100%
4	Teaching methods, curriculum and resources	5.95	0.22	0	90%
5	Written and oral communication skills	5.95	0.22	0	90%
6	Health, nutrition and wellness	5.90	0.30	0	82%
7	Parenting skills	5.90	0.44	0	90%
8	Strong student teaching experience	5.90	0.31	0	81%
9	Adolescent growth and development	5.86	0.36	0	74%
10	Personal financial literacy	5.81	0.40	0	68%
11	Child and human development	5.81	0.40	0	68%
12	Reflection on classroom performance	5.81	0.51	0	73%
13	Marketing of the FCS program	5.71	0.46	1	57%
14	Consumer economics and resource management	5.71	0.73	0	57%
15	Obtaining observation hours in secondary schools, early in students' course work	5.67	0.58	1	55%
16	Interpersonal skills across the life span	5.65	0.67	0.75	57%
17	Food science, theory, techniques and food preparation skills	5.60	0.75	0.75	57%
18	Professional organization involvement and participation at some level	5.52	0.60	1	45%
19	Understanding of cultural differences	5.48	0.68	1	42%
20	Students need FCS skills to stay healthy and productive	5.38	0.59	1	43%
21	Historical and current perspective of FCS	5.33	0.48	1	53%
22	Basic job hunting skills, interviewing, resumes, portfolio development (job requisition skills)	5.19	0.81	1	35%
23	Experiences with FCCLA	5.10	1.09	1	31%
24	Program funding rules and regulations	5.10	0.54	0	53%
25	Clothing selection, care and repair	5.00	0.63	0	43%
26	Development of written lesson and unit plans based on the National Standards	4.95	0.74	0	41%

27	Practicum experiences in all areas and grade levels of FCS	4.95	0.69	0	50%
28	Technology application for personal use and career	4.86	0.73	0.5	41%
29	Housing needs and design of interior space	4.71	0.56	1	47%
30	Grant writing	4.62	0.80	1	32%
31	Gerontology	4.57	0.81	1	41%
32	Apparel and textiles	4.48	1.08	1	32%
33	Basic clothing and construction techniques	4.10	1.17	2	20%

Note. N = 21

The resulting analysis identified at least one priority for each of the ten *National Standards*. Table 3 lists each of the ten *National Standards*. The priorities were then matched to each of the ten *National Standards*. Note that some of the priorities are matched with more than one of the *National Standards*. The two FCS teacher educators who initially designed the study accomplished the matching of priorities to the *National Standards* through extensive discussion and debate.

Three priorities were identified which do not clearly fit with any one of the *National Standards* but actually traverse all of the standards. The first of the three priorities is "Strong student teaching experience" which was ranked eighth. This priority ranking had 81% of agreement among teacher educators with an SD of 0.31 and an IQR of 0.0. The second priority, "Observation hours in secondary schools early in students' course work" ranked 15th, with 55% of agreement among teacher educators, an SD of 0.58 and an IQR of 1.0. Finally, "Practicum experiences in all areas and grade levels of FCS" ranked 27th with 50% of agreement among teacher educators, an SD of 0.69 and an IQR of 0.0.

Table 3
Delphi Panel Indentified Priorities As Related to National Standards for Teachers of FCS.

Ten National Standards	Rank	Teacher Education Priorities
1. Career, Community, and Family Connections	22	Basic job hunting skills, interviewing, resumes, portfolio development (job requisition skills)
	28	Technology application for personal use and career
2. Consumer Economics and Family Resources	10	Personal financial literacy[a]
	14	Consumer economics and resource management
	25	Clothing selection, care and repair
	29	Housing needs and design of interior space
	32	Apparel and textiles
	33	Basic clothing and construction techniques
3. Family and Human Development	2	Relationship skills[a]
	3	Family communication skills[a]
	7	Parenting skills[a]

	9	Adolescent growth and development[a]
	11	Child and human development[a]
	16	Interpersonal skills across the life span
	31	Gerontology
4. Nutrition, Food and Wellness	6	Health, nutrition and wellness[a]
	17	Food science, theory, techniques and food preparation skills
5. Curriculum Development	4	Teaching methods, curriculum and resources[a]
	26	Development of written lesson and unit plans based on the National Standards
6. Instructional Strategies and Resources	1	Critical thinking including ethical decision making and problem solving[a]
	4	Teaching methods, curriculum and resources[a]
	5	Written and oral communication skills[a]
7. Learning Environment	5	Written and oral communication skills[a]
	9	Adolescent growth and development[a]
	19	Understanding of cultural differences
8. Professionalism	5	Written and oral communication skills[a]
	13	Marketing of the FCS program
	18	Professional organization involvement and participation at some level
	21	Historical and current perspective of FCS
	30	Grant writing
9. Student and Program Assessment	12	Reflection on classroom performance[a]
10. Student Organization Integration	23	Experiences with FCCLA
	24	Program funding rules and regulations

Note. N = 21

[a]IQR of 0.0 indicates very high consensus among teacher educators and 62.5% of agreement minimum level of agreement needed to establish reliability.

Discussion and Conclusion

The Delphi Method employed in this research appears to be conducive to the examination of content (knowledge), skills and experiences that are important for professional preparation of 6-12th grade FCS teachers. However, to mitigate the possibility of investigator bias, the study should be replicated with more than two FCS teacher educators or content experts providing insight into the matching of priorities and the National Standards.

Seven high ranking teacher education priorities focused on FCS content consistent with Standards #1 through #4 have resulted from this study. "Content" includes all of the subject

matter a beginning teacher in family and consumer sciences should know (National Association of Teacher Educators for Family and Consumer Sciences, 2004). These met the IQR of 0.0, indicating very high consensus among teacher educators and demonstrated 62.5% of agreement among teacher educators, which is the minimum level of agreement needed to establish reliability. They include (a) personal financial literacy, (b) relationship skills, (c) family communication skills, (d) parenting skills, (e) adolescent growth and development, (f) child and human development and (g) health, nutrition and wellness.

Likewise, Standards #5 through #10 relate to professional practice and are represented by the following teacher education priorities that met the consensus and agreement standards of this research: (a) teaching methods, curriculum and resources, (b) critical thinking including ethical decision making and problem solving, (c), written and oral communication, (d) adolescent growth and development, and (e) reflection of classroom performance. The concept "Professional Practice" refers to all that such an individual should be able to do (National Association of Teacher Educators for Family and Consumer Sciences, 2004).

Although the priorities were congruent with the *National Standards*, some standards were better supported than others. For example, Consumer Economics and Family Resources (Standard #2), Family and Human Development (Standard #3) and Professionalism (Standard #8) seem to be thoroughly addressed; Student and Program Assessment (Standard #9) is only minimally addressed.

It is important to note that there is disconnect between Standard #9, "Student and Program Assessment" and priorities identified by teacher educators in this study. Teacher educators generated only one priority associated with this standard. Further investigation as to the value teacher educators place on student and program assessment is needed.

While Standards #1, 2 and 10 were matched with priorities identified by teacher educators in this study, the priorities were not consistently ranked highly nor did they meet an IQR that indicated consensus. Likewise, they did not reach the level of agreement needed to establish reliability. For example, Standard #1, Career, Community, and Family Connections was matched with two priorities: “Basic job hunting skills, interviewing, resumes, portfolio development (job requisition skills)” ranked 22nd and “Technology application for personal use and career” ranked 28th. The same holds true with Standard #10 and to some degree with Standard #2. It may be that low ranking of priorities matched with a Standard may indicate that the Standard itself is not highly valued by FCS teacher educators. However, before this can be verified, an additional round(s) may be necessary to achieve an IQR indicating consensus among teacher educators and a level of percentage of agreement needed to establish reliability.

Three priorities were identified which do not clearly fit with any one of the *National Standards*, “Strong student teaching experience,” “Observation hours in secondary schools early in students’ course work” and “Practicum experiences in all areas and grade levels of FCS.” Perhaps these three priorities traverse all of the Standards, particularly Standard #5 “Curriculum Development” and Standard #6 “Instructional Strategies and Resources.” Consequently, it could be reasonably concluded that these priorities do provide students with attainment of Standards #5 and 6, and to some degree all ten. A closer look at the matched priorities identified by FCS teacher educators revealed that these priorities expose students to content and allow them to observe and practice teaching skills.

Further investigation of the priorities identified for each of the ten *National Standards* could lead to possible improvement of FCS teacher education programs. A question which arose during analysis of the data was whether or not FCS teacher educators who participated in the

study actually incorporate the priorities identified in their curricula. Consequently, further research is needed to verify that the *National Standards* play a role in program development, curriculum alignment and implementation in FCS teacher education programs.

By its nature, Family and Consumer Sciences as a discipline consisting of *living* content, i.e. content which must continually adapt to a changing society. Thus, replications of this study may be a component of continuous evaluation of the *National Standards*. The knowledge base for the FCS teacher is very diverse, ranging from hard sciences to social sciences. Secondly, the passage of time influences the discipline. Governmental policy at all levels, research in the hard sciences and social sciences all impact what is taught in FCS classrooms.

For example, "Consumer economics and resource management" ranked 14th. This is possible, considering that the full impact of the U.S. national financial "meltdown" of 2008-2010 did not influence individual U.S. households until after data collection. Therefore, the ranking of this priority might now be higher. In addition, FCS teachers saw the nutritional food pyramid change in 2007 due to new knowledge gleaned from research in biology, chemistry and nutrition, thereby changing basic content to be taught.

Other replications of the study may reveal significant information regarding the examination of content (knowledge), skills and experiences that are important for professional preparation of 6-12th grade Family and Consumer Sciences teachers. Replicating the study with FCS teachers in the first to third year of teaching in order to gain the perspective of the novice could provide valuable feedback as to the effectiveness of teacher education programs in teaching priorities that address the *National Standards*. Another valuable study would be replicating this study with cooperating teachers who supervise FCS student teachers, in order to validate and provide opportunities to refine the priorities identified in this study.

The priorities identified by the teacher educators were found to relate to one or more of the *National Standards*. The priorities appeared to fit closely with the National Standards, with one or more of the priorities matching each of the standards. Determining the connections between the priorities and the *National Standards* indicates that FCS teacher education and respective teacher education programs are effectively preparing new FCS teachers as NATEFACS recommends.

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Enhancing the Teaching of Family and Consumer Sciences: The Role of Graphic Organisers

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In a world of constant and rapid change there are greater demands placed on learners to not only gain content knowledge, but also to develop learning skills and to adopt new strategies that will enable them to produce better and faster learning outcomes. Especially in internationally advancing nations like Kuwait this will be a major challenge of the future. This literature review examines theoretical frameworks that enhance Kuwaiti teachers' knowledge and skill to adopt culturally relevant reform practices across a number of disciplines and provide guidance in an exploration and use of newer pedagogical tools like graphic organisers. It analyses the effects of graphic organisers on higher order learning and evaluates how they can effect professional development and pedagogical change in Kuwait.

Globalisation and Internationalisation has diminished the time and space that once existed between nations. While Internationalisation has led to a tremendous increase in the importance of international trade, interaction, international relations, treaties, alliances, and interactions between sovereign nations, globalisation has moved many formerly national economies to the status of one global economy through global economic integration (Daly, 1999). Today, cultural interaction and communication is an international necessity. People who were once culturally and linguistically isolated from others are now doing business and living life together with their counterparts around the world. In this new world, not only are there ever-increasing demands for new knowledge there is also the necessity to develop new paradigms for finding, applying and sharing knowledge. At a national level, demands are also being made for substantial changes in education (Christou, 2010) which will equip the next generation of producers, business persons and civic leaders to move their countries away from resource dependent economies to ones that foster creativity and innovation in all aspects of professional, commercial and private life.

Faced with these challenges, many educational researchers have realised the need for a reformation of educational systems in ways that will more efficiently and effectively empower students to expand their existing capacities for learning, increase their abilities to acquire new competencies and enable them to become active participants and contributors to global knowledge (Spring, 2008; International Bureau of Education (IBE), 2010) and to be able to confront the challenges that the next generation will face. Before this reformation can occur, teachers need to be willing to leave their traditional approaches to teaching and implement current evidence-based strategies and teaching tools (Lawless & Pellegrino, 2007; Al-Ajmi & Reys, 2010) that will promote greater flexibility in teaching approaches, foster deeper cognitive learning (Davidowitz, Rollnick, & Fakudze, 2005; Hargreaves, 2003) and support higher order thinking, as well as develop a greater focus on problem solving and engage students with more authentic learning experiences (Caskey, 2002).

Although these changes in approaches to teaching need to be globally enacted, they also need to affect national education policies and curriculum in a way that respects the cultural context of the different countries (Reid, Gill, & Sears, 2010) so that all students will be able to apply higher order learning skills to functioning effectively in their relevant

societies as actively responsible citizens respective of their individual academic abilities or occupational ambitions. This means that the goals of education must not be restricted to academic outcomes, but should also include non academic outcomes through "values education, multicultural education, civics and democratic education, and environmental education" (Ladwig, 2010, p. 114). It is in this context that Ladwig sees an added challenge, because every change in pedagogical approach and curriculum content requires a change in educational policy, funding and resourcing. Ladwig also sees the need for change in teacher training, professional development, and curriculum assessment and evaluation to ensure that the theories behind these changes and the experiences of learners consistently produce the intended outcomes.

Although the outcomes of national changes in educational approaches and curriculum would include the development of a workforce that is fully equipped to contribute to the global community, some teachers need to be encouraged to change their pedagogy, curriculum approaches and requirements of learners. Hipkins, Reid and Bull (2010) warn that unless educators understand the need for change in educational approaches and requirements, they will fail to activate changes in curriculum pedagogy and assessment approaches, and the outcome will be less than is necessary in a globalised community. It is in this context of change that we argue that graphic organisers (GOs) help provide a new approach to teaching and learning by enabling teachers and learners to present information in a graphic form that promotes visual representations of a given topic. Through the use of visual representations learners are able to categorise elements of information, analyse the relationships between the different elements presented and critically evaluate those elements to discern the significance of all that is presented. We believe that by adopting the use of GOs into a changing education system and society there will be learning benefits philosophically, academically and professionally.

In this paper we draw upon the teaching of Family and Consumer Sciences (FCS) in Kuwait as an example of the context in which GOs can potentially provide a new approach to teaching and learning. The paper begins with a discussion of Kuwait education in the context of globalisation and internationalisation. We subsequently provide a theoretical base for the use of GOs by examining those aspects of learning theory that supports the efficacy of GOs. We next focus on the use of GOs as a tool for fostering problem solving and higher order thinking. The paper concludes with an overview of the types of GOs and how they may be used in a FCS context.

Family and Consumer Sciences in Kuwait

Globalisation has meant that Kuwait is now faced with the challenge of balancing the maintenance of its important and unique cultural heritage with the opportunities of taking an active role in the global economy. Maintaining cultural heritage and economic independence are challenged by the globalisation of economic processes whereas internationalisation raises opportunities for countries to develop strong relationships among other nations and contribute to a sustainable and peaceful future (Daly, 1999). This challenge reaches deeply into every aspect of Kuwaiti life, including its education system. Since 2006, the pull toward globalisation and internationalisation has led to the establishment of a school grading system that is similar to many western nations, having five, four and three years of schooling respectively, at primary (ages 6-10 years; grades 1-5), intermediate (ages 11-15; grades 6-9), and secondary (ages 16-18; grades 10-12) levels (Kuwait Info, 2009), a shift that led to a reduction by one year of the upper secondary stage and the extension of compulsory education from eight to nine years of schooling. The recognition of the importance of globalisation on Kuwait is also demonstrated by the fact that all schools use text books adopted from the Western curriculum and reflect Western lifestyles. Globalisation has also

made it necessary for all learners in all Kuwaiti schools to study English as a second language from the first year of primary education (Kuwait Info, 2009). It has also encouraged governmental support for non-Kuwaiti schools in the form of supervision, consultation and direction and the freedom for private schools for non-Kuwaiti children to follow the curricula of their respective home countries (Kuwait Info, 2009). These internal educational reforms have had a positive effect at a global level. Through these reforms, the Kuwaiti government opened the doors of cooperation with foreign countries, including the USA and UK which are considered to have more advanced education policies **(**IBE, 2010).

The pull by its unique cultural imperatives have been equally strong. The Kuwaiti Ministry of Education remains committed to sponsoring and financing education designed to meet the progress-needs of the country and the ever-changing internal labour market conditions (Ministry of Education, 2003). To maintain its cultural perspectives, the Kuwaiti education system continues to limit free schooling to national children.

Kuwait also recognises culturally sensitive differences in educational gender-needs and therefore provides a number of girls-only facilities and curricula activities. While this may be interpreted as being a response to global theories of feminism because it fulfils many feminist elements, it is clearly directed by cultural sensitivities and perspectives.

The FCS curriculum is one such area that is designed specifically to demonstrate Kuwait's appreciation of the unique role of women in society. In this, it fulfils feminist theory that "women and men alike have equal potential for individual development and growth" (Swarts, 1991, 3) and maintains the underlying belief that all social and educational reforms ultimately affect people's lifestyles, including their household resource-management, family education, hospitality and tourism management, food and feeding, internal design, and fashion design (Al-Anjari et al., 2007). Since 2007, all female learners in grade six through to grade nine are expected to participate in the FCS program. FCS is not offered for learners in grade 10 however, it is offered as an elective subject for grades11 and 12. The inclusion by FCS, to the principles of feminism provides opportunity for female learners to explore the distinct roles and relationships of women, to give meaning to the concept of personhood and a distinct understanding by all female learners of the "psychological, social, economic, legal and cultural obstacles confronting women" (Swarts, 1991, 3).

FCS in Kuwait operates within a balance of these global changes and national distinctions to empower learners to progress from the knowledge of facts to conceptual knowledge, a learning process that, Anderson and Krathwohl (2001) and Pickard (2007) identify as important for the development of a deeper relational understanding of concepts. Through structuring FCS lessons to have a learner-centred approach, learners are empowered through participation to move beyond factual knowledge about lifestyle disciplines to conceptual knowledge. In other words, there will be more awareness of their roles in developing their own future family lifestyles and the relevant importance of becoming active participants in the country's future society. Because they can be used to promote learner-centred engagement with the concepts, GOs have been shown to be highly effective in enriching learners' learning experience (Stäuble, 2005). The challenge for the Kuwaiti education system is therefore to adopt new teaching strategies and learning support systems that will increase the efficiency and effectiveness of the teaching and learning experience (Al-Shatti, 2005) so that learners will be empowered to engage with relevant curricular learning experiences and philosophy of FCS that reflects both the global and national cultural experience.

Theoretical Foundations for the use of Graphic Organisers

The use of graphic organisers to enhance teaching and learning in Kuwait is grounded on a number of important educational theories. In the context of globalisation, of primary

importance is the theory put forward by Vygotsky (1978), that environmental influences of learning are the actual precursors of self mastering knowledge construction and that the limitations of technological, cultural, economic and social diversity in schools and the lack of strategic instruction in schools could hinder the implementation of constructivist philosophy in learning. When Vygotsky's theory of environmental influences is considered within the context of Kuwait's participation in globalisation, graphic organisers can be seen to offer the opportunity for teachers to adopt a proven educational tool that will enhance their existing pedagogical practice, promote a new paradigm of teaching strategies that empowers learners to acknowledge global changes and the effects they have on Kuwaiti culture and introduce students to an efficient and effective way to prepare for their national and global futures.

Important also is the theory put forward by Ausubel (1968), that meaningful learning could be achieved by the incorporation of advanced organisers which were defined by Estes, Mills and Barron (1964, p. 41) as "a visual and verbal representation of the key vocabulary of a learning task in relation to more inclusive or subsuming vocabulary concepts that have previously been learned by the student".

Such visual representations were subsequently described as GOs and defined in terms of being a visual and graphic display that depicts the relationships between facts, terms, and or ideas within a learning task (Hall & Strangman, 2002). A considerable body of research subsequently positioned these devices as tools to support students' learning across many domains of knowledge but in particular reading and in the domains of mathematics and science (e.g., Hall & Strangman, 2002; Nisbit & Adescope, 2006; Novak, 2005). However, in spite of the research evidence about the effectiveness of GOs across a number of curriculum areas in the west, many teachers in the Kuwaiti educational system are still teaching through archaic and insufficient 'chalk and talk' methods where knowledge is compartmentalised and information is taught in isolated bytes.

GOs have been used in many western educational systems to promote effective change in the way learners approach the identification, collection and assimilation of knowledge and the way they engage with interconnected concepts so as to be able to recall and transfer prior knowledge to new information in a way that is both coherent and cohesive (Ausubel, 1968; Stäuble, 2005). Because of these features, GOs have often been used across a variety of curriculum areas including Maths and Science learning experiences (Harmon, Hedrick, & Wood, 2005). As a background to a study that focuses on the development of teachers' knowledge around the pedagogical use of GOs, the theoretical undergirding for the use of GOs is now discussed.

Graphic Organisers and theoretical concepts about learning

Graphic organisers have been linked to the theories of cognitive learning (Ausubel, 1968) because of their influence over behavioural changes (Ormrod, 2008; Mowrer & Klein, 2001), conceptual understandings (Ives & Hoy, 2003) and the current and future performance (Hawk, 1986) of learners. Graphic organisers have been shown to fit neatly within the theoretical frameworks of cognitive theory by their ability to encourage learners to place information into hierarchical structures according to the learners' perceptions of the importance of the data learned (Ausubel, 1968), to assimilate and accommodate new learning experiences into previous ones (Gillani, 2003) and through these cognitive structures, to develop more complex and multifaceted understandings that will, in turn, become an extended set of multi conceptual systems upon which learners can build further learning (Novak, 1998).

Also linking GOs and cognitive theory, especially the cognitive schema theory (Derry, 1996), is the idea that learners use individual and often unique schematic structures and functions which cause them to naturally follow unique learning patterns (Reynolds, Sinatra,

& Jetton, 1996). This means that unless the new information or the presentation of that information fits the individual learners' personal schema, the cognitive processes needed to assimilate and accommodate the new information will be restricted. This proposition also means that while a match between the learners' perceptions of the presentation of new information and the learners' unique psychological schemata would result in an accurate inferential reconstruction of stored information and therefore positive learning, a perceived contradiction between the two would lead to erroneous learning (Spiro, 1977). Based on this aspect of cognitive theory, Gold (2003) argued that teachers must seek to understand the learning styles of their individual learners and develop the use of teaching and learning tools that would promote a match between the presentation of concepts and subjects to be learned and the learners' psychological schemata so that the new concepts involved are not perceived as an anomaly by the learners (Bekinschtein, Cardozo, & Manes, 2008; Treagust & Duit, 2008). This of course takes into consideration the fact that perceived anomalies are normal when conceptual change happens at the beginning of learning, but that memory schemas can thwart such perceived anomalies and enable learners to retrieve information when the appropriate cues are present (Bekinschtein et al., 2008).

Graphic Organisers and conceptual learning

Graphic organisers have also been linked by researchers to the theories of conceptual learning. GOs are effective and efficient pedagogical tools, as assessed by the degree and speed with which they engaged learners in the accommodation and assimilation of important concepts across a number of fields (Robinson & Skinner, 1996) and by the compatibility of the patterns of information established by GOs with functioning processes of the brain (Marcia, 2008). DiCecco and Gleason (2002) analysed the use of GOs in terms of their effectiveness and efficiency in the field of comprehension, Chularut and DeBacker (2004) analysed their potential to promote self efficacy and self regulation in English language learning and both Braselton and Decker (1994) and Ives and Hoy (2003) evaluated their effects on vocabulary or verbal learning in mathematics. Although focused on different aspects of learning, the combined results of these studies confirmed a definite relationship between the use of GOs and effective conceptual learning. The research conducted showed that GOs help learners to establish rudimentary schema or structures and therefore to be important to the early phases of conceptual learning (Novak & Cañas, 2008). Research also showed that GOs promoted the identification of discovered information, changes in language and questions associated with the information presented and active involvement in the learning process (Novak & Cañas, 2008).

Closely associated to the link between GOs as pedagogical tools and conceptual organisation, is the evidence of researchers who have identified them as a means to enhance the cognitive load-capacity of learners while reducing the complexity of some learning tasks (Nilsson & Mayer, 2002; Stull & Mayer, 2007). Chularut and DeBacker (2004), Doolittle, Terry, and Mariano (2009) and Unsworth and Engle (2007) explained their ability to concurrently enhance cognitive load-capacity and reduce complexity as the power of working memory capacity to influence the storage and processing of knowledge and enable learners to effectively handle complex cognitive tasks.

To assess the degree of association between GOs and conceptual organisation by the potential of GOs to help learners understand statistical analysis, Carlson, Protsman, and Tomaka (2005) researched the influence of a decision making guide that applied five fundamental statistical concepts of research design on the responses of learners. The authors observed significantly different responses between learners who used the GO and those who used a textbook with a descriptive approach to the topic. Those who used only the GO

demonstrated an improved ability to select statistical methods three times more accurately than those who used only the textbook.

Relationships between cognition and mental structures in learning have also been explained through the study of the use of GOs in the presentation of information. Robinson, Odom, Hsieh, Vanderveen, and Katayama (2006) explain this relationship by showing the degree to which GOs enhance the capacity of learners to integrate knowledge of concept relations with the application of that knowledge. This is also evidenced by the degree to which GOs are able to attract the attention of learners to key concepts of information that traditional linear-only forms of note taking could not achieve. Robinson et al. (2006) found, that learners who used partial GOs secured higher scores for examinations than the learners who wrote summaries or used complete GOs. In one experiment, 114 psychology learners were given a partial organiser. The comprehension ability and note taking style of learners were measured by their performance in examinations. This study showed that partial GOs helped the learners in their note takings. In other studies (Daniel & Gregory, 1994) the effect of GOs presented to college learners as a matrix was found to influence learners to inter-connect relations among concepts better than when using only the text. That learners could identify, within a relatively short time, how concepts were related, confirmed the research conclusions reached by Robinson and Kiewra (1995) that GOs help learners recognise and use hierarchical and coordinate relations. The role of GOs in facilitating learner focusing on the relationship between key terms of information presented and their meanings, have also been explained by researchers (Bera & Robinson, 2004) whether as an advance organiser when it is introduced to the learner prior to the learning activities (Hall & Strangman, 2002; Marzano, Pickering, & Pollock, 2005), for helping to "connect new materials with prior learning" (Schunk, 2008, p. 173) or as a post organiser (Hall & Strangman, 2002). Robinson and Skinner (1996) also maintain that GOs are ideal for facilitating search processes. The authors revealed through experiments that learners who searched either GOs or outlines could find answers to fact questions as well as comparison questions faster and more accurately than those who searched the text. These findings were also affirmed by Nilsson and Mayer (2002), who examined the effects of GOs on learners' navigation of a 150-page hierarchical website of aquatic animals and found that users tested for maps had been more effective in learning compared to users who were tested for no maps. The results of the study by Nilsson and Mayer also showed that spatial skills of individuals could vary, even in the presence of GOs.

While these studies have confirmed the usefulness of GOs, it is important that teachers do not avoid an acknowledgement of the possibility that GOs could vary in effectiveness depending on the academic level, the number of graphic frames involved and the timing of the use of the organisers (Hall & Strangman, 2002; Marzano et al., 2005).

Types of Graphic Organisers

Although it could be argued that graphic organisers can take an infinite number of forms, being limited only by the imagination of their authors, some of the most common forms of GOs include the Fishbone Diagram, Know-Want-Learn Chart (K-W-L), Flow Chart, Concept Map and Venn Diagram. Each of these will be discussed in terms of their strengths and applications.

The Fishbone Diagram

The Fishbone Diagram GO, (also known as the Herringbone Organiser) so named because of its fish-like shape, is a member of the directional GO group. The Fishbone Diagram GO is commonly used to simplify the diverse cause-and-effect factors associated

with a complex topic (Lu, Tsai, & Hong, 2008) and show how those cause and effect factors are interconnected (Bellanca, 2007; Hall & Strangman, 2002).

The Fishbone Diagram would also be useful for showing a main topic and also the subdivisions related to the topic. For example the diagram is useful in examining the effects of different fabrics in fashion design (Figure 1), in a discussion about the effect of different fabrics in fashion designing and also showing as subdivisions, the various fabrics, such as silk, cotton, wool and nylon, underlying the topic. The diagram provides details about each of the subdivisions, in this case the different materials.

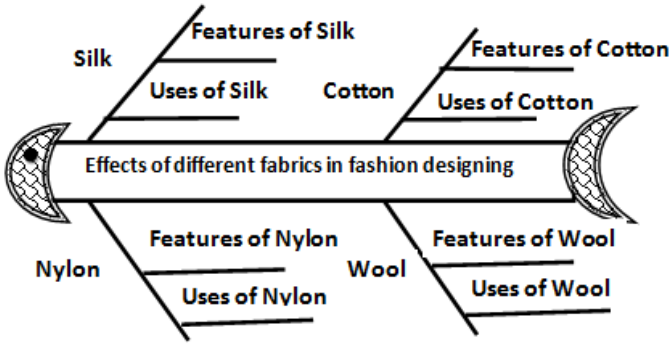

Figure 1. A Fishbone Diagram showing four fabrics and their details underlying a main topic on the effect of fabrics. Modified from "Graphic organisers" by J. Col, 2003, Enchanted learning.com.

The study by Lu et al. (2008) examined the effect of using a Fishbone Diagram in a Root Cause Analysis teaching strategy to pre-service primary Science teachers. The importance of this study is the finding that the GO could be equally useful for teachers and learners. In his study, all the eighteen pre-service primary science teachers who were trained to use the Fishbone Diagram, after training, demonstrated a better understanding of the content they were teaching and an increased ability to implement Root Cause Analysis through their effective use of the diagram as a Root Cause Analysis teaching strategy.

This same study also showed that the learners who were taught by those sampled pre-service teachers using the Fishbone Diagram, could, after the lesson, apply the tool to identify the root cause with and complete the Fishbone Diagram with the guidance of their teachers.

Know-Want-Learn Chart (K-W-L)

The Know-Want-Learn Chart (K-W-L) GOs was initially proposed as a support for active reading of expository text (Ogle, 1986). It is usually presented as a three columned table in which the user lists established knowledge about a topic in the first column, declares what the learner wants or needs to explore, in the second column and describes new information they learned during the learning session in the third column (Bellanca, 2007; Camp, 2000). The chart is sufficiently flexible to represent information (Camp, 2000), learner achievement (Czajkowski, 2000) and learner attitudes towards any subject (Williams & Burden, 1997) (Figure 2).

K What do I already know about this subject?	W What do I want to learn about this subject?	L What did I learn about this subject?

Figure 2. The K-W-L Chart which allows the learner to manage their learning. Adapted from "Graphic Organisers", by S. Wren, 2009, *Balanced Reading.com*.

For Burns (1994) and Elliott, Formhals and Wheat (2002), the effectiveness and flexibility of the K-W-L Chart is evidenced by its ability to be used to promote reading comprehension, and appropriate reading attitudes, as well as identifying different types of information, including vocabulary, content knowledge, concept knowledge and extension ideas (Burns, 1994; Elliott et al., 2002). Elliott et al. (2002) further notes the ability of K-W-L Charts to enhance expressive and receptive vocabulary, richness of words and increased use of the vocabulary by learners. Williams (2006) and Czajkowski (2000) add a further notation about the effectiveness of K-W-L Chart as a self-assessment tool for learners in the area of Science (Williams, 2006) and Social Science (Czajkowski, 2000). The effectiveness of K-W-L Chart in Science was clearly demonstrated by a study conducted by Camp (2000). After being introduced to the proposed topic, but before any instruction was given, the learners were able to represent information already known. They were also able to indicate what they wanted to learn about the given topic. Moreover, immediately after the lesson they were able to identify the new information they had learned through the activity (Camp, 2000).

The Flow Chart

The Flow Chart GO, also known as a map of cognition (Davidowitz et al., 2005), provides a graphic means to summarising procedures or sequences of instructions (Figure 3) where learners can identify each instruction, note its place in the context of the whole and understand its outcomes at certain nodes and rules at other nodes. The Flow Chart has a recognisable starting point (Bellanca, 2007; Parks & Black, 1993), shows the flow of concepts and identifies a definite outcome. The Flow Chart can also be used to graphically represent the process of making decisions, and guide learner's decision making process by indicating alternative decisional paths and their related solutions (Bellanca, 2007).

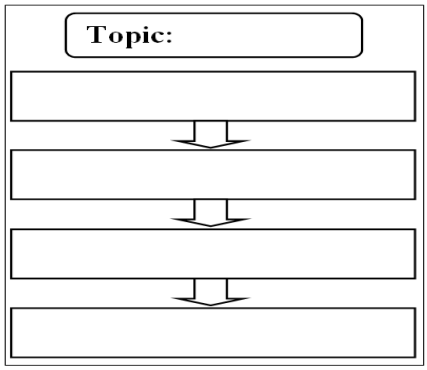

Figure 3. Flow Chart representing a series of information originating from a main topic. Adapted from "Graphic organisers", by H. M. Harcourt, 1995, Houghton Mifflin Company.

Davidowitz et al. (2005) reported the effectiveness of the Flow Chart as a tool to develop learners' skills in translating text into diagram and schematic representation of instructions. They also demonstrated how it could schematically represent written instructions for processing the text of a practical manual. The authors concluded that the Flow Chart was effective in helping learners express their deeper analytical and processing skills as well as their conceptual understanding of the manual being studied. Okoye (2008) demonstrated the effectiveness of Flow Chart in the context of science experiments by inserting an adjunct study question immediately after the Flow Chart for some learners and not for others. He noted that those learners who had access to the question after the Flow Chart significantly outperformed those learners exposed to the question before the Flow Chart and those of the control group but that there was no significant difference between those learners who were exposed to the questions before the Flow Chart and those of the control (Okoye, 2008).

The Concept Map

The Concept Map GO (Figure 4) reflects its foundations in cognitive and visual learning by enabling learners to identify concepts by their graphic or text representations and to identify relational links between them and other concepts (Vanides et al., 2005) as well as enabling learners to connect new information with previously acquired information (Ausubel, 1968; Buzan, 1983; Vanides et al., 2005). Because they can be used in a variety of learning settings (Holland, 1999; Vanides et al., 2005) Concept Maps can be considered ideal tools for meaningful learning and problem-solving (Vanides et al., 2005) that are best suited for a higher level of learning, especially those promoted in science studies (Holland, 1999), because of their ability to assist in the identification of points of information and the relationship between each area of thought and each point of information (Vanides et al., 2005). Based on a study of thematic organisers and Concept Map as schema activation strategies for gifted intermediate schools learners, Holland (1999) explained how learner interviews showed that gifted learners had benefited by the organisers sufficiently enough to be able to analyse the new information from different perspectives and could find new relations between the concepts.

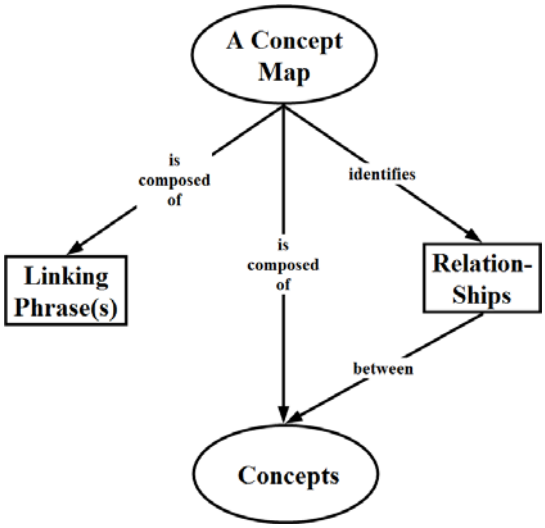

Figure 4. A Concept Map showing the relationship among different concepts. Adapted from "Problem-base learning project", Concept Map.

The Venn Diagram

The Venn Diagram GO consists of a number of intersecting circles, where each circle represent a category of information. While the non-intersecting areas of each circle represent information "items" that is unique to each concept category, the intersecting portions of each circle represent information "items" from each category that may be shared with other categories (Harris & Hodges, 1995) (Figure 5). The Venn Diagram GO is commonly used to analyse two or more concepts at the same time and provide a means to comparing and contrasting the concepts in the analysis (Baxendell, 2003; Bellanca, 2007; Linton, 2000; Marzano, Pickering, & Pollock, 2005; Traynor, 2004). They can also be used to analyse topics that contain more than one attribute (Camp, 2000; Moore, 2003) and for visually matching types of learning materials with physical and social characteristics of people (Camp, 2000). Traynor (2004) reported the effectiveness of Venn Diagram in a study on representing a range of teachers' classroom order. Three styles of classroom were studied: gentle, demanding and regulated, and Venn Diagram were used to relate their respective dispositions and practices.

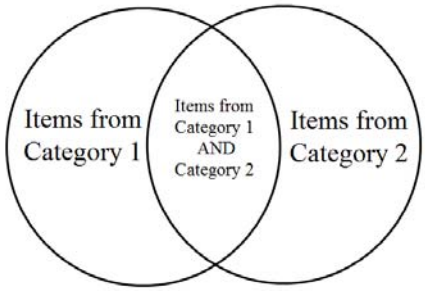

Figure 5. Venn Diagram showing the common characteristics of two different categories of information. Adapted from "Graphic organisers", *Balancedreading.com*. (2009).

Although the possible structure of GOs is limited only by the creativity of teachers, their value as effective teaching/learning tools remains dependent on the teachers' ability to create high-achieving learning environments and guide learners from their current learning environment to more complex environments including their personal environments. Bellanca (2007), and Hall and Strangman (2002) agree, that for GOs to be effective in the teaching and

learning environment, they must match advanced curriculum techniques and have the ability to engage learners in opportunities to develop knowledge, recall memory, structure abstract ideas and lead to positive learning outcomes. However, Bellanca (2007) points out that GOs, by themselves, are only partially effective, and that learners need to be taught to strategically use them. He also points out that the type of GO selected, must be appropriate to the subject area, to the approach to learning that subject and to the learning environment.

Family and Consumer Science and Graphic Organisers

While graphic organisers have been shown to be effective in building better cognition and promoting schematic retention of information (Dye, 2000) in a western teaching context, and especially in Science and Mathematics disciplines, (Harmon et al., 2005; Ives & Hoy, 2003; Ives, 2007; McLaren, et al. 2009; Moore, 2003) their effectiveness in the Kuwaiti teaching area of Family and Consumer Sciences is still unproven and therefore in need of investigation. However, the ability of Graphic organisers to help FCS learners to identify information, to understand how elements of information are interrelated and to assimilate multiple aspects of their learning environments aligns with the shift in Kuwaiti culture toward globalisation, suggests a place for GOs in the FCS subject area in Kuwait.

A starting point for this discussion is the idea, based on Bloom's taxonomy, that the learning objectives for the FCS be matched to the cognitive demands and challenges faced by FCS learners (Anderson, 1996; Ares & Gorrel, 2002; Hakkarainen, Saarelainen, & Ruokamo, 2007; Michas & Berry, 2000; Novak & Gowin, 1984) as in other subjects. This means that FCS teachers need to develop learner-centred experiences that are meaningful to learners, that is, "active, constructive, intentional, authentic and cooperative" (Jonassen, Howland, Moore, & Marra, 2003. p. 8) and are relevant to the future practical life-contexts of learners (Pickard, 2007; Reynolds, 1998) as well as appropriate for current classroom teaching practices (Pickard, 2007). Bloom's (1976) inclusion in his taxonomy of cognitive, psychomotor and affective domains of the brain producing knowledge, skills, and attitudes, supports Novak's notion of cognitive construction and reconstruction of integrated knowledge and is therefore, an appropriate model around which to form the learning design of FCS and the use of GOs as teaching tools. Based on Bloom's taxonomy, it could be expected that carefully chosen GOs would enable teachers to identify key information about FCS topics, even if their own cognitive capacity is limited, and to enable learners to become actively motivated participants in their own learning (Hakkarainen et al., 2007) as they work through carefully created activities shaped by the GOs to discover both the information and the significance of that information to their own life contexts.

Use of Grade Six FCS classes as an example of testing and developing GO tool will be ideal as the Kuwaiti Grade Six curriculum area for students aged 11 incorporates a variety of not-so-complex subjects and topics that would be suitable for developing, testing and evaluating GOs. For example learners who investigate local environmental conditions could be supported by the use of the K-W-L Chart. Learners' "K" responses could be used to assess the scope and level of established knowledge about environmental conditions in Kuwait. Their "W" responses could then be used to analyse the learners' motivations for knowing about local environmental protection strategies. When used in this way, the K-W-L Chart may provide a relevant and meaningful resource for teachers to understand their students and to better understand and manage their own environmental awareness and in doing so translate their cognitive and visual theories into real life.

Still in the environmental area of studies is the Venn diagram to identify unique and shared perspectives of environmental issues perceived by western and Kuwaiti scholars and strategists. The Venn diagram would help learners identify the differences and similarities between public and private sector perspectives on environmental management, which would,

in turn, enable them to arrive at their own position. Recognising the complexity of the environmental debate and the number of contradictory contributions to the debate, the Venn diagram could also be useful in reducing the cognitive load for learners in this activity by enabling them to distinguish the different and common opinions in the debate.

In the curriculum area of "Fashion," the Fishbone Diagram could be used to support learners' knowledge about local and international fashion by providing a means through which they could identify relevant causal issues, including international marketing pressures placed upon Kuwaiti designers to style their fashion on western fashion trends. This approach to fashion awareness would empower the learners to identify the relationships between a variety of causes and effects as well as the degree of cultural business relevancy of each fashion trend (Lu et al., 2008) and would enable them to research the subject in a safe environment, that is, one that encourages rather than limits or condemns individual approaches to learning, personal investigation and interpretation, so that learners arrive at their own understanding and viewpoints about the issues being raised.

Concept Maps could also be used to interlink the primary factors, contemporary dress design, with other factors including colour, design and accessories (Buzan, 1983). Through using the Concept Map, learners will be able to analyse the dress fashion trends from different perspectives and find new relationships between the concepts presented (Holland, 1999).

A key assumption in the use of Flow Chart as tools in the study of topics involving any ordered series of instructions is that learners could use them to present information about unwanted outcomes if something goes wrong at a particulate stage of a process. For example, baking a layer cake with many possible outcomes at certain nodes and rules at other nodes would enable learners to illustrate this point. Overall, Flow Charts would be useful in this learning activity because they possess the potential that help learners organise "what to do" and remember "how to do" it. They would be especially useful to present complex recipes, enabling learners to translate the instructions and process descriptions into easy to follow pictures or symbols. Overall, the use of GOs in the Kuwaiti FCS grade six curriculum would be useful to deliver a variety of topics (Table 1)

The inclusion of GOs in grade six curriculum is also a positive response to Bruner's (1968) argument that the capacity to handle multiple sequences of a complex whole, is dependent on how well the external learning environment is ordered. The inclusion in the selected GOs of both language and symbols representing the local culture would also promote the use of learner logic, reasoning and development as well as present an appropriate balance of cultural perspectives and dialogue that would help in the mental growth of learners (Bruner, 1968).

Table 1
Types of GOs ideal for various FCS topics in Grade six curriculum

Topic	Tasks	GO
Types of ornaments	• Identify and categorise the different shapes of ornaments. • Compare the ornaments. • Describe and predict properties of geometric shapes. • Describe and predict properties of abstract shapes. • Relate abstract and geometric forms. Represent the relationships. • Describe and predict the properties of line and point forms. • Relate line and point forms with geometric and abstract forms. • Describe and predict properties of floral shapes. • Compare floral forms with abstract forms, represent the relationship. • Describe and predict properties of natural shapes. • Compare floral forms with abstract forms, represent the relationship. • Compare natural forms with line and point forms, represent the relationship. • Students share responses, summarise the main ideas.	Venn Diagram
What are human resources?	• Identifying from the text the types of human resources. • Define and summarise the term "human resources" as the main idea. • Categorise human resources. • Identify "Energy and effort", "Skills and abilities", "Attitudes and hobbies" and "Knowledge and science" as sub ideas. • Summarise the topic.	Fishbone Diagram
Protecting the Environment from pollution and over consumption	• Remember, understand, analyse, evaluate and create the fundamentals of natural resources. • Identifying the issue of garbage and pollution. • Link the topic to a water pollution activity reported in the newspaper. • Identify the main idea of improving our dealing with the land and water resources. • Understand that unwise exploitation of natural resources lead to environmental pollution and damage to flora and fauna. • Name environmental changes leading to water pollution. • Describe the types of water pollutants. • Identify and discuss the damages caused by water pollution.	Flow Chart
Colour Wheel	• Understand the meaning of colour wheel. • Examine primary, secondary and tertiary colours as well as water primary pastel colours. • Read the instructions on making secondary and tertiary colours. • Understand that primary colours are yellow, red and blue; these cannot be configured from other colours; they are the basis of secondary and tertiary colours. • Understand that colour wheel is necessary for selection and creation of fashion materials. • Represent and discuss the concepts of colour wheel. • Represent and discuss the concepts of primary colours. • Represent and discuss the concepts of secondary colours. • Represent and discuss the concepts of tertiary colours.	Concept Map
Fashion accessories	• Understanding of the nature and types of fashion accessories. • Read the topic on fashion accessories. • Examine some fashion accessories, note down their differences in colour, shape and texture. • Describe the differences among these accessories and the reason for these differences. • Discuss what students want to learn about Fashion accessories.	K-W-L Chart

Conclusion

Kuwait has not been missed by globalisation. It also is faced with balancing global progress and demands against its own unique cultural heritage in every aspect of life, including education, which is now similarly aligned with the west in its grading system, its curriculum and its text resources. Kuwait has also met the linguistic demands placed on it by globalisation by making it necessary for all learners in all Kuwaiti schools to study English as a second language. However, faced with the need to maintain its unique cultural heritage, Kuwait remains committed to culturally sensitive differences in educational gender-needs by providing a number of girls-only facilities and curricula activities, one of which is the FCS curriculum area.

Kuwaiti teachers and learners are also not immune to the constant and rapid changes being experienced by people around the world. In fact, because of global changes, they are exposed to almost exhausting demands for greater content knowledge, more complex learning skills and more effective strategies that will enable them to produce better and faster learning outcomes. In the exploration of pedagogical tools including GOs, Kuwaiti teachers are challenged to enhance their own knowledge base and to adopt culturally relevant reform practices across a number of disciplines whilst at the same time remain loyal to accepted educational theory. However, Kuwaiti teachers and students are also faced with the challenge to assimilate many of these global expectations whilst, at the same time, holding on to their cultural distinctive. This is nowhere more significant than in the Kuwaiti subject area of FCS.

FCS though a relatively not-so-complex subject area it covers wide knowledge about both global and national issues related to environment, business, fashion, interior design, hospitality, tourism and ethics. Its philosophical approach is based on special recognition and respect for women and family and this is reflected in its design to prepare girls for the multiple facets of everyday life in Kuwait in terms of knowledge, skills and worldview. To meet these design goals FCS learners are encouraged to integrate physical, psychosocial and cognitive aspects of learning and to become independent in their thinking and in their motivation to become life-long learners. In this context GOs are believed to hold an important strategic key in terms of being effective and efficient teaching tools.

Graphic organisers have been shown to be effective in bringing about conceptual change, facilitated through metacognitive skills through Concept Mapping, flow charting, distinguishing comparative and similar information on a single topic and through being able to identify what is already known, what is needed to be known and what knew information has been learned. Overall GOs have been proven to enhance critical thinking and problem-solving in a range of subject areas including Math, Science and, in the context of Kuwait, FCS. Because the majority of Kuwait's FCS topics involve producing diverse solutions to real life situations, the GO would be an ideal tool to encourage learners to brainstorm ideas, to analyse those ideas, to differentiate the concept arising from the ideas and to think critically about those concepts.

One observation that must be noted in regard to the introduction and use of GOs in the educational system of Kuwait is that the traditional teaching methodology there has very limited experience in learner centred strategies and that this would mean that teachers and learners would have little experience in the integration of teaching /learning tools that would encourage such an approach. It could be argued therefore that some investigation needs to be conducted into the potential of professional development programs for Kuwaiti teachers that would promote a shift from traditional Kuwaiti teaching methods to learner-centred methods, a shift that could include the use of GOs in the learning experience and the establishment of a professional support system including educational policies that would ensure continued effective and efficient reforms in Kuwait.

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High School Students' Perceptions of Family and Consumer Sciences Education as a Career in the Jackson Purchase District of Kentucky

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This study investigated possible reasons high school junior and senior students in the Jackson Purchase District of Kentucky choose to pursue a career in teaching Family and Consumer Sciences (FCS) and examined future demand for FCS teachers in the district. Results of the study indicate the number of students enrolled in FCS courses has remained steady, the majority of students who take FCS classes (90.7%) have not considered FCS education as a career and that most students feel FCS should continue to be offered in high school. In addition, 28.5% of teachers in the study will retire within 2 years, adding to the teacher shortage problem in a state where demand for FCS teachers already exceeds supply.

For years researchers and educators have expressed concern for the dwindling supply and increased demand for Family and Consumer Science (FCS) teachers (Jackman & Rehm, 1994; Miller & Meszaros, 1996; Mimbs, Stewart & Heath-Camp, 1998). According to Bull, Uerz and Yoakum (2000, p. 30) "FCS programs provide the education necessary in reducing welfare dependency and increasing self-sufficiency by empowering individuals with the knowledge and skills to manage their personal and family lives as well as their work responsibilities." Despite the fact that enrollments in FCS courses remain steady, many high schools are faced with potentially closing FCS programs because there are no replacement teachers available to keep programs up and running (Lee, 1999).

Although attempts have been made to recruit FCS teachers over the past 12 years FCS programs have still fallen short of balancing teacher supply and demand. A recent national survey conducted by Werhan and Way (2006) revealed that FCS education continues to experience a serious shortage of qualified teachers. In order to successfully recruit FCS teachers there must be an understanding of why decline in this field has occurred. According to Lee (1999), it is important to collect data on student characteristics to show specific reasons why students pursue or do not pursue FCS education careers.

Miller and Meszaros (1996) predicted the current severe shortage of FCS teachers in the state of Kentucky. For example, they predicted that Kentucky would need 220 FCS teachers by 1998, however at that time only 99 FCS education students were enrolled in Kentucky FCS teacher education programs. Therefore, profiling Kentucky high school students and determining their perceptions of FCS education as a career may reveal reasons for the decline in FCS teacher education and provide insights into FCS teacher recruitment strategies. The dual purposes of this study were first, to investigate why high school junior and senior students in the Jackson Purchase district of Kentucky (JPDK) choose to pursue or not pursue a career in teaching FCS and second, and to determine future demand for FCS teachers in the district. In order to accomplish these purposes, the following research questions were examined.

1. What factors influence junior and senior high school students' decisions to pursue FCS

education as a possible career in the JPDK?
2. What is the future demand for FCS educators in the JPDK?
3. Has there been a decline in enrollment in FCS high school classes in the JPDK over the past 10 years?
4. To what extent do demographic characteristics play a role in students' decisions to pursue a degree in FCS education in the JPDK?

Literature Review

Student Perceptions of Family and Consumer Sciences

Over the years, FCS has experienced a decline in teachers so researchers and educators have begun to look into the reasons for this decline (Malroutu & Tripp, 2008). One important factor when determining causes of decline is students' perceptions of FCS. Since it takes student enrollment to run a secondary education program, students' perceptions of the field must be considered (Erwin, Moran, & McInnis, 1996).

Several studies have examined student perceptions in other states. For example, in a study conducted by Smith, Hall, Jones, Cory and Ethridge (1998) a survey was sent out to a total of 1,508 Georgia students. Of the 1,508 students, 68% thought FCS was very interesting and 82% thought FCS was beneficial for their family life; however 34% thought FCS courses should not be required along with 28% who were unsure whether FCS should be required. In addition, over half (52%) of the students did not feel FCS was as important as major subjects. However, this study did not examine whether students wanted to pursue FCS teaching careers.

In a similar study conducted by Lee (1999), 1,036 high school students in North Carolina were surveyed. Again, of the 1,036 students most held positive attitudes regarding the FCS classes and the FCS profession. However, when asked if they would consider becoming FCS teachers themselves a majority (71.2%) said no. Lee did not mention which FCS classes were offered at the participating schools in her study. Some students could have been enrolled in money management, food science, clothing construction, and child development courses which are not state or nationally mandated courses (Lee, 1999). Therefore, students enrolled willingly, which is an indication that they had positive attitudes toward FCS classes at their schools. Students who are mandated to take a course such as life skills might not have a positive view about FCS classes.

In an earlier study that produced similar outcomes, Lee (1996) interviewed middle school students in North Carolina. The students were all enrolled in a state-approved course entitled *Exploring Life Skills*. Middle school students were asked several questions pertaining to the class. Specifically, they were asked "what they thought of the career Family and Consumer Sciences teacher" and "as an adult, would they like to be a Family and Consumer Sciences teacher" (Lee, 1996, p. 96). Although 80.5% of respondents demonstrated positive attitudes toward their FCS class, 70% indicated no desire to become an FCS teacher.

Students' lack of interest in an FCS education career has resulted in the termination of several FCS programs at universities across the United States (Weis, 1995). Fewer FCS teacher education programs lead to fewer college students enrolling in university programs to supply the FCS high school teachers needed. When the supply is less than the demand of teachers, programs will close down, merge with other disciplines, or encourage irregular certification for non-traditional pre-service teachers (Travers, 1999).

Supply and Demand of Family and Consumer Sciences Teachers

The shortage of FCS education enrollment throughout the years and the aging FCS teaching workforce create a negative supply and a positive demand (Stout, Couch & Fowler, 1998). Perhaps one of the most widely cited studies conducted on the future demand for FCS teachers was a national study by Werhan and Way (2006). In the 2002-2003 academic year, over five million students enrolled in FCS classes taught by 37,500 teachers in the United States. The majority of responding states reported a shortage of FCS teachers. Some of the data were incomplete because many school boards/states/regions did not report their programs as FCS. Some referred to them as 'other', 'technical', or 'life skills' making it difficult to gather specific data for FCS on a national level. FCS enrollment makes up 25% of the total student population, which indicates FCS is an important part of secondary education (Werhan & Way, 2006). Data were not available for Kentucky.

Ten years earlier, Miller and Meszaros (1996) conducted a national study of the incoming supply and demand for FCS teachers and extension educators. Miller and Meszaros based their study on a suggestion made from Jackman and Rehm (1994) that the decline was due to the number of undergraduates majoring in the field. Findings from research based on 171 surveys mailed to U.S. colleges revealed that 27 undergraduate FCS education programs had been deactivated or phased out. Alaska, Maine, New Hampshire, Oregon, Rhode Island, and the District of Columbia no longer have FCS teacher education programs (Miller & Meszaros, 1996). At the time the study was conducted, data showed Iowa State University as the only higher education institution with a stand-alone FCS teacher education department in the United States. However, the program was later combined with apparel and hospitality management (Iowa State University, 2000). It is likely that in the fourteen years since the Miller and Meszaros 1996 study, additional FCS undergraduate programs have been deactivated despite being combined with other programs.

Only 315 FCS education degrees were awarded in 1995-1996 (Zehr, 1998). From the data collected in the Miller and Meszaros (1996) study, the states with the largest disparity between supply and demand are Arkansas, California, Florida, Iowa, Indiana, Kentucky, Louisiana, Minnesota, Missouri, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, and Virginia. Specific information for Kentucky showed a need for 270 teachers with only 99 undergraduates available to meet the demand. In response to the crisis, the University of Kentucky used federal and state vocational education money to recruit teachers and promote the field of FCS (Zehr, 1998). Several retired FCS teachers filled vacancies but retirement benefits only allow them to work 100 days a year (Zehr, 1998). Thus, this is a temporary fix rather than a permanent solution. However, in the nationwide list of teacher shortage areas conducted between 1990 through 2011, FCS was not recognized by the United States Department of Education (USDE) as an area of teacher shortage (USDE, 2010). Further, Bull and Cummings (2002) forecasted that 77% of the FCS workforce will retire by the year 2012. The number of universities offering FCS education degrees and the number of students graduating from these programs are seriously declining (Bull & Cummings, 2002).

Theoretical Framework

Super's Theory of Vocational Choice was developed in 1954. It was based on Ginzberg and associates' earlier theory of career development (Super, 1957). Super believed that career development involved an individual's whole life. The theory includes five main stages with sub-stages individuals progress through: growth, which lasts from birth to 14; exploration, lasting

from age 15 to 24 (with the sub-stages of crystallization, specification, and implementation); establishment, from 25 to 44 (with sub-stages of stabilization, consolidation and advancing); maintenance, from 45 to 64 (with sub-stages of holding, updating, and innovating); and the final stage of decline from age 65 and onwards (with sub-stages decelerating, retirement planning, and retirement living).

Super (1957) believed that people are constantly changing and that the environment we live in could be a precursor for what we choose to become. Socioeconomic factors and personal characteristics would therefore impact career development.

Super's Theory and the Study Population

Because the population for the current study consisted of junior and senior high school students who typically have an age range of 16 to 18, Super's (1957) career development theory was deemed an applicable framework, as the theory includes stages based on age ranges. According to Super's career development theory (1957), participants of the current study would fall into the exploration stage, somewhere in between the sub-stages of crystallization and specification. During exploration the person starts to decipher between 'fairy tale' careers and careers that could be attainable. They begin to explore different careers through classes, after school jobs, and family members (Super, 1957).

The Jackson Purchase District is surrounded by rivers and lakes which puts this geographical area at a socioeconomic disadvantage. Studies have been conducted about river towns and high levels of poverty especially along the Mississippi River (Boston, 2008). Fewer jobs are available due to the stigma of the area which is unattractive to teachers, businesses, and health care providers. According to Super's theory, this environment probably has some influence on the career choices of the student population studied.

Super's Theory and Reviewed Literature

All research reviewed for this study included middle school through high school students, with the age range approximately 12 to 19-year-olds. According to Super's (1957) career development theory, there are two career stages represented in the literature reviewed. During the growth stage, which lasts until 14 years old, people are fantasizing about careers, collecting perceptions of careers, and developing a sense of self-identity (Super, 1957). During the exploration stage and its sub-stages, people are beginning to test the waters with their career development. They are more interested in the possibilities and usually form career goals towards the end of this stage. Since the current study focused on junior and senior high school students, the participants should be in Super's exploration stage.

Method

Population and Sample

The target population of this study was all FCS teachers and current junior and senior FCS students at all high schools in the JPDK. As noted above, this area is at an economic disadvantage which makes the population of the area among those that the AAFCS suggests can be helped to "reduce welfare dependency through FCS education" (Bull & Cummings, 2002, p. 30).

The sample consisted of volunteer teachers and junior and senior students from high schools where permission to conduct the study was obtained. Not all schools agreed to participate.

The JPDK consists of eight counties with fourteen public high schools. Of these schools, the principals of all but two schools agreed to participate. However, not all of the teachers at the 12 schools where permission was obtained agreed to participate in the study, resulting in only seven participating schools. Among the classrooms where teachers agreed to participate, rosters identified 346 students and 8 teachers. All 346 students were provided with consent and assent forms, and were informed that participation was voluntary. The 8 teachers were provided with consent forms, and informed that participation was voluntary. Seven teachers and 107 students agreed to volunteer and made up the sample of the study.

Instrumentation

Two questionnaires were developed to collect quantitative data for this study guided by review of the literature.

Lee's (1999) Family and Consumer Sciences Survey for High School Students was modified based on additional literature and feedback from the pilot test of the current research project. The resulting student questionnaire consisted of two sections (a) education (11-items) and (b) demographics (5-items). Students chose from a list of potential answers for all items on the instrument. For example, in the education section of the student questionnaire, item 1 asks "Do you plan to attend college after high school?" Students chose from "yes", "no" and "undecided."

In addition, after review of the literature, a questionnaire consisting of 7-items was constructed to measure perceptions of teachers about their FCS classes and personal background. All 7-items were open-ended questions.

The instruments were pilot tested with a group of 5 Career and Technical Education master's degree students at a local university to establish validity and to obtain feedback on the readability of the instruments. Feedback on the questions such as whether the instruments were understandable, whether the questions were written at the appropriate level, and the appropriateness of the questions for the study was provided. Minor adjustments were made to questions on both instruments. It was not possible to run reliability statistics on the instruments as the samples in both the pilot and the actual study were too small to obtain results.

Data Collection Procedures

Human Subjects approval was obtained and an office visit was made to each high school's principal/assistant principal to explain the research study and obtain written permission to conduct research in their high school. All but two principals gave permission. Thereafter, emails and phone calls were sent to discuss the nature of the research study with the participating schools' FCS teacher(s). Phone calls and emails to FCS teachers at the high schools where permission had been obtained from the principals failed to obtain participation at all but 7 of the schools. Follow-up emails were sent out to teachers who did not respond to the first set of emails. Two other attempts were made to contact the teachers via email, however no additional teachers responded and the study proceeded with participation of seven schools.

Student subjects were then obtained through class rosters at the seven participating schools. Consent forms for parents and assent forms for the students were distributed two weeks before data collection was scheduled. Reminders were sent to all students in an effort to increase participation. Participation was voluntary, and instruments were handed out in class to all students who turned in signed consent and assent forms. However, not all eligible students

completed the survey instrument. The resulting response rates were 30.9% (N=107) students and 87.5% (N=7) teachers.

Results

Results and findings are presented in the order in which the research questions were posed. Data from the student questionnaire were analyzed using SPSS v. 16 and descriptive statistics. Data from the teacher questionnaire were grouped according to the responses and categorized for reporting.

Research Question 1: What are the factors that influence junior and senior high school students' decisions to pursue FCS education as a possible career in the Jackson Purchase District of Kentucky?

Most students (90.7%; N=97) have not considered FCS as a career; only ten students would consider FCS as a career (9.3%; N=10). Respondents were asked to select all factors that influenced their decision to pursue or not pursue a career in FCS education (see Table 1 and Table 2).

Table 1
Factors Influencing Decision to Pursue FCS Education as a Career

Factors	*Frequency*	*Percent*
Teaching is rewarding	3	2.8
Desire to teach content area	1	.9
Want to help youth	2	2.8
Family member teaches	2	1.9
Parents want them to teach	2	1.9
Other factors	1	.9

Table 2
Factors Influencing Decision Not to Pursue FCS as a Career

Factors	*Frequency*	*Percent*
College attending does not offer FCS	2	1.9
Not enough available information about FCS	2	1.9
Have never thought about it as a possible career	68	63.6
Teachers do not make enough money	8	7.5
Not enough available jobs	19	17.8
Other factors	10	9.3

It should be noted that of the ten students who showed interest in FCS as a career, only four planned to pursue education as a degree in college. Further, of those four students, one indicated she would only attend a community college, which will not result in certification to teach FCS. Another of the four plans to major in elementary education. As FCS teachers are certified for either grades 6-12 or grades 7-12, it is unlikely that this student will receive an FCS teaching certification. From the data collected, there appear to be only two strong candidates for future FCS teaching certification.

Research Question 2: What is the future demand for FCS educators in the Jackson Purchase District of Kentucky?

Teacher participants were asked if they would retire within the next five to ten years. Two teachers indicated they would retire within the next five years (28.5%). One teacher indicated she had continued working although capable of retiring because her school does not have a possible candidate for her replacement which would lead to closing the FCS department at that high school. Other teachers merely responded "no" to indicate that they are not planning to retire in the next five to ten years.

Research Question 3: Has there been a decline in enrollment in FCS high school classes offered over the past ten years in the Jackson Purchase District of Kentucky?

Of the seven teachers, three could not answer the question, "Has there been a decline in your classes since 2000?" because they have not been teaching long enough to make an accurate report. Three indicated there was not a decline and one teacher indicated there was a decline in her enrollment in two areas: child development and parenting. Two teachers commented that they fear FCS will be phased out if the state drops the mandated course of life skills. They expressed their concerns with the state's ability to mandate other core classes which will give high school students an even smaller opportunity to take and explore electives. One teacher's response sums up these fears, "I worry about the decline across the state because it's a state effort to keep FCS up and running. It would not matter if I have a strong increase of students throughout the years if the rest of the departments throughout the state were showing a severe decline in enrollment because we rely on each other for program continuation."

School records verify that overall there has been only a small decline in limited areas of FCS student enrollments in JPDK.

Research Question 4: To what extent do demographic characteristics play a role in the student's decision to pursue a degree in FCS education in the Jackson Purchase District of Kentucky?

In examining the demographic characteristics of the10 student participants who indicated they have considered FCS as a career; nine were seniors, all (10) were female, and nine were Caucasian. This is representative of the demographic characteristics of the sample population.

Among the students interested in FCS as a career, for the highest level of education that their mother completed, participants reported that two had some high school education, six had a high school diploma, one had an Associate's degree, and one had a Bachelor's degree. For the highest level of education their fathers have completed, participants reported: five had some high school education, four had a high school diploma, and one had a Bachelor's degree. Again, this was representative of the entire sample, indicating that parents' level of education is probably not a factor in determining whether or not students will pursue FCS as a career, although parents' level of education may be a factor in the overall low rates of students indicating they will attend college.

Discussion

Although only ten students reported they would consider FCS as a career, most students (77.6%; N=83) felt that FCS classes were important while only 3.7% (N=4) felt they were not. The remainder, (18.7%; N=20) declared they did not know/maybe. Along with the importance of FCS classes, slightly less than half (43.9%) felt FCS classes should be mandated, about one fifth

(21.5%) felt they should not be mandated, and about a third (34.6%) could not decide if they should be mandated. Nearly two thirds (60%; n= 97) have never considered FCS as a possible career. Furthermore, 17 of these 97 students indicated there were not enough jobs available, which contradicts the findings of the literature reviewed for the current study. It is evident that some students in the current study are unaware there is a severe shortage of FCS educators. Clearly more recruiting and awareness information needs to be provided to FCS students at the upper levels of high school.

A total of 29% (N=31) students responding to this study were males. This is consistent with many major studies in FCS. In fact some scholars have discussed recruiting men and consider them to be our largest minority group in this field (Werhan, 2002). Within the JPDK no attempts have been made to recruit male FCS teachers.

Of the ten female students who would consider a career teaching FCS, all but one were seniors. Seniors are generally 18 years old by graduation, which places them in the specification sub-stage of Super's career development theory. Specification is the time when people are narrowing their choices (Super, 1957). This means it is likely that the seniors have a better understanding of what they will pursue as a career. However, as noted above, only two of the ten actually plan to attend college programs that could actually lead to an FCS teaching certification.

Nine of the 10 were Caucasian; however, one Hispanic female indicated a desire to teach FCS. According to the National Center for Education Statistics (NCES, 2004), minority educators make up only 13% of the teacher workforce. Yet, Hispanics are the most rapidly growing ethnic group in the United States (U.S. Census Bureau, 2002) so this is a group the field might want to focus on in future recruiting efforts.

In this study, 18.7% of participants' mothers did not have a high school diploma and 19.6% of participants' fathers did not have a high school diploma. In addition, 41% of participants' mothers had a high school diploma as their highest level of education and fewer than 15% of participants' mothers had a bachelor's degree or higher. Fewer than 10% of participants' fathers had a bachelor's degree or higher. Finally, 35.5% or 38 students in the study did not know their father's highest level of education and 22.4% or 24 students in the study did not know their mother's highest level of education. Again, using Super's theory to examine these findings, students are limited to exploring occupation opportunities commensurate with their parent's socioeconomic status and the environment in which they live (Super, 1957). Based on the information provided by the students in the current study, socioeconomic and environmental factors of the parents and perhaps the JPDK may have played a role in students' future career plans.

Conclusion and Limitations

Although 86.9% of the participants in this study plan to attend college, only 33.28% of all high school graduates in the United States go on to college (NCES, 2004). Kentucky, overall, has higher than the national average rates of students attending college (63%) with a 62.7% rate for JPDK (Kentucky Council on Postsecondary Education (2008). Therefore, it is likely that at least some of the participating students who responded that they plan to attend college will not.

Regarding FCS education, 10 of the 107 students stated they have an interest in FCS education as a career; however, only two indicated that they plan to attend a college/university program that could lead to an FCS teaching certificate. While we cannot generalize beyond this sample, if these two students in the sample actually obtain FCS teaching certificates, and they choose to teach in the JPDK, there would be no decline in FCS teachers as only two of the

teachers in this study indicated that they are planning to retire soon. However, it is unlikely that these two students would actually remain in the district, as many citizens obtaining college degrees leave the area for economic reasons (Boston, 2008). Further, not all of the teachers in the district participated, so it is likely that there will be more than two retirements in the next 10 years. Therefore, even in a best case scenario, it remains likely that the JPDK will experience a decline in the number of FCS teachers.

Since a large majority of students in this study indicated that they had never considered a career in FCS or that they did not feel there were jobs available in FCS, current FCS teachers need to take a role in informing and recruiting students for FCS careers. According to Super's (1957) theory, during the specification stage students are narrowing their career paths and are more likely to accept influence from authority figures. As such, FCS teachers can play a role in influencing students to pursue FCS teacher education as a career. This study was delimitated to FCS high school programs in the JPDK. It should be noted that the study does not serve as a complete indication of the supply and demand for the entire state of Kentucky. Furthermore, seven high schools in the district chose not to participate in the research study, which resulted in incomplete data for the district as a whole. Findings of this study cannot be generalized beyond this sample.

Recommendations

Based on results of this study, the following recommendations are offered.

1. Since a significant number of students, (33.6%) plan to attend the local community college, a bridge degree could be offered between West Kentucky Technical College (WKTC) and Murray State University (MSU), which offers FCS teacher education as a degree. This bridge degree could be marketed towards all students enrolled in Early Childhood Education and Culinary Arts. Since the FCS education degree mandates college students complete courses in both domains, this could be a possible way to recruit students to enroll in MSU's FCS education program once they complete the classes required to achieve an Associate's degree at WKTC. Articulation from two-year to four-year institutions within FCS has been suggested since 1999 (FCS Summit, 1999).
2. Six of the seven teachers in the current study received their degrees from the local university, MSU, but all commented on MSU's failure to publicize the FCS degree program and failure to aggressively recruit students for the program. Both the universities and the current teachers need to share information regarding FCS teacher degrees available in Kentucky.
3. Over 20% of the current study's participants plan to attend MSU once they graduate. Making MSU's FCS presence known in these high schools, offering information, discussing possible scholarships, and creating a mentoring program could increase enrollments. Jensen, Rowley, Skidmore and Parker (2003) carried out a FCS recruitment project which involved a recruiting reception at Brigham Young University. This was shown to be a success as one-eighth of the students participating declared FCS as a major.
4. Minority students should be targeted during recruiting. In response to the lack of diversity in education, priority should be given to students of color and to males. Several supporting studies such as Devall, Vail and Resendez (2005) and Eastman, Cummings, Petersen, & VanLeeuwen, (2006) have shown an increase in minority enrollment as a

result of effective recruiting and retaining strategies.

5. While a majority of students indicated they do not desire to become FCS teachers, these students also indicated that they have simply never thought of it as a possible career. This finding suggests it is not necessarily that students are opposed to becoming an FCS teacher, but rather that they have not been given an opportunity to consider FCS careers. So, although students may not currently consider FCS education as a possible career it does not mean they could not be persuaded by the idea. Taking a faculty-student mentoring approach could help retain FCS majors (Stevens & Crase, 2003). This could mean starting the recruitment in high school by FCS teachers or guidance counselors. A larger study needs to be conducted on the whole state of Kentucky to explore why students have not considered FCS education as a career.
6. Since there were a large number of students (17.8%) that indicated there were not enough available jobs in FCS education, FCS teachers should discuss the severe shortage of FCS teachers nationwide with their students. Exposing students to the truth and evidence of the high demand for FCS teachers could result in a larger number of students' pursuing FCS teacher education as a career.

Future Research

There could be misconceptions about what FCS means to students. Some students may perceive FCS as simply cooking and sewing while the FCS field involves many more disciplines. Therefore, investigating students' definitions of FCS could serve as a future study. If there were a common definition and students viewed FCS as a field encompassing many disciplines, then desire to teach in FCS may increase. This could be included in a larger study of the entire state of Kentucky in order to determine why students have not considered FCS education as a career.

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Program Management Needs of Family and Consumer Sciences Teachers in Idaho

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The purpose of the study was to assess Idaho secondary family and consumer sciences (FACS) teachers' perceptions of importance, competence, and professional development needs related to specific program management competencies. Approximately 60% (n=86) of the state's FACS teachers completed the online survey. The survey collected demographic data and allowed respondents to rate 24 program management items. Means, standard deviations, and mean weighted discrepancy scores (MWDS) were calculated for data analysis. Among the program management competencies, FACS teachers indicated that developing relationships with fellow teachers and administrators to be of highest importance and felt least competent with conducting an adult program. The MWDS calculation revealed grant writing/funding opportunities, understanding funding sources, and developing public relations as priority areas for program management needs of FACS teachers. Implications for the professional development needs of FACS teachers and future research are discussed.

Cushall (2002) stated that *being* a career and technical education (CTE) teacher is a rigorous yet frequently underrated challenge (. Family and Consumer Sciences (FACS) teachers, a division of CTE, have a role that is different from teachers of core subjects. In addition to being instructional designers and facilitators of learning; FACS teachers prepare and budget for laboratory activities (pre-K, foods, and catering events); develop and update curriculum to mirror industry policies; prepare and supervise students for competitive events in Family, Career, and Community Leaders of America (FCCLA) or Skills USA; develop effective public relations; and complete academic, state, and legislative reports. Given the varied responsibilities, FACS teachers may lack competencies in areas of program management that can be improved with involvement in targeted professional development activities.

Review of Related Literature

Most often, teachers learn the knowledge and skills related to the operation of a total program once on-the-job (NCES, 1999). A review of Idaho teacher education programs found teacher candidates often complete only one course in curriculum development and only one course in teaching methods, or take a single course that addresses both curriculum and pedagogy. This can infer that preparation in program management responsibilities is not necessarily addressed within the curriculum, which may be a contributing factor to the increased attrition

rates of beginning teachers (Walker, Garton, & Kitchel, 2004). Ingresoll (2002) examined why so many new teachers left the teaching profession and found that often times teachers felt unprepared for the complexities of their role that demanded a multitude of management decisions every day.

With limited attention given to program management duties at the pre-service level, research have suggested that the problem continued into a teacher's career. Greiman, Walker, and Birkenholz (2002) found that in-service teachers received little program management assistance from their respective school districts. Schools provide professional development as a training strategy to fill the competency (knowledge and skill) level gaps (Ruhland & Bremer, 2002). Teachers participate in professional development activities mainly in the form of in-service workshops, followed by attending conferences and continuing higher education. However, decisions about the content of professional development activities for in-service teachers are most often made by state, district, and building administrators rather than by teachers; and often the topics are not responsive to the unique needs of CTE teachers (Lynch, 1998).

The learning opportunities that professional development affords, serves as a bridge between current reality and future needs of prospective and experienced educators. Munby, Russell, and Martin (2002) concluded that professional development activities can indeed increase perceived competency levels yet the focus of activities should meet the needs of the teachers to best improve their level of competency (Jones, Vail, & Williams, 2000).

Needs studies related to program management have been conducted in agricultural, business, and trade and industrial education (Cannon, Kitchel, & Duncan, 2010; Crews, Moore, Rader, & Rowe, 2006; Garton & Chung, 1996; Greiman, Walker, & Birkenholz, 2005; Joerger, 2002; Kitchel, Cannon, & Duncan, 2009; Layfield & Dobbins, 2002). Greiman et al. (2005) found that novice teachers of agricultural education were challenged by complex program management responsibilities across a broad range of areas, such as technology, laboratory management, completing paper work in the form of reports and applications, and managing FFA (student organization) activities. Among business education teachers, as well as trade and industrial education teachers, researchers have found grant writing, understanding funding opportunities, establishing and organizing coops, and developing public relations to be priority areas for in-service and pre-service program management professional development needs (Cannon, et al., 2010; Kitchel, et al., 2009).

A review of literature revealed no articles that specifically addressed the professional development needs related to program management among secondary FACS educators. The determination of specific professional development activities that are needed and most important for FACS educators is a question that warrants investigation. Therefore, the purpose of this study was to assess Idaho secondary FACS teachers' perceptions of importance, competence, and professional development needs related to program management competencies.

Theoretical Framework

It is essential that FACS teachers systematically engage in meaningful learning opportunities that serve to increase their competencies with program management. Identifying the specific needs of FACS teachers is an important first step in bridging the gap between knowledge, skills, and attitudes, and teacher competency of managing a total program.

To close the gap, professional development needs must be determined, and this can be accomplished through a needs assessment. Needs assessment is a powerful tool that can help

clarify and validate true needs (Selvadurai & Krashinski, 1989). Once these needs are determined and prioritized, a framework for professional development opportunities can be developed (Niven, 1993).

Among needs assessment models, the Borich Needs Assessment Model has been shown to be an effective tool for identifying professional development needs of career and technical educators (Garton & Chung, 1996; Joerger, 2002; Layfield & Dobbins, 2002). Developed by Borich (1980), the model assesses teachers' perceptions about important educational programming needs. Specifically, the model allows researchers to collect and analyze data representing teachers' "perceived level of importance" and "perceived level of competence" of professional competencies that have been identified through research. The discrepancy between these two positions can be used as an index to determine professional development programs that will be of most importance.

The Borich model adds validity to the process of identifying the continual education needs of teachers. That is, researchers have determined that ratings based solely on importance or competence levels are not as valid as a combination of the two ratings (Garton & Chung, 1996; Joerger, 2002). Therefore, it was determined that an instrument based on the Borich model to be the best model for achieving the purpose of the study.

Purpose and Objectives

The purpose of this study was to assess Idaho secondary family and consumer sciences teachers' perceptions of importance and competence as they relate to specific program management competencies, and use that information to ascertain teachers' professional development needs of secondary family and consumer sciences teachers. This study of program management competencies represents a subset of a larger study related to the professional development needs of career and technical educators. Data related to FACS was extracted and used to answer the research objectives. Specific objectives were to:

1. Determine the background characteristics of Idaho secondary family and consumer sciences teachers;
2. Determine the perceived level of importance Idaho secondary family and consumer sciences teachers place on competencies associated with program management;
3. Determine Idaho secondary family and consumer sciences teachers' perceived level of competence associated with program management; and
4. Determine the perceived professional development needs of Idaho secondary family and consumer sciences teachers.

Methodology

The target population for this study consisted of secondary family and consumer sciences teachers in Idaho as identified by the state division of professional-technical education for the 2008-09 school year (N=146). Because of the use of a census population, no sampling methods were utilized and consequently, generalizability of the findings may be limited to the population of the study.

Instrumentation

The survey instrument was developed by Kitchel et al. (2009), which was adapted from previous research by Duncan, Peake, Ricketts, and Uesseler (2006) based on the principles of the Borich Needs Assessment Model (Borich, 1980). Borich (1980) pioneered his model in an effort

to design a survey instrument that would allow data to be weighed and ranked in order of priority. However, a variety of approaches have been taken to analyze data collected from an instrument based on the Borich Needs Assessment Model (Borich, 1980). Garton and Chung (1997) used mean weighted discrepancy score (MWDS) ranking, as well as quadrant analysis to evaluate the data. They found both methods to be effective in identifying the educational needs of teachers. Edwards and Briers (1999) indicated that the MWDS is more valid than a direct assessment and recommended that "those responsible for in-service professional development…prioritize and allocate resources based on mean weighted discrepancy score rankings" (p. 47).

A panel of experts consisting of faculty from the University of Idaho, University of Georgia, an Arizona CTE teacher, and four pre-service CTE teachers refined the survey items to be appropriate for CTE and the teachers in Idaho. The panel also evaluated the instrument for face, content, and construct validity. A reliability coefficient alpha was calculated for the items on both the "Importance" ($\alpha = .931$) and "Competence" scales ($\alpha = .941$), the results of which indicated an instrument with a high degree of internal consistency.

The instrument used for the study consisted of two sections. Section one was composed of 24 items specific to program management. The instrument design allowed teachers to rate each of the 24 program management items on two distinct scales. The first response scale represented teachers' perceived level of importance of the item to the field of FACS education (1 = Not Important, 2 = Little Importance, 3 = Somewhat Important, 4 = Important, and 5 = Very Important). The second response scale represented teachers' perceived level of competence for each item (1 = Not Competent, 2 = Little Competence, 3 = Somewhat Competent, 4 = Competent, and 5 = Very Competent). Section two of the survey collected data concerning teachers' background characteristics.

The study used a descriptive research design with an online survey method. Participants were contacted by email during the spring of 2009 and asked to participate in the study by completing the web-based survey. Online survey procedures suggested by Dillman (2007) were used to increase the response rate. After three email reminders, a total of 86 (60%) FACS teachers completed the survey instrument.

Analysis of non-response bias is important in determining a sample's representativeness of the population from which it was drawn. For this study, non-response bias was evaluated by comparing the average importance and competence ratings between early respondents ($n = 41$) to late respondents ($n = 17$) through the use of an independent samples t-test. No statistically significant difference was found on the importance ratings between early respondents ($M = 4.13$, $SD = .39$) and late respondents ($M = 3.86$, $SD = .71$) ($t(20.3) = -1.506$, $p > .05$). The results of the independent samples t-test comparing competence ratings between early responders ($M = 3.49$, $SD = .59$) and late responders ($M = 3.36$, $SD = .91$) also found no statistical difference between groups ($t(21.8) = .519$, $p > .05$). Based on these findings, the sample data was determined to be representative of the population from which it was drawn.

Analysis of the data involved the use of SPSS and MS Excel™. The importance and competence scores were used to determine professional development needs through the calculation of a mean weighted discrepancy score (MWDS) for each item. The calculation of the MWDS involved subtracting the competence score from the importance score (discrepancy score), multiplying that value by the mean importance rating of the item (weighted discrepancy score), and lastly, finding the average of all weighted discrepancy scores for each competence item (Borich, 1980; Joerger, 2002).

Findings

Research Objective 1: Determine the background characteristics of Idaho secondary family and consumer sciences teachers.

Nearly all of the respondents were female, with only 1 out of 86 being male. The majority of the teachers were single (81.4%) and in the age range of 45 to 65 years old (71.1%). Forty-eight (56.9%) teachers had over 10 years of experience, and the majority had earned a four-year degree (72.1%) see Table 1.

Table 1
Background Characteristics of Idaho Family and Consumer Science Teachers (n=86)

		n	***%***
Gender:	Female	85	98.8%
	Male	1	1.2%
Married Status:	Married	12	14.0%
	Single	70	81.4%
	Not Indicated	4	4.7%
Age:	<= 25	2	2.3%
	25 to 34	10	11.6%
	35 to 44	10	11.6%
	45 to 54	34	39.5%
	55 to 64	28	32.6%
	>= 65	1	1.2%
	Not Indicated	1	1.2%
Education:	2-year Associates degree	2	2.3%
	4-year degree (Bachelor)	62	72.1%
	Masters degree	21	24.4%
	Not Indicated	1	1.2%
Teaching Experience:	0 (just completed teacher training)	0	0.0%
	1-2 years	11	12.8%
	3-5 years	13	15.1%
	6-10	13	15.1%
	11-20	23	26.7%
	>= 20	25	29.1%
	Not Indicated	1	1.2%

Research Objective 2: Determine the perceived level of importance Idaho secondary family and consumer sciences teachers place on competencies associated with program management.

Of the 24 program management items, 19 were rated "important" or "very important." The average importance ratings ranged from a low of 2.74, to a high of a 4.63 on the 5-point scale (Table 2). The items rated most important were the development of relationships with fellow teachers and administrators (M = 4.63, SD = 0.60); and providing guidance and career exploration activities to students (M = 4.61, SD = 0.60). Conducting an adult program (M = 2.72, SD = 1.25) and needs assessment to determine Programs of Study/Pathways (M = 3.67, SD = 1.05) were the items rated least important.

Research Objective 3: Determine Idaho secondary family and consumer sciences teachers' perceived level of competence associated with program management.

FACS teachers were asked to rate their perceived level of competence based on the same 24 importance statements. For the purpose of this study, the items rated least competent assisted in the calculation of determining professional development needs. Conducting an adult program (M = 2.74, SD = 1.29); grant writing and funding opportunities (M = 2.96, SD = 1.24); and establishing and organizing co-op/internships (M = 3.09, SD = 1.03) were the items rated least competent among the teachers (Table 2). Teachers perceived that they were "very competent" (M = 4.5-5.0) or "competent" (M = 3.5-4.49) in 12 of the 24 statements. The top three items rated by perceived level of competence were development of relationships with fellow teachers and administrators (M = 4.25, SD = 0.80); conducting parent/teacher conferences (M = 4.07, SD = 0.78); and develop and maintain required safety standards (M = 4.04, SD = 1.01).

Table 2
Program Management Importance and Competence Ratings of Idaho Family and Consumer Science Teachers

Topic	Importance *M* / *SD*	Competence *M* / *SD*
Developing relations with fellow teachers and administrators.	4.63/0.60	4.25/0.80
Providing guidance & career exploration activities to students.	4.61/0.60	3.96/0.81
Develop and maintain required safety standards (State and Federal/OSHA standards)	4.55/0.68	4.04/1.01
Understanding federal (Perkins), state, and local funding.	4.51/0.81	3.35/1.11
Program related trends & current issues.	4.40/0.66	3.74/0.85
Identifying appropriate course textbooks, references, and materials.	4.39/0.73	3.96/0.92
Determining CTE program content for specific courses.	4.34/0.88	3.88/0.87
Developing an effective public relations program.	4.33/0.72	3.43/1.07
Evaluating a CTE program.	4.25/0.79	3.71/0.94
Grant writing and funding opportunities	4.23/0.99	2.96/1.24
Conducting parent/teacher conferences.	4.22/0.92	4.07/0.78
Developing curriculum-based School-to-Work activities.	4.20/0.95	3.31/1.23

Issues involved with traveling with students.	4.17/0.98	3.63/1.11
Coordinating activities with local organizations/agencies.	4.13/0.92	3.29/1.13
Recruiting/promoting student involvement with CTSOs.	4.12/1.05	3.48/1.16
Fundraising for CTSOs.	4.10/1.05	3.36/1.12
Establishing and using a program advisory committee.	4.10/1.00	3.69/0.97
Integrating CTSO activities into the regular classroom.	4.09/1.06	3.31/1.11
Establishing and organizing co-op/internships.	4.03/1.15	3.09/1.30
Planning and conducting student field trips.	3.87/0.99	3.88/0.95
Completing reports for local and state agencies.	3.85/1.24	3.70/0.95
Career Clusters & Programs of Study / Pathways.	3.80/1.07	3.48/0.94
Conducting needs assessments to determine Programs of Study / Pathways.	3.67/1.05	3.18/0.93
Conducting an adult program.	2.74/1.25	2.74/1.29

Research Objective 4: Determine the perceived professional development needs of Idaho secondary family and consumer sciences teachers.

The MWDS combined perceived levels of importance with levels of competency to identify the competencies that have the highest weighted difference when averaged among the sample. Items with higher MWDS are those with the greatest need for development. Based on the MWDS ranking; the most needed areas for professional development are grant writing and funding opportunities (5.47); understanding federal (Perkins), state, and local funding (5.20); developing an effective public relations campaign (3.87); and establishing and organizing co-op/internships (3.80) (Table 3). The areas identified as lowest priority for professional development needs are planning and conducting student field trips (-0.05), and conducting an adult program (0.00).

Table 3

Program Management Professional Development Needs of Idaho Family and Consumer Science Teachers: A Mean Weighted Discrepancy Score Ranking

Topic	MWDS
Grant writing and funding opportunities	5.47
Understanding federal (Perkins), state, and local funding.	5.20
Developing an effective public relations program.	3.87
Establishing and organizing co-op/internships.	3.80
Developing curriculum-based School-to-Work activities.	3.71
Coordinating activities with local organizations/agencies.	3.44

Integrating CTSO activities into the regular classroom.	3.19
Fundraising for CTSOs.	3.05
Providing guidance and career exploration activities to students.	2.91
Program related trends and current issues.	2.90
Recruiting/promoting student involvement with CTSOs.	2.63
Develop and maintain required safety standards (State & Federal/OSHA standards)	2.38
Issues involved with traveling with students.	2.28
Evaluating a CTE program.	2.25
Determining CTE program content for specific courses.	1.97
Conducting needs assessments to determine Programs of Study / Pathways.	1.84
Identifying appropriate course textbooks, references, and materials.	1.83
Developing relationships with fellow teachers and administrators.	1.79
Establishing and using a program advisory committee.	1.66
Career Clusters and Programs of Study / Pathways.	1.24
Conducting parent/teacher conferences.	0.65
Completing reports for local and state agencies.	0.58
Conducting an adult program.	0.00
Planning and conducting student field trips.	-0.05

Discussion and Conclusions

The purpose of the study was to assess Idaho secondary family and consumer sciences (FACS) teachers' perceptions of importance, competence, and professional development needs related to specific program management competencies. The findings of the study can be used to enhance professional development activities, thus strengthening FACS teachers' competency levels with the responsibilities associated with program management.

Idaho FACS teachers indicated that developing relationships with fellow teachers and administrators, providing guidance and career exploration opportunities to students, maintaining required safety standards, and understanding funding sources, to be of most importance. The top rated item, that being the development of relationships with colleagues, is fundamental to the empowerment of learning communities and has been associated with school reform. Bullough (2007), in a historical analysis of barriers to school reform, found that reform must involve teacher education, and that for this education to be powerful it should involve building trust and common experiences amongst teachers in order to empower them to solve problems (Bullough, 2007). Regardless of the specific item addressed, each of the top rated items represent critical elements within program management.

The least competent items identified in this study provide valuable information in the determination of professional development needs. That is, these items are calculated in the MWDS ranking and serves to identify areas that warrant improvement as indicated directly by the teachers. FACS teachers felt least in their ability with conducting an adult program, grant

writing and fundraising, and establishing and organizing co-op/internships. The teachers considered themselves most competent in their ability to develop relationships with fellow teachers and administrators, and to conduct parent/teacher conferences.

The MWDS ranking represents the discrepancy between the perceived importance of an item and the teacher's competency towards it. Priority areas for program management professional development needs determined by the MWDS were grant writing and funding opportunities, understanding funding sources, developing an effective public campaign, and establishing and organizing co-op/internships. Similar to this study, other researchers have found that grant writing (Cannon, et al., 2010; Miles, 2002) and developing an effective public relations program (Cannon, et al., 2010; Garton & Chung, 1996; Layfield & Dobbins, 2002) to be important professional development needs.

The MWDS ranking and the importance ratings together form a basis for a framework of educational needs of FACS educators. The items ranked as most important form a foundation that all teachers should have, thus being particularly relevant to initial teacher preparation. These included development of relationships with fellow teachers and administrators, and providing guidance and career exploration activities to students. In addition, and separately from the competency ratings, the importance ratings are of further interest because they provide insight into the perceptions of teachers regarding various aspects of teaching and program management. This information may serve as an assessment of the current thinking of educators within FACS and contribute to an understanding of strengths, weaknesses, and professional development needs. For example, a critical review of the importance ratings provides an indication of teachers' knowledge of national trends and legislative priorities, and may indicate needs not captured by teachers' perceptions. The competencies related to career clusters, programs of study and pathways received relative low importance ratings. This could be reflective of a lack of understanding and experience with the career cluster framework in Idaho among study respondents. Despite the ratings given by teachers, these areas are important state and national initiatives, and identified as critical to career and technical programs in the latest Carl D. Perkins legislation (National Career Technical Education Foundation (NCTEF), 2009).

When examining the findings for professional developments needs of FACS teachers, it is important to consider experience and stage of career. Majority of the FACS teachers ($N = 48$; 56.9%) in this study had over 10 years of teaching experience thus presumably having more opportunity throughout their career for exposure to program management related tasks than beginning teachers. Additionally, veteran FACS teachers may feel more confident and/or exhibit a stronger self-efficacy (belief in their ability) with individual competency items. Although this study did not examine strata, determining if professional development needs differ for beginning and veteran teachers warrants investigation.

Implications

Overall, the findings of the study identified and prioritized professional development needs of Idaho secondary family and consumer sciences (FACS) teachers. Now a framework for professional development opportunities can be developed (Niven, 1993) that can be specifically tailored to the needs of Idaho FACS teachers. The findings of the study have implications for professional development of FACS teachers and future research.

Professional development of secondary FACS teachers involves pre-service and in-service learning. It is at the pre-service level that teachers form a foundation of knowledge, skills, and philosophy that prepares them for successful careers in education. Idaho FACS

education faculty and others involved with the initial preparation of FACS teachers need to review pre-service preparation curriculum in relationship to the importance ratings and MWDS rankings identified within this study to ensure these items are represented within their teacher preparation program. Adequate preparation of a FACS teacher for their holistic role may be the difference between an unsuccessful program with a dissatisfied teacher or a successful program and satisfied teacher.

For in-service professional development activities, Idaho FACS education faculty and Idaho FACS education state staff should develop training opportunities that address the professional development needs determined through the analysis of the importance and competence ratings (i.e., mean weighted discrepancy scores, MWDS) of this study. Communication of these results to school administrators is also important due to their role and influence on district level in-service training provided to teachers. Professional development activities related to program management should include the improvement of the skills and knowledge necessary to (a) find and obtain supplementary funding for program activities, and (b) address interactions FACS teachers have with the public through co-op/internships and public relations activities. Professional development in these two areas is important for the sustainability and perceived public value of FACS programs.

Identification of priority areas is an important, but preliminary step in preparing and maintaining quality teachers. It must follow that appropriate learning activities be developed, and then delivered in an accessible way. To ensure effective means of delivery of these professional development opportunities, future research should investigate motivators and barriers that promote or limit teachers' participation with them. Another area for further research is the comparison of teaching experience to determine if professional development needs differ for beginning and experienced teachers. The findings of this study are representative of Idaho but may serve as a model for other states interested in determining program management professional development needs of secondary FACS teachers.

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Constructing Blank Cloth Dolls to Assess Sewing Skills: A Service Learning Project

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Service learning is a valuable teaching tool within Family and Consumer Sciences. The aim of the project was to create a service learning project that blended skills assessment with an application of developmental theory and an introduction to the field of Child Life. Students' sewing skills were assessed during the creation of a Blank Cloth Doll. The dolls were then donated to a local Children's Hospital, where they were used by Child Life Specialists to help facilitate coping among the pediatric patients. Students reported they placed more time and effort into completing the project because the dolls were going to be donated to the hospital, and used to help children.

Family and Consumer Sciences (FCS) educators use service learning as a teaching method to enhance students' learning experiences. Service learning is based on the principles that students learn course content, provide service to their community, and have an opportunity to reflect on their experiences (Brindle & Hatcher, 1996). Students who participate in service learning experiences report improved content retention, increased demand for critical thinking, and higher satisfaction with their courses (Markus, Howard, & King, 1993; Sax & Astina 1997; Strage, 2004). Students also report a sense of pride in knowing that they have used their course content knowledge to benefit others (Yamauchi, Billig, Meyer, & Hofschire, 2006).

The project, *Constructing Blank Cloth Dolls to Assess Sewing Skills*, was developed in collaboration with university FCS faculty and Child Life clinicians to provide a service learning opportunity where students were introduced to the child life profession, applied skills related to clothing design and construction to create blank cloth dolls, and donated their dolls to the children's hospital. The dolls would then be used by the Child Life Specialists (CCLS) to promote effective coping among hospitalized children.

Purpose of the Project

Assessment of Student Sewing Skills

The FCS Education National Comprehensive Standard 16.0 for textiles and apparel states "Integrate knowledge, skills and practices required for careers in textiles and apparel" (National Association of State Administrators of Family and Consumer Sciences, 2008). Content Standard 16.4 further specifies that students should be able to "demonstrate skills needed to produce, alter, or repair fashion, apparel, and textiles products" (National Association of State Administrators of Family and Consumer Sciences, 2008). It is important that FCS students, in particular those students who want to teach FCS within high schools, master these skills so that they may teach them to their students in the future. In a survey of high school teachers, respondents indicated that it was extremely important for teachers to be able to "perform basic skills necessary to use and alter patterns, construct and fit simple garments, and make simple repairs and alternations" (Lee, 2002, p. 29). In addition, it was recommended that teachers choose appropriate techniques and sequences of design beginning with fabric preparation and progressing to the cutting and

marking of pattern pieces, construction, and final pressing of the project. One method of assessing the beginning sewing skills utilized in an Introductory Clothing Construction course at the university level was the construction of a blank cloth doll.

Introduction to Child Life and Blank Cloth Dolls

FCS educators who are familiar with the Child Life field may better appreciate and understand the Blank Cloth Doll project. Child Life professionals (CCLS) have been developing and implementing therapeutic interventions for hospitalized children for over 30 years. The scope of CCLS practice has become more diverse and has attracted more widespread research. Professionals now practice in a number of settings such as surgery centers, outpatient clinics, dentist offices, hospices, and facilities that support abused children. The populations are different, with varying needs, but the act of play remains the single-most important form of communication between CCLS and the child (Koller, 2008). Play is also a universal language among children; it offers them the opportunity for self-expression and organization of their thoughts while allowing them to regain a sense of control in a threatening environment (Thomas, 2009).

Donna Koller, a clinician at the Hospital for Sick Children in Canada, studied the potential influence that various forms of play have on children's perception of their hospital experiences. Koller and her colleagues found that the use of dolls, puppets, and art, in conjunction with medical materials, during play reduced the negative psychological and physiological effects commonly associated with hospitalization and procedures (Koller, 2008). It was also reported that medical play is one of the most effective tools used when working with children who will be receiving medical treatment. For example, a CCLS can use the doll to show a child how an IV (intravenous therapy) is placed. The demonstration will give the child an opportunity to learn about the procedure, ask questions, and then develop and practice some coping techniques to use during the procedure. Because it is essential for the CCLS to have an understanding of the child's perception of experiences with medical staff, procedures, office appointments, and inpatient stays, CCLS need developmentally appropriate tools to assess all areas of the child's developmental level (cognitive, social, emotional, and physical) in order to develop an individualized treatment plan.

One of the tools that CCLS use during medical play and assessment is the blank cloth doll. The dolls are created with varying shades of muslin fabric (to represent a multicultural population) and are then filled with batting. Batting is cotton or synthetic material that is used to line or stuff fabric-based projects. The dolls have no facial features, clothing, or any other defining features with the exception of the head, arms, legs, and torso. The child is encouraged to personalize the doll by giving it a name, and adding eyes, ears, mouth, nose, hair, clothing, or anything else they would like to make the doll an item of familiarity or comfort. Once the blank cloth doll has been personalized, the CCLS initiates medical play with the child.

During medical play sessions, the CCLS offers medical equipment that the child is either familiar with or that he or she will be introduced to in the near future. Syringes, anesthesia masks, blood pressure cuffs, and catheters are among the many basic and specific supplies that are frequently introduced during a child's hospitalization. The play session is not only an opportunity to see how the child perceives these tools and how they are used, but it is also a means of teaching during a non-directive interaction. In this manner, the child asks questions regarding the equipment in his or her own time. Professionals can visibly see some of the

misconceptions that the child has regarding medical care, work as an advocate to redirect the child through play, and educate staff on the child's perceptions.

Some of the common themes observed during medical play with a blank cloth doll include aggression, withdrawal, misconceptions, understanding, or indifference. Lab draws, IV catheter placement, sedation, and the use of bandages are among some of the experiences portrayed during play. Children also tend to express their fears, anger, frustrations, and anxiety with regard to their current and previous medical experiences. This form of play offers great insight into where the child is emotionally and what the healthcare team can do to facilitate a positive coping environment for the child and his/ family (Thomas, 2009).

Garry Landreth, founder of the Center for Play Therapy, shares that play in the hospital setting can be viewed as a child's way of developing control over their experience, and that the utilization of dolls and medical equipment are just as important as the surgeon's tools in healing the child (Landreth, 1991). The importance of this therapeutic tool does not end after the play and teaching has addressed the child's immediate needs. Children are often encouraged to take their dolls with them into surgery, procedures, inpatient stays, etc., so that they still have the comfort and familiarity that is associated with their experience with the blank cloth doll.

Project Details

The blank cloth doll was used to assess students sewing skills in an introductory clothing construction course before they began their major garment construction project. Following lessons and skills application in areas such as pattern layout, marking, cutting, basic straight seams, sewing curves, clipping seams, grading seams, students were given an application test which required the completion of the blank cloth doll.

First, a child life specialist explained the use of blank cloth doll and the service learning project. Students were then given a pattern for the blank cloth doll and were also supplied with muslin fabric, which was donated for the project. The pattern is approximately 12 inches in height and 8 inches wide. The seam allowance for the doll is ¼ inch. Students were instructed to cut out the pattern, mark appropriately, and construct the doll. Finally, students turned the doll inside out, stuffed it, and sewed up the opening.

Upon completion of the project, students took the dolls to the children's hospital and donated them to the child life department. The child life staff appreciated the donation of the dolls. Because the dolls are personalized and taken home by the children who use them, clinicians are always in need of new donations.

Project Outcomes

Skill Assessment

Based on information learned in the course, students were asked to utilize critical thinking skills to determine grading and clipping of curves while creating the dolls. Sewing skills tested through the blank cloth doll project included cutting, marking, backstitching, sewing straight seams, turning corners, appropriate seam allowance, clipping inner and outer curves, pressing seams, and hand sewing skills. Variances in students' abilities were recognized and each student was informed of the skills they needed to further develop. Some students had difficulty turning corners correctly, some needed to work on uniform seam allowances, and some needed to work on their hand sewing skills. Time was set aside in the following class to work on the skills that needed improvement.

Personal Accomplishment

Students who participated in the project were intrigued to learn about the field of Child Life, and were excited to use their skills to create dolls for the children. Because the students were asked to create such a unique doll for the children, they felt a sense of pride and goodness about their work. A grandmother of one of the students was so impressed with the service learning project that she and her sewing group constructed over 50 dolls that were also donated to the children's hospital. In addition, some students shared that they were willing to work more diligently on the task because they knew how important the doll would be for the children during their stay in the hospital.

Community Service

The outcomes of the service learning project reinforced how valuable experiences such as creating blank cloth dolls can be, and how application projects can be used as a strategy for more successful teaching and learning experiences. By developing projects for students that may be used in service to others, FCS faculty are able to assess their students' skills, while contributing something very unique to even the youngest members of their communities.

Conclusions

Utilizing service learning within the classroom is a valuable teaching tool. Students enrolled in the clothing construction course reported a better learning experience attributed to their participation in the project. Though the primary purpose of the project was to assess the sewing skills of the students, the experience provided them with other unique opportunities such as learning about an application of child development that is not commonly addressed within FCS curricula, and having their work used in a professional setting to help children. The Blank Cloth Doll project benefited many, and also reinforced the importance and usefulness of service learning within the classroom.

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