

Development of a K–12 Financial Education Curriculum Assessment Rubric

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Preface

Financial education during elementary and secondary school years can provide a solid foundation of skills and knowledge that students will need for financial decisionmaking later in life. There are numerous financial education materials targeted at K–12 students. However, little exists in the way of guidelines or criteria that would allow educators to assess the content, utility, quality, and efficacy of these curricula. The Office of Financial Empowerment at the Consumer Financial Protection Bureau contracted with RAND to develop criteria that can be used to assess K–12 financial education curricula. This report documents the current state of the literature and advances a set of criteria—based on the literature and discussions with financial curriculum experts, teachers, and financial education curriculum developers—for assessing financial education curricula on multiple dimensions.

This report will be of interest to state and district policymakers, as they consider which financial education curriculum will best serve their needs. It may also be helpful for financial education curriculum developers in revising their curricula to be consistent with the most current research, models, and expert guidance. A companion document, *A Tool for Reviewing K–12 Financial Education Curricula*, provides a simplified version of the review rubric, as well as guidance to school staff for carrying out curriculum reviews.

This research was sponsored by the Consumer Finance Protection Bureau and conducted within the RAND Labor and Population Center for Financial and Economic Decision Making, as well as RAND Education.

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Summary

Recent economic conditions have raised serious concerns about Americans' financial security, especially for those who lack the skills and resources to withstand economic shocks. A recent study found that nearly a quarter of Americans would be unable to come up with \$2,000 in 30 days if required (Lusardi, Schneider, and Tufano, 2011). A substantial body of evidence suggests an underlying, more fundamental problem that has heightened such concerns: Large segments of the U.S. population have low levels of financial capability.

One way to combat this issue is to provide K–12 students with the necessary financial skills and knowledge to make well-informed financial decisions. The goal of financial education is to help individuals make informed, appropriate decisions that lead to financial well-being. Financial education during the K–12 years can help build students' knowledge of consumer financial products, money management basics, knowledge of where and how to seek balanced or unbiased information, and skills at carrying out financial tasks. Further, financial education, in theory, can improve decisionmaking skills related to financial behavior by providing practice making decisions in the context of financial education lessons (Johnson and Sherraden, 2007). Therefore, a strong financial education curriculum would not only equip students with essential skills and knowledge, but it would also help them practice and internalize a mindset of using these skills and knowledge to actively manage their financial behavior as adults (Danes et al., 1999).

A rapidly growing number of states are recognizing the importance of students' financial capability by requiring the implementation of personal finance content standards and requiring personal finance courses to be offered in high school. In 2014, 43 states included "personal finance" in their standards, compared with 21 in 1988 (Council for Economic Education, 2014).

There are numerous financial education materials targeted at K–12 children. Available curricula vary widely in content, method of delivery (e.g., lectures versus interactive in-person games, and activities versus online learning), and course duration. Additionally, little exists in the way of guidelines or criteria that would allow educators to assess the utility, quality, and efficacy of these myriad curricula. Given that school district leaders and teachers have limited time and other resources to make informed decisions about the adoption and use of appropriate financial education curricula, a curriculum assessment tool with criteria by which to judge the quality of financial education materials would help educators select appropriate curricula.

The Consumer Financial Protection Bureau contracted with RAND to develop criteria that can be used to assess K–12 financial education curricula. To inform our development of these criteria, we undertook a thorough literature review focusing on K–12 financial education curricula and curriculum assessment criteria. We drew on the existing literature on financial and economics education, information and behavioral economics, curriculum evaluation, instructional quality and measurement, and developmental psychology and neuroscience. Our

survey of the literature focused on applicability of literature findings to four categories of criteria that we determined as key to choosing appropriate curricula for K–12 financial education: content, utility, quality, and efficacy.

To inform development of key financial education content standards, we conducted a thorough review of documents that define national content standards for financial education, as well as documents from the research literature that discuss financial education content most important for students to learn. We consider content to encompass both the financial education knowledge and skills that students should acquire before they graduate high school.

Only a small number of financial education articles address key elements of financial education curricula beyond the content that financial education curricula should include. However, we also identified several articles about best practices in financial education that could inform curriculum assessment criteria for utility, quality, and efficacy.

In addition to examining the research, we analyzed national and selected state content criteria to identify skills and knowledge that a financial education curriculum might be expected to address. We examined tools used to evaluate and select curricula (including tools specifically focused on financial education curricula and tools focused on evaluating mathematics and English-language arts curricula) to identify utility and quality criteria. We also looked at research on financial education curricula to identify criteria associated with implementation and impact. Finally, we drew on critical reviews of research on curricula to shape the efficacy criteria. We also vetted the draft rubric with teachers and financial education curriculum experts.

Ultimately, despite numerous previous studies found in the literature, the evidence regarding which curricula are effective in delivering financial education to K–12 students is inconclusive. While many studies have documented a positive association between general or specific curricula and financial knowledge, few studies have been sufficiently rigorous to make causal inferences. Studies of individual curricula generally find positive relationships between financial education and financial knowledge, behavior, and/or attitudes. However, studies of financial education in general find less clear associations, with many papers finding no effect. While some of the literature on long-term effects of financial education suggests that financial education in high school can have a lasting effect on financial knowledge and behavior into adulthood, other studies find no such relationship.

The differences in results between evaluations of specific curricula and the studies of overall effectiveness of general financial education may be explained by a number of factors. First, evaluations of specific curricula typically have a relatively short time horizon, measuring effects within a few months of the end of a course. Short-term studies may capture immediate effects that could fade over time. Second, in many of the evaluations focused on particular curricula, teachers were given training on how to teach the material. Similar opportunities were often not present in the evaluations of general financial education. Third, selection bias may differentially affect evaluations of specific and general curricula. Finally, few evaluations of specific curricula employed randomized controlled trials or natural experiments to account for the problems of

selection bias. The evidence regarding the efficacy of general financial education from studies leveraging natural experiments is decidedly mixed.

Because of the variety of findings on the effectiveness of financial education and concerns about the quality of the evidence, careful selection of a curriculum and appropriate criteria by which curricula can be judged are necessary. We investigated the financial education and general education research literature for evidence to guide the development of curriculum assessment criteria.

Looking across these documents, we arrived at six major content standard topic areas on which curriculum frequently focus: earning, income, and careers; saving and investing; spending; credit; financial responsibility, money management, and financial decisionmaking; and risk management and insurance. Based on an analysis of common substandards in each topic area across multiple national standards documents, we created content standards and skills that we use as part of our criteria to assess curriculum content.

Bringing together all this research, we arrived at a set of key criteria to assess the content, utility, quality, and efficacy of financial education curricula, provided in the complete financial education curriculum review rubric.

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We thank Sunaena Chhatry and her colleagues at the Consumer Financial Protection Bureau for their thoughtful engagement throughout the process. We thank Laura Hamilton from RAND, Julie Heath from the University of Cincinnati, and Judy Wurtzel for expert guidance. We also thank Anita Szafran for her excellent research support.

Abbreviations

HSFPP	High School Financial Planning Program
FFFL	Financial Fitness for Life
pfeg	Personal Finance Education Group

1. Introduction

Recent economic conditions have raised serious concerns about Americans' financial security, especially for those who lack the skills and resources to withstand economic shocks. A recent study found that nearly a quarter of Americans would be unable to come up with \$2,000 in 30 days if required (Lusardi, Schneider, and Tufano, 2011).

A substantial body of evidence suggests an underlying, more fundamental problem that has heightened such concerns: Large segments of the U.S. population have low levels of financial capability. Only half of adults close to retirement age and older were able to correctly answer two simple questions regarding interest compounding and inflation, and only one-third correctly answered these two questions and a question about risk diversification (Lusardi and Mitchell, 2006, 2007b).

The less financially capable may be more likely to unknowingly commit financial mistakes, less likely to engage in recommended financial practices, and less likely to be able to cope with economic shocks. Hilgert, Hogarth, and Beverley (2003) found that individuals with more financial knowledge are more likely to engage in a wide range of recommended financial practices. Furthermore, Lusardi and Mitchell (2006, 2007a) found that older adults who displayed better financial knowledge were more likely to plan for retirement, to follow through with their plan, and to invest in appropriate assets for retirement.

Low levels of financial capability are not only confined to adults. The JumpStart Coalition Survey of Personal Financial Literacy Among Students has been assessing financial literacy among high school seniors since 1997. The survey is designed explicitly for high school seniors,¹ so the material is age appropriate and covers income, money management, savings and investing, and spending and credit. Approximately 1,650 students from 30 states were surveyed in each wave. In a series of reports on each new round of data from the JumpStart survey, Mandell (1997, 2001, 2004, 2006, 2008a, 2008b, 2009) has shown low overall levels of financial literacy among high school students, with students on average getting only about half the questions correct.

These JumpStart surveys have also shown that financial literacy varies considerably depending on background, experiences, and beliefs of youth, with disadvantaged students being less financially literate. Mandell's work (1997, 2001, 2004, 2006, 2008a, 2008b, 2009) has consistently found that financial literacy is higher among high school students from higher-income households, white students, and those who aspire to go to college. Financial literacy and financial beliefs go hand-in-hand. Mandell and Klein (2007) found that financial literacy is

¹ The JumpStart surveys have focused on seniors in high school because this age group has had the most opportunity to learn about financial topics and will likely take on more responsibility for financial decisionmaking in the near

higher among those who believe that financial difficulties are the result of overuse of credit or not following a financial plan rather than a result of bad luck or low levels of saving and income. They also found that financial literacy is lower among those who believe it is “not so bad” for families to not have enough money to pay their bills, compared with respondents who think it is “pretty bad” or “very bad.” While these results are thought provoking, suggesting that those who are least knowledgeable about financial matters also tend to have belief systems that can lead to financial problems, the causal relationship is not explored, and thus the results merely indicate correlation.

These findings are troubling because young adults are becoming increasingly active in the financial marketplace. For example, in surveys of teenagers conducted in 1998 and 2008, Varcoe, Peterson, et al. (2010) found that the proportion of teenagers with a savings account increased from 38 to 53 percent, and the proportion of teenagers with a credit card increased from 4 to 10 percent over that period.

Providing students with the necessary financial skills and knowledge to make well-informed financial decisions is an important part of K–12 education. The goal of financial education is to help individuals make informed, appropriate financial decisions that lead to financial well-being (Hogarth, 2006; Johnson and Sherraden, 2007).² Financial education during the K–12 years can help build students’ knowledge of consumer financial products, money management basics, knowledge of where and how to seek balanced or unbiased information, and skills at carrying out financial tasks. Improved knowledge and skills can build students’ confidence in their financial abilities (Varcoe, Martin, et al., 2005). Further, financial education, in theory, can improve decisionmaking skills related to financial behavior by providing practice making decisions in the context of financial education lessons (Johnson and Sherraden, 2007). Therefore, a strong financial education curriculum would not only equip students with essential skills and knowledge, but it would also help them practice and internalize a mindset of using these skills and knowledge to actively manage their financial behavior as adults (Danes et al., 1999).

A rapidly growing number of states are recognizing the importance of students’ financial capability by requiring the implementation of personal finance content standards and requiring personal finance courses to be offered in high school. In 2014, 43 states included “personal finance” in their standards, compared with 21 in 1988 (Council for Economic Education, 2014).

There are numerous financial education materials targeted at K–12 children. The literature review conducted for this report identified more than 85 K–12 financial education curricula. Available curricula vary widely in content, method of delivery (e.g., lectures versus interactive in-person games, and activities versus online learning), and course duration. Additionally, little exists in the way of guidelines or criteria that would allow educators to assess the utility, quality,

² Financial knowledge is one part of a larger set of influences on adult financial behavior; personal characteristics (e.g., future orientation, self-control) and external influences (e.g., individual economic circumstances and opportunities, broader economic conditions) also may factor into an individual’s financial behavior (Comptroller General, 2004; Johnson and Sherraden, 2007; Lusardi and Mitchell, 2014).

and efficacy of these myriad curricula. Given that school district leaders and teachers have limited time and other resources to make informed decisions about the adoption and use of appropriate financial education curricula, a curriculum assessment tool with criteria by which to judge the quality of financial education materials would help educators select appropriate curricula.

The Consumer Financial Protection Bureau contracted with RAND to develop criteria that can be used to assess K–12 financial education curricula. To inform our development of these criteria, we undertook a thorough literature review focusing on K–12 financial education curricula and curriculum assessment criteria. We drew on the existing literature on financial and economics education, information and behavioral economics, curriculum evaluation, instructional quality and measurement, and developmental psychology and neuroscience.

To be included in the review, a study needed to provide direct evidence (either quantitative or qualitative) about K–12 financial education curriculum or have potential to inform the criteria used to assess financial education curricula. We included curricula and criteria developed outside of the United States, if the findings were applicable and relevant to the American system. We focused on research written in English and published in the past 15 years. The methodology used by the study to evaluate a curriculum needed to be sufficiently rigorous. We limited our review to studies in which there was some attempt, at least, to create a comparison group or to produce a counterfactual when assessing a curriculum’s effectiveness. Among the set of papers included in this review, methodological rigor still varies considerably, and we note the limitations to the various evaluation designs employed.

In addition to examining the research, we analyzed national and selected state content criteria to identify skills and knowledge that a financial education curriculum might be expected to address. We examined tools used to evaluate and select curricula (including tools specifically focused on financial education curricula and tools focused on evaluating mathematics and English-language arts curricula) to identify utility and quality criteria. We also looked at research on financial education curricula to identify criteria associated with implementation and impact. Finally, we drew on critical reviews of research on curricula to shape the efficacy criteria. We also vetted the draft rubric with teachers and financial education curriculum experts.

The next chapter discusses definitions of key terms used in this literature review. Chapter 3 presents evidence on impact of K–12 financial education. Chapter 4 discusses existing literature that informs criteria used to assess K–12 financial education curricula, and Chapter 5 describes the development of the criteria. Finally, Chapter 6 summarizes the main points in the report. Appendix A provides the financial education curriculum review rubric. Appendix B provides existing standards examined to develop the content standards in the financial education curriculum review rubric, and Appendix C provides existing rubrics examined to develop the financial education curriculum review rubric.

2. Definitions

In this chapter, we provide definitions of key terms as they are used for this project.

Curriculum

There is no single definition for *curriculum*, but some common features appear across definitions. A curriculum provides the content learning objectives, teaching methods, assignments, materials, and sequence of instruction for a focused subject area (Glossary of Education Reform, 2014). The scope of the curriculum may vary, but a curriculum is generally considered to include multiple lessons over multiple days. For the purposes of this project, we stipulate that a curriculum

- occurs over at least five sessions over multiple weeks, within a single school semester or year
- includes objectives for content or skills to be learned and materials or resources to use in the lessons
- focuses on financial education (see next definition)
- is designed to be administered to K–12 students in a school setting.

We include curricula that are self-identified as “programs” or by some other term, if they meet the above definition. Note also that we consider the curriculum to include all materials or resources that are identified by the developer as part of the curriculum or program.

Financial Education

Financial education can include a broad range of topics, including personal finance and vocational or career topics (e.g., the stock market, business management, entrepreneurship). For this project, we focus on personal finance—financial knowledge and skills required by all students to make sound financial decisions as independent adults. Specialized topics such as business finance skills, which may be of interest to specific students based on their career trajectories, are not the focus of this project.

Financial Literacy

Financial literacy is commonly defined according to the language adopted by the President’s Advisory Council on Financial Literacy (2009): “the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial wellbeing.”

Financial Capability

While *financial capability* is sometimes used interchangeably with financial literacy, it can also be used as a broader term—one that includes financial literacy as well as attitudes and behaviors. Financial capability has been described as “the internal capacity to act in one’s own best financial interests, given the socio-environmental conditions;” in other words, it is the ability to “make and implement financial decisions that are considered appropriate for his or her peers and community, given their external circumstances” (Yoong et al., forthcoming, p. 5).

Curriculum Criteria

Criteria, as used in this project, establish the desired characteristics against which something can be measured. Criteria may include strategies and decision rules for measuring whether the desired characteristics were met. Below are definitions for the four categories of criteria considered in this report. Note that one category, curriculum content, is specific to financial education. The other three categories focus on the nature of the curriculum and are not necessarily specific to financial education. This project used research and expert guidance to develop criteria consistent with those definitions, as well as further explication of each criterion with decision rules to determine whether a given financial education curriculum met that criterion.

Curriculum content:³ The curriculum covers topics and skills prioritized across major national and state standards and can be verified to align with the state’s adopted educational standards. The curriculum is designed to help students develop a range of knowledge, skills (e.g., understanding when to seek reliable information and advice), and behaviors (e.g., comparison shopping) that are identified as important according to research and major national and state standards.

Curriculum utility: The curriculum is easy to use by the educator and the student, and it includes pedagogical suggestions, activities, and assessments that are intended to support students’ learning of key knowledge, skills, and behaviors. Lesson plans, handouts, publications, media, and so on form a turn-key package that is adaptable to a range of populations (e.g., English-language learners, special education students, and students with different learning styles) and can be easily implemented by an educator with moderate to minimal preparation. The curriculum can be easily integrated into the school’s existing scope and sequence for classroom instruction.

Curriculum quality: All materials provide accurate information, using up-to-date research, information, and data. Materials are free of errors in spelling, punctuation, format, grammar, and layout. Electronic media, links, and so on are viewable regardless of operating system. Web links

³ Consistent with convention, we refer to criteria for content as *content standards* rather than *content criteria*.

are current and active. Written materials and physical products and workmanship, as applicable, are sufficiently durable to support reuse.

Curriculum efficacy: Students who complete the curriculum demonstrate a statistically significant increase in their understanding and use of consumer finance when compared with students who have not had the financial education training. The curriculum helps students develop a combination of fact-based knowledge, critical thinking, and decisionmaking skills and cultivates overall awareness about where to go for more information.

3. The Effects of K–12 Financial Education

The literature on the effectiveness of financial education in K–12 can be classified in several ways.⁴ First, studies differ in their outcome variables, with some focusing on knowledge and others focusing on behavior. Second, studies differ in terms of investigating shorter- versus longer-term impact; while much of the literature has focused on the immediate impacts of financial education, a handful of papers have considered long-run effects of K–12 financial education in adulthood. Third, among studies of financial education based in high school, some consider specific curricula, while others investigate the impact of financial education more generally, typically using national survey data. Fourth, the research in this field varies dramatically in its ability to identify causal effects, with some papers using more rigorous causal designs (experimental design or natural experiments) to identify effects, and others merely providing a description of the correlation between financial education and the outcomes of interest. Overall, few studies have employed rigorous designs, rendering it difficult to make sweeping conclusions about the effectiveness of providing financial education to K–12 students.

In this chapter, we organize the review according to impacts on the three outcome areas of primary interest: financial knowledge, financial behavior, and financial attitudes. Within each section, we divide studies according to research methodology and whether the study is focused on financial education in general or a specific curriculum. Studies using randomized controlled trials and natural experiments provide the strongest evidence of the effect of financial education.

Financial Education and Financial Knowledge

This section discusses the relationship between financial education and financial knowledge. The results of this literature review are largely based on surveys designed to measure financial literacy and knowledge. The findings in the literature on the relationship between financial education and financial literacy are mixed, with some studies pointing to no association and others finding a positive relationship.

Descriptive Studies

Much of the literature investigating the relationship between financial education and knowledge has made use of survey data collected through the Jump\$tart Coalition Survey of Personal Financial Literacy among Students, described above. The survey includes 31 questions designed to measure financial literacy. This literature has largely found no relationship between

⁴ For additional summaries of the literature, see McCormick, 2009; Fox, Bartholomae, and Jinkook, 2005; Mundy, 2009; Borden et al., 2013; Ferrari, 2007; Huston, 2010; and O’Connell, 2009.

financial education and financial literacy; see, for example, Mandell (1997, 2001, 2004, 2006, 2008a, 2008b, 2009), Mandell and Klein (2007), and Choi (2010). There is no significant difference between scores of students who report participating in a dedicated course in high school on money management/personal finance or economics, or part of a course on one of these topics, and the scores of students who took no such course. One exception is that students who participated in stock market games in a course have in total more correct answers on the measure of financial literacy. These games have students pick a hypothetical portfolio of stocks and then follow those stocks for a short period with the goal of beating the market.

Two papers, Shim, Xiao, et al. (2009) and Shim, Barber, et al. (2010), used original surveys of college students to investigate the relationship between financial knowledge and well-being. Using bivariate analysis and multiple equation models, both studies found that financial education in high school is correlated with self-assessed financial knowledge in college. These findings stand in contrast to the findings using the Jump\$start data that indicate no relationship between high school financial education and financial knowledge. One possible explanation is the selected sample: Students attending college may learn more or retain more from the personal finance education they received in high school compared with all high school students who were included in the Jump\$start sample. Furthermore, self-assessed knowledge is by definition subjective, while the measures of knowledge from the Jump\$start studies are objectively measured. It may be unsurprising that students who have taken a course perceive that they know more.

While some of the literature discussed so far in this section finds some correlation between financial education and financial literacy, the evidence cannot be interpreted as causal. In particular, little information is available about why students have been exposed to financial education. The results may be biased by the selection of students into these types of courses. For example, students who are particularly interested in such courses may be more likely to take a course or may retain more information. Alternatively, students who perceive the courses to be easy and are taking them only for that reason may retain less information. Under either scenario, students are not randomly assigned to financial education, limiting the ability of these studies to measure a causal effect of financial education on knowledge. Additionally, little is done to investigate interactions between student characteristics and financial education. For example, personal finance courses may differentially affect the financial knowledge of students depending on whether they plan to attend college, whether they hold part-time work, the relevance of the curriculum content to their own personal situation, and other background variables, such as their parents' income and education.

Studying the long-term impact of financial or economics education on financial knowledge may help to address, though not completely eliminate, the concerns that any relationship between financial education in high school and financial knowledge is driven by selection into these courses. To this end, Lusardi and Mitchell (2007b), Peng et al. (2007), and van Rooij, Lusardi, and Alessie (2011) used data collected in surveys of adults to investigate the relationship

between financial knowledge and high school financial education. Using nationally representative data from the United States and the Netherlands, Lusardi and Mitchell (2007b) and van Rooij, Lusardi, and Alessie (2011) found that high school financial and economics education affect financial knowledge in adulthood. The survey instruments for both studies included widely used measures of financial literacy, including a series of five simple questions and eight to 11 more-complex questions. Topics included compounding, inflation, time value of money, the stock market, bonds, and diversification. Peng et al. (2007), on the other hand, found no relationship between financial education in high school in a sample of alumni of one university using a measure of financial knowledge developed by the National Association of Security Dealers. The differences in these results may be driven by the different sample selection: Lusardi and Mitchell (2007b) and van Rooij, Lusardi, and Alessie (2011) use representative samples, while Peng et al. (2007) use a sample of university graduates.

While studies examining the relationship between general financial education and financial knowledge occasionally find little association, evaluations of specific financial education curricula tend to suggest a link between financial education and financial knowledge. One weakness of the general studies is that financial education may take many forms. Using one variable for financial education to capture a wide variety of curricula and courses, and combining that with a variety of different selection biases, may introduce noise in the measure that leads to null findings. In particular, using a single measure may combine effective and ineffective curricula, leading to muted effects. In an attempt to identify effective programs, we now turn to evaluations of specific curricula.

At the high school level, numerous studies have documented associations between particular curricula and increases in financial knowledge. Danes and Brewton (2010) examined the efficacy of the National Endowment for Financial Education's High School Financial Planning Program (HSFPP), based on a sample of 4,794 students who completed the course in the 2009–2010 academic year. Using a "post-then-pre" methodology in which students were asked how knowledgeable they felt about topics covered in the course after course completion, then asked to retrospectively assess how knowledgeable they were prior to taking the course, the authors found significant increases in self-assessed knowledge immediately after course completion.⁵ However, as previously noted, self-assessed knowledge gains may not present an accurate picture of true gains in knowledge. A follow-up survey completed by 381 respondents suggested that the self-assessed knowledge gains persisted for three months. This result, however, might have been heavily influenced by selection among those who chose to respond to the follow-up survey. In particular, only 381 out of 1,835 students responded, and these students may have been those that benefited the most.

⁵ Evaluations of HSFPP in previous academic years found similar results using the same methodology (Danes and Haberman, 2004; Boyce and Danes, 1998). In a companion piece (Danes and Brewton, 2013), the authors document that females, those growing up in a family farm business, and those who are working experienced the largest gains.

Varcoe, Martin, et al. (2005) evaluated the impact of the “Money Talks: Should I Be Listening?” program and found that participant test scores on a financial knowledge test increased from 52 percent correct pre-program to 72 percent correct post-program, a statistically significant difference. Niederjohn and Schug (2006) investigated the impact of Learning, Earning, and Investing, using a pre- and post-test design with a sample of 496 students. The authors found that students’ average scores on a knowledge test increased by 19 percentage points, a statistically significant change.

Although less extensively examined than financial education in high school, the relationship between particular curricula and knowledge in middle and elementary school students has been investigated in several papers. Diem et al. (undated) evaluated Junior Achievement’s JA Economics for Success program for middle school students and found that, compared with pre-test scores, students participating in the course significantly increased their performance on a knowledge test after program completion. Sotak et al. (2008) examined the efficacy of the Real Money, Real World program, a curriculum designed to improve financial knowledge and attitudes in middle and high school students. Based on self-assessments completed following the end of the course, which include retrospective questions regarding awareness and importance of particular financial topics, the authors find that participating in the program improved awareness regarding the costs to maintain a household, the relationship between education and income, and understanding regarding earning, spending, and saving money.⁶ Schug and Hagedorn (2005) studied the effectiveness of Money Savvy Kids, a curriculum designed to improve financial knowledge and attitudes among elementary school students. Based on a comparison of pre- and post-test scores, the authors found statistically significant changes in savings knowledge and self-assessed ability to handle money after the course.⁷

While illustrative, the studies just described did not employ any form of comparison group, making it difficult to determine if the observed gains in knowledge are solely attributable to the curricula as opposed to external factors. In particular, students were receiving other forms of education concurrently, and, without a control group of students who received the same education except for the financial education program under study, it is difficult to identify the causal impacts of a curriculum. However, several other evaluations have used comparison groups when assessing programmatic effectiveness.

Evaluations of Financial Education Curricula with a Comparison Group

Several evaluations have constructed comparison groups when investigating the relationship between particular high school financial education curricula and financial knowledge. Hill, Meszaros, and Tyson (2012) investigated the effect of Keys to Financial Success and found that

⁶ Again, self-assessed knowledge may not accurately represent actual knowledge.

⁷ Hagedorn (2004, 2005a, 2005b, and 2007) finds similar results in evaluations conducted in Cleveland, Washington State, North Dakota, and Memphis, respectively.

students who took the program experienced performance gains significantly higher than students in a comparison group. However, students self-selected into the “Keys” training, while students in the comparison group came from other classes in the school. Consequently, inherent differences between the two groups may have contributed to the findings.

Walstad, Rebeck, and MacDonald (2010) evaluated Financing Your Future, a DVD-based financial education program for high school students. Comparing pre- and post-test scores, the authors find that students who received the training experienced increased financial knowledge, while participants in the comparison group experienced no significant changes in knowledge.⁸

Several studies of curricula designed for middle and elementary school students suggest similar associations between education and financial knowledge. Sherraden et al. (2011) examined the impact of the I Can Save program, which provided students in kindergarten and the first grade with a matched savings account and financial education using the Financial Fitness for Life (FFFL) or Wise Pockets World curriculum over a four-year period. The authors found that students in the program scored significantly higher than the comparison group (students in the second or third grade at the same school) on a knowledge exam at the end of the fourth grade. Harter and Harter (2009) conducted a study of the effectiveness of the FFFL program across elementary, middle, and high school. A comparison of pre-test and post-test data indicated statistically significant increases in financial knowledge for students exposed to the material across educational levels. Additionally, the authors compared post-test data for students taking FFFL with a comparison group of students from the previous academic year who received financial education using materials other than FFFL. The results indicated that students who received FFFL training scored significantly higher on the knowledge test, though there were differences in demographic and age characteristics across the two groups.⁹ Chen and Heath (2012) also examined FFFL delivered to upper elementary and middle school students. In comparison with their pre-FFFL scores, the authors found that students improved their performance on a knowledge test after being exposed to the curriculum. Additionally, using a comparison group comprising schools that did not receive FFFL training,¹⁰ matched on demographic and educational characteristics, the authors found that students receiving FFFL education demonstrated significantly higher levels of knowledge than their matched counterparts. Go et al. (2012) examined the impacts of Money Savvy Youth, a financial education program for fourth- and fifth-grade students. Although there were no statistical differences in pre-test scores across groups, the authors found significant differences in post-test

⁸ Students in the control group were “similar high school students,” though it is unclear how this group was identified and constructed.

⁹ In an evaluation conducted in Nevada, Papadovasilaki, Parker, and Pingle (2014) found that students’ financial literacy scores improved more following FFFL training when class sizes were smaller, teachers were more experienced, and students had higher math scores and family incomes.

¹⁰ Note that for the year used in the analysis (2008–2009), data on a possible control group were unavailable. As a result, the authors constructed a control group using data from the 2006–2007 academic year.

scores between students receiving the course and a comparison group comprised of similar classrooms that would later receive the Money Savvy Youth training. Moreover, these differences persisted in a follow-up test conducted three months later. Caliber Associates (2007) investigated Junior Achievement's JA Dollar and \$ense after-school program, designed to help elementary-grade students develop understanding of money basics. Using pre- and post-test data on both participants in the program and students in comparison after-school programs,¹¹ the authors found that those exposed to the JA Dollar and \$ense program significantly increased scores on the knowledge test, while students in the comparison group experienced minimal changes.

While highly suggestive, the previous studies all make use of selected (non-random) samples, limiting the ability to make causal inference. In particular, the curricula were not given to students or classrooms at random and, in some cases, might have been directed to those who were most likely to benefit, possibly overstating the effect that might be observed among a broader population. Though randomized experiments are difficult to undertake in educational settings, a couple of studies have done so.

Randomized Controlled Trial Evaluations of Financial Education Curricula

Hinojosa et al. (2009) studied the impact of the 15-week version of the Stock Market Game, an educational game supported by the Securities Industry and Financial Markets Association's Foundation for Investor Education. Teachers of grades four through ten interested in teaching the Stock Market Game were randomly assigned to either the treatment or control groups. A comparison of test score data across groups indicated that students exposed to the Stock Market Game scored significantly higher than the control group on both mathematics tests and investor knowledge tests across grade levels (elementary, middle, and high school).

Becchetti, Caiazza, and Coviello (2013) conducted a randomized experiment examining the efficacy of a financial education program developed by the authors. High school classes in Italy were randomly assigned either to treatment, which received the educational course, or to control, which did not receive the course. A comparison of student knowledge gains between a pre-test and post-test across groups suggested there was not a statistically significant difference in improvement between treatment and control. However, a pre-post comparison within each group indicated that both groups experienced statistically significant increases in knowledge, suggesting possible spillovers in knowledge from the treatment group to the control group.

Natural Experiments

While not employing randomized experimental designs, several studies have addressed problems of selection bias by leveraging natural experiments. Natural experiments can provide a second-best form of variation when randomized controlled trials have not been conducted. Over

¹¹ It is unclear how the comparison after-school programs were identified and selected.

time, more and more states have passed mandates that students, particularly high school students, must receive some form of financial education. Students have not been directly randomized into a course, but the variation in enrollment in financial education courses is exogenous from the perspective of an individual under study. Researchers can exploit this exogenous variation in participants' exposure to financial education to draw causal inferences.

Mandell (1997) and Tennyson and Nguyen (2001) built on findings from the Jump\$Start papers described earlier by using state mandates on financial education to investigate the impact of financial education. However, both studies use only one year of cross-sectional data; therefore, they cannot compare scores within a state before and after the mandate. This methodology leverages exogenous sources of variation in course participation, thus sidestepping the problem of student selection into financial education. Mandell (1997) finds no effect of financial education mandates on financial knowledge. However, Tennyson and Nguyen (2001) built on Mandell's findings using the same data but taking advantage of additional information about the precise nature of state mandates. They found that standards and testing alone were not enough to raise financial knowledge. However, students in those states that required a course in personal finance scored better on the Jump\$Start test questions than students in states that required only a partial course or an examination, or that had no requirement.

Financial Education and Financial Behavior

This section looks at the literature on the effect of financial education on financial behavior. Given the limited opportunities for students (particularly elementary and middle school students) to participate in the financial arena, it is difficult to collect enough observed data to examine the impacts of particular educational curricula on real-world financial behavior. As a result, most studies that examine the link between student financial education and financial behavior employ self-reports or observations from hypothetical financial tasks, or look at long-run outcomes using decisions made as adults. As in the literature on the impact on knowledge, the results are mixed, with some finding a positive effect and others finding no effect.

Descriptive Studies

Ryack (2011) and Grimes, Rogers, and Smith (2010) provide descriptive evidence of a correlation between financial education and adult behavior. Using a survey of college students, Ryack (2011) found that those who had financial education in high school, particularly those who played stock market games, were more risk tolerant, where risk tolerance was measured using a 13-item scale that asked respondents about their tolerance for risk in the context of investing. However, Ryack did not attempt to understand why people enrolled in financial education classes in high school. Using survey data, Grimes, Rogers, and Smith (2010) found that those who had high school financial education were more likely to have bank accounts as adults. As in the case of the descriptive studies about financial knowledge, Grimes, Rogers, and

Smith (2010) studied long-run outcomes where the selection of students into financial education took place long before the financial decisions being studied.

Several of the studies mentioned above also investigate the impact of particular curricula on behavior. In addition to measuring financial knowledge, Danes and Brewton (2010) elicited participants' self-reported changes in financial behavior. After completing the HSFPP course, students reported that they took better care to protect their personal information, comparison shopped more often, and became more diligent in saving and paying debts on time. Similarly, participants exposed to the Money Talks curriculum reported saving more frequently and comparison shopping more often, and they appeared more willing to delay gratification (Varcoe, Martin, et al., 2005).

Evaluations of Financial Education Curricula with a Comparison Group

Go et al. (2012) found that grade-school students exposed to the Money Savvy Youth program were more likely to write out a budget, look for "spending leaks," save more money, and identify their needs and wants. Caliber Associates (2007), however, found no significant differences in money management behavior for participants who received JA Dollar and Sense training. Both studies used self-reported data to assess behavior change.

Leveraging choices made in a simulated financial experience at the Junior Achievement Finance Park of Southern California, Carlin and Robinson (2012a) examined the impacts of high school financial education on students' financial decisionmaking. Participants were given fictitious identities and incomes and asked to calculate their net monthly income, then create a hypothetical household budget using computer kiosks scattered around the finance park. Prior to attending the park, some students had received Junior Achievement financial education, while others had not. While not explicitly an evaluation of the curriculum, the authors' findings were that students who received the financial education training prior to attending the park were more frugal, paid off debt more quickly, relied less on credit financing, and delayed gratification. In a companion study, Carlin and Robinson (2012b) found that students who received financial education were more likely to take advantage of decision support in the form of advice about how to amortize a hypothetical loan when creating the fictitious household budget.

Randomized Controlled Trial Evaluations of Financial Education Curricula

In addition to measuring changes in knowledge, Becchetti, Caiazza, and Coviello (2013) examined how exposure to financial education influenced financial decisionmaking. In particular, students in the treatment and control groups were asked how they would allocate a hypothetical inheritance. The authors found that students randomly assigned to education were significantly less likely to invest a large portion of inherited wealth in cash.

Natural Experiments

As in the case of financial knowledge, the effects of mandates on long-run outcomes have provided a particularly good source of variation for studying the impacts of financial education on behavior. Mandates provide a plausibly exogenous source of variation in participation in financial education courses. In these papers, state of residence during high school was used to identify whether the individual in question was exposed to mandated financial education in high school. Three important studies have used mandates to assess long-term effects of financial education on behavior. Bernheim, Garrett, and Maki (2001) look at effects on savings rates and wealth accumulation, Brown et al. (2013) investigate effects on credit behavior, and Cole, Paulson, and Shastry (2013) look at both wealth accumulation and credit.

Bernheim, Garrett, and Maki (2001) is perhaps the most widely cited paper in this literature. They use data from a nationally representative survey conducted in 1995 of adults ages 30 to 49 who were in high school between 1964 and 1983. They found that students in states that required consumer education had higher savings rates as adults and accumulated greater amounts of wealth. Savings rates, wealth accumulation, and state of residence in high school were measured directly in their survey. Recently, these results have been disputed by Cole, Paulson, and Shastry (2013), who suggested that even the adoption of mandates may not be exogenous. Using data from the Census and the Survey of Income and Program Participation, they replicate the analysis of Bernheim, Garrett, and Maki and find similar results. However, when state fixed effects are added to the regressions, they find no effects of mandates for financial education on wealth accumulation or investment income among adults. One possible explanation is that states that implemented mandates during this period were systematically different from those that did not. Cole, Paulson, and Shastry did find effects of math requirements on wealth accumulation and investment income but not on consumer education requirements.

Brown et al. (2013) and Cole, Paulson, and Shastry (2013) made use of unique panel data—the Federal Reserve Bank of New York’s Consumer Credit Panel, which collects administrative data from credit reports—to investigate the effect of education mandates on credit behavior, such as having a credit report, delinquencies, and debt balances. These panel data are not subject to misreporting in the same way as survey data, but state of residence in high school must be inferred. As mentioned, Cole, Paulson, and Shastry (2013) focused on adults ages 30 to 49, while Brown et al. (2013) focused on adults ages 20 to 28. Using these different cohorts, the two studies find strikingly different effects. Cole, Paulson, and Shastry (2013), as in the case of savings and wealth accumulation, found no effects of financial education mandates on credit behavior. Brown et al. (2013), on the other hand, found improvement in credit behaviors for those in states with mandated financial education, including increased likelihood of having a credit report (necessary to receive a loan), higher credit scores, and reduced likelihood of delinquencies, carrying debt, and debt balances. There are several possible explanations for the differences in findings. First, Brown et al. (2013) studied credit behavior immediately after high

school. It is possible that the returns to financial education diminish over time. Second, the nature of financial education may have changed over time, and, in particular, more recent curricula may be more in line with the current financial landscape.

Financial Education and Financial Attitudes

In addition to knowledge and behavior, several papers have examined the impacts of specific curricula on financial attitudes. All the studies discussed here are descriptive in nature and are described in more detail above.

Danes and Brewton (2010) found that participants who completed the HSFPP reported that they were more confident about their ability to manage their finances. Schug and Hagedorn (2005) found that students in Money Savvy Kids were less likely to feel saving money is greedy, more likely to feel confident about managing money, and more likely to feel it is important to save. Diem et al. (undated) found that after taking JA Economics for Success, students' attitudes regarding likely career success and personal finance improved. Niederjohn and Schug (2006) found improvements in saving and investing attitudes (delayed gratification, importance of saving and investing) among students receiving training on Learning, Earning, and Investing. Sotak et al. (2008) found that students exposed to the Real Money, Real World program were more likely to report that it is important to learn how to make good financial decisions, save regularly, and have a spending plan.

Summary

We summarize the findings in Table 3.1. Columns 1 and 2 provide the study authors and the curriculum under evaluation, respectively. Column 3 summarizes the empirical strategy used to identify the effects of financial education. Column 4 describes whether the study found a positive relationship between financial education and the outcome of interest, and column 5 describes the outcome of interest.

Despite numerous previous studies examining the relationships between financial education and financial knowledge, behavior, and attitudes, there is still little evidence documenting what curricula or programs are most effective. While many evaluations have suggested a positive correlation between a particular program and financial knowledge and behavior, very few have used sufficiently rigorous evaluation designs to draw causal inferences. Moreover, evaluations of specific curricula often measure knowledge or behavior gains shortly after program completion, raising questions about how long these effects might persist. Studies examining general financial education present a decidedly mixed picture regarding the ability of financial education to improve knowledge among students and to modify financial behaviors as an adult.

Table 3.1. Summary of Evaluation Studies

Author	Curriculum	Method	Finding	Outcome Variable
Choi (2010)	No specific curriculum	Descriptive	Null	Knowledge
Danes and Brewton (2010)	High School Financial Planning Program	Descriptive	Positive	Self-reported knowledge, behavior, and confidence
Diem et al. (undated)	JA Economics for Success	Descriptive	Positive	Knowledge and financial attitudes
Grimes, Rogers, and Smith (2010)	No specific curriculum	Descriptive	Positive	Adults holding a bank account
Lusardi and Mitchell (2007b)	No specific curriculum	Descriptive	Positive	Adult knowledge
Mandell (1997, 2001, 2004, 2006, 2008a, 2008b, 2009)	No specific curriculum	Descriptive	Null	Knowledge
Mandell and Klein (2007)	No specific curriculum	Descriptive	Null	Knowledge
Niederjohn and Schug (2006)	Learning, Earning and Investing	Descriptive	Positive	Knowledge and financial attitudes
Peng et al. (2007)	No specific curriculum	Descriptive	Null	Adult knowledge
Ryack (2011)	No specific curriculum	Descriptive	Positive	College student risk tolerance
Schug and Hagedorn (2005)	Money Savvy Kids	Descriptive	Positive	Knowledge and financial attitudes
Shim, Xiao, et al. (2009) and Shim, Barber, et al. (2010)	No specific curriculum	Descriptive	Positive	College student knowledge
Sotak et al. (2008)	Real Money, Real World	Descriptive	Positive	Self-reported knowledge and financial attitudes
van Rooij, Lusardi, and Alessie (2011)	No specific curriculum	Descriptive	Positive	Adult knowledge
Varcoe, Martin, et al. (2005)	Money Talks: Should I Be Listening?	Descriptive	Positive	Knowledge and self-reported financial behavior
Caliber Associates (2007)	JA Dollar and \$ense	Selected comparison group	Positive	Knowledge
Carlin and Robinson (2012a, 2012b)	JA Finance Park	Selected comparison group	Positive	Financial behavior and use of decision support in a simulated experience
Chen and Heath (2012)	Financial Fitness for Life	Selected comparison group	Positive	Knowledge
Go et al. (2012)	Money Savvy Youth	Selected comparison group	Positive	Knowledge and self-reported financial behavior
Harter and Harter (2009)	Financial Fitness for Life	Selected comparison group	Positive	Knowledge
Hill, Meszaros, and Tyson (2012)	Keys to Financial Success	Selected comparison group	Positive	Knowledge
Sherraden et al. (2011)	I Can Save	Selected comparison group	Positive	Knowledge
Walstad, Rebeck, and MacDonald (2010)	Financing Your Future	Selected comparison group	Positive	Knowledge
Bernheim, Garrett, and Maki (2001)	No specific curriculum	Natural experiment	Positive	Adult saving rates and wealth accumulation
Brown et al. (2013)	No specific curriculum	Natural experiment	Positive	Adult credit-related behaviors
Cole, Paulson, and	No specific curriculum	Natural	Null	Adult wealth accumulation,

Author	Curriculum	Method	Finding	Outcome Variable
Shastry (2013)		experiment		investment income, and credit-related behaviors
Mandell (1997)	No specific curriculum	Natural experiment	Null	Knowledge
Tennyson and Nguyen (2001)	No specific curriculum	Natural experiment	Positive	Knowledge
Becchetti, Caiazza, and Coviello (2013)	Created by authors	Randomized controlled trial	Null	Knowledge
Hinojosa et al. (2009)	Stock Market Game	Randomized controlled trial	Positive	Knowledge

NOTE: All results refer to students, unless otherwise noted.

4. Financial Education Content Standards and Curriculum Assessment Criteria

In this chapter, we review financial education content standards and criteria for curriculum utility, quality, and efficacy. We begin with a discussion of applicable national and state financial education content standards and additional literature regarding key financial education content for K–12 students, which we use to develop final content standards. We then discuss findings from the financial education and general education literature that inform curriculum utility, quality, and efficacy.

In our discussion, we rely on definitions for curriculum criteria—and specific criteria for content, utility, quality, and efficacy—that are detailed in Chapter 2.

Content Standards

As noted in Chapter 2, financial education aims to improve students’ financial knowledge (facts and information that students should understand), skills (the ability to carry out financial activities), and behaviors (the routine use of financial knowledge and skills beyond the context of the class). Because behaviors focus on what students do with their financial education knowledge and skills, rather than the content they should be taught, most of the standards we explored did not specify behaviors. However, financial education curricula can and do provide guidance on instruction and assessments that allow students to demonstrate use of the content. We suggest criteria for rating this element of the standards under the subsection on efficacy.

In this section, we review the content of national and selected state financial education content standards, focusing on knowledge and skills, to identify those that are prioritized. In addition, we review research and theory on financial education content standards to further refine the content standards used in this project.

Overview of National Financial Literacy Standards

In the United States, there are no financial education standards required for use by all districts and schools. However, there are several sets of standards that were developed with the intention of being applicable across the country. Some are clearly financial education standards. We also examined initiatives that detailed personal finance knowledge and skills that K–12 students should master; while these are not standards per se, they provide a roadmap to critical content and, in some cases, may identify important topics that are not prioritized in the financial

education standards. National documents used to inform content standards include the following (see Appendix B for more detail):¹²

- Financial education standards
 - Council for Economic Education National Standards for Financial Literacy
 - Jump\$Start Coalition Personal Finance Standards
- Other guides to personal finance content
 - Financial Literacy Education Commission’s Financial Education Core Competencies
 - Money as You Learn
 - Programme for International Student Assessment’s Financial Literacy Assessment Framework

Overview of State Financial Literacy Standards

According to a recent state-level survey (Council for Economic Education, 2014), 43 states include personal finance in their K–12 standards. Some states have developed their own standards, and others (e.g., Tennessee) have adopted Jump\$Start or other national standards. Financial literacy is generally incorporated into the standards for other subjects, such as social studies or mathematics.¹³

While there is general agreement that financial literacy is a priority for students and that financial education should be provided in schools (Office of Financial Education, 2002; Financial Literacy Education Commission, 2006), there are differing views on whether financial education should be a standalone course or should be integrated into existing courses (Maloney, 2010). Standalone courses provide more time and attention to financial education topics, and requiring students to take a standalone course emphasizes the importance of the topic. However, standalone courses risk being cut due to limited budget or standards-based focus on core subjects. Integrating financial education into core courses provides more assurance that the courses will not be removed from the curriculum; however, if there is limited time to cover the curriculum, financial education topics may be at greater risk of not being taught during the year. Further, when financial education is integrated into other courses, there may be some ambiguity about which teachers are responsible for covering the topics.

Given the wide variety of configurations for financial education standards, we focused on a sample of state standards, choosing both a handful of states with state-level requirements for students to participate in financial education courses and a handful of states with financial education standards intended to be integrated with other courses. Some of these states identify

¹² There are additional standards for broader areas related to finance (e.g., The National Assessment of Educational Progress’ economic framework) or for more-focused areas (e.g., the Consortium for Entrepreneurship Education’s National Content Standards for Entrepreneurship Education). These standards are outside the scope of this project.

¹³ See Jump\$Start’s module for examples of the content areas under which financial education standards are housed in various states (Jump\$Start Coalition for Personal Financial Literacy, undated).

financial education standards as embedded in the standards of other subjects while other states—especially those with a standalone financial education requirement—have identified a set of financial education standards that goes beyond the financial education standards included in other subjects.

We drew on several recent surveys of the status of states’ financial literacy initiatives (Council for Economic Education, 2014; Pelletier, 2013) to identify the states that have personal finance standards, require those standards to be implemented by districts, and require a personal finance standalone course to be taken. Those states are Missouri, Tennessee, Texas, and Utah. We chose five states that have identified financial education standards and require them to be implemented by school districts: Indiana, Maryland, Nevada, South Dakota, and Wisconsin. In those states, districts can decide how to address financial education standards and likely integrate them with instruction for subjects that might include mathematics, social studies, economics, and consumer science, among others.

Research on Financial Education Content Standards

A recent review of the literature (Borden et al., 2013) found that certain topics were common in evidence-based programs and curricula or earlier literature reviews: budgeting and saving; goal setting; fraud and identify theft; investing, credit, financing, taxes, insurance, banking, and financial services; and special topics for young children. These financial education topics, as well as other sets of standards, reflect expert judgment and theory of important financial education content. For example, the President’s Advisory Council on Financial Capability “drew upon the expertise of its members and consulted frequently with outside experts from the financial education community, primary and secondary education community, private sector, all levels of government, and academia. Council members organized and participated in numerous listening sessions across the country and solicited input from the public to help guide its work” (President’s Advisory Council on Financial Capability, 2013, p. 1). These standards and priorities did not typically emerge from empirical studies of the impact of standards on later financial functioning. For example, budgeting and saving emerged as topics in part because surveyed students reported that they were interested in learning about how to track their spending and save toward goals, and because surveyed teachers, administrators, and community members indicated saving was a priority (Tschache, 2009; Varcoe, Peterson, et al. 2010). These topics are consistent with the topics identified above in the review of national and state content standards.

An adult financial well-being issue brief from the Consumer Financial Protection Bureau identifies factors that may support the development of healthy financial behaviors that build on core knowledge and skills. The pedagogical techniques used for instruction should promote using and internalizing the skills, rather than reporting on fact-based knowledge. Instruction can also provide opportunities for students to be successful in applying their skills and knowledge in real-world situations, which may lead students to have greater self-confidence in their financial literacy and greater application beyond the class.

Similarities and Differences in Financial Education Content Standards

Based on our analysis of trends in national and state financial education standards, as well as research on financial education content standards, we have identified six overarching topic areas:

1. earning, income, and careers
2. saving and investing
3. spending
4. borrowing and credit
5. financial responsibility, money management, and financial decisionmaking
6. risk management and insurance.

We believe that these topics should be at the core of every financial education curriculum.

Financial Education Curriculum Assessment Criteria for Utility, Quality, and Efficacy

In this section, we summarize findings from the literature that inform criteria for assessing financial education curricula, with a specific focus on utility, quality, and efficacy. Because the literature on financial education curriculum assessment criteria is thin, we also consider the literature on best financial education practices in K–12 school settings. Lastly, because good practice in curriculum utility, quality, and efficacy is not necessarily related to the subject focus of the curriculum, we consider how general education literature on K–12 curriculum and the criteria identified by lists of criteria and rubrics used to assess curriculum in K–12 settings in the United States are applicable to the assessment of financial education curricula.

We looked at rubrics used to assess K–12 curriculum in multiple subjects, including financial education, mathematics, English-language arts, social studies, and science. Through extensive Internet searches, we identified 20 such rubrics and lists of criteria. We did not include rubrics that were used to evaluate curriculum outside of K–12 settings (because they may not be applicable in the K–12 setting) or that were developed at the school district level (because they have limited generalizability). The curriculum assessment criteria lists and rubrics include

- rubrics developed to assess alignment of curriculum with Common Core State Standards (CCSS)
- criteria lists and rubrics designed for states, school districts, and educators to review and select quality curriculum and instructional resources
- criteria lists and rubrics designed to guide publishers of curriculum materials and curriculum developers.

Unless otherwise noted, we summarize relevant criteria for curriculum assessment that appeared across at least three curriculum assessment rubrics or lists. Appendix C provides a complete list of the rubrics and criteria lists that we identified.

Curriculum Utility Criteria

Within the financial education field, limited efforts have been made to define criteria for assessing curricula utility. However, much of the financial education research literature on best practices for teaching financial education concepts and skills—while often not directly about how a financial education curriculum might address those practices—has implications for utility criteria. In addition, many rubrics that we identified for assessing K–12 curricula in general include utility criteria that are applicable to the assessment of financial education curricula.

Utility Criteria Derived from Best Practices for the Financial Education Classroom

As part of its short list of best practices for financial education materials, Jump\$tart recommends that materials appeal to student interest and a variety of learning styles. Numerous literature reviews and recommendations of working groups convening to discuss best teaching practices for financial education similarly suggest engaging students through interactive activities and use of real-life contexts, as well as attending to individual students' needs and learning styles. As pointed out by Collins and Odders-White (2013), “Because financial capability is itself an applied concept, there are many natural ways to provide experiential learning opportunities in schools, such as having students interact with financial products and services, either using actual money or in simulations” (p. 10). Some empirical research specifically suggests that interactive, experiential activities like stock market games, use of real money, and simulations lead to gains in students' financial education knowledge and attitudes (Sherraden et al., 2011; Hinojosa et al., 2009; Sotak et al., 2008). Research findings of significant associations between financial education knowledge and students' work experience and spending likewise suggest that the integration of financial education activities into curricula that provide real-life experiences with money could be helpful for all students (Danes and Brewton, 2013; Valentine and Khayum, 2005).

Additionally, literature reviews on financial education emphasize the need for attention to individual learners' diverse needs and backgrounds (Baumann and Hall, 2012; Borden et al., 2013; Choi et al., 2010; Shim, Serido, et al., 2013), which is sometimes lacking in financial education instructional materials. For example, as Choi et al. (2010) comments:

Mainstream youth financial education curricula are often created with the implicit or explicit expectation that students will have the background typical of a white, middle class demographic. As a result, the lessons may be less effective for low-income or minority youth. . . . From a teaching perspective, the field must recognize that youth may come from households with “suboptimal” financial practices. (pp. 11–12)

In research investigating the association between students' “identity-processing styles” and outcomes, Shim, Serido, et al. (2013) found that students' processing styles—or the styles or strategies by which students approach, explore, and commit to activities—mattered for their

financial knowledge, self-efficacy, attitudes, and behaviors, and the authors suggest that teachers' attention to these styles can support students' learning about financial education.

Utility Criteria Derived from Best Practices for Supporting Teachers

The literature on financial education provides various suggestions for supporting teachers that could be applicable for the development of utility criteria for assessing curricula. For example, materials should help develop teachers' financial education knowledge, enable integration of financial education lessons with curriculum standards like CCSS, and provide assessments that help teachers gauge students' understanding of financial education concepts and skills.

Sasser and Grimes (2010) and Way and Holden (2009) both provide evidence from survey data that K–12 teachers report a lack of formal training in financial education, in terms of both economics or financial courses in college and professional development for providing financial education. Sasser and Grimes (2010) surveyed a self-selected sample of 126 Oklahoma teachers, and Way and Holden surveyed a self-selected sample of 504 teachers across eight states. Way and Holden (2010) additionally note teachers' reports of being unprepared to teach financial education, particularly in regard to more-advanced financial education subjects, such as risk management, insurance, and savings. The need for financial education teacher training is underscored by the fact that financial education is often embedded in other subjects, which are the teachers' primary area of specialization. Social studies, consumer science, and mathematics teachers who sometimes are expected to teach financial education within their courses may approach financial education instruction with very different mindsets and backgrounds (Loibl and Fisher, 2013; Maloney, 2010).

As part of its best practices for financial education materials, JumpStart recommends materials that require little in the way of teacher preparation. However, at the same time, teachers' lack of financial education training likely requires that teachers do spend time preparing to teach financial education lessons. Thus, financial education curriculum materials most helpful to teachers might be those that include clear, easy-to-follow instructions on how to facilitate lesson activities and anticipate student misunderstandings, as well as easily accessible information and content guidance that might enhance teachers' lesson delivery. Both the Welsh Assembly Government (2010) and the Australian Securities and Investments Commission (2003) suggest that curricular material can support teachers who may not have a great deal of background knowledge in financial education by including clear teachers' notes and glossaries within curricula that clarify jargon. These suggestions follow along the lines of Davis and Krajcik's (2005) recommendations for educative curriculum materials that provide teachers with knowledge on how to teach specific content, or with "pedagogical content knowledge" that can promote both teacher learning and better instruction.

Additionally, reviews of literature and policies in the United States, as well as other countries, suggest that financial education may be difficult for teachers and schools to integrate

into already-crowded requirements and curricula. This literature recommends that financial education curricula be integrated with established subjects like mathematics, reading, and social studies (Granville, 2009; Mundy, 2009; U.S. Department of the Treasury, 2002), which has implications for the alignment of financial education curricula with standards in those subjects. Given the current emphasis on adopting CCSS for mathematics and English-language arts in the United States, teachers and schools might be better able to integrate financial education with instruction if financial education materials are aligned with CCSS. In January 2013, the President’s Advisory Council on Financial Capability recommended integrating financial education content standards into CCSS, which would better support inclusion of financial education into K–12 instruction.

Lastly, Maloney (2010) suggests that activities to assess students’ mastery of financial education concepts within financial education curricula are key to helping teachers gauge and support student learning. JumpStart similarly stresses that financial education materials should assess financial knowledge and behaviors. In fact, in the Danes, Rodriguez, and Brewton (2013) study of factors predicting gains in high school students’ financial education knowledge and skills, whether teachers used all the assessments within their financial education curriculum materials was the only teacher-level factor that predicted students’ financial knowledge gains. These findings suggest that use of tests and other kinds of informal assessments within a curriculum may provide teachers with information that helps them better support students.

Curriculum Assessment Rubrics and Utility Criteria

Many of the criteria named in curriculum assessment rubrics relate to utility of classroom practices that might engage and support students, as well as support teachers. Multiple curriculum assessment rubrics include criteria that a curriculum should cultivate student interest through a variety of authentic and cognitively challenging learning activities, including activities that allow for applying concepts and ideas to real-life contexts.

Two curriculum assessment rubrics that we identified—the Educators Evaluating Quality Instructional Products tool (Achieve, undated) and the Instructional Materials Evaluation Tool, or IMET (Student Achievement Partners, 2013a)—are specifically meant to assess alignment of curriculum materials with CCSS and offer some criteria that could be applicable to financial education curricula. They emphasize a balance among conceptual, procedural, and application activities for alignment with CCSS for mathematics, as well as integration of speaking and writing activities for alignment with CCSS for English-language arts and literacy across subject areas. Of course, more-specific aspects of financial education content may also be aligned with CCSS standards for mathematics content.

Other criteria related to curriculum utility that were named across three or more curriculum assessment rubrics include

- attention to the specialized language of a subject and encouragement of students’ use of that language

- suggestions to teachers for how to scaffold and extend activities for students at varying achievement levels and students with special needs
- clear guidance to teachers on how to approach teaching lessons and activities within curricula
- instructions that are clear for students to understand
- activities that cultivate student engagement and interest
- effective use of technology to deepen interest, engagement, and learning
- clearly specified learning goals.

Curriculum Quality Criteria

Curriculum quality is addressed in the two main sources of existing curriculum assessment criteria for financial education: Jump\$tart Coalition for Personal Financial Literacy (2008) and Personal Finance Education Group (undated), or pfege. These sources provide guidance to teachers, publishers, and other stakeholders regarding the selection of instructional materials in financial education that meet multiple criteria for quality. For financial education material that meets its criteria, pfege gives it a “Quality Mark,” which is meant to assist teachers in selecting financial education instructional materials.

Although the lists of criteria provided by these groups are meant to be applicable to a range of instructional materials, including but not limited to curriculum, their criteria are certainly relevant for financial education curriculum. Both groups’ recommendations related to quality include that financial education curricula should be

- objective and free from branding or other biases
- accurate and up to date
- readily accessible and available, including references and/or links to any web or other resources.

Curriculum Assessment Rubrics and Quality Criteria

Most of the curriculum rubrics that we found included criteria for assessing the quality of a curriculum similar to the Jump\$tart and pfege quality criteria. Some additional criteria identified across several of the curriculum assessment rubrics included the following:

- Visual design and any charts or graphs are correctly labeled and not distracting.
- Manipulatives provide high-quality representations.
- Materials are free from errors in writing and content.
- Materials are durable and support reuse.

Curriculum Efficacy Criteria

As discussed in Chapter 3—as well as in Fox, Bartholomae, and Jinkook (2005); McCormick and New America Foundation (2008); and Borden et al. (2013)—there is a paucity of data on the effectiveness of financial education curriculum in schools, in part due to the low number of studies employing rigorous methods for studying financial education curricula. Few studies on

outcomes of financial education courses, programs, or curricula employ methods that support causal inferences. Studies of financial education outcomes often do not control for the many student-level and teacher-level factors that could also explain the findings (Schuchardt et al., 2009; Choi et al. 2010). Controlling for those factors is particularly important because studies have found significant effects of some student-level and teacher-level variables on students' financial education knowledge and behaviors, including such variables as students' prior financial knowledge, beliefs about money, financial experiences, employment, and spending, as well as teachers' use of assessments within the curriculum (Danes, Rodriguez, and Brewton, 2013; Mandell and Klein, 2007; Mandell, 2006; Valentine and Khayum, 2005). When these factors are not controlled, as is the case in much of the financial education research, student and teacher variables rather than the curriculum may be driving student outcomes.

Additionally, researchers point out large differences across studies of financial education outcomes in how financial education is defined and how success is measured, which limits comparisons across studies of the effectiveness of financial education curriculum (Schuchardt et al., 2009; Huston, 2010; Collins and Odders-White, 2011; Borden et al., 2013). These papers and others identify key financial education outcomes that are important to measure, including financial education knowledge, skills, attitudes, and behaviors (Choi et al., 2010; Manje, Munro, and Mundy, 2013). To best capture change in financial education outcomes—particularly financial education behaviors that might emerge only in adulthood—researchers recommend longitudinal studies (McCormick and New America Foundation, 2008; Choi, 2010; Collins and Odders-White, 2013).

The National Endowment for Financial Education (2014) provides a toolkit to support evaluation of financial education programs. It defines potential outcomes of short- and longer-term programs, including change in knowledge, confidence, skills, aspirations, behaviors, and improvement in socioeconomic conditions. The toolkit also provides guidance on impact indicators and evaluation design.

Curriculum Assessment Rubrics and Efficacy Criteria

None of the curriculum assessment rubrics we found included criteria for evaluating curriculum efficacy, likely because many of the rubrics were intended for reviewers or teachers to review curriculum materials themselves and their alignment to state standards rather than for reviewers or teachers to seek evidence of program efficacy. However, the U.S. Department of Education What Works Clearinghouse provides stringent criteria for determining whether a program or curriculum has demonstrated positive effects. For example, evaluation studies should include an equivalent comparison group and avoid confounding issues, such as overalignment between treatment and outcomes being measured (e.g., tests that focus narrowly on items explicitly covered by the curriculum, rather than the more broad skills and knowledge the items were intended to represent) (What Works Clearinghouse, 2014). Given the small number of impact evaluations of financial education programs and curricula, setting a bar for study rigor

that is comparable to What Works Clearinghouse criteria may not make sense. However, establishing at least some criteria to gauge curriculum efficacy could guide teachers and other stakeholders to choose a curriculum that demonstrates potential effects on student outcomes in valid studies. For example, and consistent with What Works Clearinghouse standards, a curriculum might be considered to have evidence of effects if (1) there was at least one study reporting positive effects; (2) the effects were large enough to be meaningful (e.g., an effect size of 0.25 standard deviations is substantively important); (3) the effects were on some important outcome; (4) the study compared outcomes for students who did participate in the curriculum with those who did not, and accounted for differences in the two groups; and (5) findings were consistent across studies.

Summary

In Table 4.1, we summarize the key curriculum assessment criteria explicitly suggested or informed by the literature and rubrics we discussed in this section.

Table 4.1. Summary of Curriculum Assessment Criteria for Utility, Quality, and Efficacy Suggested by Literature and Tools

Category of Criteria	Source	Specific Criteria
Utility	Literature on best financial education classroom practices	<ul style="list-style-type: none"> • Use of interactive activities within real-life contexts • Attention to individual students' needs and learning styles
	Literature on best practices for supporting financial education teachers	<ul style="list-style-type: none"> • Clear teachers' notes, glossaries, and other tools and information within financial education curricula to support teacher learning and instruction • Alignment with CCSS and/or standards for other subjects within which financial education lessons might be integrated • Inclusion of various kinds of assessments that gauge student mastery of financial education learning materials
	General curriculum assessment rubrics	<ul style="list-style-type: none"> • Use of authentic and cognitively challenging learning activities that engage students in higher-order skills like analysis, evaluation, and synthesis • Activities that apply financial education concepts and ideas to real-life contexts • Activities applicable to students with a range of interests and learning styles • Emphasis on the balance among conceptual, procedural, and application activities to align the financial education curriculum with CCSS for mathematics • Inclusion of speaking and writing activities to align the financial education curriculum with CCSS for English-language arts and literacy • Attention to specialized language of a subject and encouragement of students' use of that language • Opportunities for students to explain the thinking behind their responses to questions • Suggestions to teachers for how to scaffold and extend activities for students at varying achievement levels and students with special needs (including special education students and English-language learners)

Category of Criteria	Source	Specific Criteria
Quality	JumpStart and pfe recommendations for curriculum assessment	<ul style="list-style-type: none"> • Clear guidance to teachers on how to approach teaching lessons and activities within curricula, including examples of student work and suggestions for how to respond to students • Instructions that are easy for students to understand • Activities that cultivate student engagement and interest • Effective use of technology to deepen interest, engagement, and learning • Clearly specified learning goals
	General curriculum assessment rubrics	<ul style="list-style-type: none"> • Objective and free of branding or other biases • Accurate and up to date • Readily accessible and available • Visual design and any charts and/or graphs that are correctly labeled and not distracting • Manipulatives that provide high-quality representations • Materials that are free from errors in writing/content • Materials that are durable and support reuse
Efficacy	Financial education research literature	<ul style="list-style-type: none"> • Rigorous studies that employ randomized controlled trials or quasi-experimental methods to determine the impact of the curriculum on financial education outcomes • Use of student-level and teacher-level control variables in studies of financial education outcomes • Measurement of a range of student outcomes, including knowledge, skills, attitudes, and behaviors • Longitudinal studies that capture long-term change in financial education outcomes
	General curriculum assessment rubrics	<ul style="list-style-type: none"> • What Works Clearinghouse recommendations for rigor of impact studies

5. Financial Education Curriculum Rubric

Together, the sources discussed in Chapters 3 and 4 informed the criteria, indicators, and questions that constitute the rubric (see Appendix A). The coding guides presented in this document addresses four important aspects of financial education curricula: content, utility, quality, and efficacy. The coding guides include **criteria** to prioritize when selecting a financial education curriculum, based on the analysis presented in this report. For example, important criteria for a high-quality curriculum include objectivity, up-to-date information, lack of errors, easy access to the print and online materials, and a visual design that supports learning. Because these are broad concepts, we have also included **indicators** to further specify the criteria, and “yes/no” **questions** to help ascertain whether a curriculum addresses the criteria. For example, under the *objectivity* criterion for curriculum quality, one indicator is that materials explicitly identify funders and authors and do not promote branded products. Two related questions include, “Are the authors and funders of development and dissemination clearly disclosed?” and “Do the materials abstain from promoting particular products or financial service providers (e.g., free of slogans, logos, and statements touting specific products/providers)?”

In three sections of the rubric—content, utility, and quality—the criteria are independent of each other. For example, the quality criterion of *easy access to print and online materials* can be reviewed separately from *objectivity*; the review of the first does not affect the review of the second, and they can be reviewed in any order without changing the results. In the efficacy section of the rubric, the criteria are not independent.

Content

The adequacy of the curriculum *content* addresses the degree to which the curriculum covers important knowledge and skills. Under content, we include six broad criteria that have emerged as important in our literature review.

- Does the curriculum address grade level–appropriate topics for earning, incomes, and careers?
- Does the curriculum address grade level–appropriate topics for saving and investing?
- Does the curriculum address grade level–appropriate topics for spending?
- Does the curriculum address grade level–appropriate topics for borrowing and credit?
- Does the curriculum address grade level–appropriate topics for managing potential financial risk, including insurance?
- Does the curriculum address grade level–appropriate topics for financial responsibility, money management, and financial decisions?

Utility

We defined *utility* as the supports for using the curriculum; that is, the pedagogical guidance and materials designed to promote strong and effective instruction. Under utility, we include five broad criteria that have emerged as important in our literature review.

- Do curriculum materials provide instructional suggestions, exercises, and activities designed to support cognitive development of students' financial capability?
- Do curriculum materials provide suggestions to differentiate instruction, exercises, and activities designed to support engagement among a diverse population of students?
- Do curriculum materials allow teachers to easily plan and deliver financial education instruction to students and integrate lessons with their instruction in other subjects?
- Do materials include a range of formative and summative assessments to support teaching and help teachers assess mastery?
- Are curriculum materials instructional for teachers, in terms of helping them provide clear and accurate financial education instruction to students?

Quality

Quality is defined as the strength of the curriculum materials. However, where utility criteria focus on the potential usage of the curriculum, quality criteria focus on the accessibility, accuracy, and objectivity of the curriculum. Under quality, we include four broad criteria that have emerged as important in our literature review.

- Are curriculum materials physically accessible to teachers and students in a typical school setting?
- Are curriculum materials current and free of error?
- Are curriculum materials objective?
- Is the visual appearance of the student materials conducive to learning?

Efficacy

The *efficacy* of the curriculum is defined as the impact of the curriculum on students, as measured in high-quality research studies. Under efficacy, we include three broad criteria that have emerged as important in our literature review.

- Is each study strong (the study is designed, carried out, and reported well)?¹⁴
- Is the body of evidence large or moderate (there are multiple studies of large aggregate size)?¹⁵
- Does the body of evidence support conclusions of consistent, strong, positive impact?

¹⁴ Study procedures and implementation are thoroughly explained, there is minimal attrition and no viable alternative explanations for the findings, outcome measures are valid and reliable, analyses use appropriate techniques, and evidence is recent enough to be relevant.

¹⁵ There are at least two evaluations that, together, include at least 350 students or 14 classrooms.

As noted, under each of the criteria listed in these bullets, there are multiple indicators and detailed questions.

6. Summary and Discussion

Given the complex financial environment and economic issues related to poor financial decisions, financial capability is an essential skill. Being able to act in one's own best financial interest and make appropriate financial decisions are key to saving, planning for the future, and managing debt. Despite their importance, financial literacy and capability are remarkably low among U.S. populations, including adults and high school students.

Financial education, particularly in K–12 schools, is seen as an important intervention to improve financial capability among students and to improve their ability to make sound financial decisions in adulthood. To achieve the goal of greater financial capability, 43 states included “personal finance” in their standards as of 2014 (Council for Economic Education, 2014). While financial education of some form is often mandated, school and district staff are responsible for choosing curricula to fulfill these mandates. Criteria to assess available curricula, greater preparedness among teachers in the subject of personal finance, and more-rigorous research that carefully evaluates existing curricula can help improve these choices.

Despite numerous previous studies, the evidence regarding which curricula are effective in delivering financial education to K–12 students is inconclusive. While many studies have documented a positive association between general or specific curricula and financial knowledge, few studies have been sufficiently rigorous to make causal inferences. Studies of individual curricula generally find positive relationships between financial education and financial knowledge, behavior, and/or attitudes. However, studies of financial education in general find less clear associations, with many papers finding no effect. While some of the literature on long-term effects of financial education suggests that financial education in high school can have a lasting effect on financial knowledge and behavior into adulthood, other studies find no such relationship.

The differences in results between evaluations of specific curricula and the studies of overall effectiveness of general financial education may be explained by a number of factors. First, evaluations of specific curricula typically have a relatively short time horizon, measuring effects within a few months of the end of a course. Short-term studies may capture immediate effects that could fade over time. The general evaluations are typically measuring financial knowledge and behavior months or even years after the respondent attended a financial education class. Second, in many of the evaluations focused on particular curricula, teachers were given training on how to teach the material. Similar opportunities were often not present in the evaluations of general financial education. Third, selection bias may differentially affect evaluations of specific and general curricula. For evaluations of particular curricula, there is often selection bias on the part of teachers. In many instances, teachers had to opt in to the study and agree to teach the material to their students. It is likely that the teachers who chose to participate were more

interested in teaching the material than those who chose not to participate. The evaluations of specific curricula might not have found such positive effects if teachers were compelled to participate. However, in looking at the effectiveness of financial education in general, selection bias may be more prevalent on the part of students. For example, some students may select into a course because it is particularly interesting to them; this would lead to a spurious positive correlation between financial education and knowledge. Alternatively, other students may be taking a course only because it is perceived as an easy course, which would lead to a spurious negative effect. Selection into a financial education course may not take the same form for every course, depending on the course, its precise nature, and state mandates. Averaging across a variety of curricula with these selection issues on the part of students could result in a net null effect. Finally, few evaluations of specific curricula employed randomized controlled trials or natural experiments to account for the problems of selection bias. The evidence regarding the efficacy of general financial education from studies leveraging natural experiments is decidedly mixed.

Because of the variety of findings on the effectiveness of financial education and concerns about the quality of the evidence, careful selection of a curriculum and appropriate criteria by which curricula can be judged are necessary. We investigated the financial education and general education research literature for evidence to guide the development of curriculum assessment criteria. Our survey of the literature focused on applicability of literature findings to four categories of criteria that we have determined as key to choosing appropriate curricula for K–12 financial education: content, utility, quality, and efficacy.

To inform development of key financial education content standards, we conducted a thorough review of documents that define national content standards for financial education, as well as documents from the research literature that discuss financial education content most important for students to learn. We consider content to encompass both the financial education knowledge and skills that students should acquire before they graduate high school.

Looking across these documents, we arrived at six major content standard topic areas on which curriculum frequently focus: earning, income, and careers; saving and investing; spending; credit; financial responsibility, money management, and financial decisionmaking; and risk management and insurance. Based on an analysis of common substandards in each topic area across multiple national standards documents, we created content standards and skills that we use as part of our criteria to assess curriculum content.

Only a small number of financial education articles address key elements of financial education curricula beyond the content that financial education curricula should include. However, we also identified several articles about best practices in financial education that could inform curriculum assessment criteria for utility, quality, and efficacy. Additionally, in the general education field, some literature and many K–12 curriculum assessment and review rubrics have been developed in recent years to guide educators, school districts, and state departments of education on choosing the best curricula to use with students. We identified many

such rubrics for the purpose of this review and analyzed trends across rubrics in regard to assessment criteria that could be applied to financial education curricula.

Bringing together all this research, we arrived at a set of key criteria to assess the content, utility, quality, and efficacy of financial education curricula, provided in Appendix A.

Appendix A: K–12 Financial Education Curriculum Review Rubric

This appendix outlines our set of key criteria to assess the content, utility, quality, and efficacy of financial education curricula.

Tables A.1, A.2, and A.3 outline the criteria for assessing content in elementary, middle, and high school, respectively. We defined *content* as the knowledge and skills covered by the curriculum. The content coding guides are based on existing national and state financial education standards.

Table A.1. Content Coding Guide for Elementary School

Curriculum	Coding
Curriculum Name	Reviewer Name
Curriculum Age/Grade Focus	Date Reviewed
Materials Reviewed (publication dates)	

Indicator	Component
Content Criterion 1. Does the curriculum address grade level–appropriate topics for earning, incomes, and careers?	
1.1: Sources of income include wages, salaries, and benefits, as well as interest, rent, and profits.	Income is money earned from employment and investments. <ul style="list-style-type: none"> • Addressed • Not addressed
1.2: People can change their income by acquiring more education, work experience, and skills.	Various jobs and careers provide different levels of income and require different kinds of skills. <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 1 Score	Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.
Content Criterion 2. Does the curriculum address grade level–appropriate topics for saving and investing?	
2.1: People save for the future and might have different goals for saving and make different choices about how to save.	One can save money in various ways, including at home in a piggy bank or at a commercial bank, credit union, or savings and loan. <ul style="list-style-type: none"> • Addressed • Not addressed <p>Saving helps individuals act on future opportunities, meet short- and long-term goals, and address financial emergencies.</p> <ul style="list-style-type: none"> • Addressed • Not addressed

Indicator	Component
2.2: Compound interest affects the value of savings.	Saving money in a bank or credit union allows the money to earn interest. <ul style="list-style-type: none"> • Addressed • Not addressed
2.3: Investments involve purchase of financial assets to increase wealth.	The goal of savings is to set aside income for future spending, whereas the goal of investing is to increase wealth over time. <ul style="list-style-type: none"> • Addressed • Not addressed
2.4: Some investment strategies have greater or less risk and corresponding expected rate of return.	Not applicable at elementary level
Content Criterion 2 Score	Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.
Content Criterion 3. Does the curriculum address grade level–appropriate topics for spending?	
3.1: People choose to buy some goods or services over others.	Individuals must make choices and prioritize about the goods and services they buy because they cannot have everything they want. <ul style="list-style-type: none"> • Addressed • Not addressed Individual spending choices can be affected by a variety of factors, including family circumstances, price of goods and services, advertising, preferences, peer pressure, product quality, impact of purchase on self and others, etc. <ul style="list-style-type: none"> • Addressed • Not addressed
3.2: Individuals who are active and aware consumers can make more-informed choices.	Individuals should know the numbers required to count money. <ul style="list-style-type: none"> • Addressed • Not addressed Individuals should understand and be able to use the different values of coins. <ul style="list-style-type: none"> • Addressed • Not addressed Making good spending choices involves systemic decisionmaking and planning, including comparing the benefits and costs of spending, asking questions, and comparison shopping. <ul style="list-style-type: none"> • Addressed • Not addressed A budget is a plan for using income productively, including spending, sharing, and saving. <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 3 Score	Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.

Indicator	Component
Content Criterion 4. Does the curriculum address grade level–appropriate topics for borrowing and credit?	
4.1: Borrowing allows people to purchase goods and services now that must be paid for in the future.	Borrowing from others is often referred to as obtaining credit. Credit is the use of someone else’s money for a fee; interest is the fee one pays for borrowing money through credit. <ul style="list-style-type: none"> • Addressed • Not addressed
	When people use credit, they receive something of value now and agree to repay the lender over time, or at some date in the future, with interest. <ul style="list-style-type: none"> • Addressed • Not addressed
4.2: Different credit options have different costs.	Not applicable at the elementary level
4.3: Your credit score is a number based on information from your credit history and assesses your credit risk.	Not applicable at the elementary level
4.4: Lenders and others can access your credit history to make decisions about lending or extending lines of credit, accepting applications for rental housing, and determining if a person is a good candidate for a job.	Not applicable at the elementary level
Content Criterion 4 Score Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.	
Content Criterion 5. Does the curriculum address grade level–appropriate topics for managing potential financial risk, including insurance?	
5.1: People make choices to protect themselves from financial risks.	Risk is the chance of loss or harm and is an unavoidable part of daily life. <ul style="list-style-type: none"> • Addressed • Not addressed Individuals can choose to accept risk or protect themselves by avoiding risks or taking out insurance. <ul style="list-style-type: none"> • Addressed • Not addressed
5.2: Insurance allows people to pay a fee now in order to avoid possibility of later risk.	Not applicable at the elementary level
5.3: The cost of insurance is influenced by individual behavior and a range of other factors.	Not applicable at the elementary level
Content Criterion 5 Score Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.	
Content Criterion 6. Does the curriculum address grade level–appropriate topics for financial responsibility, money management, and financial decisions?	
6.1: Financial responsibility involves planning for the future.	Individuals could have various short- or long-term goals that could require them to save money. <ul style="list-style-type: none"> • Addressed • Not addressed

Indicator	Component
6.2: Financial advice is available from a variety of sources	Not applicable at the elementary level
Content Criterion 6 Score	Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.
CONTENT OVERALL RATING	Strong Content: All criteria were met, and at least one was exceeded. Moderate Content: All criteria were met. Limited Content: Most criteria were met (at least 50 percent), but at least one criteria was not met. Poor Content: Fewer than 50 percent of criteria were met.

Table A.2. Content Coding Guide for Middle School

Curriculum		Coding	
Curriculum Name		Reviewer Name	
Curriculum Age/Grade Focus		Date Reviewed	
Materials Reviewed (publication dates)			
Indicator		Component	
Content Criterion 1. Does the curriculum address grade level–appropriate topics for earning, incomes, and careers?			
1.1: Sources of income include wages, salaries, and benefits, as well as interest, rent, and profits.		Income can be acquired in a variety of ways, including through wages; salaries; commissions; interest, dividends, and capital appreciation on investments; money gifts; profits; and rental property. <ul style="list-style-type: none"> • Addressed • Not addressed 	
1.2: People can change their income by acquiring more education, work experience, and skills.		Building one’s human capital through various types of education and training can have differing opportunity costs. <ul style="list-style-type: none"> • Addressed • Not addressed Changes in the labor market or economic conditions can causes changes in worker’s income or unemployment. <ul style="list-style-type: none"> • Addressed • Not addressed 	
Content Criterion 1 Score		Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.	
Content Criterion 2. Does the curriculum address grade level–appropriate topics for saving and investing?			
2.1: People save for the future and might have different goals for saving and make different choices about how to save.		Different people save money for different reasons, including large purchases (such as higher education, automobiles, and homes), retirement, and unexpected events. <ul style="list-style-type: none"> • Addressed • Not addressed Peoples’ choices about how much to save and for what are based on their preferences. <ul style="list-style-type: none"> • Addressed • Not addressed 	
2.2: Time, interest rates, and inflation all affect the value of savings.		The value of savings is affected by interest and compounding over time. <ul style="list-style-type: none"> • Addressed • Not addressed Interest can be calculated by multiplying the principal amount, the interest rate, and time of loan/investment. <ul style="list-style-type: none"> • Addressed • Not addressed 	

Indicator	Component
2.3: Investments involve purchase of financial assets to increase wealth.	<p>Financial assets in which one might invest include stocks, bonds, mutual funds, real estate, and commodities.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>The rate of return on a financial investment consists of interest payments, dividends, and capital appreciation expressed as a percentage of the amount invested.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
2.4: Some investment strategies have greater or less risk and corresponding expected rate of return.	<p>Federal agencies guarantee depositors' savings in most commercial banks, savings banks, savings associations, and credit unions.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Increases or decreases in the rate of return from an investment vary according to the amount of risk. In general, a trade-off exists between the security of an investment and its expected rate of return.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 2 Score	<p>Exceeded: More than 85 percent of components were addressed, Met: Between 65 percent and 85 percent of components were addressed, Did not meet: Less than 65 percent of components were addressed,</p>
Content Criterion 3. Does the curriculum address grade level–appropriate topics for spending?	
3.1: People choose to buy some goods or services over others.	<p>People make choices about what goods and services to buy. This requires individuals to prioritize their wants.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
3.2: Individuals who are active and aware consumers can make more-informed choices.	<p>A consumer should rely on sources beyond advertising claims to gather information about goods and services.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Consumers can use a variety of payment methods to make a purchase, and some payment methods are better than others.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>A budget helps one make good spending choices, and a good budget accounts for expenses, income, savings, and taxes.</p> <ul style="list-style-type: none"> • Addressed • Not addressed

Indicator	Component
	Individual spending goals and priorities can inform the creation of a budget. <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 3 Score	Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed
Content Criterion 4. Does the curriculum address grade level–appropriate topics for borrowing and credit?	
4.1: Credit allows people to purchase goods and services now that must be paid for in the future.	People can use credit to finance long-term investments. The benefits of using credit in this way are spread out over a period of time, whereas the benefits of using credit to make daily purchases are short-lived and do not accumulate over time. <ul style="list-style-type: none"> • Addressed • Not addressed
4.2: Different credit options have different costs.	People who apply for loans are told what the interest rate on the loan will be. An interest rate is the price of using someone else’s money, expressed as an annual percentage of the loan principal. <ul style="list-style-type: none"> • Addressed • Not addressed Interest rates for loans fluctuate based on changes in the market for loans, as well as risk of nonrepayment. <ul style="list-style-type: none"> • Addressed • Not addressed Consumers can choose from a variety of credit sources. <ul style="list-style-type: none"> • Addressed • Not addressed Borrowers who use credit cards and do not pay the full balance when it is due pay much higher costs for their purchases and can avoid interest charges by paying the entire balance within the grace period specified by the financial institution. <ul style="list-style-type: none"> • Addressed • Not addressed
4.3: Your credit score is a number based on information from your credit history and assesses your credit risk.	See content criterion 4.4.
4.4: Lenders and others can access your credit history to make decisions about lending or extending lines of credit, accepting applications for rental housing, and determining if a person is a good candidate for a job.	Lenders make credit decisions based in part on consumer payment history. Credit bureaus record borrowers’ credit and payment histories and provide that information to lenders in credit reports. <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 4 Score	Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.

Indicator	Component
Content Criterion 5. Does the curriculum address grade level–appropriate topics for managing potential financial risk, including insurance?	
5.1: People make choices to protect themselves from financial risks.	Risk management strategies include risk avoidance, risk control, and risk transfer through insurance. <ul style="list-style-type: none"> • Addressed • Not addressed
5.2: Insurance allows people to pay a fee now in order to avoid possibility of later risk.	Individuals can choose to accept some risk, avoid or reduce risk, or transfer some risk by purchasing insurance. Each option has different costs and benefits. <ul style="list-style-type: none"> • Addressed • Not addressed Insurance is a product that allows people to pay a fee (called a premium) now to transfer the costs of potential loss to a third party. <ul style="list-style-type: none"> • Addressed • Not addressed
5.3: The cost of insurance is influenced by individual behavior and a range of other factors.	Insurance premiums might vary based on level of protection, insurer’s assessment of individual risk, deductible, and copayment. <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 5 Score	
Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.	
Content Criterion 6. Does the curriculum address grade level–appropriate topics for financial responsibility, money management, and financial decisions?	
6.1: Financial responsibility involves planning for the future.	People perform basic financial tasks to manage money. <ul style="list-style-type: none"> • Addressed • Not addressed Financial choices that people make have benefits, costs, and future consequences. <ul style="list-style-type: none"> • Addressed • Not addressed
6.2: Financial advice is available from a variety of sources.	Not applicable at middle school level
Content Criterion 6 Score	
Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.	
CONTENT OVERALL RATING	
Strong Content: All criteria were met, and at least one was exceeded. Moderate Content: All criteria were met. Limited Content: Most criteria were met (at least 50 percent), but at least one criteria was not met. Poor Content: Fewer than 50 percent of criteria were met.	

Table A.3. Content Coding Guide for High School

Curriculum		Coding	
Curriculum Name		Reviewer Name	
Curriculum Age/Grade Focus		Date Reviewed	
Materials Reviewed (publication dates)			

Indicator	Component
Content Criterion 1. Does the curriculum address grade level–appropriate topics for earning, incomes, and careers?	
1.1: Sources of income include wages, salaries, and benefits, as well as interest, rent, and profits.	<p>Many workers receive benefits, including health and retirement benefits, in addition to their pay.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
1.2: People can change their income by acquiring more education, work experience, and skills.	<p>The wages paid for a given job depend on a worker’s skills and education, as well as the importance of the work to society and the supply of and demand for qualified workers.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
	<p>The income that an individual receives is determined in part by the informed decisions that individual makes regarding work, investments, and asset accumulation.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
	<p>Entrepreneurs, who work for themselves by starting a new business, hope to earn a profit, but accept the risk of a loss.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
	<p>Whether and where to go to college are important financial decisions and should be based on information on the future economic opportunities that college can bring, as well as on the tuition and fees for college choices.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
	<p>Taxes affect income.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 1 Score	<p>Exceeded: More than 85 percent of components were addressed.</p> <p>Met: Between 65 percent and 85 percent of components were addressed.</p> <p>Did not meet: Less than 65 percent of components were addressed.</p>
Content Criterion 2. Does the curriculum address grade level–appropriate topics for saving and investing?	
2.1: People save for the future and might have different goals for saving and make different choices about how to save.	<p>Different people save money for different reasons, including large purchases (such as higher education, automobiles, and homes), retirement, and unexpected events.</p> <ul style="list-style-type: none"> • Addressed • Not addressed

Indicator	Component
	<p>The decision about where to save one's money depends on various factors, including savings goals and interest rates.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Employer benefit programs create incentives and disincentives to save and invest, including tax-exempt and tax-deferred accounts.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Banks and credit unions are places people can invest money and earn interest.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>People should check transactions on bank statements and note any irregularities.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
2.2: Time, interest rates, and inflation all affect the value of savings.	<p>The calculation for the end value of an investment depends on investment amount, time, rate of return, and frequency of compounding.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
2.3: Investments involve purchase of financial assets to increase wealth.	<p>People must design how to invest their savings so that they can grow over time.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
2.4: Some investment strategies have greater or less risk and corresponding expected rate of return.	<p>Government agencies, such as the U.S. Securities and Exchange Commission, Federal Deposit Insurance Corporation, and state regulators, oversee the securities and banking industries and combat fraud.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>The risk of investments depends on various factors, including diversification of the investment, economic conditions, monetary and fiscal policies, and market prices.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
Content Criterion 2 Score	<p>Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.</p>
Content Criterion 3. Does the curriculum address grade level–appropriate topics for spending?	
3.1: People choose to buy some goods or services over others.	<p>People make choices about what goods and services to buy. This requires individuals to prioritize their wants.</p> <ul style="list-style-type: none"> • Addressed • Not addressed

Indicator	Component
<p>3.2: Individuals who are active and aware consumers can make more-informed choices.</p>	<p>The quality and usefulness of information about goods and services can vary greatly among sources; wise consumers compare information across a variety of sources before determining what they will buy.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>When people consume goods and services, their consumption can have positive and negative effects on the community (for example, consumption of education or cigarettes has an impact on others).</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Governments establish laws and institutions to provide consumers with information about goods and services being purchased and to protect consumers from fraud.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>Content Criterion 3 Score</p>	<p>Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.</p>
<p>Content Criterion 4. Does the curriculum address grade level–appropriate topics for borrowing and credit?</p>	
<p>4.1: Credit allows people to purchase goods and services now that must be paid for in the future.</p>	<p>Using credit to buy durable goods—such as cars, houses, and appliances—enables people to use goods while paying for them.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>4.2: Different credit options have different costs.</p>	<p>The costs of credit from various sources can be compared by utilizing information about annual percentage rate, initial fees, late fees, nonpayment fees, and other relevant information.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Leasing, borrowing to buy, and rent-to-own options have different contract terms and costs.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Laws in place to protect consumers who use credit include requirements to provide full disclosure of credit terms, such as annual percentage rate and fees, as well as protection against discrimination and limits on abusive marketing or collection practices.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>There are important considerations in taking financial aid for education, including underlying mechanics such as grants versus loans, amount of loans necessary to complete one’s education, loan forgiveness, and repayment schedules.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>4.3: Your credit score is a number based on information from your credit history and assesses your credit risk.</p>	<p>See content criterion 4.4.</p>

Indicator	Component
<p>4.4: Lenders and others can access your credit history to make decisions about lending or extending lines of credit, accepting applications for rental housing, and determining if a person is a good candidate for a job.</p>	<p>Consumers' prior payment history can affect interest rates on future loans, and consumers can influence those rates through collateral and down payment.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Factors that could cause a lender to deny credit to someone include credit score, income, aspects of one's credit history, etc. These factors are influenced by a number of factors, including having high levels of debt, not paying bills on time, or having limited credit history.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>One can have a positive effect on one's credit score by using credit effectively, including engaging in good spending choices and credit repayment practices, as well as understanding credit disclosure information.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Consumers with excessive debt have a number of options, including consolidating loans, renegotiating repayment schedules, and even declaring bankruptcy as a last resort.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>Content Criterion 4 Score</p>	<p>Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.</p>
<p>Content Criterion 5. Does the curriculum address grade level–appropriate topics for managing potential financial risk, including insurance?</p>	
<p>5.1: People make choices to protect themselves from financial risks.</p>	<p>Risk management strategies include risk avoidance, risk control, and risk transfer through insurance.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Probability quantifies the likelihood that a specific event will occur, usually expressed as the ratio of the number of actual occurrences to the number of possible occurrences.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>Laws and regulations exist to protect consumers from abuses by a variety of sellers, lenders, and others, including those arising from privacy infringement and identity theft.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>5.2: Insurance allows people to pay a fee now in order to avoid possibility of later risk.</p>	<p>Insurance is a product that allows people to pay a fee (called a premium) now to transfer the costs of potential loss to a third party; insurers do this by pooling premiums to create a fund for individuals who experience a large loss.</p> <ul style="list-style-type: none"> • Addressed • Not addressed

Indicator	Component
	<p>Some types of insurance contracts can increase risk because having the insurance may result in the person taking more risks. Policy features such as deductibles and copayments are cost-sharing features that encourage the policyholder to take steps to reduce the potential size of loss (claim).</p> <ul style="list-style-type: none"> • Addressed • Not addressed
	<p>Types of insurance include health, disability, property, life, and auto insurance. Each type of insurance includes differing rules and benefits.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>5.3: The cost of insurance is influenced by individual behavior and a range of other factors.</p>	<p>Insurance companies charge higher premiums to cover higher-risk individuals and events because the risk of monetary loss is greater.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>Content Criterion 5 Score</p>	<p>Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.</p>
<p>Content Criterion 6. Does the curriculum address grade level–appropriate topics for financial responsibility, money management, and financial decisions?</p>	
<p>6.1: Financial responsibility involves planning for the future.</p>	<p>Financially responsible individuals accept the fact that they are accountable for their financial future, and their attitudes and values affect their financial decisions.</p> <ul style="list-style-type: none"> • Addressed • Not addressed <p>To responsibly manage finances, a person should have a personal financial plan, which should include the following components: financial goals, a net worth statement, an income and expense record, an insurance plan, a saving and investing plan, and a budget.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>6.2: Financial advice is available from a variety of sources.</p>	<p>Financial advice is available from a variety of sources, such as professional financial advisors, books, and the Internet.</p> <ul style="list-style-type: none"> • Addressed • Not addressed
<p>Content Criterion 6 Score</p>	<p>Exceeded: More than 85 percent of components were addressed. Met: Between 65 percent and 85 percent of components were addressed. Did not meet: Less than 65 percent of components were addressed.</p>
<p>CONTENT OVERALL RATING</p>	
<p>Strong Content: All criteria were met, and at least one was exceeded. Moderate Content: All criteria were met. Limited Content: Most criteria were met (at least 50 percent), but at least one criteria was not met. Poor Content: Fewer than 50 percent of criteria were met.</p>	

In Tables A.4, A.5, and A.6, each question is identified as “required” or “recommended.” All required questions must be answered yes for a criterion to be rated highly. Recommended questions contribute to the rating. See Appendix C for further explanation.

Table A.4 outlines the criteria for assessing utility. We defined *utility* as the supports for using the curriculum, including pedagogical guidance designed to promote strong and effective instruction.

Table A.4. Utility Coding Guide

Curriculum		Coding	
Curriculum Name		Reviewer Name	
Curriculum Age/Grade Focus		Date Reviewed	
Materials Reviewed (publication dates)			

Indicator	Required or Recommended	Question
Utility Criterion 1. Do curriculum materials provide instructional suggestions, exercises, and activities designed to support cognitive development of students’ financial capability (knowledge, skills, behavior, and attitudes about personal finance)?		
1.1: Materials include a balanced focus on concepts (e.g., being an informed consumer), procedures (e.g., knowing how to calculate interest or the definition of mortgage), and application (e.g., making a budget).	Required	Are there multiple activities for each of the following: <ul style="list-style-type: none"> ○ Procedural learning: memorizing content or practicing processes accurately and quickly ○ Conceptual learning: describing underlying ideas in written and spoken activities ○ Application: independently using knowledge and skills in simulated or real situations, choosing a strategy to solve problems with persistence? <ul style="list-style-type: none"> • Yes • No
1.2: Student activities, exercises, assignments, etc. require higher-order skills, such as analysis, synthesis, and evaluation.	Required	Are students expected to engage in discussion around financial constructs? <ul style="list-style-type: none"> • Yes • No
	Required	Are students expected to explain their reasoning for responses? <ul style="list-style-type: none"> • Yes • No
	Required	Are students expected to connect constructs from different lessons within and beyond the financial education curriculum? <ul style="list-style-type: none"> • Yes • No
	Required	Are students expected to reflect on their financial knowledge? <ul style="list-style-type: none"> • Yes • No

Indicator	Required or Recommended	Question
1.3: Materials promote the development of student executive functioning.	Required	Are there activities designed to help students conceptualize their financial future (e.g., activities in which students make financial plans for a meaningful future event, such as a birthday; activities that involve organizing their finances over time, such as making a savings calendar)? <ul style="list-style-type: none"> • Yes • No
	Required	Do activities require students to consciously organize their learning strategies (e.g., figure out the best way to solve a financial problem)? <ul style="list-style-type: none"> • Yes • No
1.4: Materials attend to specialized financial vocabulary and encouragement for students to use that vocabulary.	Required	Are important financial terms needed for understanding and communicating about important topics being introduced, defined, and used in lessons? <ul style="list-style-type: none"> • Yes • No
Utility Criterion 1 Score		Exceeded: All required and some or all recommended components scored “yes.” Met: All required and no recommended components scored “yes.” Did not meet: One or more required components scored “no.”
Utility Criterion 2. Do curriculum materials provide suggestions to differentiate instruction, exercises, and activities designed to support engagement among a diverse population of students (e.g., variability in race/ethnicity, gender, income, special education status, and English-language proficiency)?		
2.1: Materials attend to a diversity of students’ needs.	Required	Do the materials focus on age-appropriate content (e.g., examples and illustrations related to financial activities that the student might be doing immediately or in the near future, such as introducing credit cards in high school and savings in elementary school)? <ul style="list-style-type: none"> • Yes • No
	Required	Do materials provide direction to help teachers recognize when students are struggling and strategies to adapt lessons to those students’ needs (e.g., suggestions and materials to support re-teaching content, alternative pacing recommendations, suggestions for addressing common student difficulties)? <ul style="list-style-type: none"> • Yes • No
	Required	Do the materials provide strategies to adapt lessons to the needs of advanced students (e.g., extension activities and worksheets)? <ul style="list-style-type: none"> • Yes • No
	Required	Is the text appropriate for the student’s grade level? <ul style="list-style-type: none"> • Yes • No
	Required	Are supports provided for students with reading or math skills below grade level? <ul style="list-style-type: none"> • Yes • No

Indicator	Required or Recommended	Question
	Required	Do materials provide direction to help teachers adapt lessons to the needs of students with disabilities? <ul style="list-style-type: none"> • Yes • No
	Required	Do materials provide direction to help teachers adapt lessons to the needs of students who are not fluent in English? <ul style="list-style-type: none"> • Yes • No
	Required	Do the materials provide a variety of instructional modes (e.g., modeling; using a range of questions; checking for understanding; interactive, pair, and group tasks; role playing; hands-on activities) and guidance for teachers on how to facilitate these activities? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials delineate which resources are appropriate for which subgroups of students (e.g., students of different achievement levels)? <ul style="list-style-type: none"> • Yes • No
	Recommended	Are materials available to students in a variety of media types (e.g., print, audio, online)? <ul style="list-style-type: none"> • Yes • No
2.2: Materials address the needs of students who have not had previous exposure to financial institutions such as banking or investments.	Required	Are financial constructs (e.g., banking) introduced to students in a way that does not assume prior knowledge of those institutions? <ul style="list-style-type: none"> • Yes • No
	Required	Do materials provide strategies to introduce students to new financial constructs in a way that is sensitive to differences in students' experiences? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials discuss varying student situations that may affect the relevance of certain financial institutions or constructs (e.g., access to job options may be more limited in some contexts than others)? <ul style="list-style-type: none"> • Yes • No
2.3: Materials include application activities, which connect financial concepts and ideas to real-life contexts that are relevant to students' lives.	Required	Do the examples show a level of complexity that reflects real-world situations (e.g., is not reduced or oversimplified in an effort to make the text more readable to struggling students)? <ul style="list-style-type: none"> • Yes • No

Indicator	Required or Recommended	Question
	Required	Do the materials ask students to role play, analyze case studies, or otherwise deal with real-world problems? <ul style="list-style-type: none"> • Yes • No
	Recommended	Is the content (including but not limited to examples) connected to experiences that are meaningful to students (for example, after-school jobs rather than day-trading)? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do activities allow students to practice financial education skills as part of their everyday class experience (e.g., paying for desk rental)? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials make connections to daily home life, careers, vocations, community events or services, and recreation? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do pictures appear current or recent? <ul style="list-style-type: none"> • Yes • No • Not applicable
2.4: Materials integrate use of technology in ways designed to deepen student interest, engagement, and learning.	Recommended	If technology is used, does the use of technology add value (e.g., online assessments direct students to questions at the correct level)? <ul style="list-style-type: none"> • Yes • No • Not applicable
2.5: Materials provide opportunities for hands-on, experiential learning.	Required	Do student activities and supporting materials provide opportunities for students to practice their learning in real-world contexts? <ul style="list-style-type: none"> • Yes • No
Utility Criterion 2 Score		Exceeded: All required and some or all recommended components scored “yes.” Met: All required and no recommended components scored “yes.” Did not meet: One or more required components scored “no.”
Utility Criterion 3. Do curriculum materials allow teachers to easily plan and deliver financial education instruction to students and integrate lessons with their instruction in other subjects?		
3.1: Materials connect lesson objectives with lesson plans, activities, assessments, teacher notes, and background resources, as well as identify target settings and users.	Required	Is there a clear guide to the organization of the materials (e.g., table of contents, content scope and sequence chart, menu, content map, index), and is that guide sufficient to quickly find materials? <ul style="list-style-type: none"> • Yes • No

Indicator	Required or Recommended	Question
	Required	Does each lesson include the following: objective, description of required prior knowledge (if applicable), list of necessary materials, lesson plans/teacher notes/recommendations for instruction, multiple student activities, assessments and/or performance tasks, and statement of time anticipated for the lesson? <ul style="list-style-type: none"> • Yes • No
	Required	Are additional resources (e.g., bibliography, online resources) identified? <ul style="list-style-type: none"> • Yes • No
	Required	Is the set of materials comprehensive enough to carry out instruction (e.g., the teacher does not need to develop additional materials or find additional resources in order to teach toward learning objectives)? <ul style="list-style-type: none"> • Yes • No
	Required	Is the set of materials manageable (e.g., not so dense that it is overwhelming to the teacher or difficult to find important materials)? <ul style="list-style-type: none"> • Yes • No
	Required	Are resources to use in the classroom (e.g., copy masters) included? <ul style="list-style-type: none"> • Yes • No
	Recommended	Are resources to connect with families about financial education included? <ul style="list-style-type: none"> • Yes • No
3.2: Materials include clearly specified learning goals.	Required	Do the materials provide instructional goals for each lesson? <ul style="list-style-type: none"> • Yes • No
3.3: Content is logically sequenced, with content deepening over time.	Required	Do the materials provide a progression in which concepts or skills deepen and students become more independent and less guided in developing their understanding over the course of the lesson/module? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials place new content in the context of earlier and subsequent content? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials specify prerequisite skills and knowledge needed for each new content area? <ul style="list-style-type: none"> • Yes • No • Not applicable

Indicator	Required or Recommended	Question
3.4: Materials are explicitly aligned with Common Core State Standards (CCSS) or other standards/content into which financial education lessons might be integrated.	Recommended	Do the materials explicitly demonstrate how they are aligned to CCSS or state standards? <ul style="list-style-type: none"> • Yes • No
3.5: Materials provide guidance to help teachers integrate financial education into other subjects as appropriate.	Recommended	If the curriculum is designed to be taught as part of a course on another subject, do the materials provide guidance for teachers on how to integrate financial education into other subjects? <ul style="list-style-type: none"> • Yes • No • Not applicable
Utility Criterion 3 Score		Exceeded: All required and some or all recommended components scored “yes.” Met: All required and no recommended components scored “yes.” Did not meet: One or more required components scored “no.”
Utility Criterion 4. Do materials include a range of formative and summative assessments to support teaching and help teachers assess mastery?		
4.1: Materials include formative assessments that measure students’ progress toward accomplishing objectives, produce data to inform instruction, and are aligned to the summative assessments that measure students’ final performance.	Required	Do the materials include assessment tools for measuring students’ progress toward objectives? <ul style="list-style-type: none"> • Yes • No
	Required	Do the materials include assessment tools for measuring students’ attainment of content? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials include tools to help teachers interpret the results of formative assessments and use these data in differentiating instruction? <ul style="list-style-type: none"> • Yes • No
4.2: Assessment tools evaluate knowledge, higher-order and analytic skills, and application.	Required	Do the assessments test financial knowledge and skills? <ul style="list-style-type: none"> • Yes • No
	Required	Do the assessments test applying skills and concepts, strategic thinking or metacognition (e.g., monitoring one’s own thinking), and extended thinking (e.g., cause and effect, hypotheses)? <ul style="list-style-type: none"> • Yes • No
4.3: Materials provide clear performance descriptors and scoring rubrics, including examples of graded student work to assist teachers in evaluating performance.	Recommended	Do materials include examples to help teachers respond to student work (e.g., examples of strong student work or examples of less-strong student work with model teacher comments)? <ul style="list-style-type: none"> • Yes • No

Indicator	Required or Recommended	Question
4.4: Materials include a variety of assessment tools.	Required	Do the materials include a variety of assessment tools, including guidance for oral questioning, examples of performance tasks, closed-ended tests, and rubrics for evaluating student work? <ul style="list-style-type: none"> • Yes • No
	Recommended	Are assessments based on information that can be directly observed? <ul style="list-style-type: none"> • Yes • No
4.5: Materials document that assessment methods are accessible, unbiased, and valid.	Required	Are assessment items free of bias (e.g., do not favor students based on their age, race/ethnicity, gender, income, or other characteristics)? <ul style="list-style-type: none"> • Yes • No
	Required	Are assessment items accessible to students with disabilities, limited English proficiency, and limited reading ability? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials document the validity and reliability of the assessment tools? <ul style="list-style-type: none"> • Yes • No
4.6: Materials include culminating activities that encourage students to summarize and synthesize their learning.	Required	Do the materials provide activities at the end of lessons or units that encourage students to summarize or synthesize their learning in that lesson or unit? <ul style="list-style-type: none"> • Yes • No
Utility Criterion 4 Score		Exceeded: All required and some or all recommended components scored “yes.” Met: All required and no recommended components scored “yes.” Did not meet: One or more required components scored “no.”
Utility Criterion 5. Are curriculum materials instructional for teachers, in terms of helping them provide clear and accurate financial education instruction to students?		
5.1: Materials include sufficient tools for teachers to grasp the content communicated within lessons.	Required	Are tools to help teachers deepen their content knowledge (e.g., glossaries, teacher notes, pointers to additional resources) included? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials specify recommended prior knowledge that teachers need to deliver lessons? <ul style="list-style-type: none"> • Yes • No • Not applicable

Indicator	Required or Recommended	Question
5.2: Materials include notes to help teachers guide instructional delivery and support for any ambitious activities that require higher-order thinking within the curriculum.	Required	Do the materials differentiate “big ideas” from less-critical content and provide guidance on prioritizing content if necessary? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials provide guidance for teachers to identify, anticipate, and address challenges in the lessons (e.g., notes on how to anticipate student responses, misunderstandings, problems applying ideas)? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the materials provide examples of instructional strategies? <ul style="list-style-type: none"> • Yes • No
Utility Criterion 5 Score		Exceeded: All required and some or all recommended components scored “yes.” Met: All required and no recommended components scored “yes.” Did not meet: One or more required components scored “no.”
UTILITY OVERALL RATING		Strong Utility: All criteria were met, and at least one was exceeded. Moderate Utility: All criteria were met. Limited Utility: Most criteria were met (at least 50 percent), but at least one criteria was not met. Poor Utility: Fewer than 50 percent of criteria were met.

Table A.5 outlines the criteria for assessing quality. We defined *quality* as the accessibility, accuracy, objectivity, and visual appeal of the curriculum.

Table A.5. Quality Coding Guide

Curriculum	Coding
Curriculum Name	Reviewer Name
Curriculum Age/Grade Focus	Date Reviewed
Materials Reviewed (publication dates)	

Indicator	Required or Recommended	Question
Quality Criterion 1. Are curriculum materials physically accessible to teachers and students in a typical school setting?		
1.1: Web-based materials can be accessed using typical school technology and software; links are viewable and work. Paper-based materials are available for a moderate and clearly stated price.	Required	If there are paper-based materials, are they available for a clearly stated price? <ul style="list-style-type: none"> • Yes [Cost of materials per student \$ _____] • No • Not applicable
	Required	If there are links, do the links take the user to the appropriate, live website? <ul style="list-style-type: none"> • Yes • No • Not applicable
	Recommended	If there are web-based materials, can they be accessed without purchasing specialized software? <ul style="list-style-type: none"> • Yes • No [Specialized software required: _____] • Not applicable
1.2: Copyright limitations on usage are minimal and clearly stated.	Required	If there are limitations on usage (e.g., materials are copyrighted or must be purchased), are limitations clearly specified? <ul style="list-style-type: none"> • Yes • No • Not applicable
	Required	Are the materials free from limitations on usage that might interfere with delivery in a classroom setting? <ul style="list-style-type: none"> • Yes • No
1.3: Materials are available in alternate languages and include special needs formats (e.g., braille).	Recommended	Do the materials include any special needs formats (e.g., braille)? <ul style="list-style-type: none"> • Yes [Special needs formats included: _____] • No

Indicator	Required or Recommended	Question
		Are the materials available in languages other than English? <ul style="list-style-type: none"> • Yes [Languages included: _____] • No
1.4: Written materials and physical products are durable and reusable or easy to replace (e.g., continued electronic access to materials at no additional cost).	Recommended	Are written materials and physical products durable and reusable or easy to replace (e.g., continued electronic access to materials at no additional cost)? <ul style="list-style-type: none"> • Yes • No
Quality Criterion 1 Score		Exceeded: All required and some or all recommended components scored “yes.” Met: All required and no recommended components scored “yes.” Did not meet: One or more required components scored “no.”
Quality Criterion 2. Are curriculum materials current and free of error?		
2.1: Materials are revised regularly and the date of publication/revision is clearly stated.	Required	Have some or all of the materials been published or updated within the past three years? <ul style="list-style-type: none"> • Yes • No
2.2: Materials do not contain factual errors or internal inconsistencies.	Required	Are the materials free of factual errors? <ul style="list-style-type: none"> • Yes • No
	Required	Are the materials internally consistent such that none of the material contradicts another part of the material? <ul style="list-style-type: none"> • Yes • No
2.3: Materials do not contain errors in spelling, punctuation, format, grammar, or layout.	Required	Is the material free of spelling, punctuation, formatting, grammatical and layout errors? <ul style="list-style-type: none"> • Yes • No
Quality Criterion 2 Score		Exceeded: All required and some or all recommended components scored “yes” Met: All required and no recommended components scored “yes” Did not meet: One or more required component scored “no”
Quality Criterion 3. Are curriculum materials objective?		
3.1: Materials differentiate between fact and interpretation and discuss differing viewpoints.	Required	Are interpretations or opinions clearly identified as such, rather than presented as facts? <ul style="list-style-type: none"> • Yes • No
	Required	Do the materials often present differing viewpoints (e.g., preferences for modes of savings)? <ul style="list-style-type: none"> • Yes • No
3.2: Materials show diversity in age, race/ethnicity, gender, income, and other characteristics. Text, illustrations, and activities are culturally sensitive.	Required	Do the materials reflect diversity in areas such as age, race/ethnicity, gender, and household income? <ul style="list-style-type: none"> • Yes • No

Indicator	Required or Recommended	Question
	Required	Is the content culturally sensitive (e.g., omits stereotypes and derogatory terms)? <ul style="list-style-type: none"> • Yes • No
3.3: Materials do not promote branded products, and they explicitly identify funders and authors.	Required	Are the authors and funders of development and dissemination clearly disclosed? <ul style="list-style-type: none"> • Yes • No
	Required	Do the materials abstain from promoting particular products or financial service providers (e.g., free of slogans, logos, and statements promoting specific products/providers)? <ul style="list-style-type: none"> • Yes • No
	Recommended	Are the authors' credentials presented and do the credentials demonstrate financial education expertise? <ul style="list-style-type: none"> • Yes • No
Quality Criterion 3 Score		Exceeded: All required and some or all recommended components scored "yes." Met: All required and no recommended components scored "yes." Did not meet: One or more required components scored "no."
Quality Criterion 4. Is the visual appearance of the student materials conducive to learning?		
4.1: The design supports rather than distracts learning (e.g., visuals reinforce main points, consistent formatting throughout).	Required	Are the visuals informative and related to the text? <ul style="list-style-type: none"> • Yes • No
	Required	Do the visuals focus on core concepts (e.g., not prioritizing unimportant information because it is easier to display)? <ul style="list-style-type: none"> • Yes • No
	Required	Are visual displays clearly labeled and in close proximity to related text? <ul style="list-style-type: none"> • Yes • No
	Required	Is the content organized logically and consistently? <ul style="list-style-type: none"> • Yes • No
4.2: The formatting is clear and easy to read (e.g., serif font of sufficient size, appropriate spacing, limited use of capitals).	Required	Is the text easy to read (e.g., simple fonts, serif, large enough type, normal spacing, unjustified paragraphs, white spaces between columns, capitalization consistent with normal usage)? <ul style="list-style-type: none"> • Yes • No
	Required	Are web-based materials organized in logical and manageable sections? <ul style="list-style-type: none"> • Yes • No • Not applicable

Indicator	Required or Recommended	Question
	Required	Is the web-based presentation readable (e.g., maximum of 60 characters per line, use of full screen)? <ul style="list-style-type: none"> • Yes • No • Not applicable
	Required	Are web-based materials easy to navigate (e.g., organized with a menu, easy to switch between lessons/sections, able to resume where last left off)? <ul style="list-style-type: none"> • Yes • No • Not applicable
Quality Criterion 4 Score		Exceeded: All required and some or all recommended components scored “yes.” Met: All required and no recommended components scored “yes.” Did not meet: One or more required components scored “no.”
QUALITY OVERALL RATING		Strong Quality: All criteria were met, and at least one was exceeded. Moderate Quality: All criteria were met. Limited Quality: Most criteria were met (at least 50 percent), but at least one criteria was not met. Poor Quality: Fewer than 50 percent of criteria were met.

Table A.6 provides our coding guide for assessing efficacy. The *efficacy* of the curriculum refers to the impact of the curriculum on students, as measured in high-quality research studies. Reviewers should be prepared to commit some time to finding and reviewing studies, and they need some familiarity with basic research design. Therefore, some teachers who complete this coding guide may want support.

Table A.6. Efficacy Coding Guide

Curriculum		Coding
Curriculum Name		Reviewer Name
Curriculum Age/Grade Focus		Date Reviewed
Author/Study Name		

Indicator	Required or Recommended	Question
Inclusion Criterion: Is the study strong? (To be completed for each evaluation of a particular curriculum)		
1.1: The study uses a rigorous design (randomized controlled trial or quasi-experimental design with a comparison group). ^a	Required	Does the study use a comparison group (e.g., state averages, students not participating in the intervention)? <ul style="list-style-type: none"> • Yes • No
	Recommended	Does the study use a randomized controlled trial or a quasi-experimental design with a comparison group shown to be similar on observable characteristics? <ul style="list-style-type: none"> • Yes • No
1.2: Study procedures and implementation are thoroughly described, including the practices or curricula the treatment and comparison groups receive.	Required	Is the description of the intervention adequate to determine the treatment received by the treated students and (if applicable) the materials/practices delivered to the comparison students? <ul style="list-style-type: none"> • Yes • No
1.3: Study is carried out well, with minimal overall and differential attrition, and there were no viable alternative explanations for the findings other than possible initial differences between groups. ^b	Recommended	Is the study free of possible alternative explanations other than possible initial differences between groups? <ul style="list-style-type: none"> • Yes • No
	Recommended	Are the levels of attrition low as defined by the What Works Clearinghouse? For example, is differential attrition below 11 percent? ^c <ul style="list-style-type: none"> • Yes • No

Indicator	Required or Recommended	Question
1.4: The study outcome measures are valid and reliable, and outcome data are collected the same way across subjects. ^d	Required	Is there at least one student-level outcome? <ul style="list-style-type: none"> • Yes • No
	Required	Is the student outcome measure clearly defined and a measure of the intended construct? <ul style="list-style-type: none"> • Yes • No
	Required	Is the student outcome measure collected in the same manner for all study participants? <ul style="list-style-type: none"> • Yes • No
	Required	Does the study measure student financial knowledge, attitudes, or behavior? <ul style="list-style-type: none"> • Yes • No
	Recommended	Does the study measure student financial behavior? <ul style="list-style-type: none"> • Yes • No
	Recommended	Does the study measure student outcomes three months or longer after the curriculum is complete, as well as immediately after the curriculum is complete? <ul style="list-style-type: none"> • Yes • No
	Recommended	Does the study collect student outcome data from a source other than (or in addition to) the students? <ul style="list-style-type: none"> • Yes • No
1.5: The data are analyzed using appropriate statistical techniques.	Required	Is the analysis performed using appropriate statistical techniques (e.g., correct test of significance, correct level of analysis)? <ul style="list-style-type: none"> • Yes • No
1.6: Evidence of impact is recent enough to be relevant in the current context.	Required	Was the study performed in the past 10 years? <ul style="list-style-type: none"> • Yes • No
Inclusion Criterion Result		Include study for criteria 2 and 3 if all required components scored “yes.” Do not include study for criteria 2 and 3 if one or more required components scored “no.”

Indicator	Required or Recommended	Question
Scope of Evidence Criterion: Is the body of evidence strong? (Body of evidence includes all evaluations that meet the inclusion criterion.)		
2.1: There is sufficient research to judge efficacy (i.e., multiple medium to large studies).	Required	Are there at least two evaluations of the curriculum? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do the evaluations, collectively or individually, include at least 350 students or 14 classrooms? ^e <ul style="list-style-type: none"> • Yes • No
2.2: The body of evidence examines the range of participants and settings for which the curriculum was designed.	Recommended	Do the evaluations, collectively or individually, span the range of participants (e.g., grade levels) and settings (e.g., in-class instruction) for which the curriculum was designed? <ul style="list-style-type: none"> • Yes • No
Scope of Evidence Result		<p>Large body of evidence: All required and all recommended components scored “yes.”</p> <p>Moderate body of evidence: All required and no recommended components scored “yes.”</p> <p>Small body of evidence: One or more required components scored “no.”</p>
Efficacy Criterion: Does the body of evidence support conclusions of consistent, strong, positive impact? (Body of evidence includes all evaluations that meet the inclusion criterion.)		
3.1 Positive impacts are statistically significant and substantively important.	Required	Does at least one evaluation indicate positive effects significant at the 10-percent level? <ul style="list-style-type: none"> • Yes • No
3.2 Findings are consistent across studies and context; there is evidence of positive effects, with no overriding contrary evidence.	Required	Do all evaluations indicate either a positive effect or no effect (i.e., not a statistically significant negative effect)? <ul style="list-style-type: none"> • Yes • No
	Recommended	Do at least two evaluations indicate statistically significant positive effects, with no evaluation indicating statistically significant negative effects? <ul style="list-style-type: none"> • Yes • No
EFFICACY RATING		<p>Strong Evidence of Efficacy: Large or moderate body of evidence AND all required and all recommended components of efficacy scored “yes.”</p> <p>Moderate Evidence of Efficacy: Large or moderate body of evidence AND all required and no recommended components of efficacy scored “yes.”</p> <p>Mixed Evidence of Efficacy: Large or moderate body of evidence AND required efficacy indicator 3.1 scored “yes,” and required efficacy indicator 3.2 scored “no.”</p> <p>Limited Evidence of Efficacy: Small body of evidence OR one or more required efficacy indicators scored “no.”</p> <p>Poor Evidence of Efficacy: No studies met inclusion criterion 1.1.</p>

Indicator	Required or Recommended	Question
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^a In a randomized controlled trial, students or groups of students are assigned to use the curriculum or not. In a quasi-experimental design study, there are groups of students who did or did not use the curricula, but they were not assigned randomly into those groups.

^b Attrition is the loss of students (or groups of students) after the students were sorted into groups and before the outcome data were collected. Differential attrition is when none of the groups of students (those using the curriculum or those not) had substantially more attrition than the other group. Alternate explanations might be, for example, that students who used the curriculum also had stronger teachers.

^c For more-specific guidance and definitions, see What Works Clearinghouse, 2014, pp. 11–14.

^d Valid outcome measures are tests that have been shown to measure well the quality they are aiming to measure. Reliable outcome measures are tests that have been shown to measure the same quality consistently, each time they are used.

^e See What Works Clearinghouse, 2014, p. 30.

Appendix B: National Financial Literacy Standards

Personal Finance Standards

Council for Economic Education's National Standards for Financial Literacy (Council for Economic Education, 2013). The Council for Economic Education provides resources and professional development to support financial education, including content standards. The content standards are organized by benchmark grade level (grades 4, 8, and 12), and the current edition was released in 2013.

JumpStart Coalition National Standards in K–12 Personal Finance Education (JumpStart Coalition for Personal Financial Literacy, 2007). The JumpStart Coalition for Personal Financial Literacy is a nonprofit association of approximately 150 organizations and 49 states. JumpStart provides resources to support financial education, including widely used content standards. The content standards are organized by benchmark grade level (grades 4, 8, and 12). The third edition was released in 2007.¹⁶

Other Guides to Personal Finance Content

Financial Literacy Education Commission's Financial Education Core Competencies (U.S. Department of the Treasury, 2010). The Financial Literacy Education Commission was established under the Fair and Accurate Credit Transactions Act of 2003, in part to establish a national strategy on financial education. One product developed by the commission was financial education core competencies. While aimed at adults, the competencies may include content that students should be expected to master to be financially literate as adults. The commission is working to identify ways in which it can build financial literacy earlier in life.

Money as You Learn (Money as You Learn, undated). Money as You Learn is a set of “big ideas” that should be covered in K–12 financial education, developed by a coalition of nonprofit organizations, teachers, academics, and other experts based on recommendations from the President’s Advisory Council on Financial Capability. The content standards are organized by grade bands (K–2, 3–5, 6–8, and 9–12), released in 2013.

Programme for International Student Assessment's Financial Literacy Assessment Framework (Organisation for Economic Co-operation and Development, 2012). The Programme for International Student Assessment is an international student assessment designed by the Organisation for Economic Co-operation and Development and administered to 15-year-old

¹⁶ A fourth edition of the JumpStart standards was released in 2015, after the analysis for this report was complete.

students across more than 65 countries and economies, including the United States. Financial literacy was added as an optional component to the framework in 2012.¹⁷

¹⁷ While the framework is not being used to guide curricula, it does provide an overview of essential financial education content from an international perspective.

Appendix C: Criteria Assessment Rubrics for K–12 Instructional Materials and Curricula

Rubric or List	Source
Toolkit for Evaluating the Alignment of Instructional and Assessment Materials to Common Core State Standards (IMET)	Student Achievement Partners, 2013a
Educators Evaluating Quality Instructional Products (EQuIP)	Achieve, undated
Georgia Department of Education Educator Materials Evaluation Rubric	Georgia Department of Education, undated
Assessing Instructional Materials	Ron Pendleton, 2005
Maryland State Department of Education Instructional Resource Evaluation Guidelines	Maryland State Department of Education, 2003
Florida Department of Education Priorities for Evaluating Instructional Materials	Florida Department of Education, 2008
New York Department of Education Instructional Materials Review Rubrics	New York Department of Education, undated a, undated b
Louisiana Department of Education Instructional Materials Review for CCSS Alignment in ELA Grades 9–12	Louisiana Department of Education, 2015
California Department of Education Evaluation Criteria for Math and ELA	California Department of Education, 2014a, 2014b
Publishers' Criteria for ELA and Literacy	Student Achievement Partners, 2013b
American Federation of Teachers Curriculum Review Tools for ELA/Mathematics	American Federation of Teachers, 2012a, 2012b,
California Teachers Association Science Criteria	California Teachers Association, undated
New Jersey Science Curriculum Framework, Analyzing and Selecting Science Curriculum Materials	New Jersey Department of Education, 1998
New Mexico Public Education Department Instructional Materials Adoption	New Mexico Public Education Department, 2014
Stockton Public College Financial Education Reviews	Stockton University, undated
Jump\$tart Best Practices for Personal Financial Education Materials	Jump\$tart Education for Personal Finance Literacy, 2008
Pfeg Producing Accredited Resources Quality Mark	Personal Finance Education Group, undated

References

- Achieve. (undated). Educators Evaluation Quality Instructional Products. Web tool. As of May 15, 2015:
<http://www.achieve.org/EQuIP>
- American Federation of Teachers. (2012a). *Assessing alignment to the Common Core State Standards: A curriculum review tool for English language arts*. As of May 15, 2015:
http://www.aft.org/sites/default/files/englishevaluationtool_2013_0.pdf
- . (2012b). *Assessing alignment to the Common Core State Standards: A curriculum review tool for mathematics*. As of May 15, 2015:
http://www.aft.org/sites/default/files/mathevaluationtool_2013_0.pdf
- Australian Securities and Investments Commission. (2003). *Financial literacy in schools* (Consultation Paper 45). Variation: PANDORA electronic collection. As of May 15, 2015:
<http://asic.gov.au/regulatory-resources/find-a-document/consultation-papers/cp-45-financial-literacy-in-schools/>
- Baumann, C., & Hall, T. (2012). Getting Cinderella to the ball: Putting education at the heart of financial education. *International Journal of Consumer Studies*, 36(5), 508–514.
- Becchetti, L., Caiazza, S., & Coviello, D. (2013). Financial education and investment attitudes in high schools: Evidence from a randomized experiment. *Applied Financial Economics*, 23(10–12), 817–836.
- Bernheim, B. D., Garrett, D. M., & Maki, D. M. (2001). Education and saving: The long-term effects of high school financial curriculum mandates. *Journal of Public Economics*, 80(3), 435–465.
- Borden, L. M., Arias, W., Jr., Bosch, L., Casper, D., Faber, K. M., Hawkey, K. R., Jones, A., Totenhagen, C., & Wiggs, C. B. (2013). *Financial readiness for youth: A review of the literature and programs in the United States*. University of Arizona: The Arizona Center for Research and Outreach.
- Boyce, L., & Danes, S. (1998). *Evaluation of the national endowment for financial education high school financial planning program 1997–1998*. Family Living Programs, University of Wisconsin Extension.
- Brown, M., van der Klaauw, W., Wen, J., & Zafar, B. (2013). *Financial education and the debt behavior of the young*. Federal Reserve Bank of New York, Staff Reports: 634.

- Caliber Associates. (2007). *JA Worldwide's JA dollars and Sense program summative evaluation*. Colorado Springs, CO: JA Worldwide.
- California Department of Education. (2014a). *ELA/ELD curriculum framework revision guidelines*. As of May 15, 2015:
<http://www.cde.ca.gov/ci/rl/cf/elaeldfwguidelines.asp>
- . (2014b). *Instructional materials: Mathematics*. As of May 15, 2015:
<http://www.cde.ca.gov/ci/ma/im/index.asp>
- California Teachers Association. (undated). *Criteria for evaluation instructional materials in science, kindergarten through grade eight*. As of May 15, 2015:
http://www.cascience.org/csta/pdf/science_criteria.pdf
- Carlin, B., & Robinson, D. (2012a). What does financial literacy training teach us? *Journal of Economic Education*, 43, 235–247.
- . (2012b). Financial education and timely decision support: Lessons from Junior Achievement. *American Economic Review Papers and Proceedings*, 102, 305–308.
- Chen, W., & Heath, J. A. (2012). The efficacy of financial education in the early grades: Results from a statewide program. In T. A. Lucey and J. D. Laney (Eds.), *Reframing financial literacy: Exploring the value of social currency*, pp. 189–207. Charlotte, NC: IAP Information Age Publishing.
- Choi, L. (2010). Bank accounts and youth financial knowledge: Connecting experience and education. *Consumer Interests Annual*, 56, 75–90.
- Choi, L., Reid, C., Staten, M., & Todd, R. (2010). *Improving evaluation and metrics in youth financial education*. Conference Proceedings, San Francisco, Calif., October 28–29, 2010.
- Cole, S., Paulson, A., & Shastry, G. K. (2013). *High school and financial outcomes: The impact of mandated personal finance and mathematics courses* (Working Papers 13-064). Harvard Business School, Division of Research.
- Collins, J. M., & Odders-White, E. (2013). A framework for developing and testing financial capability programs targeted to elementary schools. *Social Science Research Network*.
- Comptroller General. (2004). *The federal government's role in improving financial literacy*. U.S. Government Accountability Office, GAO-05-93SP.
- Council for Economic Education. (2013). *National standards for financial literacy*. New York. As of May 15, 2015:
<http://www.councilforeconed.org/wp/wp-content/uploads/2013/02/national-standards-for-financial-literacy.pdf>

- . (2014). *Survey of the states 2014: The state of economic and personal finance education in our nation's schools*. New York. As of March 4, 2014:
<http://www.councilforeconed.org/wp/wp-content/uploads/2014/02/2014-Survey-of-the-States.pdf>
- Danes, S. M., & Brewton, K. E. (2010). *Evaluation of the national endowment for financial education high school financial planning program 2009–2010*. University of Minnesota, Family Social Science Department, College of Education and Human Development. As of March 4, 2014:
http://www.nefe.org/Portals/0/Who%20We%20Help/Educators/PDF/NEFE_HSFPP_Impact_Study_2009-2010.pdf
- . (2013). The role of learning context in high school students' financial knowledge and behavior acquisition. *Journal of Family and Economic Issues*, 35, 81–94.
- Danes, S. M., & Haberman, H. (2004). *Evaluation of the national endowment for financial education high school financial planning program 2003–2004*. University of Minnesota, Family Social Science Department, College of Education and Human Development.
- Danes, S. M., Huddleston-Casas, C., & Boyce, L. (1999). Financial planning curriculum for teens: Impact evaluation. *Financial Counseling and Planning*, 10(1), 26–39.
- Danes, S. M., Rodriguez, M. C., & Brewton, K. E. (2013). Learning context when studying financial planning in high schools: Nesting of student, teacher, and classroom characteristics. *Journal of Financial Counseling and Planning*, 24(2), 20–36.
- Davis, E. A., & Krajcik, J. S. (2005). Designing educative curriculum materials to promote teacher learning. *Educational Researcher*, 34(3), 3–14.
- Diem, J., Burke, M., Bessell, A. G., & Coyne, T. (undated). *JA Economics for Success Summative Evaluation Final Report*. As of May 15, 2015:
http://www.myja.org/programs/evaluation/reports/ja_economics_for_success_evaluation.pdf
- Ferrari, T. M. (2007). *Review of literature in support of the real money, real world statewide evaluation*. The Ohio State University Extension. As of March 4, 2014:
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.233.2792&rep=rep1&type=pdf>
- Financial Literacy and Education Commission. (2006). *Taking ownership of the future: The national strategy for financial literacy*. Washington, DC.
- Florida Department of Education. (2008). *Priorities for evaluating instructional materials: Research update*. Bureau of Curriculum and Instruction. As of May 15, 2015:
<http://www.cimes.fsu.edu/files/researchReport.pdf>
- Fox, J., Bartholomae, S., & Jinkook, L. (2005). Building the case for financial education. *Journal of Consumer Affairs*, 39(1), 195–214.

- Georgia Department of Education. (undated). *Learning resources/textbook and instructional materials*. Atlanta, GA. As of May 15, 2015:
<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Pages/Learning-Resources.aspx>
- Glossary of Education Reform. (2014). Curriculum definition. Web page. Great Schools Partnership. As of May 15, 2015:
<http://edglossary.org/curriculum/>
- Go, C., Varcoe, K., Eng, T., Pho, W., & Choi, L. (2012). *Money savvy youth: Evaluating the effectiveness of financial education for fourth and fifth graders* (Working Paper 2012-02). Federal Reserve Bank of San Francisco. As of March 4, 2014:
<http://www.frbsf.org/community-development/publications/working-papers/2012/july/financial-education-effectiveness-fourth-fifth-grade/>
- Granville, S. P. D. C. M. (2009). *Evaluation of financial education in Scottish primary and secondary schools*. Edinburgh, Scotland: The Scottish Government, Social Research. As of May 7, 2010:
<http://www.scotland.gov.uk/Resource/Doc/259782/0077311.pdf>
- Grimes, P. W., Rogers, K. E., & Smith, R. C. (2010). High school economic education and access to financial services. *Journal of Consumer Affairs*, 44(2), 317–335.
- Hagedorn, E. A. (2004). *Money savvy kids: Basic personal finance curriculum*. Evaluative Report.
- . (2005a). *Money savvy kids: Basic personal finance curriculum*. Evaluative Report, Department of Financial Institutions Program, Washington.
- . (2005b). *Money savvy kids: Basic personal finance curriculum*. Evaluative Report, North Dakota Department of Securities.
- . (2007). *Money savvy kids: Basic personal finance curriculum*. Evaluative Report, Memphis.
- Harter, C. L., & Harter, J. R. (2009). Assessing the effectiveness of financial fitness for life in Eastern Kentucky. *Journal of Applied Economics and Policy*, 28(1), 20–33.
- Hilgert, M., Hogarth, J., & Beverley, S. (2003). Household financial management: The connection between knowledge and behavior (Technical Report No. 309-322). *Federal Reserve Bulletin*.
- Hill, A. T., Meszaros, B. T., & Tyson, B. (2012). *Evidence of student achievement in a high school personal finance course* (Working Paper No. 2013-01). University of Delaware, Alfred Lerner College of Business & Economics.

- Hinojosa, T., Miller, S., Swanlund, A., Hallberg, K., Brown, M., & O'Brien, B. (2009). *The stock market game study: Brief report*. FINRA Investor Education Foundation.
- Hogarth, J. (2006). *Financial education and economic development*. Paper presented at Improving Financial Literacy: International Conference hosted by the Russian G8 Presidency in cooperation with the Organisation for Economic Co-operation and Development. As of May 8, 2014:
from <http://www.oecd.org/finance/financial-education/37742200.pdf>
- Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44(2), 296–316.
- Johnson, E., & Sherraden, M. (2007). From financial literacy to financial capability among youth. *Journal of Sociology and Social Welfare*, 34(3), 119–146.
- JumpStart Coalition for Personal Financial Literacy. (undated). State financial education requirements. Web tool. Washington, DC.
- . (2007). *National standards in K–12 personal finance education*. Washington, DC. As of May 15, 2015:
http://www.jumpstart.org/assets/files/standard_book-ALL.pdf
- . (2008). *Best practices for personal finance education materials*. 2nd edition. Washington, DC. As of May 15, 2015:
<http://www.jumpstart.org/best-practices.html>
- Loibl, C., & Fisher, P. J. (2013). Academic discipline and personal finance instruction in high school. *Journal of Financial Counseling and Planning*, 24(1), 15–33.
- Louisiana Department of Education. (2015). *Instructional materials review for CCSS alignment in ELA grades 9–12*. As of May 15, 2015:
<https://www.louisianabelieves.com/docs/default-source/curricular-resources/engage-ny-ela-gr-9-12.pdf?sfvrsn=6>
- Lusardi, A., & Mitchell, O. S. (2006). *Financial literacy and planning: Implications for retirement wellbeing* (Pension Research Council Working Paper No. 1). Wharton School, University of Pennsylvania.
- . (2007a). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, 54, 205–224.
- . (2007b). *Financial literacy and retirement planning: New evidence from the RAND American Life Panel* (MRRC Working Paper No. 2007-157). Ann Arbor, MI: Michigan Retirement Research Center.
- . (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 1–40.

- Lusardi, A., Schneider, D., and Tufano, P. (2011). *Financially fragile households: Evidence and implications* (NBER Working Paper 17072). Cambridge, MA: National Bureau of Economic Research. As of March 4, 2014:
<http://www.nber.org/papers/w17072>
- Maloney, P. J. (2010). Financial literacy: A practitioner's update on the status of integration in school curricula. *Journal of Personal Finance*, 9, 11–29.
- Mandell, L. (1997). *Our vulnerable youth: The financial literacy of American 12th graders*. Washington, DC: Jumpstart Coalition for Personal Financial Literacy.
- . (2001). *Improving financial literacy: What schools and parents can and cannot do*. Washington, DC: Jumpstart Coalition for Personal Financial Literacy.
- . (2004). *Financial literacy: Are we improving? Results of the 2004 National JumpStart survey*. Washington, DC: Jumpstart Coalition for Personal Financial Literacy.
- . (2006). *Financial literacy: Improving education—Results of the 2006 National JumpStart survey*. Washington, DC: Jumpstart Coalition for Personal Financial Literacy.
- . (2008a). Financial education in high school. In Annamaria Lusardi (Ed.), *Overcoming the saving slump: How to increase the effectiveness of financial education and saving programs*, 257–279.
- . (2008b). Financial literacy of high school students. *Handbook of Consumer Finance Research*, 163–183.
- . (2009). *Two cheers for school-based financial education*. Issue Brief: Aspen Institute.
- Mandell, L., & Klein, L. S. (2007). Motivation and financial literacy. *Financial Services Review*, 16(2), 105–116.
- Manje, L., Munro, J., & Mundy, S. (2013). Perspectives and experiences on developing national financial education strategies. *Enterprise Development and Microfinance*, 24(3), 190–203.
- Maryland State Department of Education. (2003). *Instructional resource evaluation guidelines*. Baltimore, MD. As of May 15, 2015:
http://www.marylandpublicschools.org/MSDE/programs/etma/reports/ETM_evaluation.htm
- McCormick, M. H. (2009). The effectiveness of youth financial education: A review of the literature. *Journal of Financial Counseling and Planning*, 20(1), 70–83.
- McCormick, M. H., & New America Foundation. (2008). *The effectiveness of youth financial education: A Review of the Literature*. Washington, DC.
- Money as You Learn. (undated). *Money as you learn: Tools for educators to integrate personal finance into teaching the Common Core*. As of May 15, 2015:
<http://www.moneyasyoulearn.org/what/>

- Mundy, S. (2009). Financial education programmes in schools: Analysis of selected current programmes and literature draft recommendations for best practices. *OECD Journal: General Papers*, 8(3), 53–127.
- National Endowment for Financial Education. (2014). *The evaluation toolkit how-to guide*. Denver, CO. As of March 4, 2014:
<http://toolkit.nefe.org/Portals/0/NEFE%20QuickStart%20Toolkit%20January%202014.pdf>
- New Jersey Department of Education. (1998). *New Jersey science curriculum framework—Chapter 4: Analyzing and selecting science curriculum materials*. As of May 15, 2015:
<http://www.state.nj.us/education/archive/frameworks/science/chap4.pdf>
- New Mexico Public Education Department. (2014). 2014 Adopted 9-12 ELA; reading, CORE reading intervention; modern, classical, and native languages. As of May 15, 2015:
<http://www.ped.state.nm.us/InstructionalMaterial/>
- New York Department of Education. (undated a). Literacy instructional materials review rubric. As of May 15, 2015:
http://schools.nyc.gov/NR/ronlyres/B6C9FC08-5993-4487-AF27-3EF551AEFA09/0/Literacy_InstructionalMaterialsReviewRubric112712.pdf
- New York Department of Education. (undated b). Mathematics instructional materials review rubric. As of May 25, 2015:
http://schools.nyc.gov/NR/ronlyres/B6C9FC08-5993-4487-AF27-3EF551AEFA09/0/Literacy_InstructionalMaterialsReviewRubric112712.pdf
http://schools.nyc.gov/NR/ronlyres/461F280F-FD6F-4D99-81CD-67E4044CCB71/0/Math_InstructionalMaterialsReviewRubricvAprilversion.pdf
- Niederjohn, M. S., & Schug, M. C. (2006). An evaluation of Learning, Earning And Investing: A model program for investor education. *Journal of Private Enterprise*, 22, 180–190.
- O’Connell, A. (2009). Evaluating the effectiveness of financial education programmes. *OECD Journal: General Papers*, 8(3), 9–51.
- Office of Financial Education. (2002). *Integrating financial education into school curricula: Giving America’s youth the educational foundation for making effective decisions throughout their lives by teaching financial concepts as part of math and reading curricula in elementary, middle, and high schools*. Washington, DC: U.S. Department of the Treasury.
- Organisation for Economic Co-operation and Development. (2012). *PISA 2012 financial literacy assessment framework*. As of May 15, 2015:
<http://www.oecd.org/pisa/pisaproducts/46962580.pdf>
- Papadovasilaki, D., Parker, E., & Pingle, M. (2014). *A study of financial education in the Clark County School District* (Working Paper No. 14-001). Reno, NV: University of Nevada.

- Pelletier, J. (2013). *2013 national report card on state efforts to improve financial literacy in high schools*. Burlington, VT: The Council for Financial Literacy.
- Pendleton, R. (2005). *Assessing instructional materials*. Mozena Publications. As of May 15, 2015:
<http://cte-ects.info/EVOC501DS/assess.html>
- Peng, T.-C., Bartholomae, S., Fox, J., & Cravener, G. (2007). The impact of personal finance education delivered in high school and college courses. *Journal of Family and Economic Issues*, 28(2), 265–284.
- Personal Finance Education Group. (undated). *The pfeg Quality Mark—Guidance for resource producers*. As of May 15, 2015:
<http://www.pfeg.org/services/pfeg-quality-mark---guidance-resource-producers>
- President’s Advisory Council on Financial Capability. (2013). *Final report*. Washington, DC. As of March 4, 2014:
http://www.treasury.gov/resource-center/financial-education/Documents/PACFC%20final%20report%20revised%2022513%20%288%29_R.pdf
- President’s Advisory Council on Financial Literacy. (2009). *2008 annual report to the president*. Washington, DC. As of March 4, 2014:
http://www.jumpstart.org/assets/files/PACFL_ANNUAL_REPORT_1-16-09.pdf
- Ryack, K. (2011). The impact of family relationships and financial education on financial risk tolerance. *Financial Services Review*, 20(3), 181–193.
- Sasser, S. L., & Grimes, P. W. (2010). Personal financial literacy: A baseline analysis of teacher knowledge in Oklahoma. *Franklin Business & Law Journal*, 3, 68–82.
- Schuchardt, J., Hanna, S. D., Hira, T. K., Lyons, A. C., Palmer, L., & Xiao, J. J. (2009). Financial literacy and education research priorities. *Journal of Financial Counseling and Planning*, 20(1), 84–95.
- Schug, M. C., & Hagedorn, E. A. (2005). The money savvy pig™ goes to the big city: Testing the effectiveness of an economics curriculum for young children. *The Social Studies*, 96(2), 68–71.
- Sherraden, M. S., Johnson, L., Guo, B., & Elliott, W. (2011). Financial capability in children: Effects of participation in a school-based financial education and savings program. *Journal of Family and Economic Issues*, 32(3), 385–399.
- Shim, S., Barber, B. L., Card, N. A., Xiao, J. J., & Serido, J. (2010). Financial socialization of first-year college students: The roles of parents, work, and education. *Journal of Youth and Adolescence*, 39(12), 1457–1470.

- Shim, S., Serido, J., Bosch, L., & Chuanyi, T. (2013). Financial identity-processing styles among young adults: A longitudinal study of socialization factors and consequences for financial capabilities. *Journal of Consumer Affairs*, 47(1), 128–152.
- Shim, S., Xiao, J. J., Barber, B. L., & Lyons, A. C. (2009). Pathways to life success: A conceptual model of financial well-being for young adults. *Journal of Applied Developmental Psychology*, 30(6), 708–723.
- Sotak, L., Ferrari, T., Hudson, N., Cochran, G., & Bridgeman, B. (2008) *Outcomes of participation in real money, real world 2007 statewide evaluation, final report*. The Ohio State University Extension. As of March 14, 2014:
http://youthsuccess.osu.edu/wp-content/uploads/2013/05/RMRW_FINAL_REPORT.pdf
- Stockton University. (undated). Financial education reviews. Web tool. As of May 15, 2015:
<http://intraweb.stockton.edu/eyos/page.cfm?siteID=263&pageID=1>
- Student Achievement Partners. (2013a). Instructional Materials Evaluation Tool (IMET). Web tool. As of May 15, 2015:
<http://www.achievethecore.org/page/783/instructional-materials-evaluation-tool-imet>
- . (2013b). Publishers' criteria. Web tool. As of May 15, 2015:
<http://achievethecore.org/page/686/publishers-criteria>
- Tennyson, S., & Nguyen, C. (2001). State curriculum mandates and student knowledge of personal finance. *Journal of Consumer Affairs*, 35(2), 241–262.
- Tschache, C.A. (2009). *Importance of financial literacy and financial literacy content in curriculum* (Montana State University-Bozeman working paper). Bozeman, MT.
- U.S. Department of the Treasury. (2002). *Integrating financial education into school curricula: Giving America's youth the educational foundation*. Washington, DC.
- . (2010). Financial education core competencies; comment request. *Federal Register* 75(165). Washington, DC.
- Valentine, G. P., & Khayum, M. (2005). Financial literacy skills of students in urban and rural high schools. *Delta Pi Epsilon Journal*, 47(1), 1–10.
- Van Rooij, M. C. J., Lusardi, A., & Alessie, R. J. M. (2011). Financial literacy and retirement planning in the Netherlands. *Journal of Economic Psychology*, 32(4), 593–608.
- Varcoe, K. P., Martin, A., Devitto, Z., & Go, C. (2005). Using a financial education curriculum for teens. *Journal of Financial Counseling and Planning*, 16(1), 63–71.
- Varcoe, K. P., Peterson, S. S., Wooten Swanson, P., & Johns, M. C. (2010). What do teens want to know about money? A comparison of 1998 and 2008. *Family and Consumer Sciences Research Journal*, 38(4), 360–371.

- Walstad, W. B., Rebeck, K., & MacDonald, R. A. (2010). The effects of financial education on the financial knowledge of high school students. *Journal of Consumer Affairs*, 44(2), 336–357.
- Way, W. L., & Holden, K. C. (2009). Teachers' background and capacity to teach personal finance: Results of a national study. *Journal of Financial Counseling and Planning*, 20(2), 64–78.
- Welsh Assembly Government. (2010). *Financial education for 7- to 19-year-olds in Wales: Guidance for schools and colleges*. As of March 4, 2014:
<http://dera.ioe.ac.uk/1879/1/111104financialeducationen.pdf>
- What Works Clearinghouse. (2014). *Procedures and standards handbook, Version 3.0*. Washington, DC: U.S. Department of Education, Institute for Educational Sciences. As of March 4, 2014:
http://ies.ed.gov/ncee/wwc/pdf/reference_resources/wwc_procedures_v3_0_draft_standards_handbook.pdf
- Yoong, J. K., Mihaly, K., Bauhoff, S., Rabinovich, L., Hung, A., & Kempson, E. (forthcoming). *A toolkit for the evaluation of financial capability programs in low and middle income countries*. World Bank Publication. As of May 15, 2015:
<https://www.finlitedu.org/evaluation/wb/toolkit/>