Academic Discipline and Personal Finance Instruction in High School

Cäzilia Loibl and Patti J. Fisher

Despite public support for personal finance instruction in high school, its effectiveness has not been firmly established. The current study investigates instructional approaches as a reason for these inconsistent outcomes by comparing survey responses of business education, family and consumer sciences, and social studies/economics teachers. The study framework suggests differences in the three disciplines' identities and individual teacher preferences. Findings confirm discipline-specific approaches to personal finance instruction with regard to content, information sources, time investment, and teacher and student characteristics. In addition, a link emerged between college-based teacher preparation and teachers' ability to respond to the challenges of personal finance instruction.

Key Words: academic disciplines, high school, personal finance instruction, teacher perceptions

Introduction

Public opinion has embraced the idea that personal finance instruction in high school is key to alleviating consumer indebtedness, financial delinquency, and bankruptcy (Bernanke, 2011; Bernard, 2010). Surveys and knowledge tests of high school students have found that financial knowledge is lacking, identified how this lack of knowledge may interfere with financial decision making, and offered suggestions about how policymakers may implement high school financial education to overcome this lack of knowledge through personal finance instruction (Mandell, 2008b; National Endowment for Financial Education, 2005). As a result, 36 states have mandated financial literacy education in secondary schools (Council for Economic Education, 2012).

The academic literature, however, is inconclusive regarding the effects of high school financial education on financial decisions and behaviors. A groundbreaking study by Bernheim, Garrett, and Maki (2001) reported positive effects on savings behavior and asset building among young adults receiving financial literacy education in high school. Other studies found no (Cole & Shastry, 2010; Mandell, 2005; Tennyson & Nguyen, 2001) or negative relationships between high school financial education and financial behaviors (Peng, 2008; Peng, Bartholomae, Fox, & Cravener, 2007).

A reason for these diverging findings may be found in the tension between the goal of the public mandate and its actual implementation in secondary school teaching. In many cases, the mandate to teach personal finance in high school is unfunded, vague with respect to academic department, classroom time, and materials, and not part of the core curriculum. The gap between the goal of the mandate and its implementation may undermine the anticipated outcome. In the current research, we respond to this concern with a survey of high school teachers and their perceptions of personal finance instruction. Analyzing teachers' decisions adds the high school perspective to the current discussion about best practices in financial education (Lyons & Neelakantan, 2008; McCormick, 2009; Servon & Kaestner, 2008), service providers' background (Bone, 2008; Grinstead, Mauldin, Sabia, Koonce, & Palmer, 2011), and content selection (Beutler, Beutler, & McCoy, 2008; Spader, Ratcliffe, Montoya, & Skillern, 2009).

The current study investigated high school teachers in Ohio from the three academic areas most likely to offer personal finance education. The discussions surrounding

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the imminent implementation of a statewide personal finance education mandate in 2010 provided for good timing to address three research questions:

(1) Which teaching preferences define personal finance instruction in the three academic disciplines? By identifying preferences for personal finance instruction for the academic disciplines, we documented the unique approaches of teaching this topic across different disciplines.

(2) How does mandatory personal finance instruction compare to elective personal finance instruction? By comparing personal finance instruction in mandatory social studies/economics courses to elective coursework in the two other disciplines, a relatively stronger focus on investment decisions became apparent.

(3) What are the challenges faced by those teaching personal finance? College-based teacher preparation emerged as a key contributor for effective personal finance instruction.

Review of Literature

Academic disciplines and teachers' perceptions of their discipline create a context within which teachers work and develop their professional identity (Giovannelli, 2003; Grossman & Stodolsky, 1995; Ma & MacMillan, 1999). The influence of a discipline is generally based on the value the school and larger community places on it in addition to the discipline's characteristics (Burch & Spillane, 2005; Siskin, 1994). More specifically, Grossman and Stodolsky (1994) and, later, Grossman, Stodolsky, and Knapp (2004) identified five dimensions for describing academic disciplines' approaches to teaching school subjects in secondary schools: definition, scope, status, sequence, and dynamic. These dimensions are applied to personal finance instruction in order to examine how they may shape the teaching of this subject.

Subject definition is a discipline's understanding of the content of the subject. Well defined subjects are associated with clearer curriculum content and standardized testing (Grossman & Stodolsky, 1995). Personal finance is one of the lesser defined and less agreed upon subjects, leading to a variety of perspectives on its content. In this situation, content tends to depend on the academic department involved in teaching personal finance. For instance, the "High School Financial Planning Program" (National Endowment for Financial Education, 2012), which is targeted to Family and Consumer Sciences, places a relatively strong emphasis on qualitative aspects of personal finance such as creating financial plans and budgets, selecting financial services, and the influence of personal finance on career and lifestyle. In contrast, the "Financial Fitness For Life" program (Clow et al., 2006) is aimed at economics and mathematics and has a relatively strong quantitative focus in its lesson plans for saving, investing, and understanding the stock market. Content may also differ within disciplines, depending on teachers' interests and familiarity with the subject. The financial literacy literature, for instance, suggests gender differences in personal finance instruction in that women tend to be more involved in decisions about day-to-day expenditures (Meier-Pesti & Penz, 2008), while men are more likely to be involved in investing and long-term financial planning (Lusardi & Mitchell, 2007). The gender difference may be observable in academic disciplines, because the portion of female teachers is particularly high in family and consumer sciences and low in economics.

A concept closely related to subject definition is subject scope, which refers to the number of disciplinary areas involved in a school subject. Increasing disciplinary influence is commonly associated with broader scope and lower consistency of subject curriculum compared to single-discipline subjects such as algebra or physics (Grossman & Stodolsky, 1995). Personal finance draws on several disciplines, including economics, marketing, psychology, sociology, technology, and public policy (Tufano, 2009). Teachers approaching this interdisciplinary subject may feel a greater sense of curricular autonomy than teachers of well-defined, more sequential subjects. Since personal finance includes so many topics, teachers need to make individual choices about what to include or not include. It is likely that the topics covered in personal finance instruction in economics will differ from such instruction in business education or family and consumer sciences.

School subjects also differ in their status, which reflects the values of the school and its community. Higher status subjects receive more resources and have greater influence within a school. Subject status is based on metrics such as role in core curriculum, relevance for college entrance, and inclusion in state and district assessment programs (Grossman & Stodolsky, 1995). The status of personal finance seems to be based on both subjective and objective components. Its subjective status is high due to the growing societal and political relevance attached to financial literacy. As of spring 2012, a total of 13 states required students to take a personal finance course and 36 states required

that personal finance content standards be implemented. However, the objective status of the subject is low with respect to secondary education metrics. No state has added a personal finance course to the core curriculum, it is of little relevance for college entrance, and only 16 states require student testing of economic concepts (Council for Economic Education, 2012). In many states, the personal finance mandate is unfunded (JumpStart, 2012).

The fourth dimension that shapes the subject-matter environment in which instruction takes place is the perceived or inherent sequentiality of the subject and curriculum. This dimension refers to the notion that specific content must be covered before teachers can move to the next topic (Grossman & Stodolsky, 1995). Common examples of subjects based on sequentiality are foreign languages and mathematics (Cohen, 1990; Parke & Lane, 2008). Personal finance instruction is commonly designed with a lower degree of sequencing, as it is exemplified in the flexible-module structure of the "High School Financial Planning Program," which calls its curriculum a "collection" that allows for the "flexibility to choose from a variety of 45-minute lessons to design learning experiences that best fit […] audience needs, curriculum requirements, and schedule" (National Endowment for Financial Education, 2012). However, teachers' perceptions of a hierarchy of personal finance topics may differ among the academic disciplines. Social studies/economics teachers, who are used to a fairly rigid sequential curriculum, would likely transfer this approach to their personal finance instruction. At the other end of the spectrum, family and consumer sciences teachers would be more likely to embed personal finance content in their instruction of consumer, human development, and nutritional topics, implying a less hierarchical, more modular approach to personal finance.

The last dimension, subject dynamic, refers to the degree to which new knowledge emerges and concepts change, thus causing a continuing need to stay updated. Personal finance can be considered a highly dynamic subject (Bettman, Luce, & Payne, 1998; Payne, Bettman, & Schkade, 1999). Technological and regulatory changes have led to new financial products and decreased product lifetimes. Choosing among credit card features, the variety of mortgage loans, and innovations in investment products require more than a basic financial understanding in today's marketplace (Willis, 2008, 2009). In addition, new online media have made significant amounts of financial information and analytic tools available for classroom use. As this list suggests, personal finance belongs to the so-called "integration code" subjects (Bernstein, 1971) in which the gap between academic and everyday knowledge is narrow. As a result, teachers are expected to stay current in order to provide accurate and relevant information to students. In addition, they must carefully select information from the large amount of financial information available through traditional and online media (Fox, Bartholomae, & Lee, 2005). The dynamic of the subject also requires teachers to revise classroom materials for personal finance more often than teachers of static subjects. For this reason, the regularly updated information provided on web portals, such as fefe.arizona.edu or hsfpp.nefe.org, appear particularly attractive for personal finance instruction. We assumed that teachers in all three disciplines examined in this study aim to stay abreast of the latest developments. We expected to find differences in intensity and perceived obstacles between the three academic disciplines depending on teacher formal education and the importance attached to the subject matter.

Methods

Data Collection

The current study used analyses of an online survey of high school teachers in a U.S. Midwestern state (Ohio) who taught personal finance content in the 2006/2007 academic year. The survey addressed business education, family and consumer sciences, and social studies/economics teachers, because these three groups were most likely to teach personal finance content (National Endowment for Financial Education, 2005). After IRB approval was obtained, survey invitation postcards and two reminder postcards were mailed to the three academic disciplines at each of the 1,145 high schools offering 10^{th} to 12^{th} grade-level classes (total mailing $N = 3,435$). This sample included public, public charter, private, and parochial schools. Because teachers' names were not publicly available, the postcards were addressed in a generic way to the "Family and Consumer Sciences teacher" (or "Business Education teacher" or "Social Studies/Economics teacher") at each high school. The survey was conducted online during six weeks from February 26 to April 07, 2007. Participants were mailed a $10 gasoline gift card for their assistance.

Of the 868 teachers who accessed the Internet survey site, which was hosted by a market research company, a total of 710 teachers taught personal finance in the 2006/2007 academic year and were asked to complete the survey. A total of 647 respondents belonged to one of the three academic content areas of interest, and those responses entered the analyses presented here. The excluded responses repre-

sented a diverse bundle of Mathematics, Science, Technology, and Agricultural Sciences subjects, which could not be easily integrated under a common theme. Counting all teachers who taught in the state's high schools in the three academic content areas of interest during the 2006/2007 academic year ($N = 3,849$; this number is larger than the total mailing ($N = 3,435$) because the mailing excluded schools that had 9th grade, but not 11th and 12th grades assuming that there is little personal finance instruction in 9th grade), a response rate of 16.8% was calculated.

The response rate is a conservative estimate because teachers could teach personal finance courses in more than one academic content area and some teachers may not have been scheduled to teach a personal finance course during the 2006/2007 academic year. Selection bias was examined by comparing survey responses to the full sample of teachers in the three targeted academic content areas. Data on three key demographic variables - gender, age, and formal education - and membership in the academic content area were made available by the state's Department of Education. Means comparison tests showed that participants in the sample were on average 1.7 years younger ($F = 14.665$, $p < .000$); there was also an 11% higher frequency of graduate degrees ($\chi 2 = 9.064$, $p < .003$). There was no difference in the gender distribution of the respondents. Comparing survey respondents to the statewide distribution of teachers in the academic disciplines, fewer business education (-14%; $\chi 2 = 6.948$, $p < .008$), but a larger number of social studies/economics teachers (+57%; $\chi 2 = 27.327$, $p < .000$) responded to the survey. There was no difference in the number of family and consumer sciences teachers in the sample compared to the statewide distribution of teachers. Taken together, compared to all teachers in Ohio who were contacted for this project, survey respondents presented a slightly younger and more educated group with a higher representation of social studies/economics teachers and a lower representation of business education teachers. These sample characteristics were kept in mind when interpreting the statistical findings.

Instrument Development

The questionnaire was developed using a mix of established survey questions, questions developed for the particular purpose of the study, and questions suggested by high school teachers pretesting the instrument. The questionnaire consisted of 53 questions and was divided into four parts. Part I consisted of a total of 20 questions assessing respondents' personal finance curricula and student population, including the time spent on personal finance in the courses in which it is mainly taught, the content taught, the grade levels, and the length, schedule, and meeting frequency of these courses. Teachers were also asked to indicate how many students in the course would receive a grade of "C" or above and how many were English as a Second Language/English Language Learner (ESL/ELL) students, as well as the students' race and gender, the percentage of students expected to graduate with a high school diploma, and the percentage expected to enter college. Part II consisted of ten questions assessing challenges involved in teaching personal finance. These questions examined teachers' attitudes toward teaching personal finance, preferred sources of information on personal finance, and time spent to prepare for teaching personal finance in class. Part III consisted of 14 questions on participants' school environment and socio-demographic background. The fourth and final part of the survey measured teachers' knowledge of personal finance concepts with a nine-question quiz. The questions in Parts I, II, and III entered in the analyses are presented here.

We used the maximum likelihood estimation (MLE) procedure to replace missing values in the data set used for the present analysis. This method, implemented by the expectation-maximization algorithm, applies MLE to the task of imputing missing data values without recourse to the simulation involved in multiple imputation. MLE makes fewer demands of the data in terms of statistical assumptions and is generally considered superior to imputation by multiple regression (Garson, 2008). The MLE method, which assumes that missing values are missing at random, is now the most common method of imputation (Little & Rubin, 2002).

Measures

The key metrics of the current study included five sets of variables: personal finance content; sources of personal finance information; time investment to prepare for personal finance courses; course challenges; and student, school, and teacher demographic characteristics. The sample statistics are presented in Table 1.

Personal finance content. The survey instrument included a list of 58 personal finance topics adapted from the NEFE High School Financial Planning Program (National Endowment for Financial Education, 2007). The topics addressed the following five themes in personal finance instruction: (a) financial planning, goal setting, and decision making; (b) budgeting; (c) savings and investments; (d) consumer credit; and (e) insurance. The 58

topics, measured on a 1 = "do cover", 0 = "do not cover" response options, were factor analyzed to verify the stability of the five original themes. Item loadings under each factor in the rotated component matrix were then examined for reliability using Cronbach's alpha. Separate reliability analyses were conducted for each topic factor for each of the three academic disciplines. Unsatisfactory items were removed and the factor analysis was then repeated with the remaining items. The procedure was repeated seven times, after which the final factor solution emerged, including 26 of the original 58 items. A total of six factors were obtained, thus extending and rearranging the five original themes. A label was developed for each factor based on the mix of the items that loaded on the factor. Kaiser-Meyer-Olkin tests of sampling adequacy (KMO = 0.914) and Bartlett's tests of Sphericity (χ^2 = 10,283.978, df = 378, $p < .000$) indicated that the data were appropriate for factor analysis, explaining 70.5% of the total variance. Eigenvalues for the independent factors were all greater than 1 and all item loadings were in excess of the 0.600 threshold. Cronbach's alpha reliability coefficients ranged between 0.694 and 0.930.

The most popular personal finance topic was goal setting (teachers covering goal setting = 87%, *SD* = 29.6%), followed by budgeting (80%, *SD* = 34.3%), credit (70%, *SD* = 34.5%), taxes (69%, *SD* = 37.6%), insurance (63%, *SD* = 1.6%), and investing (43%, *SD* = 40.5%). Differences in content preferences among the three disciplines were significant for all six factors. They were greatest for budgeting (means comparison test, *F* = 58.412) and investing (*F* = 53.182), followed by goal setting (*F* = 32.234), credit (*F* = 23.109), taxes (*F* = 18.295), and insurance content (*F* = 12.181).

Information sources. Teachers' use of information sources to stay informed about personal finance content was measured with a list of 37 information source variables, including broadcast sources (2 items, TV programs, radio programs), printed sources (6 items, e.g., books, personal finance textbooks, general newspapers), Internet-based sources (13 items, e.g., email newsletters, information-sharing email listservs, browser searches), interpersonal sources (12 items, e.g., spouse, parents, friends, and extended family), and professional sources (4 items, e.g., professional conferences, JumpStart trainings and resources). The question inquired, "How frequently do you use each of the following to stay informed about personal finance topics?" Response options ranged from never = 1 to very often = 5. Factor analysis produced five primary information sources. This division into five categories is similar to the categories employed by Lin and Lee (2004) and Blinder and Krueger (2004). Usage of the sources was measured with the question, "How frequently do you use each of the following to stay informed about personal finance topics?" Responses were rated on a 5-point scale ranging from 1 = never to 5 = very often. The most popular personal finance source was mass media sources (obtaining a 3.01 rating on the 1-to-5 scale, *SD* = .798), followed by interpersonal sources (2.69 rating, *SD* = .773), Internet sources (2.63 rating, *SD* = .859), financial professional sources (2.39 rating, *SD* = .934), and professional development sources (2.03 rating, *SD* = .849). Differences in source preferences among the three disciplines were significant for three of the five factors. They were greatest for the use of professional development sources, followed by Internet sources and mass media sources.

Time investment. To examine teachers' time investment in preparing for personal finance courses, four questions inquired about the time spent on four tasks: "When teaching personal finance topics, how much time do you spend on each of the following activities, on average, to prepare for one class period? Searching the Internet for personal finance content; Reading publications about personal finance content; Talking to others about personal finance content; and Correlating classroom materials on personal finance content." Respondents could choose from the following six alternatives suggested during survey instrument pretesting: (1) no time; (2) up to half hour; (3) more than half hour, but less than 1 hour; (4) more than 1 hour, but less than 2 hours; and (5) more than 2 hours. For data analysis, we recoded the responses into minutes using the interval midpoints in addition to the two scale anchor values to facilitate the interpretation of the results. The most time was spent on correlating materials (*M* = 53 min, *SD* = 38.9 min) and searching on the Internet (*M* = 50 min, *SD* = 36.8 min), followed by reading publications (*M* = 39 min, *SD* = 35.1 min) and talking to others (*M* = 29 min, *SD* = 31.4 min). Differences among disciplines emerged for the time spent correlating materials and time talking to others about personal finance content.

Course challenges. Classroom challenges were investigated with nine items derived from individual and focus group discussions with teachers. The items were introduced with the question, "What do you feel are the major challenges when you teach personal finance topics? (Check all that apply)". The items included: (1) I don't have enough subject matter knowledge to comfortably teach it; (2) I don't have

Table 1A. Sample Characteristics for Business Education, Family and Consumer Sciences, and Social Studies/Economics Academic Disciplines

Measure	Range	Business education	FCS	Social studies/ economics	All respondents
		M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Personal finance content					
Teaching insurance (in %, $F = 12.181$***)	0-1	0.70 (.399)	0.65 (.407)	0.49 (.403)	0.63 (.016)
Teaching credit (in %, $F = 23.109$***)	0-1	0.73 (.342)	0.76 (.304)	0.53 (.370)	0.70 (.345)
Teaching investing (in %, $F = 53.182$***)	0-1	0.56 (.404)	0.25 (.341)	0.57 (.390)	0.43 (.405)
Teaching taxes (in %, $F = 18.295$***)	0-1	0.80 (.336)	0.63 (.390)	0.61 (.369)	0.69 (.376)
Teaching goals (in %, $F = 32.234$***)	0-1	0.85 (.313)	0.96 (.152)	0.73 (.395)	0.87 (.296)
Teaching budgeting (in %, $F = 58.412$***)	0-1	0.86 (.280)	0.88 (.270)	0.55 (.431)	0.80 (.343)
Information sources					
Mass media sources (5-pt. scale; $F = 4.243$*)	1-5	3.04 (.757)	2.91 (.836)	3.14 (.769)	3.01 (.798)
Internet sources (5-pt. scale; $F = 10.728$***)	1-5	2.83 (.821)	2.56 (.882)	2.44 (.819)	2.63 (.859)
Professional development sources (5-pt. scale; $F = 21.206$***)	1-5	1.91 (.765)	2.27 (.907)	1.77 (.750)	2.03 (.849)
Financial professional sources (5-pt. scale; $F = 2.597$†)	1-5	2.50 (.869)	2.32 (.958)	2.35 (.996)	2.39 (.934)
Interpersonal sources (5-pt. scale; $F = 0.672$, *ns*)	1-5	2.65 (.780)	2.72 (.739)	2.72 (.824)	2.69 (.773)

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

a suitable curriculum that fits my teaching needs; (3) I don't have enough classroom materials, such as lesson plans, student hand-outs; (4) I don't have enough classroom time to properly teach these topics; (5) I don't see an interest in my school administration in teaching these topics; (6) I don't see an interest in the topic among my students; (7) I struggle with selecting financial information and classroom materials among the many available sources; (8) Teaching personal finance often seems tedious; and (9) I don't have time to stay current with changes in personal finance. Across disciplines, the top three challenges were classroom time (42% of respondents, *SD* = 49.4%), classroom materials (38%; *SD* = 48.7%), and time to stay current (30%, *SD* = 45.9%). Except for source selection and time required to stay current, the three disciplines differed significantly in their responses.

Student, school, and teacher demographics. A number of student, school, and teacher demographics were collected to provide a rich account of the setting of personal finance instruction (see Table 2). Student population in

Table 1B. Sample Characteristics for Business Education, Family and Consumer Sciences, and Social Studies/Economics Academic Disciplines

Measure	Range	Business education	FCS	Social studies/ economics	All respondents
		M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Time investment					
Time searching the Internet (in minutes; $F = 1.793$, *ns*	0-120	48.75 (34.124)	53.89 (38.343)	47.79 (37.872)	50.67 (36.816)
Time reading publications (in minutes; $F = 0.784$, *ns*)	0-120	40.02 (35.020)	41.12 (35.752)	36.62 (34.363)	39.71 (35.169)
Time talking to others (in minutes; $F = 6.896$**)	0-120	24.45 (27.462)	34.77 (33.966)	28.44 (31.460)	29.64 (31.487)
Time correlating materials (in minutes; $F = 13.622$***)	0-120	51.62 (37.545)	62.02 (39.613)	41.89 (36.396)	53.74 (38.911)
Course challenges					
Subject matter (in %; $F = 13.383$***)	0-1	0.05 (.237)	0.21 (.409)	0.20 (.406)	0.15 (.365)
Curriculum (in %; $F = 7.292$**)	0-1	0.12 (.330)	0.25 (.438)	0.22 (.416)	0.20 (.403)
Classroom materials (in %; $F = 9.043$***)	0-1	0.29 (.456)	0.38 (.486)	0.51 (.501)	0.38 (.487)
Classroom time (in %; $F = 9.992$***)	0-1	0.33 (.472)	0.45 (.499)	0.55 (.498)	0.42 (.494)
School administration (in %; $F = 5.696$**)	0-1	0.25 (.437)	0.15 (.364)	0.13 (.346)	0.18 (.388)
Student interest (in %; $F = 7$ .777***)	0-1	0.19 (.398)	0.35 (.478)	0.25 (.437)	0.27 (.445)
Selection (in %; $F = 1.986$, *ns*)	0-1	0.25 (.437)	0.32 (.469)	0.24 (.433)	0.28 (.451)
Tedious task (in %; $F = 6.169$**)	0-1	0.11 (.320)	0.23 (.424)	0.17 (.384)	0.18 (.387)
Stay current (in %; $F = 1.900$, *ns*)	0-1	0.26 (.444)	0.34 (.476)	0.28 (.455)	0.30 (.459)
N		234	268	145	647
%		36.2%	41.4%	22.4%	100.0%

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

each grade level, course meeting times, number of courses, teachers' years of teaching personal finance, teacher participation in college-level and continuing education courses, and teacher age were measured as continuous variables. Instruction time and household income were categorical variables recoded for data analysis purposes into continuous variables by using the interval midpoints in addition to the upper-scale anchor value. The remaining variables were coded as binary (0/1) variables, as noted in the second column of Table 2.

Examining the student population in all personal finance classes, the cohort size increased from Grade 9 to 12, most students were White, native speakers, and there were about equal numbers of male and female students. The high relative concentration of students in social studies/economics at Grades 11 and 12 is most likely related to "American Government and Economics" courses in Ohio high schools. These two subject matters are often taught in combination or sequentially and are likely to include applied content such as personal finance. Teachers expected most students to successfully complete the course and obtain a high school diploma, with about 60% of their personal finance students expected to enter college.

Teachers taught, on average, between one and two personal finance courses per semester, and spent about 45% of course time on personal finance content. Most courses were taught in the traditional weekly schedule, meeting about five times a week. About three quarters of the personal finance courses were elective, and about two thirds were one semester long. About half of the schools providing personal finance instruction were located in rural areas, with the other half distributed in the suburban, urban, and central city areas of Ohio. About 90% of respondents worked at public schools. Teachers taught personal finance content for an average of 13 years, had taken an average of two college courses addressing personal finance content, and very few teachers had participated in continuing education regarding personal finance instruction. About two thirds of the teachers were women and had a graduate degree, the average age was 45 years, most were married, and the average household income was in the low $80,000 range. Two thirds of the student, school, and teacher demographics differed significantly among the three disciplines. The largest differences emerged for teacher gender, the elective option of the personal finance course, and the time spent on personal finance content in those courses.

Results

Preferences for Personal Finance Instruction in Academic Disciplines

To examine the variables associated with personal finance instruction in each of the three academic disciplines, several binary logistic regression models were fit to the data using membership in the academic discipline as the dependent variable and the six topics, five information sources, four time-investment variables, and the student, school, and teacher demographics as independent variables.

Business education teachers, the second-largest group of respondents, tended to spend a higher amount of classroom time on personal finance content than the other two disciplines, which were teaching smaller personal finance courses in Grade 12 (see Table 3). Their personal finance courses were more likely to be elective, multi-semester, and have a higher portion of male students. Business education teachers had attended a larger number of college courses in personal finance and were less likely to be female as compared with the other two academic disciplines. Their personal finance instruction included less credit and goal-setting content. They tended to use more Internet and fewer professional development sources to prepare for class and spent less time discussing personal finance courses with colleagues.

Family and consumer sciences teachers comprised the largest group of survey respondents. A member of this group was likely to be female and older, and less likely to hold a graduate college degree. This group had more years of teaching experience in personal finance but had attended fewer college courses on personal finance. Family and consumer sciences teachers tended to spend less classroom time on personal finance content. Similar to the business education academic discipline, their personal finance instruction was mainly conducted in elective, one-semester courses. They had a higher number of Grade 12 and female students in their personal finance courses, and tended to focus their personal finance instruction on credit, goal-setting, and budgeting content, devoting less time to investing content. Professional development and personal sources were most likely used for course preparation, and Internet sources were avoided.

Social studies/economics teachers presented the smallest number of respondents. A member of this group was likely to be male, to have fewer years of teaching personal finance content, and to have attended fewer continuing education events. Social studies/economics teachers re-

sembled family and consumer sciences teachers in the amount of time they devoted to personal finance content in their courses; however, their courses tended to be mandatory and fewer in number. These teachers expected fewer of their students to graduate from high school. The focus of their instruction tended to be on investing. They liked to confer with colleagues about teaching personal finance. None of the information sources seemed to play a particular role for this academic discipline. A thumbnail sketch of the characteristics that differentiate each academic discipline from the other areas with respect to teaching personal finance content is provided in Table 4.

Comparing Personal Finance Instruction in Mandatory Versus Elective Courses

Considering the diversity of personal finance instruction in the academic disciplines identified in the previous section, we now turn to the question of personal finance instruction in mandatory social studies/economics courses compared to elective coursework in business education and family and consumer sciences. A multinomial regression analysis was fit to the data using academic discipline as the dependent variable, with instructional topic variables, information source variables, time investment variables, challenges, and the student, school, and teacher demographic variables as independent variables. This model posits a linear relationship between the independent variables and the log odds of an individual belonging to a cluster relative to a baseline cluster (Agresti, 1996). For this analysis, the baseline category was social studies/economics because it has personal finance content in its mandatory core curriculum and, in Ohio, was suggested as the future home of personal finance instruction.

The significant predictors of content area-specific differences are presented in Table 5. Several characteristics distinguish personal finance instruction in business education and family and consumer sciences from social studies/economics. As expected, social studies/economics offered personal finance instruction in mostly mandatory coursework. As a result, a legislative mandate for personal finance instruction in the social studies/economics discipline would assure a systematic exposure of students to personal finance content. Our findings also show that there were no differences in the size of the student audience among the three disciplines at the four high school grade levels. Rather, personal finance instruction was spread across a larger number of courses in the electives. This indicates that students have been reached in both elective and mandatory personal finance courses and may have received personal finance instruction from more than one academic discipline. Teachers in both elective disciplines had more teaching experience in personal finance and reported higher attendance of continuing education courses. They tended to focus less on investing content, which emerged as the signature content for the social studies/economics discipline.

Comparing business education and social studies/economics, a few additional course characteristics emerged. Social studies/economics teachers reported lower instruction time for personal finance content per course, which were taught in mostly one-semester courses addressing a lower quality student audience. Comparing family and consumer sciences and social studies/economics, social studies/economics teachers taught less credit, goal-setting, and budgeting content and were less likely to take advantage of professional development information and classroom materials. Family and consumer sciences teachers spread their personal finance instruction over a larger number of courses, which tended to have a one-semester schedule. Compared to family and consumer sciences teachers, social studies/economics teachers reached a higher number of male students in their personal finance instruction and a higher number of students who the teachers expected to go to college.

Challenges of Personal Finance Instruction

The relationships between academic discipline and the challenges of teaching personal finance were investigated using univariate correlation analysis, and the results are presented in Table 6. The nine challenges identified in the study pretests show different patterns for the three academic disciplines. Six of the nine challenges were negatively related to personal finance instruction in business education, indicating a low level of perceived difficulties. Dealings with the school administration about teaching personal finance emerged as the only significant association. Family and consumer sciences teachers' personal finance instruction was associated with five challenges, with student interest being the foremost challenge. Classroom materials presented the greatest challenge for social studies/economics teachers. This is not surprising considering that an analysis of commonly used economics textbooks documented the limited materials on personal finance content (Leet & Lopus, 2003). The Council for Economic Education has reacted by issuing updated "Financial Fitness For Life" materials (Clow et al., 2006).

An open-ended question allowed teachers to report additional challenges they face when teaching personal finance content. Teachers added only a few new aspects not includ-

Table 2A. Student, School, and Teacher Differences in Business Education, Family and Consumer Sciences, and Social Studies/Economics Academic Disciplines

	Range	Business education	FCS	Social studies/ economics	All respondents
		M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Student population					
Grade 9 (cohort size; $F = 0.910$, *ns*.)	0-150	5.70 (13.604)	7.71 (19.963)	5.94 (19.948)	6.43 (17.986)
Grade 10 (cohort size; 2.041, *ns*	0-150	7.86 (12.163)	11.57 (24.655)	8.83 (25.401)	9.21 (20.786)
Grade 11 (cohort size; $F = 5.407$**)	0-255	13.41 (15.604)	12.15 (20.719)	19.95 (36.269)	14.20 (23.600)
Grade 12 (cohort size; $F = 29.570$***)	0-310	15.80 (16.917)	15.81 (19.100)	35.86 (47.789)	20.19 (28.484)
White students (in %; $F = 2.180$, *ns*)	0-1	0.86 (.225)	0.86 (.213)	0.82 (.2674)	0.85 (.228)
Male students (in %; $F = 18.894$***)	0-1	0.49 (.192)	0.39 (.198)	0.48 (.20053)	0.45 (.207)
Will graduate course with "C" (in %; $F = 0.121$, *ns*)	0-1	0.93 (.637)	0.94 (.634)	0.90 (.906)	0.92 (.685)
ESL/ELL students (in %; $F = 4.047$*)	0-1	0.04 (.105)	0.06 (.100)	0.03 (.088)	0.05 (.098)
Will graduate with diploma (in %; $F = 5.990$**)	0-1	0.96 (.075)	0.94 (.138)	0.92 (.144)	0.94 (.127)
Will enter college (in %; $F = 8.099$***)	0-1	0.65 (.242)	0.57 (.273)	0.65 (.273)	0.61 (.266)
Courses taught					
No. of courses ($F = 11.805$***)	1-3	1.76 (.771)	1.81 (.772)	1.44 (.725)	1.69 (.777)
Percentage instruction time in main personal finance course (in %; $F = 76.506$***)	0-100	62.33 (34.353)	38.68 (25.482)	27.74 (22.696)	44.78 (31.639)
Course layout					
Elective course (in %; $F = 138.196$***)	0-1	0.87 (.330)	0.88 (.324)	0.31 (.464)	0.75 (.430)
One-semester course (in %; $F = 12.514$***)	0-1	0.57 (.49)	0.77 (.420)	0.60 (.490)	0.64 (.480)
Traditional schedule (in %; $F = 2.280$, *ns*)	0-1	0.83 (.373)	0.80 (.393)	0.74 (.437)	0.80 (.394)
Meeting times (no.; $F = 2.952$, *ns*)	1-5	4.88 (.554)	4.75 (.809)	4.71 (.814)	4.78 (.743)

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 2B. Student, School, and Teacher Differences in Business Education, Family and Consumer Sciences, and Social Studies/Economics Academic Disciplines

	Range	Business education	FCS	Social studies/ economics	All respondents
		M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
School demographics					
Rural school location (in %; $F = 4.381$*)	0-1	0.54 (.498)	0.56 (.496)	0.42 (.495)	0.52 (.499)
Public school (in %; $F = 12.216$***)	0-1	0.92 (.260)	0.94 (.237)	0.80 (.401)	0.89 (.304)
Teacher experience					
Years teaching pf (in yrs.; $F = 33.917$***)	1-44	12.51 (10.023)	17.03 (9.761)	9.20 (8.451)	13.23 (10.067)
College-level courses (no.; $F = 15.825$***)	0-4	2.72 (1.385)	2.20 (1.348)	1.94 (1.533)	2.29 (1.452)
Continuing education (no.; $F = 11.355$***)	0-5	0.55 (1.018)	0.84 (1.147)	0.37 (.695)	0.63 (1.048)
Teacher demographics					
Gender (% female; $F = 197.480$***)	0-1	0.61 (.487)	0.99 (.086)	0.26 (.441)	0.67 (.47018)
Age (in yrs.; $F = 29.155$***)	22-76	44.12 (9.53)	47.83 (9.496)	40.24 (10.684)	44.59 (10.319)
Education (% MS, Ph.D.; $F = 2.736$, *ns*)	0-1	0.72 (.446)	0.66 (.473)	0.61 (.488)	0.66 (.471)
Marital status (% married; $F = 1.234$, *ns*)	0-1	0.76 (.422)	0.82 (.381)	0.78 (.411)	0.80 (.399)
Household income (in dollars; $F = 12.565$***)	$10k-$200k	$80,952 ($29,936)	$89,464 ($35,198)	$72,926 ($32,041)	$82,679 ($33,252)

*$p < .05$. **$p < .01$. ***$p < .001$.

ed in our list of nine challenges. Business education teachers mentioned the elective status of the courses that tended to attract lower enrollment and lack of financial resources to purchase technology equipment, for instance, to offer market simulations. Family and consumer sciences teachers addressed the variety of teaching methods to teach personal finance, a lack of suitable continuing education offerings for teachers, and the diverse student population in these courses. Social studies/economics teachers noted that personal finance might not be a part of the school district curriculum.

The results of an OLS regression analysis are presented in Table 7, which was conducted in order to investigate the predictors of teacher challenges by regressing the number of challenges on the six instructional topic variables, five information source variables, four time investment variables, and the student, school, and teacher demographic variables. We found teacher preparation through college-level courses in personal finance to be the most important predictor of teaching challenges: the more college courses taken, the fewer challenges faced by teachers. Apart from

Table 3. Three Binary Logistic Regression Models for Predicting Personal Finance Instruction in Business Education, Family and Consumer Sciences, and Social Studies/Economics Academic Disciplines

	Business education	FCS	Social studies/economics
	β	*β*	*β*
Years teaching personal finance		0.040*	-0.070*
Number of personal finance college courses	0.270**	-0.248*	
Number of personal finance CEUs			-0.689**
Female teacher	-0.975**	5.493***	-2.380***
Teacher age		0.044*	
Teacher graduate degree	0.435†	-1.080**	
Number of courses			-0.545*
Instruction Time	0.042***	-0.037***	-0.042***
Students in Grade 10		0.014†	
Students in Grade 12	-0.012*	0.014*	
Elective course	1.535***	1.073*	-3.067***
One-semester course	-1.598***	2.081***	
Male students	0.015**	-0.025**	
Students will graduate from high school	0.026†		-0.037†
Rural school location	0.518†		
Teaching credit	-1.336**	2.225***	
Teaching investing		-2.429***	2.319***
Teaching taxes	0.709†		
Teaching goals	-1.280**	3.764***	
Teaching budgeting		1.323*	-0.989†
Internet sources	0.338*	-0.423*	
Professional development sources	-0.578**	0.700**	
Personal sources		0.510*	
Time needed to read publications		-0.010†	
Time needed to talk to others	-0.013**	0.010†	0.021**
Time needed to correlate materials			-0.012†
Constant	-4.917**	-13.349***	10.174***
χ^2	324.848	567.490	456.891
-2 log likelihood	521.910	310.304	231.597
Nagelkerke R^2	0.541	0.787	0.773

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.
Note. Only significant variables are shown.

Table 4. Thumbnail Sketches of Academic Disciplines

Business education	Family and consumer sciences	Social studies/economics
Had attended a higher number of college courses on personal finance	More years teaching personal finance	Fewer years teaching personal finance, had attended fewer continuing education events on personal finance
Less likely female teachers	Had taken fewer college courses on personal finance	Most likely male teachers
Devote more time to personal finance content in their courses	Most likely female teachers, older	Personal finance taught in fewer courses, devoting less time to personal finance content
Teach personal finance fewer high school seniors	Less likely holding a graduate college degree	Most likely to teach personal finance in mandatory courses
Personal finance most likely an elective, yearlong course	Spend less time on personal finance content in their courses	Focus instruction on investing
More male students in personal finance courses	More likely teaching personal finance in Grade 12	Spend the most time talking to others about personal finance content when preparing courses
Less likely to teach credit, goal-setting	Elective courses, one-semester long, mostly female students	
Tend to use Internet sources to prepare personal finance courses; fewer professional development sources	More likely to teach credit, goal-setting, budgeting	
Spend less time talking about personal finance content to others	Less likely to teach investing	
	Use professional development and personal information sources to prepare personal finance instruction	
	Make less use of Internet sources	

this, fewer challenges were associated with the business education discipline, with teachers teaching investing, devoting more time to teaching personal finance in their courses, and having a higher quality student body.

Discussion

Academic Disciplines Unique in their Approaches to Personal Finance Instruction

The first research question addressed the choices that define personal finance instruction within the three academic disciplines that primarily teach it. The findings supported the notion in the educational literature that academic disciplines are unique in their approaches to personal finance instruction in a variety of aspects (Grossman & Stodolsky, 1994, 1995). First, each discipline seemed to have developed specific subject definitions expressed in their teaching foci and preferred sources of classroom information and materials. An example is the emphasis on investing content in social studies/economics.

Second, the setup of courses in which personal finance is taught was found to vary with respect to the course elective or mandatory status, number of courses in which personal finance is taught, and the time devoted to personal finance content in these courses. These results support the different conceptualizations of subject scope among the three academic disciplines. In particular, the elective instruction in business education and family and consumer sciences tended to allow for more time-intensive instruction, which was reflected in the greater number of personal finance topics addressed by these two disciplines. Third, the student audience differed with respect to gender, student quality, and cohort size. These findings point toward varying degrees of status among the academic disciplines with respect to personal finance instruction. Business education teachers tended to be particularly successful in attracting higher quality students and had a majority of male students. Finally, teachers in the three

Table 5. Multinomial Regression Analysis Comparing Business Education and Family and Consumer Sciences Teachers to Social Studies/Economics Teachers

	Business	FCS
	β	β
Intercept	-11.462***	-20.802***
Teaching credit		2.628**
Teaching investing	-1.898**	-3.853***
Teaching goals		3.567***
Teaching budgeting		1.861*
Mass media sources		-0.624†
Professional development sources		0.910*
Personal sources		0.675†
Time needed talking to others	-0.027**	
Time needed correlating materials	0.014†	
Number of personal finance courses	0.547†	0.712*
Instruction time devoted to personal finance content	0.052***	
Students in Grade 10		0.023†
Elective course	3.095***	3.041***
One-semester course	-1.201**	1.151*
Male students		-0.036**
Students will graduate from high school	0.053*	
Students will enter college		-0.022*
Years teaching personal finance	0.070*	0.104**
Number of CEUs	0.628*	0.713*
Female teacher	1.276**	6.492***
Teacher education (graduate degree = 1)		-1.160*
χ^2		896.733
-2 log likelihood		485.368
Nagelkerke R^2		0.850

†$p < .10$. *$p < .05$. **$p. < .01$. ***$p < .001$.
Note. Only significant variables shown; Reference category is: Social Studies/Economics teachers.

Table 6. Pearson's Correlation Coefficients Between the Academic Disciplines and Variables Associated with Teacher Challenges

	Business education	FCS	Social studies/economics
	Pearson's *r*	Pearson's *r*	Pearson's *r*
Subject-matter	-0.200***	0.131**	0.075†
Curriculum	-0.145***	0.119**	
Classroom materials	-0.130**		0.146***
Classroom time	-0.156***		0.133**
School administration	0.131**	-0.068†	-0.070†
Student interest	-0.130**	0.146***	
Selection		0.078*	
Tedious task	-0.125**	0.122**	
Stay current		0.075†	

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.
Note. Only significant variables are shown.

Table 7. OLS Regression Model for Predicting the Number of Challenges Encountered When Teaching Personal Finance

	Unstandardized β	p
(Constant)	4.032	0.000
Business education discipline	-0.429	0.027
Teaching Investing	-0.482	0.019
Instruction time	-0.007	0.017
Percent students will enter college	-0.008	0.004
Number of college-level courses on personal finance content	-0.141	0.003
Number of continuing education courses or workshops	-0.124	0.069
R^2 / Adjusted R^2		0.191 / 0.134
F		3.320***

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.
Note. Only significant variables are shown.

disciplines were identifiable with respect to their college preparation, experience, gender, age, and formal education level. Telling is the finding that the mostly female, older, lower educated family and consumer sciences teachers were more hesitant to teach investing content than other personal finance content, which supports findings of gender differences in financial decisions and behaviors persisting beyond the private sphere (Niessen & Ruenzi, 2006). Taken together, the results for our first research question suggested a diverse, multifaceted portrait of personal finance instruction in high schools shaped by the academic discipline in which it is taught.

Personal Finance Instruction in Elective Courses Is More Student Focused

Our second research question touched on the policy discussions about housing personal finance instruction in the, mostly mandatory, social studies/economics discipline. The findings suggest that a relocation of personal finance instruction from elective business education and family and consumer sciences courses to mandatory social studies/economics courses would affect several aspects of this subject. First, the differences in subject definition could result in a strengthened focus on investing content at the cost of instruction in goal setting, budgeting, and credit.

It has been suggested that the "Stock Market Game" used in social studies/economics courses has been effective in teaching personal finance concepts as it has become very popular (Harter & Harter, 2010). Second, the reduced subject scope would likely limit instruction to fewer courses with less instruction time devoted to personal finance content. On the other hand, the social studies/economics courses reached a larger number of male students and students who were expected to enter college, which may indirectly improve the degree of status of personal finance among the school subjects. Finally, the larger number of CEUs among business education and family and consumer sciences teachers should motivate social studies/economics disciplines to increase their continuing education offerings for their teachers to respond to the subject's dynamic nature.

Perception of Challenges in Personal Finance Instruction Linked to Teacher Preparation

The analyses addressed the question of whether and how the challenges of personal finance instruction differ among the three academic disciplines. In this respect, a link emerged between college-based teacher preparation and teachers' ability to respond to the challenges of personal finance instruction. Even at the univariate level, it became clear that this link is particularly strong for business education. Six of the nine challenges listed were significantly and negatively related to this academic discipline. In contrast, five significant challenges were identified for family and consumer sciences teachers and two for social studies/economics teachers when controlling for the full set of study variables to determine the extent of teacher challenges in personal finance instruction. Teaching investing content, time-intensive instruction, having higher quality students, and college-level preparation were metrics that distinguished business education from the other two disciplines and, as the regression results show, were closely related to teacher preparation. The lack of significance of the number of years the respondents taught personal finance speaks for little relief with respect to the main challenges, such as time constraints, the quest for teaching materials, and efforts to stay current on personal finance content. While the quality of the student body, measured as the percentage of students expected by their teachers to enter college, which is a metric chosen to reflect academic ability, was found to reduce teacher challenges, the conditions in the four grade levels did not affect it. This finding may suggest that the challenges of personal finance instruction are more closely related to students' general intellect than their financial interest and experiences. Although cohort size increased from Grade 9 to 12 in response to the greater usefulness of personal finance content to students nearing the age of majority, our findings indicate that a potential greater student interest does not reduce teaching challenges in a manner similar to student quality (Auwarter & Aruguete, 2008). This finding supports the notion forwarded by Mandell (2008a) that student grade point average may serve as a surrogate measure for financial literacy.

Study Limitations

While we have employed best survey practices to safeguard from any pitfalls in data collection and analysis, the reader should be made aware of two potential biases. First, both authors come from one of the three disciplines: family and consumer sciences. While it was attempted to provide an objective analysis, there may have been unintended biases that influenced the design and implementation of this study. A second bias relates to the fact that the data were from a single state. While it is generally advised to aim for a diverse sample, the intensive discussions among consumer advocates, policy makers, and researchers surrounding the implementation of a statewide personal finance education mandate in Ohio in 2010 provided for particularly good grounds for thoughtful survey responses. We also expected a higher response rate from teachers. It

would have been difficult to find comparable conditions in other states at this point in time. Findings of the current study were used to inform policy makers' discussions about the implementation of the mandate at the Ohio Department of Education and the Ohio Commission on Personal Finance Education.

Conclusion

The current study investigated differences in teaching a traditionally elective subject, personal finance, among three different academic disciplines. Our findings respond to subject matter scholarship's call for using the "subject-matter lens" in assessing teaching outcomes (Burch & Spillane, 2005; Grossman & Stodolsky, 1995). Although our study focused on a limited number of choice items, such as instructional content, information sources, and time investment, the results indicated significant academic differences that may also affect other teaching choices. For example, a worthwhile topic for further investigation would be the differences in teaching practices among the disciplines. Mandell (2008a) suggested that highly interactive teaching methods, such as the use of stock market simulations, tend to have a particularly positive influence on student understanding of personal finance concepts.

The public mandate for personal finance instruction aims for the high school classroom to provide students with the "skills and knowledge needed to make sound decisions managing their own personal finances" (Rutan, 2008, p. 4). Our findings suggest, however, that the practice of teaching this subject encourages academic disciplines to interpret personal finance instruction in a variety of ways. As a result, teachers in the three main disciplines reach a highly diverse student audience and skillfully embed personal finance subject matter in a variety of courses. Formal college preparation in personal finance emerged as the strongest predictor for successful personal finance instruction. Other indicators were student quality, classroom time, an interest in teaching investing, and being a teacher in business education.

As state mandates related to personal finance instruction tend to hand implementation decisions to the local level, it can be expected that a mandate requiring placing the subject under the umbrella of one specific discipline will redirect its instruction, may well bias the education and, removed from its managerial or social context, hamper its usefulness for high school graduates. Our findings suggest that the quality of personal finance instruction in high schools may be substantially improved if consideration is given to the strength of each academic discipline and cooperation enabled.

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Acknowledgment

This research was funded by a generous grant from the P-12 Project at The Ohio State University.