

Understanding Student Attitudes toward Majoring in Human Development and Family Science

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ABSTRACT. Most prospective students are unfamiliar with Human Development and Family Science (HDFS), which makes building program enrollment among incoming students challenging. This study used the Theory of Planned Behavior (Ajzen, 1991) to conduct a two-stage empirical analysis of attitudes associated with majoring in HDFS. HDFS students demonstrated many significantly different attitudes toward majoring in the field than did non-HDFS students. They possessed more positive attitudes toward the discipline's treatment of human sexuality, its development of interpersonal communication skills, and its potential for strengthening families. These findings may prove beneficial to HDFS departments that want to improve perceptions of the field and build enrollment. Several strategies for program development and communication enhancement are presented.

Family science is a relatively young discipline, and as such, does not possess the same recognizability that other social science programs such as psychology or sociology enjoy. Unlike majors such as chemistry, social work, and history, our own experience suggests that Human Development and Family Science (HDFS) tends to be a *discovery major*, meaning that most incoming college students are unfamiliar with the field and only learn about such programs after they have been on campus a semester or more. Furthermore, once they do hear about HDFS, it is not unusual for students and their parents to have questions about the curricular content of such programs, to wonder how the discipline of family science is distinctive from other social science fields, and to ask about the types of careers that are available to persons with an HDFS degree. This unfamiliarity with the discipline of HDFS may contribute to low numbers of first year students enrolling in HDFS programs, suggesting that those in the field have considerable work to do in terms of educating prospective students, their families, potential employers, and colleagues in other departments about HDFS.

A first step in effective education often involves identifying what learners already know, which also serves to reveal what they do *not* know. The current study sought to discover what prospective students know and do not know about HDFS by comparing their attitudes toward majoring in the field against those of students who have already chosen the discipline. As might be expected, this empirical analysis revealed many significant differences in attitudes between the two sample groups. However, the value of the research came from identifying the specific beliefs and affections responsible for the differences, which might be useful in developing HDFS

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programs and enhancing communication with prospective students. This article describes the research methodology, presents the specific attitude-related findings, and discusses a variety of potential strategies for building enrollment in HDFS. However, before doing so, we establish the study's context through a review of the literature relevant to choosing a college major.

Choosing a Major

Being that HDFS is a relatively new discipline unfamiliar to many, it is imperative to know how to best market our programs to prospective students. Several researchers have sought to identify variables associated with choice of college major. Though methods and samples vary and none of the samples included family science majors, the findings are illuminating.

When examining academic/vocational commitments, Galotti and Kozberg (1987) discovered the following four points as most significant in students' choice of a major in general: "How much I care about the subject" (79%), "Something I will do well in" (54%), "Something with good career opportunities" (46%), and "What I want to do with this major after college" (32%) (p. 322). Similarly, Malgwi, Howe, and Burnaby (2005) learned, when surveying undergraduate business school students about factors that influenced their initial choice of major, that the most influential variable overall was "interest in the subject," regardless of gender (p. 277). For females, the next most important motivator was aptitude in the subject. However, males in the study were significantly more impressed by job opportunities, career advancement potential, and the compensation a major affords.

Crampton, Walstrom, and Schambach (2006) also examined factors that influenced major selection among College of Business students. Most important factors were career-related: personal interest in subject matter; long-term salary prospects; and probability of working in the field after graduation. Following closely behind in importance were: starting salary, prestige of profession, job security of related occupations, and occupational growth forecasts/predictions. Least important items were referent sources and included: high school guidance counselor(s), university career services program(s), and university advisement center. "Family member" is the only referent item that scored above the mid-point (p. 229). Other studies confirm the centrality of parents and/or guardians in major selection process (Esters, 2007; Kaynama & Smith, 1996).

Beggs, Bantham and Taylor (2008) questioned first-year and upperclass business students to identify factors integral to their major selection process. Like much existing research, fit and interest in subject was most important for these students. Following in order of importance were: course and major attributes (e.g., program and faculty reputation, course availability, and variety); job characteristics (e.g., perceived availability of positions, flexibility of career paths); and financial considerations and job security. Information search was of minimal import, though students were impacted by people familiar to them, particularly family members and high school teachers. Rarely did students mention conducting more formal searches using the internet, job shadowing, or career planning instruments.

Wildman and Torres (2001) investigated the degree of influence on students' choice of agriculture as a major (p. 47) using five principle sources of influence: 1) exposure to agriculture, 2) family and friends, 3) college of agriculture recruitment activities, 4) professionals, and 5) job considerations. Prior experience in agriculture was most influential; a personal role model in agriculture, job considerations (i.e., working outdoors), and friendliness of a department faculty were also important considerations.

Galotti (1999) examined the decision making process involved when selecting a college major. While students deemed the selection of a major a serious decision, they restricted the

number of alternatives and criteria they considered to no more than seven, perhaps due to stress or cognitive overload. Some of the highest rated items suggest that selecting a major is “guided by values,” “intuition,” and “emphasis on future” (p. 384). Lackland and DeLisi (2001) also noted that students’ value systems were a significant predictor of major choice. For instance endorsement of humanitarian concerns was associated with the selection of a major in the helping professions while absence of such concern was associated with choosing a science major. In addition, gender role orientation was also predictive of college major, with a feminine orientation being associated with choice of a helping profession major and a masculine orientation being associated with choosing science majors.

While research exists relative to factors associated with the decision to major in gender traditional and gender nontraditional fields (Lackland & DeLisi, 2001), agriculture (Tarpley & Miller, 2004; Wildman & Torres, 2001), business (Crampton, et al., 2006), or information systems (Wong, Fiedler & Liu, 2007), nothing is available related to students’ understanding of or attitudes toward a major in HDFS. Thus, as we seek to educate others about the field and recruit students into our HDFS programs, it is imperative to explore factors associated with students’ decisions to major in HDFS.

Theory and Method

Because existing research has failed to address issues surrounding student choice of the HDFS major, there is considerable need for further study of the factors underlying students’ decisions. Over the past several decades, the Theory of Planned Behavior (TPB; Ajzen 1985, 1991) has been one of the most widely-used explanatory models for understanding individuals’ decisions to perform specific behaviors (Armitage & Conner, 2001). The TPB, which is rooted in attitude theory, has been employed in investigating hundreds of different behaviors ranging from maintaining an exercise regimen (Kerner & Grossman, 2001), to complying with speed limits (Elliott, Armitage, & Bauhan, 2003), to the decision of African American students to complete high school (Davis, Ajzen, Saunders, & Williams, 2002).

Cognitive and affective attitude theory supports that when individuals have both strong beliefs (cognitions) and positive feelings (affections) about a behavior, they foster favorable attitudes that predispose them to perform that action (Rosenberg & Hovland, 1960). For instance, if people *believe* that a certain restaurant has healthy food and they *like* to eat healthy food when dining out, there is a high probability that people will go to the restaurant. The TPB is rooted in this same principle that strong beliefs and positive feelings combine to produce an *attitude composite* that includes a consistent behavioral response. However, the TPB uses different terms; it labels the cognitive component of an individual’s attitude toward a behavior *belief strength*, and the affective component *outcome evaluation* (Ajzen, 2006). In addition, the TPB extends basic attitude theory by identifying three specific categories of cognitions/affections that together determine intentions to perform an action: 1) the individual’s own *attitude toward the behavior* (ATB); 2) the person’s perceptions of what significant others think about the behavior, i.e., *subjective norms* (SN); and 3) the individual’s belief that he/she possesses the skills and resources needed to complete the behavior, i.e., *perceived behavioral control* (PBC) (Ajzen, 1991). The TPB further suggests that a person’s intentions and perceived behavioral control will predict his/her actual behavior.

Sampling and timing constraints precluded the current study from empirically testing all of the TPB’s suggested relationships. Such partial use of the model is consistent with that of other studies that also have employed the TPB in focused ways (e.g., Celuch, Taylor, & Goodwin,

2004; Taylor & Todd, 1995). Still, the TPB provided the current study with several important guides, including ones for: eliciting salient beliefs about majoring in the discipline, assimilating the beliefs through content analysis, and translating those results into quantifiable survey items. As described above, the model also offered a framework for the three-part categorization of beliefs (ATB, SN, and PBC,) and it encouraged the integration of cognitive and affective components into composite attitude scores. Subsequent paragraphs describe each of these TPB methodologies in more detail.

This study, approved by our College's Institutional Review Board, focused specifically on the model's three initial constructs (ATB, SN, and PBC) in order to identify how these components differed between HDFS students (those with a major or minor in HDFS) and non-HDFS students (those without an HDFS major or minor). The rationale for this decision was that t-tests of the two groups' mean responses could be used to identify specific attitudes that were significantly more positive for HDFS students than for non-HDFS students. Such attitudes might signal key program characteristics that HDFS departments could enhance as well as emphasize in communication with prospective students in order to: 1) help those students who already share similar attitudes more readily self-identify and see their potential good fit in the field; 2) shape prospective students' attitudes toward HDFS by introducing accurate beliefs and encouraging more positive feelings toward the discipline, which might increase students' consideration of HDFS.

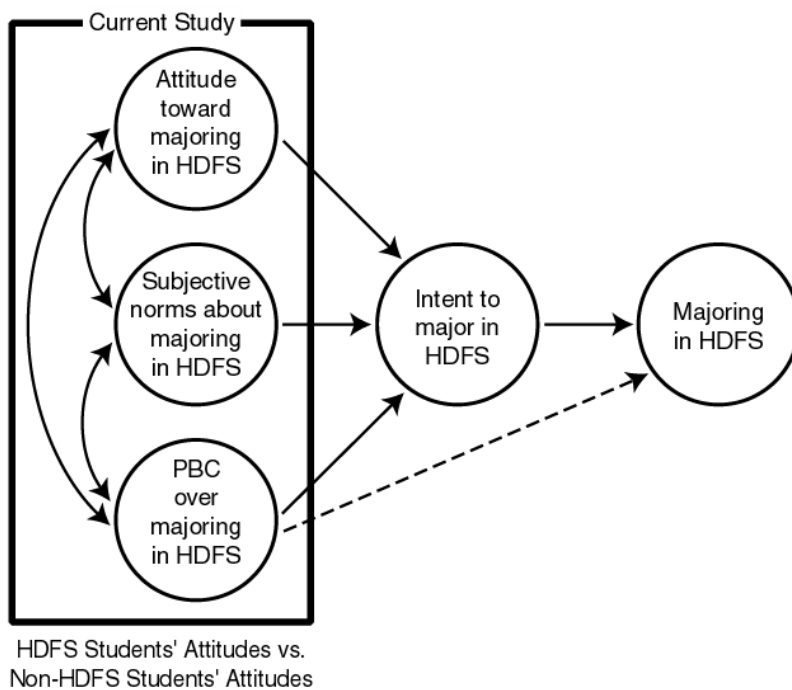


Figure 1. Application of the TPB to the current study.

Figure 1 illustrates this study's specific application of the TPB, with focus on the first three constructs, each of which involves *the act of* majoring in HDFS. The measurement of attitudes toward specific behaviors, versus objects, is an important distinctive of TPB research (Ajzen & Fishbein, 2005). For instance, individuals' general attitudes toward HDFS may be quite different than their attitudes about personally working in the field. It is easy to imagine, for example, someone saying, "HDFS seems like a great discipline, but it's not a field that I want to work in."

Again, the premise underlying the general research approach was that any significant differences that surfaced between the two sample groups might point to specific cognitions (objective beliefs) and affections (subjective feelings) that could be taken into account in enhancing HDFS programs and communicating their benefits.

Instrument Development

The current study followed a common two-phase approach for conducting TPB research (Ajzen, 2006; Kassem, Lee, Modeste, & Johnston, 2003). The first phase was exploratory in nature as it aimed to uncover all salient beliefs about majoring in HDFS. To accomplish this objective, an online belief elicitation survey was created that posed 10 open-ended questions. These questions were based on the three primary model components, for instance, "What do you believe are the advantages of majoring in HDFS?" (ATB) and "Who are the individuals or groups who would not approve of you majoring in HDFS?" (SN). A total of 34 people completed the survey: 15 HDFS students, 15 non-HDFS students, and 4 HDFS faculty. Two teams of research assistants performed independent content analyses on the belief elicitation results through a multi-step process that involved clustering together like answers, subdividing response categories into increasingly more narrow topics, and sorting responses in order of descending frequency.

The results of the content analyses became the basis for the second phase of research. The content areas that had elicited higher numbers of responses, generally ones mentioned three or more times, were translated into quantitative items for an online confirmatory survey. For example, frequent suggestion in the exploratory phase that HDFS helps to develop parenting skills led to the creation of the following cognitive and affective confirmatory survey items, respectively: "How effective do you believe the HDFS major is in developing parenting skills?" (1 = not effective; 7 = very effective) and "How important do you feel parenting skills are" (1 = not important; 7 = very important). During data analysis each cognitive item result was multiplied by its affective counterpart, which produced composite attitude measures ranging from 1 (very negative attitude) to 49 (very positive attitude). In addition, the coding of negatively framed items was reversed so that a higher composite score always represented a more positive attitude. The confirmatory survey also contained a direct measure of each of the three main constructs (ATB, SN, and PBC), as well as several demographic items (e.g., gender, major, and year). Additional demographic items were not included, partly to avoid lengthening and an instrument that already risked respondent fatigue, but also because the study identified no *a priori* hypotheses related to the possible effects of such items.

Participants

The participants for both phases of this study were drawn from a private undergraduate college of liberal arts and applied sciences located in the northeastern United States, where the HDFS Department is housed within the School of Education and Social Sciences, along with Departments of Psychology; Education; and Sociology, Social Work and Criminal Justice. For the confirmatory phase, the sample was composed entirely of undergraduate students. After incorporating changes from four students who pilot tested the survey, a link to the confirmatory instrument was emailed to 618 potential respondents: 118 HDFS students and 500 randomly selected non-HDFS students. Two email addresses proved undeliverable, which lowered the actual number of potential respondents to 616. Of these individuals, 176 started and took at least part of the survey, producing an effective response rate of 28.6%. Because of missing data, 18

surveys could not be used. The final sample, therefore, consisted of 158 respondents (56 HDFS majors/minors and 102 non-HDFS students). The non-HDFS respondents represented 43 different majors ranging from elementary education, to psychology, to business administration. Each of these non-HDFS students might be considered a “prospective” student, in that more than 60% of new HDFS students change into the program from another campus major. The sample was fairly well distributed in terms of class: 16.5% first-year students, 29.1% sophomores, 25.3% juniors, and 29.1% seniors. Gender composition was less balanced: 82.9% female and 17.1% male, though this statistic should be understood in the context of the institution's overall gender composition, which was 63% female and 37% male. Also, although the survey did not collect information on respondents' race, it can be noted that the college's overall student population (approximately 2,850 students) consisted of at least 83% White/non-Hispanic students. In addition, virtually all of the school's students were traditional age undergraduates (18-22), most coming from upper-middle and lower-upper class families.

Data Analysis and Results

In order to determine whether the survey items represented accurate measures of ATB, SN, and PBC, the researchers employed factor analysis and two different types of reliability tests for the composite variables (cognitive component times affective component), as well as for the individual cognitive and affective items. Also included in these analyses were the survey items that represented direct measures of each of the three main constructs. First, within each TPB area, principal components factor analysis was used to reveal the extent to which variables loaded on like components. These loadings, sorted in ascending order, then served as guides for conducting a series of Cronbach's Alpha and Spearman-Brown split-half reliability tests. In order to be deemed a reliable measure, a variable first needed to exhibit a factor loading greater or equal to 0.60 (Hair, Anderson, Tatham, & Black, 1998). All variables that met this criterion were then included in a scale that was tested for both types of reliability. If the Cronbach's and Spearman-Brown tests both equaled or exceeded 0.80 (Garson 2009), all scale items were retained. If not, the variable with the lowest factor loading was eliminated, and the reliability tests were repeated.

Table 1 presents the results of the factor and reliability analyses for the composite variables. In summary, of the 54 composite items, 37 variables were retained: 28 ATB and 9 SN, as well as the two direct measures of these constructs. None of the three PBC measures proved reliable. In addition, for the 54 individual cognitive items, 32 were retained: 22 ATB and all 10 SN. Also, of the 54 individual affective items, 26 were retained: 19 ATB and 7 SN. Again, no PBC measures proved reliable in either the cognitive or affective variable sets,

Table1
Factor and Reliability Analysis for Composite (Cognitive x Affective) Items

TPB	Item	Variable	Factor Loading	Reliability if Item Retained:			Item Retained
				Cronbach's Alpha	Spearman-Brown	Brown	
<i>Attitude Toward the Behavior</i>							
ATB	Mom major	MomMj-X	0.076	0.960	0.822	0.822	no
	Mrs. Degree	MrsDg-X	0.088	0.961	0.827	0.827	no
	College Professor	CollProf-X	0.326	0.962	0.842	0.842	no
	Predominantly female	PreFem-X	0.333	0.962	0.841	0.841	no
	Homemaker	HomMkr-X	0.339	0.962	0.843	0.843	no
	Policy Advocate	PolAdv-X	0.388	0.964	0.838	0.838	no
	Earn a high salary	HighSal-X	0.402	0.964	0.844	0.844	no
	Academically rigorous	AcaRig-X	0.518	0.964	0.840	0.840	no
	Family and Consumer Sciences Teacher	FCS Tea-X	0.532	0.964	0.844	0.844	no
	Social Worker	SocWrk-X	0.539	0.964	0.844	0.844	no
	Preschool Teacher	PreTea-X	0.549	0.964	0.854	0.854	no
	Activities Coordinator (e.g., retirement home)	ActCord-X	0.564	0.964	0.853	0.853	no
	Concepts from psychology	Psych-X	0.597	0.963	0.861	0.861	no
	Human development across the lifespan	HumDev-X	0.615	0.963	0.863	0.863	yes
	Sexuality Educator	SexEd-X	0.629				yes
	Caseworker	CaseWk-X	0.638				yes
	Youth Worker	YthWrk-X	0.638				yes
	Concepts from sociology	Socio-X	0.644				yes
	Counselor	Counslr-X	0.651				yes
	Interpersonal relationships	Intper-X	0.673				yes
	Human sexuality	HumSex-X	0.674				yes
	Enhance one's personal marriage and family situations	MFSit-X	0.676				yes
	Marriage and Family Therapist	MFThp-X	0.682				yes
	Parenting	Parentg-X	0.684				yes
	Family Support Worker	FamSp-X	0.690				yes
	Marital relationships	Marital-X	0.696				yes
	Teaching/educational skills	TeaSkls-X	0.699				yes
	Family functions/dynamics	FamFun-X	0.700				yes

Parenting skills	ParSkls-X	0.706	yes
Therapy skills	TherSkls-X	0.724	yes
Family strengthening	FamStr-X	0.729	yes
Qualify for many potential occupations	Occups-X	0.732	yes
Family relationships	FamRel-X	0.733	yes
HDFS is worthwhile (direct measure)	WorthWhl	0.747	--
Learn practical knowledge and skills for professional life	ProLife-X	0.748	yes
Family resource management skills	FRMSkls-X	0.749	yes
Counseling skills	CouSkls-X	0.758	yes
Marriage skills	MarSkls-X	0.766	yes
Gain a unique perspective on people and families	PeoFam-X	0.772	yes
Service skills	SerSkls-X	0.798	yes
Interpersonal communication skills	IntpCom-X	0.799	yes
Personal growth/life skills	PerGrth-X	0.814	yes

SN

Subjective Norms

Significant Other	SigOth-X	0.513	0.917	0.851	no
Important people (direct measure)	ImpPeople	0.696	0.927	0.854	yes
Professors	Profess-X	0.748			yes
Other Mentors	Mentors-X	0.790			yes
Your Pastor	Pastor-X	0.791			yes
Siblings	Siblings-X	0.798			yes
Peers	Peers-X	0.799			yes
Parents	Parents-X	0.805			yes
Extended Family	ExtFam-X	0.838			yes
Members of Your Church	Church-X	0.844			yes
Friends	Friend-X	0.852			yes

PBC

Perceived Behavioral Control

Switching from another major to HDFS would be very difficult	Switch-X	-0.364	0.325	-0.060	no
You are gifted in working with people (adults, adolescents, & kids)	Gifted-X	0.773	0.576	0.656	no
Perceived control (direct measure)	PerControl	0.789	0.167	0.611	no
You have a good understanding of what majoring in HDFS involves	UndSt-X	0.804			no

(n =158)

There are several possible explanations for the lack of valid perceived behavioral control items. One reason may have been ineffective item construction; given the ambiguity inherent in behavioral control, reliable PBC questions are particularly challenging to develop. In addition, the current study's belief elicitation phase produced only three potential control factors, which greatly limited the potential item pool. Another related reason for lack of valid PBC items could be that the decision to major in HDFS is one for which individuals believe they have complete volitional control. Such beliefs, which are common for certain behaviors, might mitigate the construct's influence, making its measurement difficult. Whatever the cause, the lack of PCB factors did not hinder the study's focused application of the TPB.

Given the research purpose and the need to determine whether the mean responses of HDFS students were significantly different than those of non-HDFS students, the main statistical analysis involved independent sample *t*-tests of the composite attitude variables. The results of this analysis, which are presented in Table 2, reveal a considerable number of statistically significant differences between the attitudes of the two sample groups. Of the 37 composite that were retained, 34 items (91.9%) revealed a statistically significant difference between the attitudes of the HDFS group and non-HDFS group ($\alpha = .05$). More specifically, 25 of 28 ATB items (89.3%) achieved significance, as did all 9 SN items (100%). Again, because no PBC items proved reliable, *t*-tests were not conducted for the PBC variables.

As mentioned above, it was to be expected that HDFS students would possess many attitudes that were significantly more positive than those of non-HDFS students. The value of the research results then instead comes from identifying those specific attitudes, so they can be used to strengthen HDFS programs and to enhance their communication with prospective students. In terms of student attitudes toward majoring in HDFS (ATB), HDFS students possessed a significantly more positive view of: the discipline's treatment of family relationships, human sexuality, and family functions/dynamics; the major's development of skills for parenting, marriage, and interpersonal communication; the field's ability to offer a unique perspective on people and families; and the discipline's potential for strengthening families. Likewise, the HDFS students held much more positive attitudes toward work in a variety of occupations including counselor, family support worker, and marriage and family therapist. In terms of subjective norms (SN), or respondents' perceptions of others' support of them majoring in HDFS, HDFS students anticipated and valued more the support of every identified group. These differences in perceived support were particularly large for parents, siblings, pastors, and other mentors.

Table 2
Independent Sample T-Tests for Composite Attitude (Cognitive x Affective) Items

TPB	Item/Part	HDFS (n = 56)		Non-HDFS (n = 102)		All (n = 158)		Sig (2- tailed)	Mean Diff	Std Err Diff	a	
ATB ^a	<i>Cognitive and affective attitude toward the HDFS major's treatment of:</i>											
	a	39.14	9.18	31.15	11.94	33.98	11.66	0.000	8.00	1.84	0.01	
	b	45.86	4.89	35.50	11.59	39.17	10.93	0.000	10.36	1.32	0.01	
	c	30.68	11.41	25.14	12.28	27.10	12.23	0.006	5.54	1.99	0.01	
	d	34.36	9.24	29.70	12.37	31.35	11.55	0.008	4.66	1.74	0.01	
	e	41.86	7.21	34.45	11.99	37.08	11.10	0.000	7.41	1.53	0.01	
	f	37.96	8.02	32.31	12.23	34.32	11.23	0.001	5.65	1.62	0.01	
	g	41.20	7.50	35.14	11.54	37.28	10.67	0.000	6.06	1.52	0.01	
	h	26.82	10.26	26.91	11.27	26.88	10.89	0.960	-0.09	1.82	--	
ATB	<i>Cognitive and affective attitude toward the HDFS major's development of the following skills:</i>											
	a	38.91	7.63	31.67	10.66	34.23	10.28	0.000	7.24	1.47	0.01	
	b	41.18	6.80	33.37	10.28	36.14	9.91	0.000	7.81	1.37	0.01	
	c	37.89	8.11	33.62	10.58	35.13	9.96	0.005	4.28	1.51	0.01	
	d	41.79	8.50	32.92	10.50	36.06	10.70	0.000	8.86	1.64	0.01	
	e	42.75	7.49	32.56	11.50	36.17	11.34	0.000	10.19	1.52	0.01	
	f	34.88	10.05	28.94	11.48	31.04	11.33	0.001	5.93	1.83	0.01	
	g	33.63	9.59	29.71	11.19	31.09	10.78	0.028	3.92	1.77	0.05	
	h	30.48	9.62	27.16	10.65	28.34	10.39	0.054	3.33	1.71	--	
	i	30.98	10.32	27.58	10.89	28.78	10.79	0.058	3.40	1.78	--	
ATB	<i>Cognitive and affective attitude toward the HDFS major's production of the following outcomes:</i>											
	a	40.91	10.12	32.66	11.83	35.58	11.90	0.000	8.25	1.87	0.01	
	b	42.66	7.20	31.74	12.05	35.61	11.79	0.000	10.93	1.53	0.01	
	c	41.63	9.18	32.43	11.42	35.69	11.53	0.000	9.19	1.67	0.01	

An analysis of means of individual cognitive and affective items also revealed several potentially important findings (Tables 3 and 4). Several large differences, for instance, indicated that HDFS students believed much more strongly than their counterparts that HDFS graduates qualify for many potential occupations (1.26) and that the major is effective in developing interpersonal communication skills (1.14) and professional growth/life skills (1.02). Likewise, in terms of respondents' feelings, HDFS students placed much higher value on strengthening families (1.68), gaining a unique perspective on people and families (1.03), and learning about human sexuality (1.01).

Because female students represent a high percentage of the majors in many HDFS departments, it was decided to test the data for gender effects. First, a one-way ANOVA revealed that gender explained variation in many of the composite attitude variables: 31 of 37 ATB and SN items varied significantly ($\alpha = 0.05$) based on whether participants were female or male. Next, two different multivariate models were tested, one using the validated ATB items as dependent variables, and the other the SN items. Gender and HDFS status were modeled as fixed factors. However, neither gender nor the interaction term (gender x HDFS status) emerged as a significant predictor of attitudes, suggesting that respondents' gender did not mediate the previously described HDFS findings.

In addition, although HDFS proved to be a significant predictor of ATB ($\alpha = 0.01$) for the first model, it did not emerge as a significant predictor of SN ($p = 0.089$) for the second one. Since the three earlier analyses (factor, Cronbach's, Spearman-Brown) provided strong support for the reliability of the SN measures, one might speculate that there are other individuals, not identified in the current study, who affect a college student's decision to major in HDFS. Or perhaps like PBC, subjective norms are simply not a main influence for this specific choice. It is not unusual for a particular attitude construct to impact certain types of behaviors and not others (Ajzen & Fishbein, 2005). Likewise, subjective norms generally tend to be one of the weaker predictors of intentions (Armitage & Conner, 2001).

Table 3
Independent Sample T-Tests for Individual Cognitive Items

TPB	Item/Part	HDFS (n = 56)			Non-HDFS (n = 102)			All (n = 158)			Sig (2- tailed)	Mean Diff	Std Err Diff	a
ATB ^a	<i>Please indicate how effective you believe the HDFS major is in developing the following skills:</i>													
	a	5.63	1.00	4.94	1.39	5.18	1.31	3.24	156.0	0.001	0.68	0.21	0.01	
	b	5.98	0.88	5.13	1.32	5.43	1.25	4.86	149.7	0.000	0.85	0.18	0.01	
	c	5.77	0.99	5.35	1.26	5.50	1.19	2.28	137.4	0.024	0.41	0.18	0.05	
	d	6.18	0.99	5.16	1.29	5.52	1.29	5.55	139.0	0.000	1.02	0.18	0.01	
	e	6.23	0.93	5.09	1.50	5.49	1.44	5.89	153.6	0.000	1.14	0.19	0.01	
	f	5.50	1.21	4.80	1.39	5.05	1.36	3.16	156.0	0.002	0.70	0.22	0.01	
	g	5.38	1.11	5.20	1.29	5.26	1.23	0.88	156.0	0.382	0.18	0.20	--	
	h	5.14	1.18	4.84	1.31	4.95	1.27	1.42	156.0	0.157	0.30	0.21	--	
	i	5.14	1.18	4.98	1.32	5.04	1.27	0.77	156.0	0.444	0.16	0.21	--	
ATB	<i>To what extent do you believe that the following are outcomes of majoring in HDFS:</i>													
	a	6.05	1.14	5.11	1.46	5.44	1.42	4.21	156.0	0.000	0.95	0.22	0.01	
	b	6.48	0.63	5.63	1.33	5.93	1.20	5.47	153.6	0.000	0.85	0.16	0.01	
	c	6.30	0.99	5.26	1.39	5.63	1.35	5.45	145.4	0.000	1.04	0.19	0.01	
	d	6.21	0.93	4.95	1.59	5.40	1.51	6.31	155.3	0.000	1.26	0.20	0.01	
ATB	<i>Please indicate how accurate you believe the following descriptors are for the HDFS major:</i>													
	a	5.32	1.10	4.51	1.49	4.80	1.42	3.90	143.2	0.000	0.81	0.21	0.01	
	b	6.23	0.85	5.66	1.09	5.86	1.04	3.67	137.2	0.000	0.58	0.16	0.01	
ATB	<i>How common do you believe it is for HDFS majors to work in the following occupations:</i>													
	a	6.23	0.89	5.52	1.30	5.77	1.22	4.05	148.3	0.000	0.71	0.18	0.01	

b	Policy Advocate	4.52	1.31	3.85	1.58	4.09	1.52	2.69	156.0	0.008	0.66	0.25	0.01
c	Marriage and Family Therapist	6.14	0.82	5.70	1.23	5.85	1.12	2.74	150.0	0.007	0.45	0.16	0.01
d	Caseworker	6.05	0.80	5.16	1.31	5.47	1.23	5.34	154.4	0.000	0.90	0.17	0.01
e	Sexuality Educator	4.93	1.29	4.42	1.47	4.60	1.43	2.16	156.0	0.032	0.51	0.23	0.05
d	Youth Worker	5.68	1.08	4.97	1.38	5.22	1.32	3.33	156.0	0.001	0.71	0.21	0.01
g	Family Support Worker	6.02	0.90	5.58	1.12	5.73	1.07	2.68	134.7	0.008	0.44	0.16	0.01

SN^b *If you chose to major in HDFS, how supportive of your decision do you think the following people would be?*

a	Parents	5.98	1.24	5.16	1.84	5.45	1.70	3.34	149.4	0.001	0.83	0.25	0.01
b	Siblings	5.82	1.52	4.76	1.97	5.14	1.88	3.76	139.0	0.000	1.06	0.28	0.01
c	Extended Family	5.54	1.46	4.64	1.87	4.96	1.78	3.34	137.3	0.001	0.90	0.27	0.01
d	Friends	5.71	1.46	4.83	1.83	5.15	1.76	3.10	156.0	0.002	0.88	0.28	0.01
e	Peers	5.41	1.42	4.65	1.77	4.92	1.69	2.77	156.0	0.006	0.76	0.28	0.01
f	Significant Other	5.16	2.29	4.41	2.29	4.68	2.31	1.96	156.0	0.051	0.75	0.38	--
g	Members of Your Church	5.84	1.46	5.14	1.65	5.39	1.62	2.66	156.0	0.009	0.70	0.26	0.01
h	Your Pastor	5.95	1.37	5.16	1.65	5.44	1.59	3.23	131.8	0.002	0.79	0.24	0.01
i	Professors	5.98	1.50	4.95	1.86	5.32	1.80	3.57	156.0	0.000	1.03	0.29	0.01
j	Other Mentors	5.77	1.55	4.75	1.83	5.11	1.80	3.71	130.2	0.000	1.02	0.28	0.01

^a Attitude Toward the Behavior

^b Subjective Norms

Table 4
Independent Sample T-Tests for Individual Affective Items and Direct Measures of Attitude

TPB	Item/Part	HDFS (n = 56)				Non-HDFS (n = 102)				All (n = 158)				Sig (2- tailed)	Mean Diff	Std Err Diff	a
		M	SD	M	SD	M	SD	M	SD	t	df						
ATB ^a	<i>How important do you feel it is to learn about the following concepts:</i>																
	a	6.36	0.86	5.59	1.32	5.86	1.23	4.42	151.1	0.000	0.77	0.17	0.01				
	b	6.82	0.39	6.05	1.18	6.32	1.04	6.04	134.8	0.000	0.77	0.13	0.01				
	c	6.34	1.07	5.33	1.37	5.69	1.36	5.11	138.4	0.000	1.01	0.20	0.01				
	d	6.61	0.71	5.77	1.46	6.07	1.30	4.84	154.1	0.000	0.83	0.17	0.01				
	e	6.79	0.46	6.06	1.24	6.32	1.09	5.30	141.1	0.000	0.73	0.14	0.01				
	f	6.75	0.55	5.93	1.35	6.22	1.20	5.37	146.4	0.000	0.82	0.15	0.01				
	g	6.77	0.50	5.96	1.30	6.25	1.16	5.54	143.9	0.000	0.81	0.15	0.01				
	h	5.68	1.24	5.33	1.40	5.46	1.35	1.55	156.0	0.124	0.35	0.22	--				
ATB	<i>How important do you feel the following skills are:</i>																
	a	6.88	0.38	6.46	0.82	6.61	0.72	4.32	153.2	0.000	0.41	0.10	0.01				
	b	6.55	0.66	6.22	0.99	6.34	0.90	2.56	150.3	0.011	0.34	0.13	0.05				
	c	6.73	0.59	6.33	0.96	6.47	0.87	3.24	154.0	0.001	0.40	0.12	0.01				
	d	6.84	0.42	6.33	0.94	6.51	0.83	4.68	150.9	0.000	0.51	0.11	0.01				
	e	6.29	0.83	5.92	1.27	6.05	1.14	2.18	151.6	0.031	0.36	0.17	0.05				
	f	6.18	0.81	5.65	1.32	5.84	1.19	3.13	153.9	0.002	0.53	0.17	0.01				
	g	5.84	0.95	5.53	1.20	5.64	1.12	1.78	136.6	0.077	0.31	0.17	--				
	h	5.91	1.03	5.43	1.35	5.60	1.26	2.50	139.5	0.014	0.48	0.19	0.05				
ATB	<i>How important to you are the following:</i>																
	a	6.66	0.82	6.22	1.20	6.37	1.10	2.76	148.9	0.006	0.45	0.16	0.01				
	b	6.55	0.71	5.52	1.45	5.89	1.33	6.01	154.5	0.000	1.03	0.17	0.01				
ATB	<i>In considering a major, how desirable to you are the following characteristics:</i>																

SN ^b	a	Family strengthening	6.21	1.02	4.54	1.63	5.13	1.65	7.91	153.3	0.000	1.68	0.21	0.01
		<i>How important to you is the approval of the following people?</i>												
	a	Extended Family	4.57	1.52	4.42	1.71	4.47	1.64	0.55	156.0	0.585	0.15	0.27	--
	b	Friends	5.34	1.10	5.07	1.40	5.16	1.30	1.25	156.0	0.212	0.27	0.22	--
	c	Peers	4.50	1.48	4.38	1.50	4.42	1.49	0.47	156.0	0.636	0.12	0.25	--
	d	Members of Your Church	4.59	1.66	4.00	1.62	4.21	1.66	2.17	156.0	0.032	0.59	0.27	--
	e	Your Pastor	4.75	1.73	4.12	1.74	4.34	1.76	2.19	156.0	0.030	0.63	0.29	--
	f	Professors	4.82	1.55	4.54	1.52	4.64	1.53	1.11	156.0	0.269	0.28	0.25	--
	g	Other Mentors	4.96	1.68	4.52	1.71	4.68	1.71	1.58	156.0	0.117	0.44	0.28	--
ATB/ Direct		<i>Majoring in HDFS is entirely worthless/very worthwhile.</i>	6.54	0.74	5.05	1.40	5.58	1.40	8.76	155.8	0.000	1.49	0.17	0.01
SN/ Direct		<i>People who are important to you generally would not support/highly support your decision to major in HDFS.</i>	6.25	0.98	4.96	1.56	5.42	1.51	6.37	153.2	0.000	1.29	0.20	0.01

^a Attitude Toward the Behavior

^b Subjective Norms

Discussion

Human Development and Family Science majors and minors possess significantly more accurate information about the content of the HDFS major than non-HDFS students. They were particularly astute in recognizing the centrality of human development, family relationships, human sexuality, and interpersonal relationships to the field. They had more positive attitudes toward those areas of study. Also, HDFS students valued and believed that this major offers unique perspectives on people and families and the potential for strengthening families more so than non-HDFS students. These results support previous research, which suggests the overwhelming importance that genuine interest in the subject plays in choosing a major (Adams, Pryor & Adams, 1994; Beggs, et al., 2008; Malgwi, et al., 2005). Thus, a critical step in recruiting students to family science programs may be to help them understand the content of the discipline and to highlight the value of this content to them. One way to do this would be to emphasize the relevance of the major to life and career, and the possibilities for the content to help strengthen families and alleviate family strife and dysfunction.

Compared to their non-HDFS counterparts, HDFS students also believed that the major is significantly more effective in helping them to develop skills in interpersonal communication, personal growth, marriage, parenting, service, and family resource management. This finding supports Brock's (1987) assertion that more undergraduate family science programs need to focus on "content *and* the skills needed to change family life" (p. 75), particularly in the way of prevention services available through educational intervention. By integrating professional skills training and the competencies employers want (Boyd-Soisson & Hamon, 2007), students would be better able to articulate "what they know [and] what they can do with it" (Brock, p. 77). This unique skill set might also contribute to a stronger "occupational identity" (Brock, p. 74) as family science professionals.

HDFS students had significantly more positive attitudes toward the major as "family strengthening" than did non-HDFS students. Since selection of a major is often guided by values (Galotti, 1999), and we assume that most people would value strong families, this descriptor might be successfully employed in marketing efforts for family science programs. "Family strengthening" has the capacity to concisely communicate a fundamental goal of our programs. As a result, our own department has created a colorful and engaging 20" x 28" departmental poster of an intergenerational Asian family walking hand-in-hand across an open field. The poster's message is simple and clear: Help Build Strong Families—Make a Difference and includes *the Department of Human Development and Family Science*. The poster is displayed in faculty offices and is distributed to HDFS majors to hang in their rooms. Our hope is that students who value "family strengthening" will associate our program with that goal.

Introductory courses in HDFS might also communicate a "family strengthening" approach. Mauldin, Crain and Mounce (2000) discovered that accounting students often decided on their majors during the semester in which they took their first accounting course. Thus, HDFS Departments should pay particular attention to their introductory course. In addition to having the "most talented and student oriented faculty teaching" critical introductory courses (Mauldin, et al., p. 145), we suggest selecting a text which incorporates a family strengths framework, like that of Olson, DeFrain and Skogrand's (2008) *Marriages and Families*.

HDFS majors are more likely than non-HDFS majors to believe that a degree in HDFS will qualify them for many potential occupations. They are also more familiar with many of the career possibilities. Given that existing research suggests that availability and appeal of prospective jobs, potential for career advancement, and compensation are important factors in

selecting a major (Beggs et al., 2008; Crampton et al, 2006; Galotti & Kozberg, 1987; Malgwi et al., 2005), it is critical that we educate students about career opportunities in HDFS. To this end, our own department has implemented several strategies. First, each semester we host a panel of HDFS alumni who talk about their careers and how specific HDFS courses have prepared them for this work. The panels are well-attended by HDFS majors, though they are advertised broadly and both majors and non-majors are encouraged to attend. Second, we have created an attractive and engaging HDFS alumni career booklet in which we feature the careers of 20 of our departmental alumni and is distributed widely across campus, The booklet is also available in electronic format on our website. Third, our HDFS department has also developed a vast array of *career option* information on our department website. We provide data on entry-level positions obtained by our new graduates for every graduating class. We also offer more in-depth career profiles of individual alumni and the jobs they possess.

Based on our research, HDFS students perceive the positions of marriage and family therapist, caseworker, and family support worker as significantly more desirable than do non-HDFS students. As a department, our strategy has been to reflect the broad range of positions and professional contexts in which HDFS graduates might be employed. We frequently highlight the Table of Career Opportunities in Family Science (NCFR, 2004, pp. 14-15), which offers a succinct yet comprehensive overview of the vast array of career options in HDFS. We also emphasize the numerous graduate programs for which HDFS affords excellent preparation, including, but not limited to: HDFS, marriage and family therapy, counseling, ministry, social work, child development, gerontology, and public health.

HDFS majors, significantly more than non-HDFS majors, value the approval of every identified group, particularly siblings, mentors, parents, and pastors. Existing research also notes the strong effect that parental influence has on choice of major (Beggs, et al., 2008; Chung, Loeb, & Gonzo, 1996; Esters, 2007). In fact, Esters argues that more emphasis should be placed on involving parents in the college and major decision-making process. Recognizing parental influence in decision-making and the realistic need for parental financial support in attending a private institution like our own, our department tries to target parents for education and information about HDFS. During campus visits, we encourage parents to attend the departmental academic information sessions where we provide an overview of HDFS, its curriculum, unique skills and perspectives, job options, and related information. We've also designed our website with parents in mind, addressing issues that we think both they and their children will want to know. The Department Chair also promptly responds to calls or e-mails from parents of prospective students. Thus, we concur with Beggs' and colleagues' recommendation that universities should capitalize on parental involvement by educating parents about how to help their children choose a major that will be a good fit for their child. Making sure that parents know about HDFS is the first step in parents being able to discuss the major as an option with their child.

Finally, HDFS is a predominately female major. For instance, the HDFS Department's sampling frame of HDFS students for the current study was approximately 86.4% female to 13.6% male. Because the literature suggests that males often rank financial success and high salaries as more important than do females (Beggs, et al., 2008; Crampton et. al, 2006; Malgwi, et al., 2005) and since most social science occupations are not very lucrative, it is not surprising that more men do not choose to major in HDFS. However, since compensation appears to be a major concern for some students, particularly men, we now include a salary range in our alumni career profiles on our department website, as some career paths pay better than others. We also

emphasize the importance of males in many of these occupations, despite lower wages. Like Adams et al. and colleagues (1994), we recognize the need to emphasize the “psychologically rewarding nature” of HDFS careers (p. 45). In addition, our department recently initiated a “Men of HDFS” group. A male HDFS faculty member began by inviting men in the department to join him for an informal evening gathering where they discussed being in a predominately female department. The male majors enjoyed the exchange so much that they asked to meet monthly, which they do. While most gatherings are informal, the group occasionally organizes specific events. For instance, the Men of HDFS, on their own accord, organized a cookout for the “Women of HDFS.” The faculty adviser also invited a male HDFS graduate who works in domestic violence to speak to the group about working in a predominately female field. This support has proven helpful to the current male students and is also slowly increasing the numbers of males in the program.

Conclusion

Unlike other majors that incoming college students tend to already know and understand, Human Development and Family Science can be an unfamiliar and misperceived discipline for many students. The current study's results provide evidence of this lack of familiarity by virtue of the two sample groups' frequent differences in attitudes toward majoring in HDFS. Of course, these findings should be interpreted judiciously, particularly given the sample's relatively small size and homogenous composition. It is quite possible that students in a private liberal arts college may have attitudes and make choices different from students attending public, state-supported colleges and universities. Nevertheless, several of the specific results are supported by anecdotal evidence that has accrued over many years. Similarly, while a few of the HDFS Department's initiatives outlined in the Discussion section were implemented since gleaning the results of the current study, some of the practices (e.g., alumni career panels) were in place prior to the study. Thus, we want to recognize the potential mutual influence between the results and the Department's initiatives. However, to the extent that the findings of the current study resonate, other institutions might consider these results and suggested responses while working to improve the content and perceptions of their own HDFS programs. In addition, future studies might extend the current research either by replicating it on a larger scale or by using one of the specific issues identified to chart a path of deeper inquiry.

Nonetheless, HDFS departments need to be very strategic about best utilizing their resources in creatively marketing their programs (Hamon & Schvaneveldt, 2006). While selection of a major is a personal decision, it is not “referent”-free either (Kaynama & Smith, 1996). Helping prospective and current students, parents, and faculty advisers (particularly students with undeclared majors) understand HDFS is a critical factor for introducing more students into our programs. Similarly, timing of an introductory HDFS course (Beggs et. al, 2008), departmental publications and websites, resources from professional organizations, and other materials can help to educate and shape perceptions about HDFS. Current students in and graduates of HDFS programs are also critical partners in introducing others to the possibilities of HDFS. Faculty members within HDFS departments need to be reflective and creative about implementing strategies to better help students accurately understand family science.

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