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Career Exploration of Culinary Nutrition: Motivations and Career Aspirations of Undergraduate Students

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Culinary nutrition is an emerging niche discipline that combines two traditionally-separated career paths of the registered dietitian nutritionist and professional chef. Family and consumer sciences' (FCS) coursework may be the ideal setting to introduce culinary nutrition as a career path given the three areas of study in the national standards related to this realm. This qualitative study utilized focus groups at two institutions that offer a degree in culinary nutrition, Saint Louis University and Johnson and Wales University, to investigate the motivations and career aspirations of undergraduate students. Five major themes emerged: past experiences; interests and desires; career aspirations; career and lifestyle expectations; decision-making. Each major theme was supported by subthemes at either or both study sites. These findings may be used in career exploration and preparation efforts to further the discipline of culinary nutrition by FCS educators.

American consumers have demonstrated a clear interest in healthy, delicious food options. The National Restaurant Association identified *nutrition* and *natural ingredients* as two of the top ten concept trends of 2017 (National Restaurant Association, 2016). Artifacts of this movement have permeated American culture, from Michelle Obama's *Let's Move!* and *Chefs Move to Schools* campaigns (United States Department of Agriculture, 2017) to a body of cookbooks, cooking shows, grocery stores and restaurants fully devoted to serving food that is equally nutritious and appetizing. Despite growing interest, there is still a marked disconnect between nutrition knowledge and culinary competence (Condrasky & Hegler, 2010).

In the professional realm, registered dietitian nutritionists (RDNs) and professional chefs are separate professions that might interact closely but are considered two distinct realms of expertise. In the educational realm, students typically pursue a degree in either dietetics or culinary arts and integration of the two has been limited (Kerrison, Condrasky, & Sharp, 2017). However, the emergence of culinary nutrition is gaining ground in both the professional and education sectors (Kerrison, Condrasky, & Sharp, 2017). Condrasky and Hegler (2010) defined culinary nutrition as the "application of nutrition principles combined with food science knowledge and displayed through a mastery of culinary skills" (p. 1). This emerging profession integrates two disparate career paths: that of the RDN and the professional chef.

Career Exploration for Family and Consumer Sciences Students

Culinary nutrition as a career path for family and consumer sciences (FCS) students has yet to be asserted. However, three of the 16 current national areas of study in the FCS standards published by the National Association of State Administrators of FCS (NASAFACS) are specific to this realm, including: food production and services; food science, dietetics and nutrition; nutrition and wellness. Though culinary arts is not an explicit area of study, the traits of the

profession are relatively aligned with that of the food production and services area of study, such as menu planning, food preparation, and food service management. What's more, given that the national standards support career exploration (NASAFACS, 2018), students may be encouraged to investigate culinary nutrition as a possible career path within FCS.

Student Motivations and Career Aspirations

Knowledge of student motivations and career aspirations may be used to assist career exploration efforts by FCS educators. Previous research has focused on factors that motivated traditional dietetics students to pursue the career path of an RDN and identified a range of factors, many of which occurred during students' secondary education. These included a personal interest in nutrition, a desire to help others and work with people, a personal struggle with weight management or diet-related condition, and having a friend or family member with a diet-related condition (Atkins & Gingras, 2009; Brady, Mahe, MacLellan, & Gingras, 2012; Chuang, Walker, & Caine-Bish, 2009; Holsipple, 1994; Hughes & Desbrow, 2005; Kobel, 1997; Lordly & MacLellan, 2012; Markley & Huyck, 1992; Rodenstein, 1990; Stone, Vaden, & Vaden, 1981). However, no studies have previously examined what motivates students to pursue a degree in the niche sector of culinary nutrition.

Methodology

This study employed a basic qualitative research design (Merriam & Tisdell, 2016) to investigate subjects' perceptions, perspectives, and understanding of their own motivations to pursue a degree in culinary nutrition. The theoretical framework underpinning this study was characterized as a relativist, empirical approach wherein reality was based on participants' interpretations of their own lived experiences. Integral to the theoretical framework was the Social Cognitive Career Theory, which is based on Bandura's social cognitive theory (1986) and has been used by the research community to frame how students become interested in a career, make relevant decisions, and achieve academic and career success (Lent, Brown, & Hackett, 1994). The theory integrates cognitive variables of self-efficacy, outcome expectations, and goals, with other aspects of one's self such as gender, ethnicity, social network, and barriers (Lent, Brown, & Hackett, 2000).

Site and Participant Description

Currently, only two institutions that are accredited by the Accreditation Council for Education in Nutrition and Dietetics in the United States offer a degree in culinary nutrition (ACEND, 2017): Saint Louis University (SLU) in St. Louis, Missouri, and Johnson & Wales University (JWU) at their Denver, Colorado and Providence, Rhode Island campuses (JWU, 2017; SLU, 2017). SLU and JWU at their Denver, Colorado campus served as the sites for this study.

Participants were recruited via email from SLU and JWU. Junior and senior-level undergraduate students were recruited to establish triangulation (Denzin, 1978). Participants were invited to participate regardless of age, gender, race, or socioeconomic status. Institutional review board approval was obtained at both institutions prior to the initiation of data collection.

Data Collection and Analysis

This study was conducted in the Spring Semester of 2016. Data collection involved semi-structured focus groups of six to eight participants per group. Researchers used an

interview guide composed of 14 questions which aimed to capture both cognitive and physical variables influencing participants' decision to pursue culinary nutrition (Lent, Brown, & Hackett, 2002). The focus groups were audio recorded, transcribed, and analyzed using the constant comparative method (Leedy & Ormrod, 2005). Emergent themes and subthemes were supported by illustrative quotes that were documented verbatim.

Findings

Three focus groups were conducted in total: two at SLU and one at JWU. Each focus group lasted between 60 and 90 minutes. A total of 23 participants contributed to the focus groups. Of those, 34.5% were seniors and 65.5% were juniors; 39% were males and 61% were females.

Major Themes

The major themes that emerged were past experiences, interests and desires, career aspirations, career and lifestyle expectations, and decision-making. Major themes, subthemes, and their identification from participants at either or both study sites are summarized in Table 1. For the sake of brevity, only those themes reported at both study sites are elaborated upon in this section.

Past experiences. The past experiences motivating students were those that took place prior to attending college, committing to the degree program, or returning to college to pursue culinary nutrition. Nine discrete experiences were identified and are listed in Table 1. Four past experiences were reported by participants at both study sites.

Experience with a diet-related disease. Participants described how a diet-related disease impacted themselves, family members, or friends, and how they observed the role of nutrition (or lack of) in the management of the disease. For example, one participant reported, "It's amazing how, I just remember being jealous of my cousin counting carbs in middle school and I was always obsessed with food labels and it took me a long time before I realized it was an actual profession." In contrast, others commented on the perceived lack of attention to nutrition in disease management. One participant reflected on her father's struggle with kidney disease: "I noticed that there's not a lot of medical food—the food that patients receive is not really that good and doesn't have a lot of flavor and always has this bad rep that nutritious foods are terrible. It pushed me more to just be in this degree in that way." Thus, reflections were either related to the identification of the importance of nutrition, or the lack of concern for nutrition in disease management.

Food-related work experience. Food-related work experiences were consistently reported in a positive manner. One participant recalled memories of working at a farmers' market as a teenager: "I remember there was like, a stand next to us that had like, fresh noodles and they were like, green, and I was like—why would noodles be green? And I went home and told my mom I was all excited and she was like—'maybe you should look into food 'cause you really seem to like nutrition.'"

Table 1
Emergent themes and subthemes of perceptions regarding the motivations of undergraduate students to pursue a degree in culinary nutrition

Theme	Subtheme	SLU	JWU
Past Experiences	Experience with a diet-related disease	X	X
	Food-related work experience	X	X
	Participation in a sport	X	X
	Exposure to nutrition or culinary arts in a high school course	X	X
	Experience with weight loss or gain	X	
	Cooking with family during childhood	X	
	Lack of cooking knowledge from childhood	X	
	Gardening or farming during childhood	X	
	Exposure to nutrition in a college course		X
Interests and Desires	Personal interest in food and nutrition	X	X
	Potential to make a difference	X	X
	Desire for student to earn a bachelor's degree	X	X
	Lack of nutrition knowledge in the general public	X	
	Lack of culinary knowledge among nutrition professionals	X	
	Desire for culinary skills as a RDN	X	
Career aspirations	Help others appreciate healthy food	X	X
	Make a difference	X	X
	Work abroad	X	X
	Child nutrition	X	X
	Education setting	X	X
	Public health	X	X
	Entrepreneurial	X	X
	Not or "maybe" clinical	X	X
	Don't know	X	X
	Policy	X	
Career and lifestyle expectations	Happiness	X	X
	Constant change and learning opportunities	X	X
	Stability	X	X
	Flexibility and part-time work opportunities	X	
	Conservative pay	X	
	Stability	X	
	Benefits	X	
Decision-making	First chose culinary arts, then added dietetics	X	X
	Returned to college to pursue a second career	X	X
	Sought out culinary nutrition in high school	X	
	First chose dietetics, then added culinary arts	X	
	Transferred from a different major	X	

Another participant described their experience of working in a restaurant: "That was my first job. I haven't left the industry since… stuck with it and seems like a good deal." Therefore, positive food-related work experiences motivated participants at both study sites to seek out a food-related career.

Participation in a sport. Participation in sports during high school was also a motivation to pursue nutrition. One participant described the influence of her teammates: "I found nutrition because I played sports my first two years and it just seemed that everybody who played sports was going into fields associated with sports." Another participant recalled the experience of working with an athletic trainer following a track injury and how nutrition was brought to her attention for the first time: "I was fascinated because I hadn't thought about how nutrition was related to activity." Participation in a sport, either due to peer influence or exposure to nutrition during recovery from an injury, was identified as a motivation among participants at both sites.

Exposure to nutrition or culinary arts in a high school course. Lastly, exposure to nutrition or culinary arts in a high school course was also a motivation to pursue culinary nutrition at both study sites. One participant recalled:

> I took cooking classes in high school and was like, "Yeah, I'll go do that." Then, I realized pretty quick that being a line cook kinda sucks and I did not want to do that. And then I kinda realized that I kinda liked the science part of food more.

Another participant reported exposure to nutrition for the first time during an advanced placement environmental science course: "It was the first time I had ever been introduced to that subject and I was like—wow, this is perfect for me." Though students were not necessarily exposed to the discipline of culinary nutrition in high school, they did gain exposure to either nutrition or culinary arts through their coursework in cooking, FCS, or environmental science.

Interests and desires. Students' personal interests and desires also influenced their decision to pursue culinary nutrition. Six discrete interests and desires were identified and are listed in Table 1: Three interests and desires were reported by participants at both study sites.

Personal interest in food and nutrition. A personal interest in food and nutrition was characterized by participants' interest in food, the effects of various diets, or the science of food. One student reported, "I love food. I like to talk about food. I'm good at talking about it. I remember being like—how cool would it be to go to school for something you're actually excited about?" Another student asked rhetorically, "I love food so why don't I just pick this major?" A third commented on an "interest in science" and how "food works in the body." Thus, a personal interest in food and nutrition motivated participants at both study sites to study culinary nutrition.

Potential to make a difference. Next, participants described the potential to make a difference with their degree. Some reflected on how nutrition impacts consumers/individuals daily, while others identified the need for nutrition given the prevalence of certain health conditions. For instance, one student reflected, "I think it's cool to talk to people about something they're affected by every day and they're thinking about every day." Another

commented, "I just think it's an awesome job…especially with everything that's going on with obesity. I think with our job we can really makes a difference." The potential to make a difference, either on an individualized basis or by influencing disease epidemics, motivated students at both study sites to pursue culinary nutrition.

Desire for student to earn a bachelor's degree. Lastly, students at both sites identified the desire to earn a bachelor's degree or a "four-year college degree" as a motivating factor. One participant recalled, "I wanted to go into culinary and my parents wanted me to get a four-year college degree, so SLU had this program and it just worked." A JWU student commented, "I came here just for my associate's and when I got done I decided to keep going." Therefore, the desire to earn a bachelor's degree was either the student's own desire or that of their parents; the four-year culinary nutrition degree was seen as a way to both study culinary arts and earn a bachelor's degree.

Career aspirations. The theme of career aspirations emerged from discussions about what type of employment participants would like to pursue with a culinary nutrition degree. Three general aims and six specific aims were identified and are listed in Table 1. All but one of the subthemes were identified by participants at both study sites.

General aims. General aims were broader career aspects that could be applied in a variety of employment settings. These included: help others appreciate healthy food, make a difference, and work abroad. All three were reported by participants at both study sites. The aim of helping others appreciate healthy food was described as helping others "realize the pleasure of food," or encouraging "the same love and passion that I have." Multiple participants mentioned their perception that many people are averse to healthy food, coupled with their desire to show how food can be both healthy and delicious. The theme of making a difference was described as a hope to "impact one person" or having a career that "means something." One participant noted:

> I want to feel like I'm making a difference doing something that means something to me, something that people appreciate that I can take pride in… regardless of the 25 paths I outlined earlier, I think that whatever I land in it'll be a good one.

The third general theme of working abroad was characterized by hopes for "global travel" or "global spanning" work. One participant identified how witnessing malnutrition abroad not only prompted him to study nutrition, but also work abroad in his future career.

Specific aims. In contrast, specific career aims were characterized by discrete employment settings. These included: child nutrition, education setting, public health, entrepreneurial, not or "maybe" clinical, don't know, and policy. Participants at both study sites named all the specific aims except for policy, which was only named by participants at SLU.

Career and lifestyle expectations. In contrast to specific career aims, the theme of career and lifestyle expectations emerged from discussions of participants' hopes for quality aspects of their future lives. Six discrete career and lifestyle expectations were identified and are listed in Table 1; three expectation were reported by participants at both study sites.

Happiness. The subtheme of happiness was characterized as a desire to "have fun" or "enjoy what I'm doing." One participant commented, "I think just lifestyle is just going to be—this is really corny—just like, happy 'cause I really like doing what we're going to do and it's just such a blessing to be doing this." Another participant expressed her desire for a career to be "something I get to wake up in the morning and go do this and, and it's not, 'Ugh, I gotta go to work'. I'm enjoying what I'm doing even if I'm working."

Constant change and learning opportunities. Next, participants at both study sites also expressed the expectation of constant change and learning opportunities throughout their careers. This was described as "hectic," "ever-changing," "always moving and on the go," "continuously challenging," or "continuously different." One participant commented, "There's always going to be like, a new trend on the market or a new fruit people haven't thought about." Other participants expressed how they tend to get bored easily and need constant change. One participant stated: "I get bored with jobs really easily. I leave after like, two years and continuously grow at different jobs."

Stability. Lastly, the expectation of stability was expressed by participants at both study sites. This subtheme was characterized by both employment and financial stability. For instance, one participant noted: "I'd like to be at a place where I can be for a long time and kind of climb the ladder." Another participant described the need for "something substantial to support myself" in order to pay off student loans. Thus, employment and financial stability was a career and lifestyle expectation of participants at both sites.

Decision-making. The final theme of decision-making emerged from participants' accounts of how they decided to pursue a degree in culinary nutrition. Five discrete paths were identified. Participants at both sites reported first choosing culinary arts and then adding dietetics, or returning to college to pursue a second career. However, only SLU participants made their decision by seeking out culinary nutrition in high school, first choosing dietetics and then adding culinary arts, or transferring from a different major.

Discussion

The findings of this study may be compared to the existing corpus of knowledge on what motivates traditional nutrition and dietetics to pursue a career as an RDN. In turn, the nuances of what motivates culinary nutrition students may be used to inform career exploration and preparation efforts. Limitations of this study and suggestions for future research will also be discussed.

Comparisons to Existing Research

Interests and desires. Participants at both SLU and JWU reported a personal interest in food and nutrition and the potential to make a difference as motivating factors, both of which further validate prior research and indicate these as especially strong subthemes (Brady et al., 2012; Chuang et al., 2009; Hughes & Desbrow, 2005; Kobel, 1997; Markely & Huyck, 1992; Stone et al., 1981). One subtheme that was not identified in the prior literature, but that was identified by participants at both study sites, was a desire for the student to earn a bachelor's

degree or a "four-year college degree." Given that culinary professionals may secure employment with an associate's degree or substantial work experience, this motivation is most relevant for potential students that are strongly interested in culinary arts, but still wish to earn a bachelor's degree. Three interests and desires emerged at SLU, but not JWU. These included a lack of nutrition knowledge in the general public, a lack of culinary knowledge among nutrition professionals, and a desire for culinary skills as a RDN. These factors characterize the skills, or ideal skills, of RDNs. Thus, given that most participants at this study site were attracted first to nutrition and dietetics, it makes sense that these participants would vocalize desires specific to RDNs. Furthermore, these interests and desires did not emerge in the literature review, and thereby contribute new findings to the body of research.

Past experiences. Participants at both sites reported past experiences that prompted their interest in culinary nutrition, including experience with a diet-related disease, food-related work experience, participation in a sport, and exposure to nutrition or culinary arts in a high school course. These past experiences were consistent with prior research, and are therefore especially strong subthemes (Brady et al., 2012; Holsipple, 1994; Hughes & Desbrow, 2005, Lordly & MacLellan, 2012).

Past experiences of SLU students, but not JWU students, included personal weight loss or gain, cooking with family during childhood or a lack of cooking knowledge from childhood, and gardening or farming during childhood. Whereas the former experiences were documented in previous research (Brady et al., 2012; Holsipple, 1994; Hughes & Desbrow, 2005, Lordly & MacLellan, 2012), the latter experience of gardening or farming during childhood was not. Thus, this marks a new contribution to the understanding of what may motivate students to pursue culinary nutrition.

In contrast, exposure to nutrition through a college course was reported by JWU participants, but not SLU participants. This motivation to enter the field was previously established by Lordly and MacLellan (2012). Given the differences in decision-making paths of students at each institution, this distinction is consistent with the finding that many JWU students entered culinary nutrition by first choosing culinary arts, and then later adding dietetics upon exposure to the field in a college-level course; this finding is elaborated upon in the subsequent section on decision making.

Career aspirations. The career aspirations of participants were almost identical at SLU and JWU, indicating the strength of these subthemes. Participants at both sites discussed the general aspirations of helping others appreciate healthy food, making a difference, and working abroad. This finding indicates that culinary nutrition may be considered a helping profession, or may attract students that wish to improve the lives of others. In this case, culinary nutrition students were drawn to the field in order to help others appreciate and be able to prepare food that is both healthy and nutritious. This finding also validates prior research that identified a desire to help others and work with people as a motivation for entering the field of nutrition and dietetics (Holsipple, 1994; Hughes & Desbrow, 2005; Kobel, 1997; Lordly & MacLellan, 2012; Markley & Huyck, 1992).

In addition, participants at both study sites identified similar specific career aspirations. Participants expressed the desire to work in child nutrition, education, public health, or as an entrepreneur. Participants at both sites indicated they do not want to work in clinical dietetics, or that they only want to do so for a short time. This is a notable deviation from the present body of

research on traditional nutrition and dietetics students that indicates clinical dietetics as an expected work setting (Holsipple, 1994; Hughes & Desbrow, 2005). However, given that RDNs are qualified to work in a variety of settings (Hooker, Williams, Papneja, Sen, & Hogan, 2012), clearly culinary nutrition students are drawn to the field for its opportunities to work in sectors other than clinical dietetics.

Decision-making. Between the two study sites, only one participant sought out the combined discipline of culinary nutrition in high school. This points to a clear need to heighten awareness of culinary nutrition as a career path among high school students. Given the multiple areas of study related to culinary nutrition within the FCS National Standards, FCS coursework may be the ideal place to explore this career path.

Additionally, the decision-making path of first choosing dietetics, then adding culinary arts emerged solely from the participants at SLU, whereas the path of first choosing culinary arts, then adding dietetics emerged almost entirely from participants at JWU. This was likely due to differences in program offerings at the two institutions. SLU offers both a traditional bachelor's of science in nutrition and dietetics and a bachelor's of science in nutrition and dietetics with a culinary option (SLU, 2017). Most of SLU's students, therefore, were drawn to the university for its traditional nutrition program and then later decided to enter the culinary nutrition degree program. In contrast, JWU offers both a bachelor of science in culinary arts and a bachelor of science in dietetics and applied nutrition (JWU, 2017). This finding further supports the importance of introducing students to culinary nutrition as a career path in high school, rather than discovering the career path serendipitously once enrolled in college.

Lastly, participants at both SLU and JWU reported returning to college to pursue culinary nutrition as a second career. This finding further validates prior research indicating a notable percentage of students that return to study dietetics as a second career (Hughes & Desbrow, 2005, Markley & Huyck, 1992). This finding is also relevant to recruitment efforts when targeting various pools of potential applicants.

Applications to Practice

Recruitment to university programs. The findings of this study may be used to inform phase-appropriate recruitment efforts, which is especially relevant given that students are likely to become interested in the field at different phases. Given the distinct decision-making paths that emerged from the results of this study, institutions may target five different applicant pools: high school students; traditional nutrition and dietetics students; traditional culinary arts students; students enrolled in a different major; students returning to college to pursue a second career.

Recruitment efforts should emphasize the interests and desires identified in this study. For instance, the desire for a bachelor's degree was identified as a motivation in this study that did not emerge in the existing research. In recruitment efforts, this opportunity should be emphasized at institutions where students have the option to earn either an associate's degree in culinary arts or a bachelor's degree in culinary nutrition, such as JWU (2017), or at an institution that is the only school in a geographical region to offer a culinary nutrition degree, such as SLU (2017).

Recruitment efforts should also capitalize on past experiences that led current culinary nutrition students to the field. Each subtheme related to past experiences in this study represents a unique recruitment opportunity. For instance, given that some participants became interested

in the field through a high school or college course, the classroom setting may be an effective place to educate students on the field of culinary nutrition. This may be achieved by providing relevant information to the instructors of those courses, including a section on culinary nutrition in new versions of textbooks or inviting culinary nutrition professionals serve as guest lecturers.

Preparation for future careers. Lastly, the findings of this study may be used to frame the career possibilities for culinary nutrition professionals. Three broad career aspirations emerged, including the desire to help others appreciate healthy food, make a difference, and work abroad. The desire to make a difference was reported in previous research (Holsipple, 1994), though the desire to help others appreciate healthy food and work abroad emerged as new findings. Notably, the desire to help others appreciate healthy food seemed to be unique to culinary nutrition students given that it was supported by comments about making food that is both healthy and delicious. Some participants even compared themselves to traditional nutrition and dietetics students and touted their knowledge of both disciplines as superior to mere nutrition knowledge. Thus, this is a career aspiration that culinary nutrition students take pride in and see as unique.

When evaluating potential careers, culinary nutrition students will likely seek out those that allow them to use their knowledge of both nutrition and culinary arts. From an employer's perspective, they may hire an individual who is proficient in both avenues, potentially decreasing overall labor costs. Future employers may also emphasize culinary nutrition professionals that participants described as most important to their careers and lifestyles, such as constant change and learning opportunities.

Limitations

The generalizability of these findings are limited by the fact that there are only two institutions that offer a degree program in culinary nutrition; therefore, the usefulness of the results may be limited to those programs at this point in time. However, if additional colleges or universities are interested in starting a degree program in this area, the results may inform the development of certain aspects of the program such as the curriculum and recruitment activities.

Future Research

Given the qualitative nature of this study, a survey-based or mixed-methods follow-up study may serve to provide quantitative information regarding the prevalence and strength of various motivations. Further research may also include additional education and employment rates of culinary nutrition graduates.

Conclusion

Culinary nutrition is an emerging niche discipline at the intersection of nutrition and dietetics and culinary arts. Given the NASAFCS support of career exploration, as well as the three areas of study tangentially related to culinary nutrition in the national standards, FCS coursework may be the ideal setting to introduce this career path. Ongoing research on the distinctive traits of culinary nutrition students and young professionals is needed to further this discipline.

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An Examination of the Influence of Family and Ethics Training in Students' Critical Reasoning

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Researchers sought to assess the role of family influences in students' critical deliberation of an ethical dilemma and to determine how that role changed with exposure to educational content pertaining to professional ethics. Qualitative data from four classes (85 paired responses) were collected over a period of two years. Consistent with ecological, social learning, and family systems theory, results showed that students' families played a consistent and important role in shaping their ethical perspectives and reasoning. Some degree of shift in rationale and in integration of philosophical concepts affirmed the impact of ethics course content. Content analysis of student responses elicited three primary themes: compassion and caring, commitment and endurance, and safety and protection, as well as several secondary themes.

"Purposeful moral deliberation is essential to the ethical practice of family and consumer sciences (FCS)" (Roubanis, Garner & Purcell, 2006, p. 30). Members of the American Association of Family and Consumer Sciences (AAFCS) embrace an ecological perspective when they strive to assist individuals, families and communities. Ethics requires taking into consideration interpersonal relationships and ethical knowledge. This process is, therefore, necessarily complex. Professional organizations establish standards of conduct, or professional codes, that are intended to guide members in their decision-making and activity. Those codes attempt to take into account the multiple levels of human ecology and interaction, and in turn, they influence curriculum design. To maintain relevance over time, those codes require regular review. The AAFCS Code of Ethics underwent such evaluation in 2012-2013, resulting in a modified structure and the addition of the principle of integrity (Roubanis, 2013). Recent calls for curriculum changes in post-secondary FCS programs have focused on increasing students' awareness of and reflection upon ethics to improve critical analysis skills and, ultimately, to better prepare them to confront and address professional dilemmas.

The current study examines how a course that teaches ethical reasoning enhances FCS students' ability to critically reason about the influence of their families' values in resolving an ethical dilemma. Specifically, researchers asked students to reflect upon an adoption scenario that presented a disruptive, potentially violent, family situation to (a) determine, using a thematic analysis, how students drew upon their own family experiences to analyze and justify resolutions to that ethical dilemma, and (b) identify how exposure to course content may have influenced student reasoning.

Review of Literature

Kidder (2003) referred to ethical decision-making and behavior as voluntary obedience to an otherwise unenforceable sense of moral duty to uphold what one values, while morals are beliefs in intrinsic rights and wrongs. Yet, Kidder cautions against drifting too far into academic discourse because (a) most people have a working understanding of good, and (b) ethics is really more about inner impulses, judgments, and duties than it is about definitions (p. 63). Thus, curriculum emphasis on critical reasoning should increase student awareness and heighten students' sense of duty to effectively address and resolve personal and professional ethical issues.

Several time-honored theories form a basis for examining social and family processes' impact on ethical decision-making. Social learning theory (Bandura, 1977) posits that one's development is heavily influenced from the earliest stages of life by the social cues that one observes through interaction. It combines social experience with intellect, providing a basis for "analyzing human motivation, thought, and action" (Bandura, 1986, p. xi). The process of symbolizing provides an avenue for turning experiences into wisdom, allowing ability to assess potential outcomes. FCS graduates must integrate ethics content into practical field applications.

Ecological theory provides a basis for thinking about how individuals are influenced by systems at a variety of levels (Bronfenbrenner, 1979). Personal characteristics and environment are intertwined. In the family, the ethical development of individuals is a product of the micro-, meso-, exo-, and macrosystems. As noted by Bretherton (1993), we view "family as a system of interlocked but separate minds" (p. 294).

During the 1980s, family scholars increased the focus on the role of the family in the transmission of ethics. As evidence of this recognition, ethics and families was the theme of the 1993 National Council on Family Relations (Boss, Doherty, LaRossa, Schumm & Steinmetz, 1993). Arising out of general systems theory, Bowen's systems theory (Kerr, 2000) recognizes that a significant event for one or more family members reverberates among all family members, including shaping outlook on situations. Societal emotional process – the influence of affect on behavior - applies to workplace dilemmas. The current study tests the premise that microsystemic influences from family life affect the salient mental anchors used in ethical reasoning.

Family influence on moral development can be substantial and long lasting. Beginning in childhood, family heavily influences socialization, including moral perspectives and value development (White, 1996). As individuals are exposed to a larger ecosystem, adolescence and young adulthood are times to refine ethical decision making. According to Walker and Taylor (1991), the moral development of children is best predicted by a parenting style that uses supportive interactions and applies a higher level of moral reasoning. Pratt, Arnold, Pratt and Diessner (1999) assessed adolescent moral reasoning using the standard Kohlberg Moral Judgment interview. Researchers concluded that authoritative parenting was related to a greater likelihood for common views between parent and child in moral socialization. Encouraging adolescents to voice their opinions and showing respect for their views aided their ability to apply moral reasoning with greater sophistication.

Kennedy, Felner, Cauce, and Primavera (1988) examined the relationship between two aspects of social competence: moral reasoning and interpersonal cognitive problem-solving skill (ICPS) among high school students. Those adolescents who possessed a healthy self-concept tended to refer to personal history in their decision-making. This reflection, paired with growing exposure to ethical decision-making approaches, coincided with growth in moral development.

In addition, family experiences are fundamental in shaping cognitive outcomes. Adolescents' perceptions of their family climate also shape personal incentives, such as academic motivation (Urdan, Solek & Schoenfelder, 2007). Indeed, both family obligation and critical incidents can influence motivation.

Moral judgment is influenced by family, particularly parents, at a microsystem level. Ethical development at a macrosystem level can result from curriculum that includes character education, beginning in junior high; but the advancement of moral thinking can be explained by the neo-Kohlbergian model (Thoma, 2014). At the university level, the microsystem and macrosystem converge, resulting in the four components of the model: moral sensitivity, judgement, and motivation, as well as a method for constructing an appropriate action. Thus, Speicher (1994) found that sons and daughters who graduated from college achieved a higher moral stage in comparison to their parents.

As reasoning advances from conforming to societal norms to individual application of principles, moral development is positively correlated with the college experience (Pascarella, 1997). Advanced moral development, through exposure to ethics course content and ethics dialogue, encourages reasoning that applies learned moral principles. Pearson and Bruess (2001) identified factors that college students perceive as important to their identity and moral development. Students noted relationships with family, peers and mentors most frequently. Personal values also had a significant influence on their development. Such findings demonstrate the influence of family on moral growth.

Practical application, grounded in a core of fundamental values, is the objective of most ethics curricula. Klugman and Stump (2006) acknowledged that teaching goals should challenge students to identify core values and beliefs as well as improve students' ability to think critically, reason coherently, and articulate their stances. While pre- and post-tests conducted in a freshman ethics course found few significant modifications in students' stated values and beliefs, students did surprisingly well at articulating their reasoning in response to posed dilemmas. Shurden, Santandreu, and Shurden (2010) found that college seniors were even better able than they had been as freshmen to analyze their thought processes in response to ethical dilemmas and succeeded in transferring that analysis to practical applications in their field. Similarly, in their analysis of potential change in the moral reasoning of dietetic interns after a week of ethics training, Nortje' and Esterhuyse (2015) found interns used more detail in their decision-making and moved from rule-oriented analysis to incorporation of universal principles.

Empirical evidence shows students benefit from and appreciate ethics education (Lau, Caracciolo, Roddenberry & Scroggins, 2011). Kohlberg and Hersh (1977) emphasized the importance of teacher-guided discussions in the classroom as a means of critically reasoning through a conflict while recognizing and addressing inconsistencies. Graduates must be prepared to address ethical conflicts because a young professional's poor decisions or behaviors could do considerable harm to the interests of key stakeholders.

A FCS department that offers a course in which ethics is a dominant theme sends a powerful message about the importance of grounded reasoning. The focus of such training should be on both the process of moral decision-making, as well as ethical sensitivity. This compels students to give greater thought to what they value and believe, what those with other perspectives and experiences value and believe, and how the two compare (Farnsworth & Kleiner, 2003). Dahm (2015) considered the impact of ethics training in a senior-level FCS capstone course. The instructional design and content, based on Kayes' (2002) ethics instruction approach, emphasized application of normative models of decision-making in applied settings

and "led to positive changes in student views, including increased appreciation for diverse opinions, openness to considering and integrating alternative positions in the reasoning process, and a more invested sense of professional and social responsibility" (p. 27). A course that improves students' capacity to reason coherently prepares young professionals to successfully address a variety of situations where the decision-maker's ethics are critical to preserving or elevating the well-being of others. The results bear pedagogical implications for courses that focus on ethical decision-making while also building on our understanding of how family experiences constitute fundamental reference points that influence young professionals' reasoning and ethical choices.

The literature has primarily focused on the effect of ethical training in university settings on decision-making in business, health sciences and legal field settings (Allen, Bacdayan, Kowalski & Roy, 2005; Baykara, Demir & Yaman , 2015; Etzioni, 2002, Kayes, 2002; McCabe, Dukerich, & Dutton, 1991). Bommer, Gratto, Gravander and Tuttle (1987) proposed a conceptual model of decision-making within organizations. In addition to consideration of the aforementioned environments, the personal environment, including the family, was acknowledged. Individual attributes, including life experiences, were also recognized. Thus, individual and family influences play an integral role in the decision process within professional settings.

If purposeful moral deliberation is determined to be essential to the practice of FCS (Roubanis et al., 2006) and, if FCS professionals advocate the integration of an ethics component into the required curriculum, then it is important to identify what other factors influence students' analytic processes. There must be an accounting for the role of the family in shaping a young person's morality and, ultimately, his/her rationale for resolving situations of an ethical nature. In this study, researchers sought to achieve that by asking FCS students who were taking part in a capstone course on ethics to resolve a family-based ethical dilemma, while articulating the influence of their own family experience on their final decision.

Method

In the current study, researchers collected data from students enrolled in a senior-level capstone course where enhancement of ethical decision-making was a fundamental objective. At the beginning and the end of the course, in a private student-instructor electronic journal, students responded to a professional dilemma concerning an adoptive family (See Appendix). Using a qualitative design, researchers examined the responses for both time periods to discover the degree to which students incorporated their own family experiences into formulating a resolution to the dilemma, and to evaluate how that reasoning changed over the semester (Time 1 = beginning, Time 2 = end) based on exposure to course content.

In qualitative research, immersion in the data in order to distinguish emergent themes is key (Rosenblatt & Fischer, 1993). In the current study, analysis using NVivo® software allowed researchers to review the responses and assign each detected idea or thought to a thematic node. For example, a student wrote that she believed non-violent children deserve protection from violent children at all costs. This comment was coded under a node titled *Safety*. On occasion, a given splice of text was assigned to multiple nodes when it reflected more than one theme. Excel® software was also used to build an "at-a-glance" reference table so that each student's responses could be charted.

The credibility of a qualitative study is promoted through several activities, including prolonged engagement, triangulation, peer debriefing, and member checking (Lincoln & Guba,

1985). Each of these occurred in conducting the current study. Prolonged engagement is the "investment of sufficient time" (p. 301) to achieve the study's purposes. Because researchers collected data on eight different occasions over the course of a two-year period, we maintain that threshold was met. Researchers achieved triangulation of sources using in-class discussion of the students' journal entries. Peer debriefing refers to "a process of exposing oneself to a disinterested peer…for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer's mind" (p. 308). Debriefing meetings were held by the research team throughout the analysis process, particularly by one member of the team who mostly led the analysis process meeting with the member of the team who led the data collection process. Finally, member checking occurred via two of the three graduate research assistants who both worked on the study and were, themselves, former participants in the course. As such, they were able to affirm that the responses were "recognizable…as adequate representations of their own (and multiple) realities" and had the "opportunity to react to them" (p. 314).

Results

Sample

Of the 112 students enrolled in the course, 85 students (75%) participated, i.e. provided responses at both the beginning and the end of the course. The data were collected across four separate semesters over a two-year period. Females constituted the majority (97.6%) of respondents. Racially, Caucasians composed about half (49.9%) of the sample, with African Americans making up 36.5% of the group, and Latinos representing 9.4%. The sample included a relatively small number of Asian Americans (2.3%). The remainder consisted of students who did not declare any particular race.

Students' Time 1 Responses

Influence of the Family. In Time 1, students incorporated family influences into their reasoning in 88.2% (n=75) of their responses. Students quantitatively rated (0 to 10) the level of family influence on their reasoning and solutions. The mean for Time 1 was 7.2.

Students' Decisions. Of the 88% (n=75) who indicated a clear choice in the dilemma during Time 1, approximately half (n=38) supported removal of the adopted 8-year-old child Tiffany, while the others (n=37) chose for Tiffany to remain with the family. During Time 1, 12% (n=11) did not offer a clear choice.

Primary Themes Embedded in Rationale. Table 1 conveys the frequencies of the three major themes found in students' responses. Within a given theme, students may have discussed the theme in either a positive light (e.g. caring) or a negative light (e.g. neglect).

The qualitative analysis of student responses revealed three primary themes in students' Time 1 rationale: compassion/caring 23%, (n=17), commitment/endurance 19%, (n=14), and protection/safety 16% (n=12). Assertions students made within the compassion/caring theme typically centered on the principle that those in a decision-making position ought to take a sympathetic view toward the difficulty being experienced by others. Conversely, some students recalled a lack of compassion from their past family experiences. Within the commitment/endurance theme, students routinely stressed the importance of not giving up on family relationships, and the rewards that often await those who weather dark times. Alternatively, they also commented on the damage done when family commitments were not honored. Finally, students who spoke about protection/safety affirmed the pragmatic need to ensure that no person's health be threatened by the circumstance. Included in that, some students

Table 1
Themes by Time 1 and Time 2 Occurrence

Theme	Time 1	Time 2	Total
Compassion/Caring	12	20	32
Opposite, including Neglect	5	2	7
Total	17	22	**39**
Commitment/Endurance	11	11	22
Opposite, including Divorce	3	2	5
Total	14	13	**27**
Protection/Safety	8	9	17
Opposite, including Violence	4	3	7
Total	12	12	**24**
Other Themes	38	32	**70**
No Theme Indicated	10	13	**23**
N	**91**	**92**	**183**

** Note: First row of data for each theme reflects positive affect related to family experiences, while second row indicates negative affect for the same theme.*

recalled incidents of family violence that had affected their lives.

Seven other themes came to light to a lesser degree. These included: responsibility/obligation, family communication, stability, equality/fairness, miscellaneous family beliefs (most often related to Christian scripture), a belief that professional help is valuable, and a belief in utilitarianism—i.e., that decisions are best made considering what is likely to offer the greatest benefit to the greatest number of people. Notably, these lesser themes represented 44% of the responses submitted.

Students' Time 2 Responses and Changes Observed

Influence of the Family. In Time 2, students' responses incorporated family influences into their reasoning in 83.5% (n=71) of the responses. Students were asked to quantitively rate (0 to 10) the level of family influence on their solutions. The mean for Time 2 was 7.2, exactly equal to that of Time 1. In other words, there was no perceived change in family influence in the aggregate when students evaluated this dilemma at the end of the course. However, when responses from those students who supported Tiffany's removal on both occasions (Time 1 and Time 2) were examined, the level of family influence increased by 20%. By comparison, a review of all other student responses (i.e. those who supported removal only once or who never supported removal) revealed a marked decrease (57%) in reference to family influence.

Students' Decisions. Of those who indicated a clear choice during Time 2, 55% (n=47) believed Tiffany should remain with the adoptive parents, an increase of 6% (n=37). Conversely, 45% (n=38) supported removal, a decrease of 6% (n=38). During Time 2, 7% (n=6) did not offer a clear choice - a decrease from Time 1 (12%, n=10).

Of all 85 students, 69% (n=59) maintained their Time 1 decision through Time 2, while 14% (n=12) reversed their original decision in Time 2. The remaining 16% (n=14) did not offer a concrete decision in either Time 1 or in Time 2. Two-thirds of those who changed their minds (8 of 12) shifted from removal of the child to keeping Tiffany in the adoptive parents' home. Within that group, it is notable that 75% (6 of 8) said they had changed their minds because they

placed a higher priority on the biological children's welfare rather than that of the adopted child.

With some degree of consistency—38% (n=32) in Time 1 and 40% (n=34) in Time 2—students proposed that therapeutic intervention could be useful in resolving the adopted child's violent behaviors. It was the opinion of 18% (n=15) that counseling not only could be useful, but that it should be given a chance to work before reaching any final determination of the adopted child's removal from or remaining with her adoptive family.

For those students who supported removal of the child, this choice was often associated with placing greatest priority on the biological children's safety. Among those who consistently (both Time 1 and Time 2) prescribed that Tiffany should remain with her adoptive family, 97% (n=32) indicated that their highest priority was the adopted child's welfare. However, there was less uniformity among those who consistently prescribed the child's removal; that is, 41% (n=13) identified the safety of the biological children as their priority, 18% (n=6) identified Tiffany's welfare as their priority, 15% (n=5) indicated that both choices were equivalent priorities, while 3% (n=1) indicated the agency's concerns should be given highest priority.

Positive versus Negative Family Experiences

Our analysis also examined whether there were differences between those who cited positive family experiences within their rationale and those who cited negative ones. For example, some students used positive terms to describe family experiences in which their own parents had taken the responsibility to raise children outside of their immediate family, while others offered general admiration for a relative's work ethic or warm memories of how the family made holidays special. Others invoked negative situations, characterized by disappointment, regret or antagonism, such as dealing with neglectful or abusive parenting behaviors. Of 85 students, 60% (n=51) indicated positive family experiences in both Time 1 and Time 2 as a basis for their decision.

We explored whether there was a relationship between those positive experiences and the decision students made. We found that of those 51 students, 43% (n=22) consistently chose for Tiffany to remain with her adoptive parents; 24% (n=12) consistently chose for Tiffany to be removed from the home; 8% (n=4) initially determined to remove Tiffany, but later decided for her to remain; and, 4% (n=2) initially determined for Tiffany to remain, but later decided to remove her. The remaining 22% (n=11), either at Time 1 or Time 2, were not clear about their decision.

A smaller group, 14% (n=12), consistently indicated negative family experiences as a basis for their conclusion. Within that group, 33% (n=4) consistently chose for Tiffany to be removed from the home; 17% (n=2) consistently chose for Tiffany to remain with her adoptive parents; and, 25% (n=3) initially determined to remove Tiffany, but later decided for her to remain. No student advocated in Time 1 that Tiffany remain, and then in Time 2, changed position to favor removal. The remaining 25% (n=3) did not specify a decision either at Time 1 or at Time 2. What is notable here is the seemingly moderating effect that occurred between Time 1 and Time 2—that is, only 2 of the 12 determined in Time 1 for Tiffany to remain with her adoptive parents, but 6 of the 12 had made that determination in Time 2; adding to that, only 3 of the 12 prescribed therapy in Time 1, but that grew to 8 of the 12 for Time 2.

Primary Themes Embedded in Rationale. As indicated in Table 1, qualitative analysis revealed that, of those students who responded with content suggestive of one or more themes (72 of 85) in Time 2, the same three prominent themes were affirmed on 79 occasions:

compassion/caring (28%, n=22 responses), commitment/endurance (16%, n=13 responses), and protection/safety (15%, n=12 responses). Once again, multiple themes were sometimes found in a given student's response. The seven secondary themes also arose in the Time 2 content analysis. References to those themes occurred in 30% (n=24) of the responses. Of the three themes, compassion and caring was the only theme that exhibited a marked increase in occurrence from Time 1 to Time 2 (23% to 28%).

Discussion

Influence of the Family

Study findings support that students were aware of the degree to which their own family life influenced their attitudes and beliefs in resolving an ethical dilemma. That is, they tended to recognize how certain principles had been instilled in them and how certain experiences had affected their perspective. Responses revealed a substantial (7.2 out of 10) amount of family influence on student reasoning in both Time 1 and Time 2. Such findings affirm the resilience of the social learning process.

Analysis indicated that most students drew upon positive experiences both times they were queried, whereas a minority drew upon negative experiences on both occasions. Importantly, differences appeared in the ultimate choice of those two groups as to how the dilemma ought to be resolved. That is, almost half of those drawing upon positive experiences took an optimistic approach, deciding that the child should continue to live with her adoptive parents, whereas those drawing upon negative experiences were more inclined toward caution, seeking her removal from the adoptive family over working with the parents for her to remain in their home.

Thematic Discussion

Compassion and caring. The most common associations that students made between their family experiences and their dilemma decisions centered on the theme of compassion and caring. Reference to this theme increased notably from Time 1 to Time 2. Further, compassion and caring were most commonly referenced in a positive light, though some respondents drew upon some form of neglect or emotional abuse. Recounting a positive experience, one student said that she "felt enough love from my own family to know the effects a situation like this can have on a child." Then, that same student elaborated on that sentiment in Time 2 when she gave a more detailed explanation:

> From my own personal family life, I've always been in an environment where love is a factor. Love, patience and discipline has allowed for all of us to grow into successful people. My older brother and sister came from an extremely impoverished home into my home where my mother raised them with these three factors. While it was hard for her taking in these kindergarten aged children who had to grow up a little to survive, she was able to do it. I've seen first-hand her influence on my siblings.

There also were occasions when students drew upon experiences where they felt rejection and, in some instances, had experienced a form of neglect or emotional abuse. One student recalled:

> When I was younger my dad married a woman named Lisa and at first she loved me like one of her own children, but then she turned into what I can best describe as the evil step

> mother from Cinderella. Her children, in her eyes, could do no wrong, even though they were the ones causing any trouble going on in the house. I'm not saying I was an angel, but because of my up-bringing and my father, I knew better. But I would still be more disciplined than her children when really I wasn't to blame for anything. And staying in a home where someone isn't willing to make a change is only going to be detrimental to a child, especially one as young as Tiffany in the scenario. The only true way to get out and move on from an issue such as that is to get out of it completely and put distance between what's happening. To me, it's an overall better solution for everyone simply because I wasn't happy when I was living in a home where I didn't feel welcomed.

Given that our sample consisted of students who have chosen to pursue majors in fields where workers with considerable emotional intelligence and advanced interpersonal skills are in demand, it is no surprise that compassion and caring emerged as the most prominent theme.

Commitment and endurance. Commitment and endurance among the families constituted the second most common theme in the content analysis. Most students indicated positive family experiences associated with this theme. In a response that is typical of this theme, a student said,

> This scenario reminds me of my sister. She suffers from depression and is a compulsive liar. She has caused problems at home before as well, which I would rather not say but are relevant to the scenario. Even though my sister has her problems, we don't give up on her. The family got her help and she is doing better. The main point is that we did not lose faith in her when we found out what was wrong.

Another student wrote,

> About a year ago, my mom and step-father got a divorce…I no longer had a home to go back to in Houston…My dad begs to come back into our life, but I am glad that my mom will not allow him to. Even though he is a good man, he let drugs take over, and he would threaten my mom and I was scared for her.

Clearly, students identified strongly with those in their families who demonstrated resolve, felt admiration for those who demonstrated the virtues of commitment and endurance, and were compelled to incorporate that into their rationale for their final decisions.

Protection and safety. The third most common theme arising from the dilemma analysis evoked students' experience of feeling safe and protected in their families, or alternatively, feeling vulnerable and threatened, possibly abused. Most students recalled positive experiences associated with this theme; but one-third of the students recalled something negative. Reflective of one who perceived the benefit of her mother's protective instincts, one student said:

> I came to my decision because I was raised to do whatever is possible to keep my family out of harm's way…. I watched my parents treat each of us differently because they wanted the best for each of us, yet if it ever came to one of us harming the other I do feel they would have protected the other two children first before anything else was done. Yet

> that doesn't say they wouldn't do anything in their power to help the one causing the harm. This is a difficult question because I have always wanted to adopt and I never thought about being faced with this scenario.

Another student conveyed how her mother's abusive behaviors allowed her to empathize with the adopted child in the scenario.

> I came to my conclusion because my mom was addicted to alcohol and I had a similar childhood to Tiffany. Having support from my family and friends is what kept me sane. I experienced the same kind of abuse and neglect and had I been an [sic] considered an issue, which to my step mom I was, I probably would have felt threatened as Tiffany probably did in her situation. Why else would she be aggressive and threatened towards the family. Being that she is so young she is still highly impressionable there is a glimpse of hope for her to get help. Counseling is the family's best option to get Tiffany help. And their support too is crucial.

Protection and safety represent the most pragmatic of the three major themes and, accordingly, many students were inclined to consider those in their rationale.

Secondary themes. In the secondary themes, students sometimes launched into memories of how they were taught to think and behave, typically by a parent, and sometimes directly referencing Christian teachings. One student recalled, "My parents are both big believers in the necessity to compromise, so I think that though Tiffany does not seem to be fitting in well with Ron and Katie's family, we could sit down and see if a compromise was possible."

To a slightly lesser degree, students spoke of the importance of living up to responsibilities in deference to societal or family expectations: "First, I believe that my ultimate job is to take care of Tiffany. She is the client I was charged with, and her well-being is my responsibility."

Equally, they referenced the need for optimal family communication. For instance, a student reflected on her own communication with her partner, stating "I feel like if I actually take the time to find out what is wrong and ways that I can help him, instead of just giving my opinion, he would be better off." Other themes included stability, equality, the benefits of gaining professional help, and esteem for utilitarianism.

Drawing Upon Approaches as Pedagogical Underpinning

Of specific interest to this study was the degree to which the course content may have provided students with an improved capacity to reason and/or to convey their reasoning—and in so doing, incorporate some prominent theories of social science as well as concepts presented in the course. Content analysis of student responses across Time 2 revealed that students often articulated their reasoning using key language phrases emphasized in the course. For example, utilitarianism was explicated using the phrase "the greatest good for the greatest number of people." Meanwhile the Kantian Imperative relied upon a "rules-based approach." And, finally, virtue ethics was taught using the Golden Rule, i.e. "Do unto others as you would have them do unto you." The increased use of these key words and phrases in Time 2 responses provided evidence that students had integrated course concepts into their reasoning process.

The study affirmed the salience of social learning theory in that students recalled

experiences that shaped their perspectives and guiding principles. Many of those experiences were examples of reinforcement, some in which the student him or herself was a primary participant, others in which the student became affected as a matter of vicarious reinforcement. "a person's behavior can act on the environment, as well as the other way around" (Crosbie-Burnett & Lewis, 1993, p. 537). The specific effects of one's microsystem (i.e., which generally includes family members and the home) and ecological theory were especially validated when students provided evidence that their interactions with family had had influence upon their reasoning. Moreover, students indicated that they had influenced other family members, supporting the reciprocity element that is a central tenet of ecological theory. Finally, systems theory was evoked in how students explained roles and rules, both implicit and explicit, that exist or existed in their family, and how their families sought—some successfully, others unsuccessfully—to maintain homeostasis.

The major premise that microsystemic influences from family life affect the mental anchors used in ethical reasoning was supported. In support of White's (1996) conclusion that moral perspectives and value development are greatly influenced by the family beginning in childhood, respondents frequently noted family influence in their analyses. From systems theory, feedback control was evident between the family and external social influences.

In all of this, the magnitude of the influence and relevance of family experiences for both reasoning and decision-making in the professional context was unmistakable. Accordingly, this finding gives merit to the importance in any family sciences course content of including activities that help students process their own experiences in light of ethical principles.

Limitations and Future Research

In this study, paired responses were evaluated to determine students' reasoning about an ethical dilemma based on their exposure to a course centered on ethics and ethical decision-making. Yet, there is always a concern for attributing changes to a particular variable in a non-controlled environment. In other words, student responses may have been influenced by factors that occurred outside the classroom. Although the influence of family upon the dilemma solution seemed strong (7.2 out of 10), self-report was the sole source of this metric. Self-report responses should be interpreted with caution. Further, the conclusions of this study were based on 85 paired responses from students who attend one public southern university. Generalization of the conclusions to all senior FCS students should be limited. A future similarly designed study might compare the responses of students by geographical area. And, of course, findings might vary based on the pedagogical approach to exposing students to ethics-based curriculum.

While we used a structured analytical approach (following Lincoln & Guba, 1985) to categorize and interpret data and improve the credibility of the findings, all qualitative data are subject to variability of interpretation. Future research might test the resilience of the themes isolated in this study with respect to types of familial influence on the rationale underlying a difficult decision. Further, it might be interesting to determine how different dilemmas influence the distribution of data into the various theme categories, or whether demographic differences (ex. age, gender, ethnicity) influence the data distribution. For instance, this study examined the responses of college seniors. What might the responses of middle school students or young adult professionals be? Both cognitive and moral reasoning – as well as life experience - change occur over time; therefore, age may play an important mediating role in determining the influence of family in decisions.

Further study is warranted of the finding that family influence was more relevant to the

final decisions of those students who chose consistently (both Time 1 and Time 2) to remove the child. Perhaps an inquiry that specifically examines those students' responses considering the "good boy good girl" orientation (i.e., due to that stage's inherent referencing of family and friends for approval) associated with Kohlberg's moral reasoning theory would be valuable.

In the current study, most students held the same conclusion from Time 1 to Time 2. A longitudinal study might consider whether students hold the same conclusion to an ethical dilemma over time. It would be valuable then, to compare that finding across disciplines.

The focus of much ethics-based curriculum is to facilitate the translation of conceptual moral approaches into practical applications in the professional environment. The process of purposeful moral deliberation toward sound solutions should be strengthened and reified as FCS students address dilemmas in the field. Of interest would be a longitudinal study that examines both the kinds of dilemmas encountered by student graduates and the critical reasoning used to resolve them. This study revealed that family values and belief systems learned at an early age are fundamental to the individual's moral reasoning process as he/she progresses through life. Senior FCS students reported the influence of family values played an important role in interpreting and resolving the presented dilemma, reflecting application of societal emotional process noted in systems theory. As students move into their professions of choice, how might the role of family continue to underpin dilemma solutions? How does post-graduate personal and professional experience reinforce the identified family influences in both positive and negative ways? Do the three primary themes identified in this study remain in evidence, or do others emerge? And what would we find if we were to compare the dilemma solutions and reasoning of experienced FCS professionals to that of FCS seniors?

Conclusions and Implications

This study examined family influences and changes in reasoning processes among senior FCS students. We found evidence that ethics course content affected how students articulated their responses. Indeed, the authors are persuaded that exposure to the leading principles ought to occur early in students' academic careers, allowing them greater capacity to achieve and deepen that processing as they progress through their programs. If we accept that our goal is greater coherence and stronger depth of thought to help students deal with a variety of professional situations, then FCS curriculum should provide a greater opportunity for students to have their beliefs, assumptions and conclusions assessed by faculty. Thus, a major recommendation of this paper is that programs insert a unit within their "front door" course that seeks to familiarize students with ethical principles, and then to insert within succeeding courses specific activities that compel students to reflect on their own family experiences and to reach reasoned conclusions.

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Appendix

The Dilemma

You work for the government agency that helps to place children for adoption whose parents have had their parental rights terminated because of the parents' gross neglect or abuse or because of some criminal activity. About a year ago, you helped place an 8 year-old girl named Tiffany with what appeared to be an excellent home: both Ron and Katie (the father and mother) had good jobs, yet flexible enough to devote ample time to the child's needs, and furthermore, several references testified to the fact that Ron and Katie had been wonderful and loving parents to their two biological children. Recently, however, you were surprised when the couple asked you for assistance with revoking the adoption. They explained to you that Tiffany—who you knew had experienced a number

of incidents of neglect and abuse associated with her parents' substance abuse—was too much for them to handle. Ron and Katie explained that since bringing her home, the child had been prone to violence, threatening on more than one occasion to use a knife to murder either one of them or one of her siblings. Ron and Katie had taken her for psychiatric evaluation, and received a very grim picture prognosis of what the next several years were likely to hold for their family if Tiffany remained in the home.

Question #1:
Imagine that you are the person whose opinion matters most regarding how things turn out for this child and for the family. Think about how you will proceed, and consider what priority should prevail in this case. In the space below, specify what you believe your highest priority should be from among these choices:

a) Eight year-old Tiffany's well-being and future development;
b) The well-being of Ron, Katie and their biological children;
c) Your agency, which has never allowed parents to return a child who exhibits psychological or behavioral problems, and has to be cognizant of how this situation will set a future precedent for other families; or,
d) Some other priority that you perceive should be of highest importance above any of those

Question #2:
On a scale of 0 to 10, with zero being "absolutely none whatsoever," and ten being "completely one-hundred percent," rate the degree to which you believe you arrived at your decision in this scenario as a direct result of the influences of routine interactions and specific experiences over your lifetime with those you regard as your family.

Question #3:
Feel free to approach the following question in whatever way you believe is most accurate—that is, you may be inclined to think about general qualities, conditions or expectations that characterized your life in your family, and thus, had influence on you; or, you may consider one or more external events that in some way impacted the family's stability, whether temporarily or permanently; or, perhaps the influence is mostly attributable to the words, actions or experiences of a particular relative or relatives. The question is this: In a brief paragraph, describe the influences from your own family life that are most relevant to how you determined the position you would take to resolve the scenario above.

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Student Understanding and Utilization of Developmentally Appropriate Practice

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Early childhood educators need to understand developmentally appropriate practice (DAP) to be effective. This study was designed to address teachers' perceptions related to the delivery of instruction related to DAP as well as student understanding of this practice. Teachers' perceptions were compared with students' proficiency scores from the Career and Technical Education Early Childhood I North Carolina State Assessment. Early Childhood I is a workforce development course that focuses on teaching practices. It is one of two courses offering high school students the opportunity to earn the Early Childhood Education Credential Equivalency, enabling completers to serve as lead teachers in child care settings in North Carolina.

Developmentally appropriate practice, or DAP, is a teaching method based on research about early childhood development and early education. DAP focuses on holistic education that provides academic rigor to lay the foundation for future education (Pierce Brown, Smith, Mowry, 2015). A child's development is influenced by experience and biological maturation as well as cultural and social context (Copple & Bredekamp, 2009). Teachers need to understand DAP to meet student's diverse needs.

This study was designed to address teacher's perceptions of student understanding of DAP in comparison with student proficiency scores on the North Carolina Career and Technical Education *Early Childhood I State Assessment*. *Early Childhood Education I* is a high school family and consumer sciences (FCS) course on the human development pathway. This study aimed to answer the following research questions:

1. To what extent do teachers feel that their students understand the concept of DAP?
2. To what extent do high school students demonstrate understanding of the components of DAP on the final assessment?
3. What methods are useful in helping students understand and utilize DAP?

Review of Literature

Developmentally Appropriate Practice

A position paper was adopted by the National Association for the Education of Young Children (NAEYC) in 2009 related to DAP with the goal of "promot[ing] excellence in early childhood education by providing a framework for best practice." NAEYC's paper noted the importance of quality early childhood education (ECE), specifically connecting it with students' future achievement in the areas of literacy, mathematical, and social-emotional development (NAEYC, 2009).

While the importance of early education is understood, best practices are difficult to understand and utilize. Kim and Han, (2015) found that while most teachers can identify DAP for children, external pressure can cause practitioners to revert to worksheets and teacher directed practices. To utilize DAP, teachers must consider age, culture, and personal knowledge (NAEYC, 2009).

Some arguments against DAP are based on inconclusive research and arguments related to a lack of cultural consciousness. Van Horn and Ramsey (2003) found there was no evidence of educational impact for students taught using DAP. In a later study, they also found that DAP did not result in better outcomes based on parent rating scales (Van Horn, Karlin, & Ramsey, 2015). Brown and Yan (2015) conducted a qualitative metasynthesis of data from international sources and found discrepancies between DAP, cultural beliefs, and practices. Some critics indicate that DAP may not adequately consider concessions for cultural backgrounds (Brown & Yan, 2015).

However, a study by Hegde and Cassidy (2009) found that DAP is often reinterpreted based on the cultural context. In this study, Hegde and Cassidy interviewed early education teachers in India on cultural impact, class size, and teaching methods and found that understanding and utilization of DAP differs: This was also a finding in Kim and Han's (2015) study in the United States. Therefore, some obstacles related to DAP were associated with the practitioner's education and understanding rather than culture.

It is imperative that teachers are taught to recognize, teach, and evaluate their classroom DAP. Staff education promotes program quality. Nelson (2005) evaluated Kamehameha preschool programs in Hawaii and found that teacher education and professional development had major impacts on the success of the programs. Based on this research, the recommendation was made that staff educational requirements across the state be increased. While higher educator education is important, other researchers found that this is not the sole factor influencing teacher practices (Jisu & Neuharth 2010). Jisu and Neuharth (2010) compared lead and assistant teachers' beliefs and practices and found that both categories of teachers could identify DAP and teachers' assistants could be trained for implementation.

Teachers' Belief and Practice

Some studies note differences in teacher belief and practice (Hedge & Cassidy, 2009; Kim & Han, 2015). Kim and Han (2015) compared preservice and in-service teachers and found that preservice teachers' beliefs were influenced by cultural beliefs and real-world feasibility in their classrooms. To build on the connection between teachers' beliefs and praactices, teacher support and professional development related to DAP were recommended by these authors to make connections in additional areas:

> When a teacher holds stronger beliefs about appropriate social activities, individualization, and literacy activities, they believed the social competence instructional strategies are more acceptable and feasible. They also believed that they utilized more instructional strategies when compared to those who possessed weaker beliefs about developmentally appropriate practice (p. 492).

Early Childhood Education I

Early Childhood Education I is not designed like a traditional high school course. The first difference is that this course is offered for two credits, where most high school courses are offered for one credit. It also includes an internship that places high school interns at sites working with children from birth through age twelve. The internship comprises fifty percent of the total course time.

This course may be offered in one semester, or it may be taught throughout the year. It also may be offered as an honors course. For a CTE course to be an honors credit instead of standard credit, a teacher must write a curriculum addendum that reflects increased rigor for 25 percent of course weight. The teacher must then seek approval from their local education agency (LEA) and gather data from this elevated portion of their curriculum. Although labor-intensive, when a CTE course is weighted as an honors credit, students who seek to increase or maintain their grade point average are more likely to take it. While some high-level students will take standard CTE courses that interest them regardless of the credit, it is much harder to attract such students into *Early Childhood Education I* since it is the equivalent of two standard credits.

At least five of the ten major objectives in this course, about 68 percent of the total content weight of *Early Childhood Education I*, deal directly with teaching DAP. DAP is foundational to early childhood educational practices; therefore, it makes sense that more time would be spent on this topic. As noted by Williams, Ballard, Johnson & Hegde (2012) many students in ECE classes need participation and engagement with young children to assess their understanding of DAP. It is imperative that students are not only taught the concept, but also that they understand and can implement it in their own classrooms.

Methodology

Data were collected through a survey available through the Career and Technical Education (CTE) listserv to *Early Childhood Education I* teachers. An online Qualtrics survey was utilized to maintain anonymity, prevent errors, and encourage participation. The survey was easily accessible via a link on computer or mobile devices. Twenty-four surveys were completed and comprise the sample for this study.

The survey included questions to gain information about the teacher's experience, teacher education, and existing program structure. Each teacher was asked to rank selected *Early Childhood Education I* teaching methods by classroom utilization frequency using a 5-point Likert scale (always, most of the time, about half the time, sometimes, never). Teachers then ranked their perceived effectiveness related to offering this content in the classroom using another 5-point Likert scale (extremely effective, very effective, moderately effective, slightly effective, not effective at all). Finally, teachers rated student participation and achievement.

This study also examined proficiency scores for each objective in the final assessment data for *Early Childhood Education I* from the 2015-2016 school year for the State of North Carolina. This assessment is a 100-question multiple choice test designed to measure student understanding in course objectives. The number of questions per objective is based on the course

objective weight. For example, objective 3.01 "understand how to select and use observation methods" is four percent of the course, and, consequently, there will be approximately four questions from this objective on the exam. State scores were used to verify whether the teachers' beliefs and practices were meeting the standards in the curriculum for *Early Childhood Education I*. Since this measure is considered an unbiased assessment of student data, it provided a true picture of the understanding students possess of DAP.

Results

Demographics

Respondents were a fairly-homogenous group of women. A total of 59 percent of the participants were 51 and older. Sixty-two percent of respondents had a bachelor's degree, while the remainder possessed master's degrees. None of the teachers in the 23 to 30 age group had a master's degree. Half of responding teachers graduated from accredited teacher education programs: The remaining 50 percent received lateral entry certification, a process that allows those with career experience to teach content related to their experience and degree while seeking teaching certification. Fifty-six percent of teachers indicated that they had taught Early Childhood for most of their teaching career.

Since *Early Childhood Education I* is a two-credit course, it is set-up in different ways. The approach shared by 71 percent of respondents, is to schedule both class periods during the same semester. This schedule means that students have larger blocks of time in their internships. The other set-up, used by 5 participants, is to have the students for an entire year during one class period. This allows the students to intern throughout the entire year, but for a shorter time frame each day. Two respondents selected "other." Program structures may vary due to transportation, on-site child care, principal discretion, etc.

When questioned about course credits, most (82 percent) of teachers taught their *Early Childhood Education I* course as a standard course. Two respondents taught the course as an honors course, and two participants taught both standard and honors courses. This combination could mean that they are either teaching two separate sections or combining their honors and standard students in one class period.

North Carolina sets maximum capacities for most CTE courses. The recommended maximum number for this course is sixteen students, and 75 percent of participants had the recommended number while 25 percent had a higher number. Interestingly, seven of the 18 who had the maximum or less actually had classes of less than ten students.

While FCS teachers are certified to teach in all areas (such as foods, clothing, parenting etc.), many are content specialized. Of respondents who selected other courses they taught, 70 percent also taught *Parenting and Child Development*, a recommended but not required prerequisite for ECE. Seventy-five percent of the participants also taught *Early Childhood Education II*, a course that examines administrative issues in early education. *Early Childhood Education II* is needed to finish the pathway, but students can also enroll at a community college and use Education 119 "Introduction to ECE" to complete their high school pathway and earn their Early Childhood Credential. Fifty percent of participants taught classes other than those previously listed, with 45 percent teaching FCS courses and one teaching courses outside of FCS.

Classroom and Internship Practices

Frequency Used.

The second part of the survey asked teachers to rate the frequency at which they utilized common classroom and internship practices to teach students about DAP using a 5-point Likert scale. Responses are summarized in Table 1. Five of the ten teaching practices would have only occurred in the classroom and the other five directly related to the internship. When data are combined, 95 percent of teachers selected "interacting with children at internship" and used either "always" or "most of the time" to teach DAP. Other frequently-used practices included "observations of children at internship," "observations of internship teacher," "planning lessons for internship" and "discussing DAP with their internship teacher." For in-class activities, "discussing DAP" was most frequently used. Least-used practices, included "reading from a textbook and answering questions from the text" and "completing worksheets in the classroom."

Table 1
Teaching Practices for Developmentally Appropriate Practice

	Always		**Most of the time**		**About half of the time**		**Sometimes**		**Never**	
Methods for teaching DAP	***f***	**%**	***f***	**%**	***f***	**%**	***F***	**%**	***f***	**%**
Observations of children at internship.	14	58.33	7	29.17	1	4.17	2	8.33	0	0.0
Taking notes on DAP in the classroom from presentations	6	25.00	8	33.33	8	33.33	2	8.33	0	0.0
Completing worksheets in the classroom	4	16.67	3	12.50	4	16.67	12	50.00	1	4.17
Discussing DAP in the classroom	16	66.67	5	20.83	2	8.33	1	4.17	0	0.0
Reading a textbook and answering questions from the text	2	8.33	0	0.0	3	12.50	15	62.50	4	16.67
Watching videos about DAP	2	8.33	4	16.67	9	37.50	8	33.33	1	4.17
Planning lessons for internship	11	45.83	6	25.00	2	8.33	4	16.67	0	0.0
Interacting with children at internship	21	87.50	2	8.33	0	0.0	1	4.17	0	0.0
Discussing DAP with their internship teacher	8	33.33	7	29.17	4	16.67	4	16.67	1	4.17
Observations of internship teacher	14	58.33	6	25.00	1	4.17	3	12.50	0	0.0

Perceived Effectiveness of Methods.

Participants were also asked to rank effectiveness of the ten methods using a 5-point Likert scale. Table 2 summarizes their responses. The results of this question related to the results from the previous question. Methods used most frequently by the participants were

Table 2
Teacher Perceptions of Effectiveness of Teaching Methods for DAP

	Extremely Effective		Very Effective		Moderately Effective		Slightly Effective		Not at all Effective	
Methods for teaching DAP	***f***	**%**	***f***	**%**	***f***	**%**	***f***	**%**	***f***	**%**
Observations of children at internship.	14	58.33	7	29.17	1	4.17	2	8.33	0	0.0
Taking notes on DAP in the classroom from presentations	6	25.00	8	33.33	8	33.33	2	8.33	0	0.0
Completing worksheets in the classroom	4	16.67	3	12.50	4	16.67	12	50.00	1	4.17
Discussing DAP in the classroom	16	66.67	5	20.83	2	8.33	1	4.17	0	0.0
Reading a textbook and answering questions from the text	2	8.33	0	0.0	3	12.50	15	62.50	4	16.67
Watching videos about DAP	2	8.33	4	16.67	9	37.50	8	33.33	1	4.17
Planning lessons for internship	11	45.83	6	25.00	2	8.33	4	16.67	0	0.0
Interacting with children at internship	21	87.50	2	8.33	0	0.0	1	4.17	0	0.0
Discussing DAP with their internship teacher	8	33.33	7	29.17	4	16.67	4	16.67	1	4.17
Observations of internship teacher	14	58.33	6	25.00	1	4.17	3	12.50	0	0.0

perceived as most effective while the methods used the least were considered the least effective. The only exception was the practice of "watching videos about DAP." While only 45 percent of teachers rated this practice "extremely effective" or "very effective," only 25 percent used the practice frequently in their classrooms. This response might be explained by limited access to technology or an inability to locate quality videos.

Student Performance on State Assessment by Course Objective

While all participants responded that students received an A or B overall in their courses, it is important to consider standardized, unbiased data before making assumptions about the effectiveness of teaching practices in these courses. The ECE Blueprint and North Carolina State Assessment data for *Early Childhood Education I* from the 2015-2016 school year represents proficiency scores for DAP objectives on the state assessment.

Overall, 92 percent of the 1,654 students in North Carolina achieved proficiency status on the *Early Childhood Education I* assessment (FCS NC State Coordinator, personal communication, March 16, 2017). Of the DAP- related objectives, 7.01 "Understand techniques for communicating expectations and setting limits" was the highest correct response and 89 percent of related questions were also answered correctly. Objective 7.02 "Understand techniques for guiding behavior" was the second highest at 84 percent. The two objectives, each only answered correctly by 56 percent of students, were 3.01 "Understand how to select and use observation methods" and 5.01 "Classify developmentally appropriate activities for infants and toddlers within the domains of child development."

Teacher Perceptions of Student Understanding

Surveyed teachers were also asked questions related to their perceptions of student understanding of DAP. Most teachers indicated that their students "definitely" (54 percent) or "probably" understood DAP. Overwhelmingly, the teachers in this study believe that the content taught in this course prepares students for ECE by equipping them with an understanding of DAP. This corresponds with teachers' statement of the final grades students achieve in their courses, as well as overall student performance on the state assessment.

Discussion

Acquisition and Utilization of DAP

Utilizing DAP in early education is important for students' future achievement in school (Pierce Brown, Smith, & Mowry, 2015). This action research project involving reports from a small sample of teachers and student scores on a statewide exam provides promise for the assertion that *Early Childhood Education I* students understand and apply DAP.

Teachers involved in this study came from a variety of backgrounds, but all worked to prepare their students using similar teaching strategies and methods. Most *Early Childhood Education I* teachers who responded to the survey indicated that they use internship activities, observations, and lesson plans, with the perception that these increase understanding of DAP. These activities help foster skill-development to align beliefs about appropriate practices and actual instructional practices, which is a discrepancy cited in research (e.g. Brown & Lan, 2015; Hegde & Cassidy, 2009; Jisu & Neuharth, 2010; Kim & Han, 2015).

Survey respondents rated internship activities as more effective in teaching DAP than classroom activities. This fits with research by Williams et al. (2012) that looked directly at internship activities including lesson plans, videotaping, and personal reflections. The internship, when utilized correctly, provides interns opportunities to use learned skills.

The in-class teaching method preferred by these teachers is presentation note taking. Presentations are easy to make and are already included in the curriculum guide. Most classrooms do not have a full set of up-to-date textbooks. Additionally, while worksheets can serve as good reinforcement, it is more logical to let the internship activities serve as reinforcement.

According to Nelson (2005), staff education impacts the quality of the program. This course makes up half of high school level Early Childhood Credential Equivalency requirements, and is the only course focused on DAP. Therefore, students must be educated in DAP to prepare their own students.

Implications

This research has several implications for FCS educators. Based on survey results, teachers indicated that they understood the importance of DAP for students taking courses in ECE and indicated that teaching methods they were using were working. By utilizing a variety of methods from both the classroom and internship site, students can demonstrate proficiency in DAP on the state final assessment.

Another implication of this study is the importance of internships and work-based learning experiences in FCS education. In many FCS classes, internships and other forms of work-based study are key components in overall student understanding. ECE is no exception as its content is highly specialized for the workplace. It is, therefore, logical that students get workplace experience.

Suggestions for Further Research

Further studies could involve gathering data from students employed in early education settings and their employers regarding the adequacy of students' understanding of DAP in their work environments. Internships provide practice, but whether these practicums truly increase students' understanding beyond other educational avenues is unknown.

Another option for future research would be a closer examination of the differences in teacher experience and education. In the last few years, due to the shortage of students in teacher education programs, specifically FCS, lateral entry is becoming a popular way to find teachers to fill positions.

Conclusion

Research demonstrates the importance of education in DAP for ECE educators. Various sources cited throughout this paper highlight the importance of educating early education teachers in DAP. ECE courses appear to meet this need based on the responses from the educators involved in this study as well as results from statewide testing. The purpose of these courses is to meet a vital need in the workplace, and they are fulfilling their purpose. Utilizing the internship as an equal component in education helps to foster student understanding based on teacher perceptions of effectiveness of methods.

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Standardized vs. Student-Driven Exam Review in a High School Family and Consumer Sciences Classroom

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The purpose of this study was to investigate the effects of review formats utilized in the high school family and consumer sciences classroom to determine their influence on student performance on standardized tests. Students in two child development classes participated in the study. Students in the control class were only given sample questions from a standardized test bank when they reviewed, while students in the experimental class created their own review materials and activities in addition to their work with standardized questions. Both classes were assessed with identical multiple-choice exams, one at mid-term and the other at the end of the course. The class mean of the treatment group was higher than the class mean of the control group on both exams, although the difference was not statistically significant.

Exam reviews help students prepare for exams and result in better test scores, especially when these reviews are compared to situations where no reviews are conducted (King, 2010). Typical reviews are teacher directed with the teacher providing review outlines or study questions. If classroom time is utilized for this purpose, teachers usually go over content that might be examined and answer questions students raise. However, students often find such reviews boring and disengaging, experiencing them as additional class lectures. Additionally, only the few who are prepared for these reviews actually appear to benefit from them (King, 2010; Paul, Hollis, & Messina, 2006).

Could exam reviews be conducted differently so that students are actively involved in the process resulting in higher test scores? The purpose of this study was to investigate a standardized vs. student-driven exam review to observe the influence of each on student performance on standardized tests. It was hypothesized in this study that the student-driven exam review method would result in higher test scores than the standardized review method.

Review of Related Literature

Educators have created and experimented with new ways to implement exam reviews with the goals of both improving test scores and creating positive attitudes toward the given subject. Most of these approaches appear to be teacher-directed, with the teacher creating and directing the review.

One approach involves gamification, wherein teachers implement games such as bingo or jeopardy to review material, especially facts and definitions. Games are often used because students appear to enjoy them, and they can be readily created for any subject area (Hackathorn,

Cornell, Garczynski, Solomon, Blankmeyer, & Tennial, 2012; Kaupins, 2005; Middlecamp, 2003; Kostic, Groomes, & Yadon, 2015). In their research on the effectiveness of trivia games on exam scores, Keck (2000) and Paul et al. (2006) found that students who engaged in the trivia games achieved higher scores (Keck, 2000; Paul et al., 2006). Trivia games helped students determine how and what to study, as well as areas in which additional study was needed.

Practice tests are an additional alternative to the traditional exam review. Students particularly appear to enjoy this type of review when the review is conducted online. One benefit is that students can receive immediate feedback related to their performance. Such reviews not only check students' knowledge levels, but also provide them a preview of the format and wording of exam questions (King, 2010; Pemberton, Borrego, & Cohen, 2006; Sturm-Beiss, 2013; Teplitski, Irani, Krediet, Di Cesare, & Marvasi, 2018). It is thought that the practice of taking an exam and receiving some incorrect answers helps students to identify their weaknesses and then engage in deeper cognitive thought to improve understanding of the material.

Clickers, handheld electronic devices that enable a student to respond anonymously to a question posed by the instructor, provide a slightly different version of the practice exam review. Student responses can be displayed in real time for both the teacher and students to view. Student engagement is increased during a Clickers-based review as all students can participate. Clickers have been used in a variety of disciplines, including the sciences, business, psychology, and family and consumer sciences (FCS) (Bunce, Vanden-Plas, & Havanki, 2006; Elliott, 2003; Gentry, 2007; MacArthur & Jones, 2008; Reay, Li, & Bao, 2008; Simpson & Oliver, 2007; Sutherlin, Sutherlin, & Akpanudo, 2013; Walker, Spangler, Lloyd, Walker, Wessels, & Summerville, 2018; Willoughby & Gustafson, 2009). Since most studies have focused on the implementation of these devices, little is known about their effectiveness in improving exam scores. However, in his chemistry courses, King (2010) concluded that utilizing Clickers in exam reviews resulted in higher grades relative to other reviews.

While some educators have varied the methods by which they conduct their exam reviews, others have more actively involved the students in the exam review. Lee (2006) implemented a three-part, student-driven exam review in a college-level algebra class. The first part of this approach required students to write a review summary of each course concept deemed important by the instructor allowing students the opportunity to demonstrate their conceptual knowledge, refresh their understanding of concepts, and narrow the range of concepts to study for a test. The second component of Lee's (2006) approach required students to develop possible exam questions while working in groups. This promoted discussions in which students demonstrated their knowledge as they explained their ideas for possible questions; students also evaluated possible questions posed by their peers. The third component of Lee's (2006) approach required the students to make a group presentation of the exam questions they developed to the class. During the presentation, class members provided feedback to presenters to edit or improve their questions. This activity encouraged students to become more focused and actively involved in the review process by giving them the opportunity to listen to their classmates' reasoning skills as they demonstrated their problems. It also provided students with new ways to solve problems as they studied others' work. Lee (2006) concluded that students appeared to value and enjoy this interactive exam review.

Bhatia and Makela (2010) found that collaborative test reviews resulted in higher test scores among students in a history of textiles college course. Review questions were prepared by the instructor, and then students worked in small groups to answer the questions. Each group

was then assigned to lead a discussion on one topic from the review, thereby sharing their collective knowledge with other groups at the review. This provided students an opportunity to gain a better understanding of concepts, focus their study, and learn together.

Whether or not they lead to higher test scores, non-traditional exam reviews appear to be preferred by students (Hackathorn et al, 2012; Kaupins, 2005; King, 2010; Lee, 2006; Nwosu, Mason, Roberts, & Hugel, 2013). However, in many cases, the non-traditional exam review did appear to correspond to higher test scores for students (Bhatia & Makela, 2010; Keck, 2000; King, 2010; Paul et al., 2006).

Method

The sample for this study consisted of students in grades 9-12 who were enrolled in two parenting and child development classes at a rural high school. Students were assigned to the two classes before the study began. One class met during first period (8:00 a.m.), while the second class met during third period (11:30 a.m.). The first period class was randomly assigned as the control group. This class consisted of 21 female students: two were of Hispanic origin while 19 were Caucasian. The class included nine freshmen students, eight sophomores, three juniors, and one senior. The third period class was then assigned as the treatment group. This class consisted of 24 students: 18 females, and six males. Since four students in the treatment group were classified as ESL and did not speak English well, their results were not included in class averages, leaving an actual sample size of 20 Caucasian students, 17 females and three males. This class included five freshmen students, nine sophomores, four juniors, and two seniors.

For both the control and treatment groups, all classroom activities and instruction were identical throughout the semester. Both classes were taught by the same teacher, used the same textbooks, received the same teacher notes and hand-outs, and participated in the same learning activities.

A quasi-experimental design was used in relation to the exam reviews for the two groups. The control group engaged in traditional, standardized exam reviews. Throughout the semester, the students received practice questions from the test-item bank and were instructed to study these questions for the mid-term and final exams. Before each exam, the teacher directed an in-class review, reading out the questions for students to voluntarily answer aloud.

Like the control group, the students in the treatment group also received practice questions from the test-item bank and were instructed to study them for the mid-term and final exams. However, the in-class review was conducted in a different manner: First, students were provided a list of important course concepts (e.g., nuclear family, blended family, authoritative parenting style) and instructed to briefly summarize the meaning of each concept. After completing their summaries, the students selected their own small groups of two or three and proceeded to develop two review activities for the classroom. One activity was to create a written assessment tool that contained practice test questions in a variety of formats (true-false, multiple choice, matching, short answer, etc.). The second activity was to create an interactive classroom review which could be performed in a large group or small team format (e.g., team games such as jeopardy, active games such as indoor “baseball,” flashcards for small group, etc.). This review would promote active student participation while providing immediate feedback. The groups then led the class through their review activities, with the teacher acting as facilitator rather than director. The result was a peer-led exam review in which all students were actively involved.

For both the control and treatment groups, identical standardized exams were administered at mid-term and at the end of the semester. The mid-term exam was generated by the teacher from the course practice test bank provided by the state. The final exam was the end of course exam directed by the state instructional management system. All exam questions had been tested by the state to assure their validity and reliability. As some students were absent on those days, the final sample included the 20 students in the control group and 17 in the treatment group who completed both exams.

Results

T-tests for independent samples were conducted to determine whether the experimental group and control groups differed regarding their mid-term and final exam scores. Data analysis showed did not uncover a significant difference between the treatment and control group scores on the midterm exam (t= -.207, p=.837). There was also not a significant difference between the groups' scores on the final exam (t= -1.05, p=.300). However, as shown in Table 1, although not significant, it should be noted that the scores for the treatment group were higher on both the mid-term and final exams.

Table 1
Results of Independent T-tests on Mid-Term and Final Exam Scores

	Mid-Term Exam					Final Exam				
	N	Mean	SD	t	sig	N	Mean	SD	t	sig
Control	20	86.40	10.72			20	86.20	10.18		
				-.207	.837				-1.05	.300
Treatment	17	87.12	10.26			17	89.06	5.12		

When asked orally whether they preferred the student-driven format of review as opposed to the traditional, standardized review format, 14 of the 17 students in the treatment group indicated they did prefer the student-driven format. One student remarked, "I felt like I could understand it better because I had to teach it to someone else." Another said, "Before I could explain my activities to the group, I had to make sure I really knew the information myself." Students in the treatment group were observed as more actively involved in the review process and more motivated to participate through all phases of the review activities than the students in the control group.

Discussion and Implications

This study found that allowing students to be actively involved in creating and conducting their own exam review resulted in higher test scores than when students experienced a traditional exam review, although the differences in the test scores were not statistically significant. Engaging students in the exam review process also resulted in more positive student attitudes toward the exam. However, this finding is limited to a relatively small sample that was not randomly selected due to the restriction of school class scheduling. In addition, the time of day, with one class occurring early in the morning and the other at mid-day, may have influenced student attitudes and performance. Further research involving larger samples and a variety of FCS courses would hopefully provide additional helpful data.

The potential benefit of students' active participation in not only their exam reviews, but also their classroom learning experiences, is evident given the positive student attitudes in this study. These benefits are not limited to any subject or age group, so they could apply generally to FCS courses. Learning is enhanced in a collaborative, social, goal-oriented classroom environment. By taking an active part in learning and understanding content with their peers, students gain valuable transferable skills and may also perform better on tests.

FCS educators should use these findings to create review sessions that are both beneficial and enjoyable to students. In addition, they should feel free to experiment with different types of reviews to determine which appear to be most effective with the various classes and audiences. Perhaps combining review formats might prove effective, for example, beginning the exam review with a trivia type game and following that with a discussion of the most missed topics. Or, after each question is answered, students might provide additional information about the topic, going deeper in their reflection of that concept. This active involvement in exam reviews could reduce students' test anxiety, increase their enjoyment, and ultimately increase their knowledge of the concepts which would hopefully increase their test scores.

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