

Does A Graduate Course in Personal Finance for Teachers Lead to Higher Student Financial Literacy than a Teacher Workshop?

Cynthia L. Harter

Eastern Kentucky University, Center for Economic Education, Richmond, KY 40475.

John F.R. Harter

Eastern Kentucky University, Department of Economics.

This study investigates the effectiveness of different types of teacher training – specifically a graduate course versus a workshop versus no training – in improving student scores on a multiple-choice test covering financial concepts. Both teacher training methods result in increases in student test scores, but the students of teachers in the graduate class improve slightly more. Students of teachers in the graduate class, however, do not perform significantly differently from students of teachers who attended a workshop.

Journal of Consumer Education (2012) **29**, (35-46).
<http://www.cefe.illinois.edu/JCE/archives/vol29.html>
Published online September 2013

Keywords: financial literacy, personal finance
JEL: A23, G02

INTRODUCTION AND OVERVIEW

This study compares the relative effectiveness of separate methods of training the teachers of economic and financial concepts in improving students' knowledge of economic and financial concepts. Efforts to prepare teachers for educating students about economics have historically focused on two options which involve significantly different costs to both providers and participants: coursework and in-service workshops. The question we are addressing is, is there a significant difference in student performance if teachers take a content-specific graduate course or attend a curriculum-specific three-hour workshop? Specifically, middle and high school teachers took a graduate class in consumer economics and personal finance. These teachers then took the knowledge gained in that class to their students. Their students comprise one test group. We provided workshops that train teachers in *Financial Fitness for Life (FFFL)*, a curriculum in consumer economics and personal finance. The students of the teachers who attended

This research was partially funded by an Excellence in Economic Education subgrant from the Council for Economic Education through funding from the United States Department of Education Office of Innovation and Improvement. The authors thank the Council for Economic Education and the Kentucky Council on Economic Education for their financial support. They also thank John Swinton, Helen Roberts, and other participants who discussed the paper and offered helpful suggestions at the 2010 CEE /NAEE Conference.

one of those workshops comprise a second test group. The control group consists of students of teachers who neither took the graduate class nor attended an *FFFL* workshop, but did also teach consumer economics and personal finance content to their students. The hypothesis of this paper is that a graduate class in consumer economics and personal finance for teachers will improve students' financial literacy as measured by the Council for Economic Education's *FFFL* assessment tool and improve their financial literacy more than a teacher workshop in *FFFL*. We find that the graduate class for teachers does increase student performance, but not necessarily more than an *FFFL* workshop for teachers.

There is evidence that having teachers learn economics in their classwork enhances student learning (*e.g.*, Walstad and Soper, 1988; Bosshardt and Watts, 1990; and Wetzel, O'Toole, and Millner, 1991), though this might not occur until the teacher has taken multiple courses (Lynch, 1990). There is also evidence that in-service, professional development workshops improve student learning (*e.g.*, Swinton, De Berry, Scafidi, and Woodard, 2007), though this might not occur until the teacher has participated in multiple workshops (Swinton, De Berry, Scafidi, and Woodard, 2010). The relative amounts of the student learning in the two methods of teacher training can be important. State councils for economic education and local centers for economic education in various states offer scholarships to help pay tuition costs for teachers who take graduate classes.² Is this the best use of scarce resources?

METHODOLOGY AND ANALYSIS

During Spring and Summer, 2009, we offered a graduate class titled "Seminar in Economic Education: Consumer Economics and Personal Finance for Teachers." The course covered basic personal finance topics including using financial statements, tools, and budgets, managing income taxes and checking and savings accounts, using credit cards and consumer loans, building and maintaining good credit, making vehicle and other major purchases, obtaining affordable housing, managing risk, health expenses, and insurance planning, investing in stocks, bonds, and mutual funds, and handling estate planning. The professor used the ninth edition of *Personal Finance* by Garman and Fogue, published by Houghton Mifflin and supplemented with other materials provided to the teachers through a Blackboard site. No other print materials were provided to the teachers. For each topic, teachers were provided with links to a variety of online resources, activities, and lessons that could be used to cover the personal finance content at various grade levels. The course content covered the six major categories of personal finance spelled out in the Jump\$tart Coalition for Personal Financial Literacy's *National Standards in K-12 Personal Finance Education* which provides "the framework of an ideal personal finance curriculum" and "describes what personal finance instruction should enable students to know and do." (Jump\$tart, 2007) The college-level course

² Examples where scholarship funds are available for teachers who take graduate courses include Wisconsin (<http://www.economicswisconsin.org/Education.html>), IPFW (<http://new.ipfw.edu/departments/business/depts/cee/workshop/>), Montana (<http://www.montana.edu/cpa/news/nwview.php?article=4886>), Kansas (<http://www.kcee.wichita.edu/mainpage.htm>), and Nebraska (<http://www.nebraskacouncil.org/documents/PersonalFinanceInstituteInfo.pdf>), all accessed May 14, 2012.

emphasized adult-learner content and combined it with methodology and resources that teachers can use to teach grade-level-specific content in their classes.

The graduate course was offered online with enrollments of nine in the Spring and fourteen in the Summer. From those, we have six teachers who participated in our study. Three are high school teachers and three are middle school teachers. In an effort to repay most of the tuition that the teachers had to pay to take the course, we offered stipends of \$950 to teachers who took the course and participated in the study. This was done to induce participation and to make the costs (at least explicit costs) to participants roughly equivalent to those in the workshop group.

For the workshops, we chose *Financial Fitness for Life (FFFL)*. Previous research has shown that students learn consumer economics and personal finance when using a good curriculum (*e.g.*, Walstad, Rebeck, and MacDonald, 2010). Specifically, training teachers in *FFFL* has improved student test scores (Swinton *et al*, 2007; Butt, Haessler, and Schug, 2008; and Harter and Harter, 2009). Thus, we compared the graduate class to a curriculum known to be effective.

During 2009, we offered two workshops in *Financial Fitness for Life*. Together, there were twenty-seven attendees. From this group, we attracted nineteen participants for our study – fourteen high school and five middle school teachers. These teachers were offered a free teacher resource package of the *FFFL* curriculum in addition to the free workshop training and a \$450 stipend for completing participation in the project. We also recruited twelve teachers who neither took the graduate class nor participated in an *FFFL* workshop. This is the control group, consisting of eight high school and four middle school teachers. These teachers received no training and no materials, but were awarded a \$450 stipend for completing participation in the project. This gives us a total of thirty-seven teachers in the three groups. The graduate class and *FFFL* teachers completed pre-tests and post-tests and attitude surveys as part of the class or workshop. The control group took the pre-test and attitude survey, and did not have a post-test since they received no “treatment” during the study. The teacher post-tests were conducted after the treatment, but before actually teaching the topics to the students. We used 40 questions from the Council for Economic Education’s *High School Financial Fitness for Life Assessment* for the content test, and we modified Soper and Walstad’s (1983) “Survey on Economic Attitudes” by changing “economics” to “consumer economics and personal finance” (along with a few minor wording changes for grammatical reasons) for the attitude survey.³

The teachers also administered a content pre-test and a math test (which provides a proxy for general academic ability) to their students at the beginning of the fall, 2009, semester. After the teachers taught content in consumer economics, the students took a post-test and also completed a demographics questionnaire. We used 40 questions from the grade-level-appropriate version of the Council for Economic Education’s *Financial Fitness for Life Assessment* for the content pre- and post-test. For the high school math

³ We omitted the questions from the “Earning an Income” theme of the *FFFL* test for all of the groups in our study – teachers, middle school students, and high school students. This theme deals primarily with education and career opportunities, and we chose to focus on the spending and saving content. The scores that we report are out of 40 possible points. Copies of the attitude questions are available from the authors upon request.

test, we used 20 questions from an old version of the *Preliminary Scholastic Aptitude Test*, and for the middle school math test, we used 16 questions from an old version of a sixth-grade *Massachusetts Comprehensive Assessment System* preparatory test.

The teachers completed a short follow-up survey after they finished the student testing, reporting some demographic information as well as specific information about what and how they taught the relevant content. All of the assessments and surveys were completed by spring of 2010. Everything was completed online except for the teachers' follow-up survey because of limitations of using open-response questions on the online testing site. Many follow-up activities (*e.g.*, emails and phone calls) were conducted to ensure as many completed observations as possible.

RESULTS

Thirty-seven teachers completed most of the activities. There were six in the graduate-class group – 3 in middle school and 3 in high school; 19 in the *FFFL* Workshop group – 5 in middle school and 14 in high school; and 12 in the Control Group – 4 in middle school and 8 high school. Because there are only twelve middle school teachers in the data set, we focus our analyses on the high school group. Even with the small group of middle school teachers, though, the results were strikingly similar to those obtained from the high school data.

There are 25 high school teachers in the dataset. Their descriptive data are reported in Table 1. One of the teachers in the control group did not complete the demographic survey. Also, none of the teachers in the control group took the posttest because they did not have any treatment administered during the study. So, they took the content test only once – at the beginning. We observe that most of the teachers are white females with 42% under 35 years old. The *T*Enthusiasm variable is an average of responses to questions on the modified Soper and Walstad (1983) "Survey on Economic Attitudes" where we used a 5-point scale. If teachers have a positive attitude toward personal finance and consumer economics content, the average is closer to 5. If teachers have a negative attitude toward personal finance and consumer economics content, the average is closer to 1. An average of 3.79 suggests that the teachers in our study have a more positive attitude about this content.

There are three teachers in the graduate course group, fourteen teachers in the *FFFL* workshop group, and eight teachers in the control group. With small numbers in the groups, it is difficult to make many comparisons among the three groups. However, when we split the data into the three groups, we find that those in the *FFFL* workshop are older, on average, and have more years of teaching experience while those in the control group have attended more workshops and earned more graduate credits in this content area, on average.⁴ In terms of gender and race, the groups are similar. Teacher enthusiasm is highest among the *FFFL* workshop group (3.87) and lowest among the control group teachers (3.67). Enthusiasm for the graduate course teachers is 3.71. Teacher results on the 40-question pretest are as follows: graduate course average is 34.67, *FFFL* workshop average is 31.00, and control group average is 32.25. Teacher

⁴ The percentage of teachers under 35 is as follows: 100% for graduate course group, 43% for the control group, and 29% for the *FFFL* workshop group. The average years of teaching experience is as follows: 5.33 for graduate course group, 7.57 for the control group, and 14.14 for the *FFFL* workshop group.

results on the posttest (which the control group did not take) are as follows: graduate course average is 36.67 and *FFFL* workshop average is 32.71. Comparing the test scores between pairs of groups using a difference-of-means test, we find that the only statistically significant difference is on the pretest between the graduate course group and the *FFFL* workshop group. The teachers who took the graduate course scored statistically significantly higher on the pretest than teachers who attended the *FFFL* workshop.

Table 1: Descriptive Results for High School Teachers

Variable	Variable Description	Number of Observations	Mean (Standard Deviation)
Grad Class	Dummy Variable = 1 if teacher took graduate class in Consumer Economics and Personal Finance in 2009	25	0.12 (0.33)
<i>FFFL</i> Workshop	Dummy Variable = 1 if teacher attended <i>FFFL</i> workshop in 2009	25	0.56 (0.51)
Control Group	Dummy Variable = 1 if teacher was member of Control Group and did not take the graduate class or attend a workshop	25	0.32 (0.48)
Gender	Dummy Variable = 1 if teacher is female	25	0.72 (0.46)
Race	Dummy Variable = 1 if teacher is White	24	0.88 (0.34)
Age	Dummy Variable = 1 if teacher is under 35	24	0.42 (0.50)
Experience	Average years of teaching experience prior to 2009-10 academic year	24	11.13 (8.57)
Workshops	Number of workshops, trainings, seminars, etc. attended to learn about financial and/or economic topics	24	5.88 (4.72)
Credits	Credit-hours of graduate instruction completed in financial and/or economic topics	24	5.04 (8.04)
Pretest Score	Teacher's score on <i>FFFL</i> Pretest	25	31.84 (3.58)
Posttest Score	Teacher's score on <i>FFFL</i> Posttest	17	33.41 (4.74)
TEnthusiasm	Average Score on Attitude Questions on a scale of 1 to 5 where 5 means a more positive attitude	25	3.79 (0.53)

We do not have information about what motivates teachers to attend a workshop, take a graduate course, or not participate in either. This could introduce selection bias

into our model, but we do not know whether the bias would have an upward or downward effect on the coefficients in our model. Teachers who attended the workshop were older and more experienced, on average, while teachers in the control group had attended more workshops and earned more graduate content credits, on average. Perhaps teachers in the graduate course were working on degree programs and taking the course to fulfill a specific requirement which could mean decreased motivation to learn and teach the content or they may have been particularly interested in this content which could increase their motivation to learn and teach it. The older, more experienced teachers in the workshop group could have a particular interest in the subject matter and be more motivated to seek out programs in this area, or they may have needed to fulfill district or school professional development requirements and may not have had a particular commitment to learning and teaching the content. Only the teachers in the control group, who had attended more workshops and earned more graduate credits in this content area, seem to have participated primarily because of interest in the content. If they were more motivated, we would have expected different results than those obtained – namely, that having a teacher who is in the control group would increase student performance on the posttest.

There are 728 students in the high school group with 83 students of teachers who took the graduate class, 421 students of teacher who attended the *FFFL* workshop, and 224 students of teachers in the control group. Descriptive statistics for these students are provided in Table 2. Fifty-six percent of the students are female, most are white, and 23% are twelfth-graders. More than one-half live with both parents. Forty-two percent report their moms graduated college or earned a graduate degree while 32% report the same for their dads. Eighty-five percent of the students report that they probably or definitely will attend college while one-third of the high-school students work at least on occasion. Nearly one-half of the students agree or strongly agree that they enjoy consumer economics and personal finance while 37% of them are undecided on that point. Sixty-two percent of the students disagree or strongly disagree that studying consumer economics and personal finance is a waste of time.

The average test scores for these groups are shown in Table 3. Looking at the first row of results where all of the students are combined into a single group, we observe that the average posttest score of 23.68 is higher than the average pretest score of 15.04. When we break the students into groups depending on the treatment group of the teacher, we see that the students of teachers in the control group have higher scores on the math test and the content pretest than students of teachers in either of the treatment groups. In fact, in using a difference-of-means statistical test to analyze the differences in averages between the groups, we found significant differences between each of the treatment groups and the control group but not between the two treatment groups on the content pretest or posttest. It appears that students in the control group were more knowledgeable at the beginning of the testing period. However, the average scores on the content posttest for all 3 groups are not significantly different. There is more improvement observed in both of the treatment groups than in the control group, and the students end at roughly the same level of knowledge. This is good news for providers of economic education. The teachers in the treatment groups are able to bring student performance up to the same level as that of students in the control group – who started with higher scores in this content area and in general math.

Table 2: Descriptive Results for High School Students

Variable	Variable Description	Number of Observations	Mean (Standard Deviation)
Gender	Dummy Variable = 1 if student is female and 0 if student is male	663	0.56 (0.50)
White	Dummy Variable = 1 if student is white and 0 if student is another race	666	0.83 (0.38)
Twelfth	Dummy Variable = 1 if student is in 12 th grade and 0 if student is in 9 th , 10 th , or 11 th grade	663	0.23 (0.42)
Both	Dummy Variable = 1 if student reports living with both parents most of the time	664	0.56 (0.50)
MomCollege	Dummy Variable = 1 if student reports that his/her mother graduated college or earned a graduate degree	546	0.42 (0.49)
DadCollege	Dummy Variable = 1 if student reports that his/her father graduated college or earned a graduate degree	508	0.32 (0.47)
CollegePlan	Dummy Variable = 1 if student reports that he/she probably or definitely will attend college	664	0.85 (0.36)
Work	Dummy Variable = 1 if student reports working part-time, full-time, or on occasion	666	0.33 (0.47)
Enjoy	Dummy Variable = 1 if student agrees or strongly agrees with statement: I enjoy consumer economics and personal finance.	665	0.45 (0.50)
WasteTime	Dummy Variable = 1 if student disagrees or strongly disagrees with statement: Studying consumer economics and personal finance is a waste of time.	666	0.62 (0.49)

Table 3: Test Results for High School Students

Teacher Group	Number of Students	Math Test (Std. Dev.)	Content Pretest (Std. Dev.)	Content Posttest (Std. Dev.)
All Combined	728	6.25 (3.82)	15.04 (6.12)	23.68 (10.02)
Grad Course	83	5.37 (2.51)	14.25 (4.78)	23.87 (7.72)
<i>FFFL</i> Workshop	421	6.03 (3.88)	14.68 (6.63)	23.85 (11.01)
Control	224	6.99 (3.99)	16.02 (5.44)	23.28 (8.76)
t-Statistic Comparing Means for Grad Course Group and Control Group	na	-4.67	-2.69	0.50
t-Statistic Comparing Means for <i>FFFL</i> Workshop Group and Control Group	na	-3.69	-2.94	0.65
t-Statistic Comparing Means for Grad Course Group and <i>FFFL</i> Workshop Group	na	-2.12	-0.68	0.02

Table 4: Gains in Performance for High School Students

Teacher Group	Number of Students	Average Gain Measure by Posttest-Pretest (Standard Deviation)
All Combined	728	8.63 (10.13)
Grad Course	83	9.61 (7.89)
<i>FFFL</i> Workshop	421	9.17 (10.97)
Control	224	7.26 (9.07)
t-Statistic Comparing Means for Grad Course Group and Control Group	Na	1.68
t-Statistic Comparing Means for <i>FFFL</i> Workshop Group and Control Group	Na	2.12
t-Statistic Comparing Means for Grad Course Group and <i>FFFL</i> Workshop Group	Na	0.39

It appears that teachers who chose to participate in the test groups started with students who had less knowledge in this content area than students of teachers in the control group. And all of the students performed relatively equally at the end of the testing period. To further investigate this result, we studied the gains from the pretest to the posttest for the students to see if the differences in average gains were statistically significant between the test groups and the control group. As shown in Table 4, for high school students, the gain in performance for students with teachers who attended the FFFL workshop is statistically significant as compared to gains in performance by students of teachers in the control group, but this does not hold for students of teachers who took the graduate class.

REGRESSION ANALYSIS

To further analyze the effects of teacher education and training on student assessment scores, we used ordinary least squares regression. We have used an econometric model where the dependent variable is students' posttest scores, and the independent variables include the following student characteristics

- Gender,
- Grade level,
- Whether they live with both parents,
- Whether students report that they probably or definitely will attend college,
- Score on math multiple-choice test, and
- Whether the students were in a class where the teacher was in either test group or in the control group during fall, 2009.

We initially also included the number of graduate credits in economics and personal finance earned by the teachers since it has been documented that more teachers' graduate economics credits contributes positively to student performance (Watts, 2006) and also the teacher's score on the pretest of the high school level of the *Financial Fitness for Life* test (omitting the "Earning an Income" theme as was done with the student test). However, correlation analyses on the variables indicated some correlation problems between teacher variables and student variables. We also found that the variable describing students' plans to attend college was highly correlated with parents' education levels while mothers' and fathers' educational attainment levels were also highly correlated with each other. This limited the inclusion of some of the variables.

In Table 5, we use ordinary least squares regression to investigate effects on normalized scores (mean of 0 and standard deviation of 1) on the 40-question subset of the high school *FFFL* assessment. Here, we find students' academic ability as measured by performance on the math test and being in 12th grade as opposed to a younger grade are positive and significant. Being in a class where the teacher received either treatment – training at the *FFFL* workshop or the graduate course – is also a positive and significant predictor of test score. Regression coefficients can be interpreted relative to the standard deviation of the dependent variable. So, being in 12th grade as opposed to being in a younger grade, holding everything else constant, increases the expected normalized posttest score by .646 of a standard deviation (which has been normalized to equal 1). We can look at the coefficients on our treatment variables to get an estimate of the size of the effects of the different treatments. Being in a class where the teacher received workshop training, holding everything else constant, increases the expected normalized score by .177 of a standard deviation while being in a class where the teacher

took the graduate content class increases the expected normalized score by .25 of a standard deviation. This supports our hypothesis that taking a graduate course better prepares teachers and has a larger impact on student performance.

**Table 5: High School OLS Regression
 Dependent Variable – *FFFL*-HS Posttest**

Variable	Coefficient	t-Statistic	p-Value
Math Score	0.049	5.03	0.000
Female	0.012	0.16	0.871
Grade12	0.646	7.34	0.000
Live with Both Parents	0.135	1.84	0.067
Plans to Attend College	-0.070	-0.69	0.489
Teacher Attended <i>FFFL</i> Workshop	0.177	2.17	0.030
Teacher Took Graduate Course	0.250	2.01	0.045
Constant	-0.638	-4.79	0.000

n = 656. Adj. R-squared = 0.11

In Table 6, we use the same model except we change the dependent variable from normalized score on the posttest to the normalized gain in score from the pretest to the posttest where Gain = Posttest Score – Pretest Score. Again, the mean is 0, and the standard deviation is 1. Here we see that math score is a negative and significant predictor of gain which suggests that having a higher math scores decreases the gain in score on the *FFFL* assessment. Students with higher math scores tend to have higher pretest scores as well, so there is less room for improvement. Here, student gender is negative and significant at the .10 level. Females gain less in scores than males. Students who probably or definitely plan to attend college also gain less in scores while, as before, being in 12th grade as opposed to a lower grade is positive and significant.

**Table 6: High School OLS Regression
 Dependent Variable – Gain in *FFFL*-HS Score**

Variable	Coefficient	t-Statistic	p-Value
Math Score	-0.030	-3.16	0.002
Female	-0.123	-1.69	0.092
Grade12	0.639	7.36	0.000
Live with Both Parents	0.033	0.46	0.644
Plans to Attend College	-0.181	-1.81	0.071
Teacher Attended <i>FFFL</i> Workshop	0.220	2.73	0.007
Teacher Took Graduate Course	0.275	2.24	0.026
Constant	0.041	0.31	0.754

n = 656. Adj. R-squared = 0.09

Also, being in a class where the teacher received either treatment – training at the *FFFL* workshop or the graduate course – is also a positive and significant predictor of gain in test score. Again, we can look at the coefficients on our treatment variables to get

an estimate of the size of the effects of the different treatments. Being in a class where the teacher received workshop training, holding everything else constant, increases the expected normalized gain in score by .22 of a standard deviation while being in a class where the teacher took the graduate content class increases the expected normalized gain in score by .275 of a standard deviation. These results provide evidence that teacher education and training does improve student performance, and that teacher education through a graduate content course has a larger impact than teacher training through a 3-hour, curriculum-specific workshop.

CONCLUSION

The results obtained show that teaching consumer economics and personal finance to students does increase their knowledge of those topics. Additionally, the students taught by teachers in all three groups do not score significantly differently at the end of learning about these topics. The students of teachers who neither took the graduate class nor attended a workshop began the study with significantly more knowledge of consumer economics and personal finance, however, so the students with teachers who did take the class or attend the workshop improved more. This gain in knowledge is statistically significant for only the FFFL workshop group. This is contrary to what we expected at the outset. We also did not find a significant difference in the gain for the students in the two test groups, contrary to our expectations. On the other hand, we did find slightly more improvement in test scores for students with teachers who took the graduate class than for students with teachers who attended the FFFL workshop. This, however, is small. In other words, we cannot confirm that having teachers take a graduate class improves student learning more than attending a workshop. Perhaps the less costly method of providing individual workshops provides more benefits in terms of student performance than a graduate course in this content area. This supports a similar result by Swinton et al. (2010).

This might be a result of the assessment being drawn from the Financial Fitness for Life Assessment which was the focus of the workshop but not the focus of the graduate class. The graduate class, being more general in nature, might have resulted in students learning more broadly. A general assessment of financial knowledge – that is not geared to a specific curriculum – would be useful in investigating this issue further. Other drawbacks of this study include that the population of teachers who teach this content area is small, so we were not able to use a random sample. Also, our time frame measures only short-term results and not any deep learning that might occur.

REFERENCES

- Bosshardt, William, and Michael Watts. (1990). Instructor Effects and their Determinants in Precollege Economic Education. *Journal of Economic Education*. 21(3). 265-276.
- Butt, Nicole M., Stephen J. Haessler, and Mark C. Schug. (2008). An Incentives-Based Approach to Implementing *Financial Fitness for Life* in the Milwaukee Public School. *The Journal of Private Enterprise*. 24(1). 165-173.

- Garman, E. Thomas, and Raymond Fogue. (2008). *Personal Finance*, 9e, Boston: Houghton Mifflin Co.
- Harter, Cynthia L., and John F.R. Harter. (2009). Assessing the Effectiveness of *Financial Fitness for Life*. *Journal of Applied Economics and Policy*. 28(1). 20-33.
- Harter, Cynthia L., and John F.R. Harter. (2004). Teaching with Technology: Does Access to Computer Technology Increase Student Achievement? *Eastern Economic Journal*. 30(4). 507-514.
- Jump\$tart Coalition for Personal Financial Literacy. (2007). *National Standards in K–12 Personal Finance Education with Benchmarks, Knowledge Statements, and Glossary*, (3rd Edition). Washington, D.C.: Author.
- Soper, John C., and William B. Walstad. (1983). On Measuring Economic Attitudes. *Journal of Economic Education*. 14(4). 4-17.
- Swinton, John R. Thomas W. De Berry, Benjamin Scafidi, and Howard C. Woodard. (2007). The Impact of Financial Education Workshops for Teachers on Students' Economic Achievement. *The Journal of Consumer Education*. 24. 63-77.
- Swinton, John R. Thomas De Berry, Benjamin Scafidi, and Howard C. Woodard. (2010). Does In-Service Professional Learning for High School Economics Teachers Improve Student Achievement? *Education Economics*. 18(4). 395-405.
- Walstad, William B., and Ken Rebeck. (2005). *Financial Fitness for Life High School Test Examiner's Manual – Grades 9-12*. New York: National Council on Economic Education.
- Walstad, William B., and Ken Rebeck. (2005). *Financial Fitness for Life High School Test Examiner's Manual – Grades 6-8*. New York: National Council on Economic Education.
- Walstad, William B., Ken Rebeck, and Richard A. MacDonald. (2010). The Effects of Financial Education on the Financial Knowledge of High School Students. *The Journal of Consumer Affairs*. 44(2). 336-357.
- Watts, Michael. (2006). What Works: A Review of Research on Outcomes and Effective Program Delivery in Precollege Economic Education. National Council on Economic Education.
- Wetzel, James N., Dennis M. O'Toole, and Edward L. Millner. (1991). A Qualitative Response Model of Student Performance on a Standardized Test. *Atlantic Economic Journal*. XIX(3). 18-25.