

# Valuing the Implementation of Financial Literacy Education

Kimberlee Davis and Dorothy Bagwell Durband

*Placing a monetary value on education is a complex task. A more difficult task is to determine at what monetary level individuals will support educational improvements. The contingent valuation method was used to estimate the value of the implementation of financial literacy education in Texas public schools. A Web-based survey was administered to 279 Texas Parent Teacher Association (PTA) members. Respondents reported being willing to pay additional property taxes for implementation of financial literacy education. Additional gambling venues and state sales tax proved to be acceptable revenue sources for added educational funding, whereas a state income tax proved to be the least preferred revenue source.*

*Key Words: contingent valuation, financial education, financial literacy*

## Introduction and Background

Alan Greenspan, former Chairman of the Board of Governors of the Federal Reserve System, identified financial education programs at the elementary and secondary school levels as necessary resources for consumers to achieve financial literacy. In a speech presented during an annual meeting of the Jump\$tart Coalition for Personal Financial Literacy (Jump\$tart), Greenspan stated that an understanding of financial issues is critical to the successful management of personal finances and instrumental in giving consumers the tools to make educated choices about financial products. He pointed out that such knowledge was necessary to enable consumers to protect themselves from abuses stemming from fraud and other illegal practices (Jump\$tart, 2003). Ben Bernanke, current Chairman of the Board of Governors of the Federal Reserve System, stated that improving financial education is vital to the future of our economy and pronounced that “financially literate consumers make the financial marketplace work better, and they are better-informed citizens” (Bernanke, 2006).

In 1997, Bernheim, Garrett, and Maki documented that financial education mandates had a positive effect on personal financial management. For instance, they reported that asset accumulation amounts increased up to 1.5% later

in life for those who received high school instruction in personal finance compared to those who did not receive instruction. Despite this important finding, a national survey of financial literacy among high school seniors conducted every other year since 1997 revealed only slight increases in already low scores in financial literacy (Jump\$tart, 2004, 2006). One plausible explanation for these low scores may be American high schools’ increased focus on high stakes testing as mandated by the national education legislation known as “No Child Left Behind” and college preparation. Courses with practical daily applications, such as financial literacy, have received less emphasis.

The lack of attention to financial literacy education in public high schools has an impact on consumers’ ability to make sound financial decisions about present and future personal needs. Yet, measuring the benefits and costs of implementing new secondary courses to the core curriculum can be difficult. A technique of economic analysis called the contingent valuation method (Mitchell & Carson, 1989) has helped researchers obtain estimates of economic value of intangible, nonmarket goods or services. In this paper, the contingent valuation method is used to establish an estimate of the economic value placed on the implementation of the financial literacy educational

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curriculum in Texas public schools. This is the first known attempt to value financial literacy education using this method.

## **Literature Review**

### ***Status of Financial Literacy Education***

In recent years, the Congress, State legislatures, and several governors have addressed the importance of financial education in public schools. As a result, financial education during high school is required by a number of states, including Alabama, Georgia, Idaho, Illinois, Kansas, Kentucky, Louisiana, Missouri, New York, North Carolina, Ohio, South Carolina, Texas, Utah, Virginia, and West Virginia (H. Res. 273, 2007).

In 2007, Jump\$start reported that some 31 states had approximately 156 pending bills before legislative bodies addressing financial literacy (Jump\$start Coalition, 2008). This number was up from 2004, when 24 state bills, resolutions, and proclamations that encouraged financial literacy offerings in grades K-12 had been introduced (Duguay, 2004).

Bernheim et al. (1997) reviewed results of mandated consumer education curricula in high schools. These mandates included instruction in budgeting, credit management, savings, investments, and household financial decision making. Their research suggested that mandates significantly increased experience with financial education and eventually boosted the rates at which individuals saved and accumulated during their adult lives, thus making a long-term impact on adult financial behaviors.

In 1997-98, an evaluation of the National Endowment for Financial Education (NEFE) High School Financial Planning Program looked at the short-term effects of financial education in schools (Boyce & Danes, 1998). Some 30% of students reported that they began a savings program after taking part in the NEFE program. Another 15% who saved before taking part in the education program began to increase the amount they regularly saved. Another 40% said they had gained skills for tracking spending, were more informed about the cost of credit, were more knowledgeable about investments, and were more secure with their money-management skills.

The 2003-04 evaluation of the same NEFE program showed that students reported improvements in financial knowledge and changes in behavior (Danes & Haberman, 2005). Immediately following education, about 60% of

the students increased their knowledge with regard to auto insurance, the cost of credit, and investments. Three months after the program, 59% of the students reported changing their spending patterns, and 60% reported changing their savings patterns.

In 1997, Jump\$start administered its first assessment measuring the financial literacy level of high school students. This assessment has been administered every two years since, beginning with an average score of 57.3% in 1997. Scores fell to 51.9% in 2000 and 50.3% in 2002 with some mild increases to 52.3% in 2004 and 52.6% in 2006. It should be noted that students failing the measure by a score below 60 have improved from 65.5% in 2004 to 62% in 2006 (Jump\$start, 2007). Nonetheless, a majority of high school students failed the assessment and showed low levels of financial literacy.

### **Theoretical Perspective**

The contingent valuation method is a means of assigning monetary value to a resource or service that is not priced by a marketplace. The contingent valuation method is based on welfare economics, where the value of a non-market good or service to an individual is expressed as their willingness-to-pay (WTP) to attain it. Much of the conceptual development of the contingent valuation methodology began with environmental economics studies (Carson et al., 1995). Most frequently, the contingent valuation method has been used to determine the value of environmental commodities, such as clean air or clean water and the repair of environmental damage (Carson et al., 2003). This technique has also been used to identify the value of improvements in other non-market commodities, specifically public education, public traffic safety, crime prevention, health care, recreational venues, and agricultural extension programming (Bayoumi, 2004; Carson et al., 1995; Cohen, Rust, Steen, & Tidd, 2004; Roe, Haab, & Sohngen, 2004; Whitehead, 1998).

Perhaps, the most significant application of the contingent valuation method was its use to estimate the value of the damage done by the Exxon Valdez oil spill in 1989 (Carson et al., 2003). Robert Solo and Kenneth Arrow, both Nobel Prize-winning economists, chaired a panel organized by the federal government to determine the economic impact of the oil spill. The panel confirmed that the contingent valuation method was suitable for use in policy-making. The panel reported that contingent valuation method studies were capable of establishing useful information and approximations of value that are

reliable enough to provide a starting point for establishing passive-use or values of non-market goods, thus clearing the way for the use of this method in valuing the damage to the Alaskan coast (Carson et al., 2003).

Roe et al. (2004) used the contingent valuation method to estimate program participants' WTP for agricultural economics extension programming and explored revenue-generating potential from alternative program pricing structures. Results suggested that participant benefits exceeded departmental costs of conducting the program. These results provided useful information to guide administrators who had to (a) make difficult financial decisions and (b) possibly alter their pricing structure to generate more revenue from extension programming.

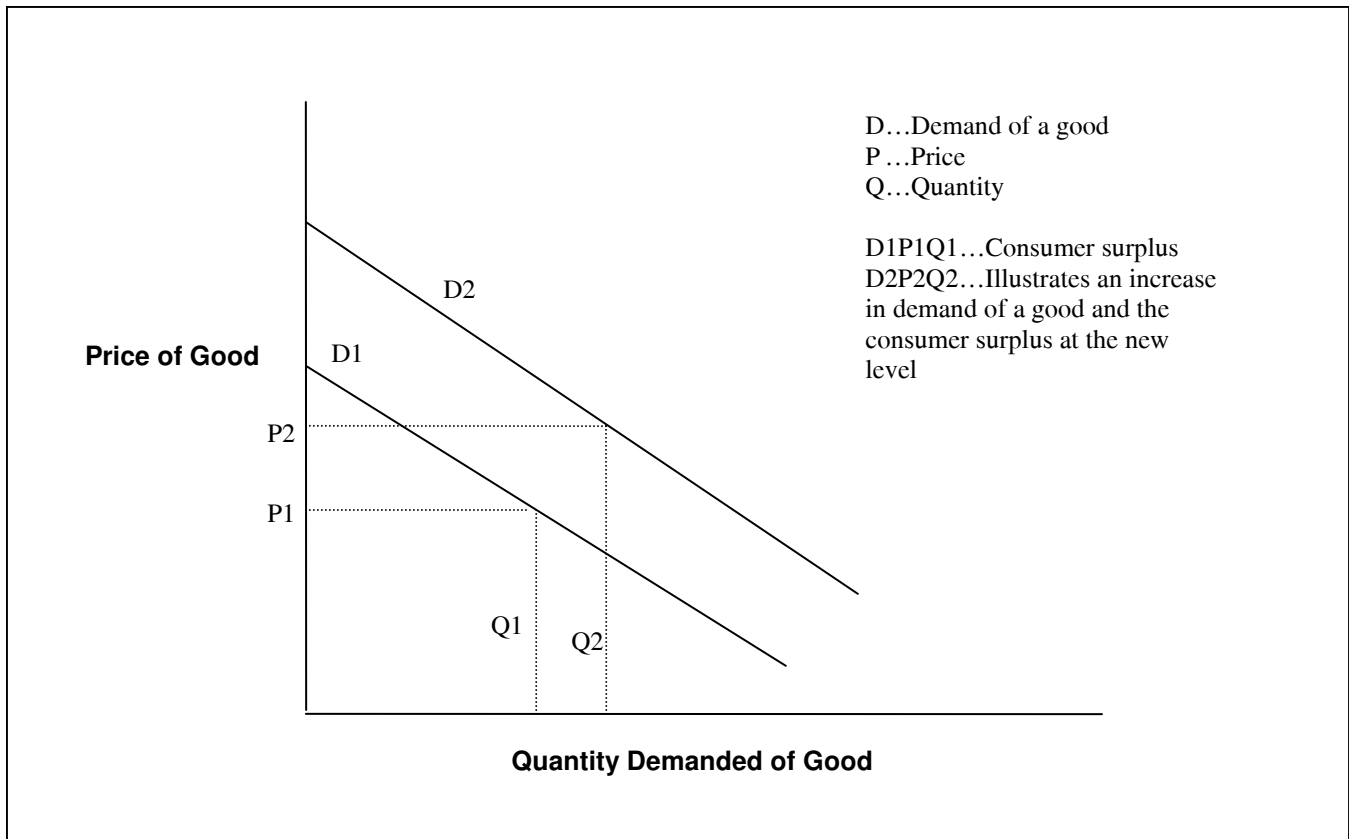
As with other goods and services, the WTP for the inclusion of financial literacy education in Texas public high schools was based on the microeconomics theory related to the concept of *consumer surplus*. The theoretical perspective used in the current study was based on welfare economics theory as applied by Hicks (1939), which was used to study economic activities of individuals that might

establish or increase levels of social welfare. In cases where a price or value has not been set in the marketplace, stated preferences cannot be measured in known dollar amounts. Preferences, however, can be measured in the WTP.

Microeconomics theory states that people prefer greater welfare to less and that welfare can be measured in dollars, thus allowing a measurement of change in value based on a change in stated preferences of individuals (Bateman et al., 2002). In other words, there is an attempt to maximize the level of social welfare by examining the economic activities or, in the case of the current study, the stated preferences of the individuals holding memberships in the Texas Parent Teacher Association (PTA) with regard to the inclusion of financial literacy education in Texas public high schools.

As applied to the current study, the researchers expected an individual's characteristics to explain changes in the WTP. This expectation was based upon the focus on changing the level of consumer surplus, defined as the difference between what a consumer is willing to pay for

**Figure 1. Change in Consumer Surplus**



a good and the market price of that good. As illustrated in Figure 1, the total consumer surplus was the area between the demand curve and the market price (D1P1Q1). When there is a shift in the demand, the amount of the consumer surplus will change. Thus, consumer surplus is a result of the waning or increasing utility of a good or service as perceived by a consumer and is a measure of the net benefit received by the consumer. This is illustrated in the increase in demand for a good from D1 to D2; both the market price and the amount sold expand (see Figure 1). The consumer surplus was initially shown as D1P1Q1. With the change, it is now shown as D2P2Q2.

This difference represented the consumer's maximum WTP and was known as the Hicksian consumer surplus measure (Hicks, 1939). The purpose of the study was to determine the subjects' maximum WTP or consumer surplus with regard to the implementation of financial literacy education in Texas public schools.

## **Methodology**

### ***Survey Development***

As suggested by Mitchell and Carson (1989), the development of the survey began with the creation of "sections." For the purposes of the present paper, only the section addressing the WTP is discussed. This particular section focused on the WTP for the inclusion of financial literacy education in Texas public high schools based on scenarios with no further explanation of what type of financial literacy education was to be offered.

The "payment card technique" was the question technique used to develop the items intended to obtain the WTP for a public good. Subjects were given a scenario listing a number of potential payments. For some specified improvements, they were asked to choose which amount represented the maximum amount they were willing to pay for this improvement. This technique eliminated the starting point bias by including zero as a potential payment. The payment card technique was adapted to fit online data collection.

Studies have shown that the payment card technique does not elicit the maximum WTP (Rahmatian, 1986; Sorg & Brookshire, 1984). To address the possibility that this technique may not obtain the maximum WTP, subjects were given two scenarios. After subjects responded to the first scenario, they were given a second scenario to which to respond.

In the second scenario, subjects were informed that the initial amount they had indicated they were willing to pay was inadequate. They were then asked how much more money they would be willing to pay for financial literacy education in public schools. The second scenario was offered to eliminate the possibility of value cues, either by the starting point of the first amount offered or its positioning (e.g., subjects who would select a midpoint or average amount, thus not eliciting a meaningful answer associated with their preferences).

### ***Pretest of Survey and Pilot Test of Web Site Data Collection***

As recommended by Bateman et al. (2002), a pretest of the 39-item survey in the form of one-on-one interviews was conducted with eight members of Texas PTA chapters from Lubbock, Houston, and San Antonio to assure that survey items could be understood by the participants. These PTA members were desired as pretest subjects based upon the assumptions that they would be in the best position to relate to the issues within the survey and would be similar to prospective subjects in the full study. The one-on-one interviews lasted from 30 minutes to 1 hour and enabled the assessment of the effectiveness of the construction of the instrument.

As suggested by Bourque and Fielder (2003), participants were asked to complete the steps. First, they were asked to read silently the advertisement for the study and to verbally explain to the primary researcher what they understood the advertisement to mean. They were asked to do the same with the directions for completing the survey and each of the items on the survey. Subsequently, each participant was asked to discuss every item's meaning, contents, structure, or wording one item at a time. They read each item and provided verbal feedback about the item and answer choice. Third, they were asked for suggestions to improve the readability and clarity of the instrument. Based on pretest participants' comments, a revision of items occurred.

A Web site for data collection was developed and a pilot test conducted to determine the extent to which administrative procedures and the Web site functioned seamlessly. The pilot test was conducted using a sample of 30 volunteers obtained from the Texas PTA chapter officers in the Lubbock area. Results from the pilot test were used to develop and refine the content and the survey. Although the strongest test to establish validity of an instrument is

to compare subjects' responses with actual amounts paid in the market, such a comparison was impossible, making the best approach to scrutinize the survey carefully and to use extensive feedback from the pretest and pilot test in order to ensure reliability and validity.

### Sample

Subjects were members of the Texas PTA who received the Texas PTA publication, *The Voice*, and who volunteered to participate. *The Voice* is a free quarterly publication of the Texas PTA that is distributed via the U.S. Postal Service to more than 3,100 Texas PTA presidents, officers, and subscribers throughout the state. Texas PTA members were solicited by including a request to participate in the study in the April 2005 issue of *The Voice*.

### Procedures

Subscribers to *The Voice* who were interested in learning more about the study were directed to an Internet site where they were provided with additional information about the study and an opportunity to participate in the online survey. Those who participated in the online survey were the subjects in the current study. At the conclusion of the Internet survey, each subject was given the opportunity to enter a drawing for a \$150 Barnes and Noble gift card. Each subject who elected to enter the drawing was instructed to provide personal contact information so the winner could be notified. In order to protect the identity of the subjects who participated in the study, subjects were informed prior to agreeing to participate in the study that there was no way to match subjects' responses to survey items with entries for the gift card. It was anticipated that the gift card would encourage prospective subjects to participate in the study.

*The Voice* containing the solicitation to participate in the study was mailed on March 30, 2005 to 3,100 Texas PTA subscribers. From April 1, 2005, to April 22, 2005, 117 responses (3.8% response rate) were received. In addition, an email invitation was sent on April 23, 2005 to 1,143 addresses obtained from the Texas PTA Web site that would also be among the readership of *The Voice*. This technique increased the number of responses by 87 for a total of 204 (6.6% response rate). A reminder email was sent to the same 1,143 email addresses on May 6, 2005 and yielded another 75 responses for a total of 279 (9.0% response rate).

### Limitations

The use of a convenience sample is a limitation of the study as is the low response rate. Unlike the odds in random sampling, when a convenience sample is used some members of the population have no chance of being selected. Consequently, with convenience sampling, an unknown number of the population is excluded, and the researcher cannot specify the probability each member of the population has of being selected as a member of the sample.

### Results

#### Sample Characteristics

The sample was comprised of 279 Texas PTA members who received the Texas PTA newsletter, *The Voice*, and subsequent email reminders. The socio-demographic variables addressed included the following: gender, ethnic background, age, marital status, relationship to Texas PTA, employment status, description of current employer, highest level of education, household income, household size, number of people financially supported, housing situation, and grade level of the subject's oldest child in school (see Table 1). The majority of the subjects who participated in the study were Caucasian/white female. They were predominantly married, between the ages of 40-49, employed either full- or part-time, with 36% of annual income reported falling between of \$75,000 to \$125,000, and were homeowners with mortgages. A large majority (96%) reported having had at least some college education.

**Table 1. Sample Characteristics**

Characteristic	<i>n</i> <sup>a</sup>	%
Gender		
Male	27	10
Female	249	90
Total	276	100
Ethnic Background		
Caucasian/White	257	92
African American/Black	5	2
Hispanic/Latino	11	4
Native American	3	1
Asian/Pacific Islander	3	1
Total	279	100
Age (in Years)		
20-29	6	2
30-39	74	27
40-49	145	52
50-59	52	19
Total	276	100

**Table 1. Sample Characteristics**

Characteristic	<i>n</i> <sup>a</sup>	%	Characteristic	<i>n</i> <sup>a</sup>	%
<b>Marital status</b>			<b>Household income</b>		
Never married	4	1	\$75,000-99,999	50	18
Not married but living with significant other	3	1	\$100,000-124,999	51	18
Married	255	91	\$125,000-149,999	27	10
Separated	1	0	\$150,000 and higher	48	17
Divorced	16	6	Don't know	14	5
Widowed	0	0	Total	274	99
Total	279	99	<b>Household size</b>		
<b>Relationship to Texas PTA</b>			1	6	2
Parent	211	76	2	16	6
School staff member, teacher or administrator	25	9	3	63	23
Both	42	15	4	145	52
Total	278	100	5	43	15
<b>Employment status</b>			6	5	2
Self-employed	35	13	7	1	0
Employed part-time	58	21	Total	279	100
Employed full-time	95	34	<b>Number you financially support</b>		
Retired	6	2	0	24	9
Stay-at-home parent	80	29	1	11	4
Not employed or temporarily laid off	1	0	2	24	9
A full time student	4	1	3	56	20
Total	279	100	4	114	41
<b>Description of current employer</b>			5	40	14
Education or academic institution	89	32	6	7	3
Government (Federal, state, local)	14	5	7	1	0
A non-profit organization	12	4	Total	277	100
A large corporation	22	8	<b>Housing situation</b>		
A small corporation	35	13	Own without a mortgage	28	10
A farm or agricultural business	0	0	Own with a mortgage	227	81
Self-employed	24	9	Rent	22	8
Does not apply	80	29	Live with relative or parents	0	0
Total	276	100	Other	0	0
<b>Highest level of education</b>			Total	279	99
Some high school or less	0	0	<b>Grade level of oldest child in school</b>		
High school graduate	12	4	Kindergarten	14	5
Some college/trade/vocational training	59	21	1st grade	11	4
Associate's degree	16	6	2nd grade	15	5
Bachelor's degree	94	34	3rd grade	30	12
Some graduate	41	15	4th grade	15	5
Master's degree	53	19	5th grade	24	9
Doctoral or professional degree	4	1	6th grade	32	12
Total	279	100	7th grade	27	10
<b>Household income</b>			8th grade	0	0
Less than \$15,000	1	0	9th grade	5	2
\$15,000-24,999	7	3	10th grade	38	14
\$25,000-34,999	12	5	11th grade	28	11
\$35,000-49,999	28	10	12th grade	19	8
\$50,000-74,999	36	13	Total	258	99

<sup>a</sup>The *n*s for individual categories may not equal total *N* because some respondents inadvertently or intentionally did not answer some questions.

### ***Willingness-to-Pay***

The research question was "Are parents of Texas public school students willing to pay for the implementation of financial literacy education in Texas public schools?" The construct, WTP for the implementation of financial literacy education, was operationalized as follows. Two survey items were identified as reflecting the initial WTP for financial literacy education (see Table 2). With regard to Item a, subjects were directed to select amounts from 0¢ to 20¢ that they would be willing to pay for financial literacy education in Texas public schools. Later in the survey (Item b), subjects were directed to select amounts from \$1.55 per \$100 in property taxes to \$1.75 per \$100 in property taxes that they would be willing to pay for financial literacy education in Texas public schools (Texans, on average, pay \$1.55 per \$100 in property taxes). Results of subjects' responses to Items a and b were summed to yield an initial WTP amount, and a new variable labeled "WTPInitial" was created. Cronbach's alpha for the two items was .90.

A one-sample *t* test was conducted on the variable "WTPInitial" to evaluate whether the mean was significantly different from 0, the accepted mean. The sample mean of 4.32 (*SD* = 4.80) was significantly different from 0 ( $t(278) = 15.03, p < .001$ ). The effect size, *d*, of 0.90 indicated a large effect. The results suggested that respondents were willing to pay an additional 4.3¢ per \$100 in property taxes for financial literacy education to be taught in Texas public schools.

Two other items were identified to measure the WTP for financial literacy after the subject received additional information stating that the amount selected in Question a and b was not enough to ensure the implementation of financial literacy education in Texas public schools (see Table 2). With regard to Item c, subjects were directed to select amounts from 0¢ to 20¢ to indicate what they would be willing to pay for a change in the current Texas educational system for implementation of financial literacy education. In Item d, subjects were directed to select amounts from \$1.55 per \$100 in property taxes to \$1.75 per \$100 in property taxes for the inclusion of financial literacy education in Texas public schools. A Cronbach's alpha for the two-item measure was .89. The responses to these items were summed to yield a new variable, "WTPAfter."

A one-sample *t* test was conducted on the new variable to evaluate whether the means were significantly different from 0, the accepted mean. The sample mean of 5.58 (*SD* = 5.37) was significantly different from 0 ( $t(278) = 17.33, p < .001$ ). The effect size, *d*, of 1.04 indicated a large effect. The results suggested that respondents showed a WTP an additional 5.6¢ per \$100 in property taxes for financial literacy education to be taught in Texas public schools after additional information was provided to them.

A Cronbach's alpha for the four-item scale created from items a, b, c, and d was calculated. The alpha reliability for this scale was .95. The responses to these items were

**Table 2. Willingness-to-Pay Survey Items**

Items
a. Considering that Texans on average pay \$1.55 per \$100 in property taxes, how much more would you be willing to pay per \$100 in property taxes to ensure the implementation of financial literacy education? (In cents)
b. Considering that Texans on average pay \$1.55 per \$100 in property taxes, how much more would you be willing to pay per \$100 in property taxes to ensure the implementation of financial literacy education? (In dollars)
c. Now, consider that the amount you selected in Item A was not enough to ensure the implementation of financial literacy education in Texas public schools. With that in mind, how much per \$100 of property value would you be willing to pay? (In cents)
d. Now, consider that the amount you selected in Item B was not enough to ensure the implementation of financial literacy education in Texas public schools. With that in mind, how much per \$100 of property value would you be willing to pay? (In dollars)

*Note.* The first scenario is represented by item numbers a and b. The second scenario is represented by item numbers c and d.

summed to yield a total WTP amount, and a new variable "WTPAverage" was created.

A one-sample *t* test was conducted to determine the total WTP amount to evaluate whether the means were significantly different from 0, the accepted mean. The sample mean of 4.95 (*SD* = 5.00) was significantly different from 0 ( $t(278) = 16.52, p < .001$ ). The effect size, *d*, of 0.99 indicated a large effect. The results suggested that parents of Texas public school students showed a WTP of 6¢ per \$100 in property taxes for financial literacy education to be taught in Texas public schools in addition to the \$1.55 per \$100 in property taxes currently paid.

### ***Acceptable Revenue for Educational Funding***

The State of Texas primarily funds its public education system through property taxes levied on property owners. Other states in the United States use revenues gained through state income taxes revenues and gambling revenues. Items included in this survey were designed to assess PTA members' preference of revenue sources to fund the State of Texas educational system.

In order to determine what funding sources Texas PTA members indicated as acceptable for the implementation of financial literacy education in high schools, data were obtained from three sets of survey items with four items each (see Table 3). The first item from each set did not include new information for the subject to consider, as this would have resulted in a change in the level of provision.

When considering allowing gambling venues in addition to the already legalized daily and twice-weekly lotto games, scratch-off tickets, horse and greyhound racing, and charitable bingo in the State of Texas as a school funding source, 44.8% reported that they would not support the use of gambling revenue to fund Texas public schools, whereas 39.1% would support gambling revenue as a way to provide additional funding for Texas public schools. Only 9.0% would support gambling revenue as a way to fund the implementation of financial literacy education in Texas public schools, exclusively, whereas only 7.2% supported using gambling revenue as an alternative method to property taxes for funding Texas public schools.

When considering the establishment of a state income tax as revenue to fund Texas public schools, 53.7% would support the use of a state income tax to fund Texas public schools, and 20.4% indicated support for a state income tax as revenue to provide additional funding for Texas public schools. A slightly smaller percentage (19.7%) would support a state income tax as an alternative method to property taxes for Texas public schools, whereas only 2.5% indicated support for a state income tax as a way to fund the implementation of financial literacy education in Texas public schools exclusively.

When considering an increase in the state sales tax as revenue to fund Texas public schools, 38.7% supported the use of a state sales tax to fund Texas public schools,

**Table 3. Willingness-to-Pay Before Alternative Information Provided**

Response choices	Funding source					
	Additional gambling venues		State income tax		State sales tax	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
"As an alternative method to property taxes for Texas public schools"	20	7.2	55	19.7	53	19.0
"As a way to provide additional funding for Texas public schools"	109	39.1	57	20.4	108	38.7
"As a way to fund the implementation of financial literacy education in Texas public schools exclusively"	25	9.0	7	2.5	10	3.6
"I do not support the use of [this revenue source] to fund Texas public schools."	125	44.8	160	53.7	108	38.7
Total	279	100.1	279	97.3	279	100.0

*Note.* Some categories do not add to 100% due to rounding.



**Table 4. Willingness-to-Pay After Alternative Information Provided**

Response choices	Funding source					
	Additional gambling venues		State income tax		State sales tax	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
“As an alternative method to property taxes for Texas public schools”	17	6.1	63	22.3	42	15.1
“As a way to provide additional funding for Texas public schools”	119	42.7	76	27.3	127	45.5
“As a way to fund the implementation of financial literacy education in Texas public schools exclusively”	21	7.7	7	2.5	9	3.2
“I do not support the use of [this revenue source] to fund Texas public schools.”	122	43.7	133	47.8	101	36.2
Total	279	100.2	279	99.9	279	100.0

*Note.* Some categories do not add to 100% due to rounding.

and 38.7% indicated support for a state sales tax to provide additional funding for Texas public schools. Nineteen percent indicated support for a state sales tax as an alternative method to property taxes for funding Texas public schools, whereas only 3.6% indicated support for a state sales tax as a way to fund the implementation of financial literacy education in Texas public schools exclusively.

Two pieces of information were then presented to subjects that provided them with additional information about the performance of Texas public schools in comparison to the rest of the nation's public schools. This information included a statement that “Texas schools are ranked 33<sup>rd</sup> in school spending per student in national rankings of state public schools and spend below the national average on school spending per student.” Subjects again were asked under what conditions they would support alternative funding based on the new information presented. Results are shown in Table 4.

The second question from each of the three sets of items provided subjects with additional information about the amount needed to fund financial literacy education. After being provided with the additional information that compared Texas to other states in the nation in terms of school funding, 43.7% selected “I do not support the use of additional gambling venues to fund Texas public schools,” and 42.7% supported using gambling venues as a way to provide additional funding for Texas public schools. A small percentage (7.7%) selected gambling venues “As a

way to fund the implementation of financial literacy education in Texas public schools exclusively,” whereas only 6.1% selected “As an alternative method to property taxes for Texas public schools.”

As before, once information about other state's funding was given for a state income tax for school funding, 47.8% chose the response “I do not support the use of a state income tax to fund Texas public schools,” whereas 27.3% selected “As a way to provide additional funding for Texas public schools.” A smaller percentage (2.5%) selected “As a way to fund the implementation of financial literacy education in Texas public schools exclusively,” whereas 22.3% selected “As an alternative method to property taxes for Texas public schools.”

When considering the establishment of a state sales tax as a revenue source to fund Texas public schools, 36.2% of the respondents selected “I do not support the use of additional a state income tax to fund Texas public schools,” and 45.5% selected “As a way to provide additional funding for Texas public schools.” A small percentage (3.2%) selected “As a way to fund the implementation of financial literacy education in Texas public schools exclusively,” whereas 15.1% elected “As an alternative method to property taxes for Texas public schools.”

### Summary and Discussion

The present paper discusses the development and implementation of a method to estimate the demand for a spe-

cific improvement in Texas public schools, the implementation of financial literacy education. This is the first known attempt to measure the value of financial literacy education. Information relative to the degree to which Texas PTA parents desire financial literacy education implementation is provided. The findings indicate the respondents are willing to pay from 4.3¢ to 5.6¢ per \$100 in property value. Thus, the total property tax per \$100 in property value would be from \$1.59 to \$1.61, instead of the current average of \$1.55 per \$100.

Although the method and results presented in this paper show how techniques common in the non-market valuation arena can be applied to funding certain areas of curriculum in Texas public schools, further research is needed to fully explore the value of the implementation of financial literacy education. An additional study should be conducted in order to validate these results with a larger sample. The use of focus groups is recommended with different segments of parents of Texas public school students who are disenfranchised or do not agree with the current educational curriculum (e.g., parents from low income families, parents with varied ethnic backgrounds, parents of children in gifted and talented programs, and parents of children who fall academically in the lower one fourth of their class). Results of focus groups meetings would allow researchers to gain additional knowledge on parents' (or other stakeholders') attitudes and beliefs about financial literacy and their WTP for it. In addition, this study could be replicated with additional samples in other states.

These findings may be of use to policy makers and legislators who focus their efforts on educational reform, sending a clear message that financial literacy education in Texas public schools is valued by parents in Texas. The results would provide information about how individuals (some of whom may be constituents) value financial literacy education. Believing that a financially literate population is better able to participate knowledgeably in political processes and contribute more efficiently to the economic structure of the state, it is expected that policymakers at the federal, state, and local school board level would find the results of this study useful to their decision-making processes relative to designing and delivering financial literacy education in Texas public high schools.

It is important to note that the Texas Legislature passed H.B. 492 in 2005 (Texas Jump\$tart Coalition, n.d.) which requires personal financial literacy education as a condi-

tion of graduation, effective the 2006-07 school year. Currently, the Texas Education Agency is working on the logistics of providing this mandated financial literacy education. Unfortunately, this legislative requirement did not carry with it a fiscal appropriation for schools to implement the requirement.

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