

The Case for Applied Financial Education

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Executive Summary

For schools to create the most significant lasting impact from financial education, decision-makers must recognize the challenges inherent in implementation. The authors contrast how financial education is taught with core subjects such as English language arts (ELA), math, social studies, and science and argue that the expectations for a single semester of financial education often exceed that of core classes. The new expectations of financial capability mean that students must also develop positive financial attitudes and behaviors in addition to knowledge and skills.

The authors propose career and technical education (CTE) as a model where students build workplace-ready proficiency in a relatively short time. By immediately applying their learning in real-world settings, students gain a depth of understanding and develop positive behaviors and attitudes. Success is determined not only by grades but also by the successful accomplishment of real-world tasks and hours of documented practice. The patented Budget Challenge financial education program is unique in that it provides a ten-week, real-time experience where students manage all the finances of an independent young adult. Like in CTE, students apply what they have learned in a real-world setting for an extended time. Student performance data show significant improvements in financial knowledge and skills and the development of important positive financial behaviors and attitudes.

Research on financial literacy education shows it can be effective if...

Much progress has been made over the past two decades toward the goal of providing financial literacy education for all high school students. The need was obvious: the end of defined benefit pension plans, the growth of increasingly complex financial products, and alarming student debt burdens had created a perfect storm of financial challenges an entire generation was ill-equipped to weather. As support for the idea grew, most states began to include financial literacy standards in their core curriculum, and some mandated a financial literacy class to graduate. The financial crisis created a greater sense of urgency as the actual cost of financial illiteracy became evident. By the spring of 2022, the Council for Economic Education's (CEE) semi-annual *Survey of the States* found that 23 states now require a course in financial literacy education to graduate¹. Despite these efforts, challenges remain. The CEE reports that nearly ¼ of millennials spend more than they earn, and more than 2/3rds of Gen Y have less than three months of expenses saved in an emergency fund.

The most recent meta-analysis of the effectiveness of financial literacy education, the 2020 *Financial Education Affects Financial Knowledge and Downstream Behaviors* from the National Bureau of Economic Research, concludes that “financial education treatment effects from RCTs (random controlled trials) have, on average, positive effects on financial knowledge and behaviors”². In other words, properly controlled studies showed

¹ Council for Economic Education, 2022. “Survey of the States”. <https://www.councilforeconed.org/wp-content/uploads/2022/03/2022-SURVEY-OF-THE-STATES.pdf>

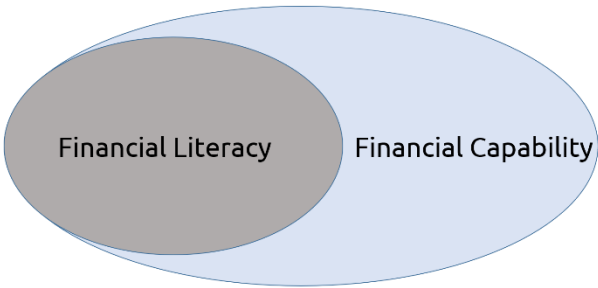
² Kaiser, Tim, Annamaria Lusardi, Lukas Menkhoff, and Carly Urban. 2020. “Financial Education Affects Financial Knowledge and Downstream Behaviors”. <https://gflec.org/wp-content/uploads/2020/04/Working-Paper-Financial-education-affects-financial-knowledge-and-downstream-behaviors-April-2020.pdf?x83489>

statistically significant benefits of financial education. In addition, the authors found that treatment effects were comparable to or even more powerful than the effects of teaching other subjects like math or reading. That is good news and supports our belief that effective financial education can have significant, long-lasting, and life-changing impacts on young adults.

However, an analysis of the research shows significant differences in the effectiveness of different financial literacy interventions. It also shows considerable decay in the effectiveness of the interventions on both knowledge and behavior over time. These findings are consistent with earlier research that proposed that financial literacy education is most effective when there is no time gap between when the material is learned and when students can apply it. The study analysis compared active learning with traditional lecture-based education. Not surprisingly, it found that "the active learning intervention is superior as it works via three mechanisms, i.e. increased financial literacy, self-control, and financial confidence, while lecturing only affects financial confidence."

Increased expectations: financial literacy versus financial capability

With the growing concern for young adults struggling financially and the increased belief that more needs to be done, attitudes regarding "financial literacy" are changing. The recent Milken Institute report³ documents the noticeable shift in expectations for financial literacy to be effective. As we recognize that there is more to managing money than understanding concepts, the definition of financial literacy is expanding to include the skills, attitudes, and behaviors that together make up financial capability.



Knowledge	Skills	Attitudes	Behaviors
<ul style="list-style-type: none">• Key financial concepts (inflation, compound interest, etc.)• Awareness of financial products and services• Practical know-how (how to make payments, open a bank account, etc.)	<ul style="list-style-type: none">• Numeracy skills• Literacy skills	<ul style="list-style-type: none">• Reasons for (or for not) saving, borrowing, investing, etc.• Attitudes towards the future• Confidence in own plans for retirement• Proclivity towards budgeting, saving, lending, etc.	<ul style="list-style-type: none">• Money management (managing day-to-day finances)• Long-term planning (preparing for emergencies and retirement)• Financial decision-making (ability to choose appropriate financial products)• Seeking financial advice

Source: Zottel, Perotti, and Bolaji-Adio (2013)

Knowing the significant differences between the effectiveness of interventions and the expanded definition of financial capability, educational leaders have vital questions to consider.

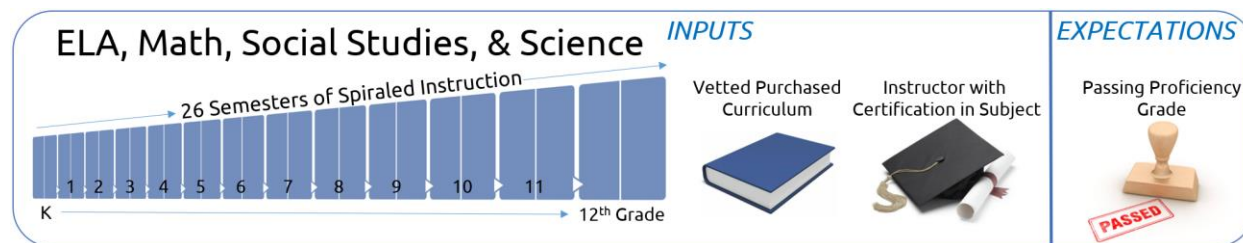
³ Contreras, Oscar, Joseph Bendix, 2021. Milken Institute "Financial Literacy in the United States"
<https://milkeninstitute.org/sites/default/files/2021-08/Financial%20Literacy%20in%20the%20United%20States.pdf>

What does effective education look like?

We generally find three critical components if we examine how core subjects are taught.

- **Content is spiraled.** Core subjects are repeated yearly over a long period, with prior learning providing the foundation for new learning.
- **The curriculum is vetted and purchased.** Before schools authorize purchases, there is typically a review process that involves a methodical evaluation by department leadership and curriculum coordinators. Free resources often circumvent this vetting process leaving the decision to the teacher's discretion.
- **Teachers are trained and certified in the subject they teach.** Elementary educators are required to complete a cohort of classes in the core subjects, while secondary educators typically have an academic major or minor in their area of certification.

Below is an illustration of the cumulative educational inputs that core subjects are given with the expectation of students passing end-of-course or pre-graduation proficiency tests. While each state has some variability in requirements, this generally is true for core subjects like English Language Arts (ELA), math, social studies, and science.



How does financial literacy education differ from successful core education?

There is wide variability in how financial literacy is taught, but it is generally taught quite differently than core subjects.

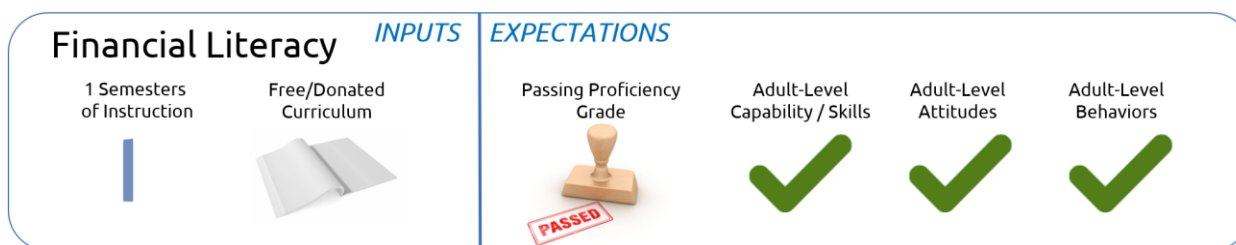
- **One semester versus 20 to 26 semesters.** Financial literacy is typically taught as a single semester class or as an add-on to an existing course such as economics or math.
- **Often relies on free curriculum.** Unlike core subjects, individual teachers are often responsible for finding materials without a budget to purchase them. The result is that teachers frequently use free materials provided by the same institutions that profit from consumers' financial mistakes.
- **Teachers lack formal preparation or certification.** In a survey ⁴of over 1200 teachers sponsored by the National Endowment for Financial Education, less than 20 percent reported feeling very competent to teach any of the six personal finance topics surveyed. Though alarming, this is not surprising, considering that no U.S. college or university offers a secondary education major or minor in financial literacy. In fact, many colleges and universities fail to offer any financial literacy courses.

⁴ Coggeshall, Jane G, Lauren Bivona, Daniel J. Reschly. 2012. National Comprehensive Center for Teacher Quality "Evaluating the Effectiveness of Teacher Preparation Programs for Support and Accountability"
<https://files.eric.ed.gov/fulltext/ED543773.pdf>



Increased expectations far exceed what high schools have delivered, but should we be surprised?

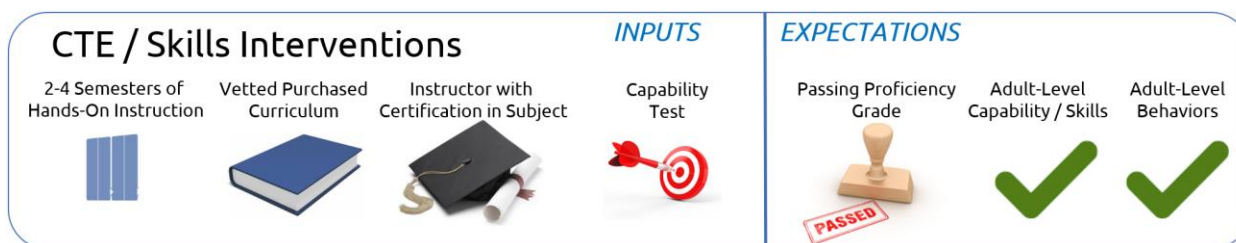
Even in core subjects that receive up to 26 semesters of spiraled instruction with vetted curriculum, certified instructors are rarely expected to make life-long behavior and attitudinal changes or fully prepare them for a vocation in that discipline. For example, someone who writes for a living is likely to graduate with at least a bachelor's degree in that area. Yet, it is now clear that passing a course in financial literacy may not adequately prepare students for managing adult finances. A role they will all begin upon graduation. So, is it realistic to expect even more from a subject like financial literacy with the limitations of how it is currently taught?



Core curriculum education versus CTE emphasis on hands-on learning

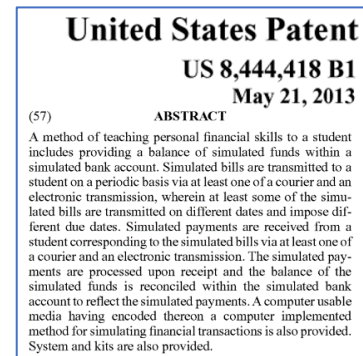
With a new focus on capability, it makes sense to review a successful educational model where the focus is to prepare students with the skills, attitudes, and behaviors necessary to be successful in an adult career. Career and Technical Education (CTE) classes are designed and implemented differently than core classes such as math, science, ELA, and social studies and are a model for effective financial education. How is CTE different?

- **Courses are of significantly shorter duration.** Most CTE classes last from two to four semesters, with some being a single semester.
- **Instruction emphasizes hands-on applied learning.** CTE classes are offered in labs or skill centers and sometimes include off-site work experiences to allow students to apply the concepts and skills learned in a setting similar to the workplace.
- **A real-world assessment measuring capability is part of the program.** CTE classes provide end-of-course certifications documenting proficiency, time-on-task, and measurable skills.



The innovation of hands-on applied learning and a real-world financial capability test

"Simulation" is a word often used in education, but it usually refers to something closer to an imaginative exercise. The innovation in Budget Challenge is the first ever true-to-life capability test. It highlights competing financial trade-offs, develops financial habits, and provides real-time feedback that shapes behaviors and attitudes. Budget Challenge patents 8,444,418 and 8,740,617 describe a method of sending bills and reconciling payments across multiple due dates in an educational simulation. This innovation is the foundation for a real-time, real-life financial simulation where each student manages the finances of an independent young adult for ten weeks.



The patented process represents only one of the many innovations in the Budget Challenge program. Together they produce results similar to the most effective CTE programs.

Developing skills, positive attitudes and behaviors, and knowledge

The expectations of financial capability mirror those of successful CTE programs. Regardless of the program, students must learn new knowledge and skills. Because CTE prepares students directly for the workforce or additional training, it must instill positive behaviors or habits, and positive attitudes. An example of this in CTE might be putting on appropriate safety gear or replacing equipment when finished with it. In Budget Challenge, positive behaviors include

- checking account balances before making payments,
- paying bills on time,
- paying down debt, and
- paying yourself first by having retirement contributions withheld from your paycheck.



In a CTE class, positive attitudes might include treating patients with compassion or offering to assume additional responsibility. In Budget

Challenge, students learn positive financial attitudes, like recognizing the importance of a credit score and taking responsibility for one's financial future. These attitudes and behaviors are essential for successful financial management.

Sustained practice builds deep knowledge and capability.

Students must be able to apply the knowledge and skills they learn in a real-life situation to build actual capability. In CTE, this typically occurs in a lab, shop, or real-world setting. This repeated practice allows for the development of positive behaviors and attitudes. In Budget Challenge, students perform specific tasks and routinely engage in higher-order thinking and decision-making. Through this process, students begin to understand how most financial decisions are interrelated and how managing finances is very different from simply reading about them.

A typical CTE class spends as much time or more on practice as in the initial learning. This sustained practice allows for learning from mistakes, developing proficiency, and performing skills in different circumstances. In Budget Challenge, students manage the finances of an independent young adult for ten weeks. This extended time allows students to practice through multiple cycles of payroll, monthly bills, semi-annual bills, and an unexpected financial event. Like in CTE, they learn from their mistakes, experience different situations, and develop proficiency and desired behaviors and attitudes.

Practice Hands-On Activities and Decision Making



Budgeting

- Creating Budget
- Updating Budget
- Forecasting Cash Flow
- Adjusting 401(k) allocation
- Planning to Earn Trophies

Cash Flow Management

- Receiving/Reviewing Bills
- Receiving/Reviewing Paychecks
- Paying Bills
- Reconciling Account Balance
- Transferring Funds to Saving Account
- Timing of Inflows and Outflows
- Transactions to Earn Trophies

Investing

- Researching Investments
- Trading Mutual Funds
- Reviewing Allocations
- Establish Standing Buy-Orders

Meaningful actionable feedback reinforces positive behaviors and improves performance

In CTE classes, effective feedback comes from many different sources but is always actionable. The feedback from making an error when building or constructing something, cutting someone's hair, or welding a joint is often readily apparent to the student without intervention by the teacher. In other situations, the teacher provides feedback to help students improve their performance. Research has shown that the most effective student feedback is timely, specific, and can be acted on. Budget Challenge automatically provides students with multiple types of meaningful feedback that shapes their behavior and learning. The program gives the teacher comprehensive student performance data and automated tools to provide students with feedback that will help them learn.

Capability Feedback in Real-Time



Engagement Scoring (*updated daily*)

Trophy Progress

Status of long-term financial goals with notification for trophies awarded or lost

Credit Score Feedback

Daily penalties/rewards for behaviors likely to improve/worsen credit score

Fees/Mistakes Feedback

Realistic bank and vendor fees are processed and assessed daily

Peer Ranking from Competition (*updated daily*)

Overall Knowledge/Behavior/Skill Score (*updated daily*)

Formative and summative assessments on the things that matter

CTE classes differ from core classes because students do not just pass a written test to determine proficiency. They must demonstrate specific skills at a level of proficiency determined by real-world experience. So, a cosmetology student doesn't gain certification solely from passing a written test. They must demonstrate that they have the necessary skills to do the job. In addition, they are often required to successfully practice a specific number of hours to establish that they also have the attitudes and behaviors necessary to be successful. As CTE

students work towards their goals, they take formative assessments to increase their likelihood of success. If they successfully meet program goals, besides a grade, they often receive certification in their area of study.

Skills & Behaviors Capability Assessments

9 Adult-Level Trophies

Money Management Capability



Create a \$500
Emergency Fund



Make an extra
Student loan payment



Maintain credit
Utilization below 50%



Pay Bills on time



Pay off entire
credit card balance



Contribute \$1,000 to
401(k) over 4 pay periods

Investing Capability



Move 95% of investments
Into aggressive funds



Pick and follow either Active
Or Set-it/Forget-it strategy



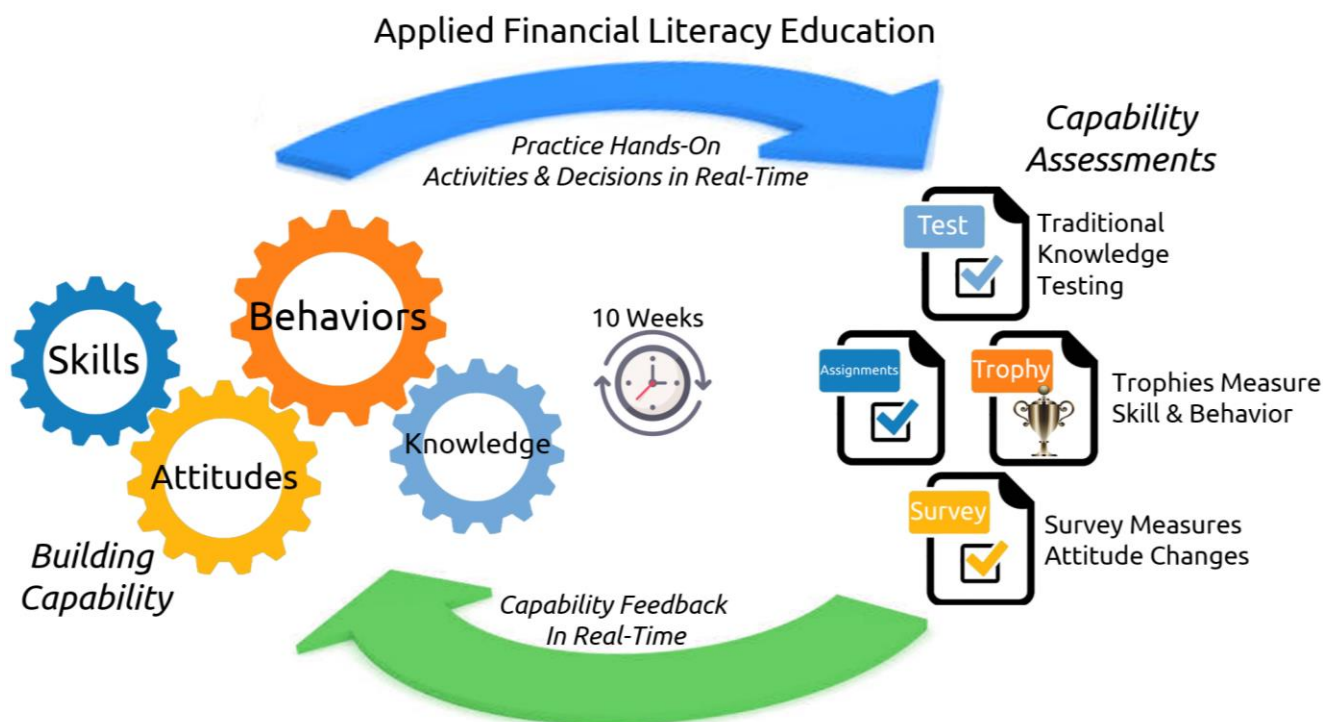
Maintain fees below 0.5%

In Budget Challenge, students attempt to earn trophies by demonstrating they can achieve critical financial tasks many adults struggle with. Students receive daily formative feedback on their progress towards these trophy goals. Accomplishing trophy goals are one of several types of summative feedback provided to students at the end of the simulation. In addition to trophy goals, assignments, traditional knowledge testing, and surveys of financial attitudes and behaviors provide a comprehensive picture of what a student is learning during the simulation and at the end of the course.

Our program addresses the biggest shortcoming in financial education

Even the most engaging lessons about money fall short in one crucial aspect. By separating critical financial topics from the reality of actually managing finances, they fail to teach the most important lessons. In the real world, most financial decisions involve trade-offs. A stock market game that gives you \$100,000 to invest can be engaging and fun. A worksheet can show how much interest can be saved by paying down debt. A video showing the importance of an emergency fund can convey vital information. But in real life, most students will not be given \$100,000 to invest, and in order to pay down debt, they must have money left over after paying current expenses. Money put in an emergency fund is money that cannot be used for a 401(k) match or to pay down debt. The timing of bills, payments, and financial deadlines are often as important as the actual decision.

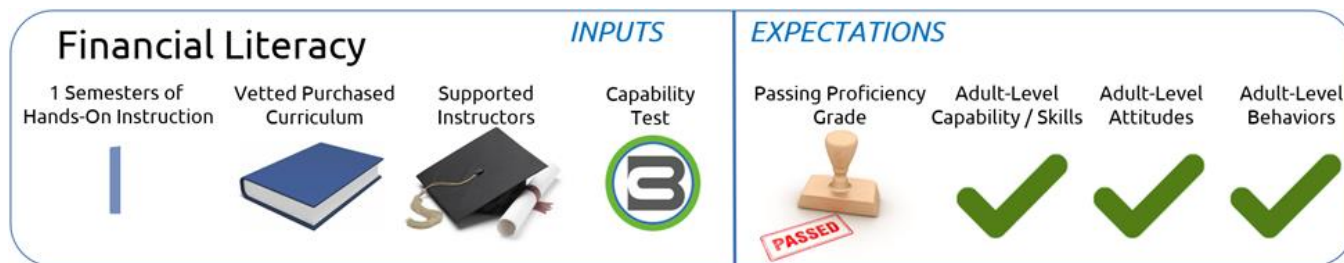
In real life, consumers make decisions while considering all other aspects of their finances. Evaluating trade-offs, managing cash flow, and setting priorities can only be meaningfully taught in a simulation that operates like the real world. Budget Challenge places these decisions in a simulation where students learn by managing ALL the finances of a typical independent young adult in real-time for ten weeks. The same realism that makes the best CTE programs so effective is what makes Budget Challenge uniquely effective among financial literacy programs.



Supporting teachers with the best tools, customized training, and live help desk

As mentioned earlier, another challenge is the lack of teacher preparation. Budget Challenge closes the preparation gap by providing extended teacher-play interactive training where teachers, like their students, learn by doing. Live webinars can be customized to meet teacher needs and schedules. Teacher support continues once school starts. Built-in teacher tools promote student engagement, identify struggling learners, assess progress, and extend learning to the home. A professionally staffed Help Desk provides on-demand continuous support for teachers AND students.

Evidence that Budget Challenge is effective using multiple measures of student performance



The following data shows program effectiveness superior to all other methods of teaching financial literacy. Results are not surprising when considering how the program overcomes the limitations and drawbacks of traditional financial literacy education.

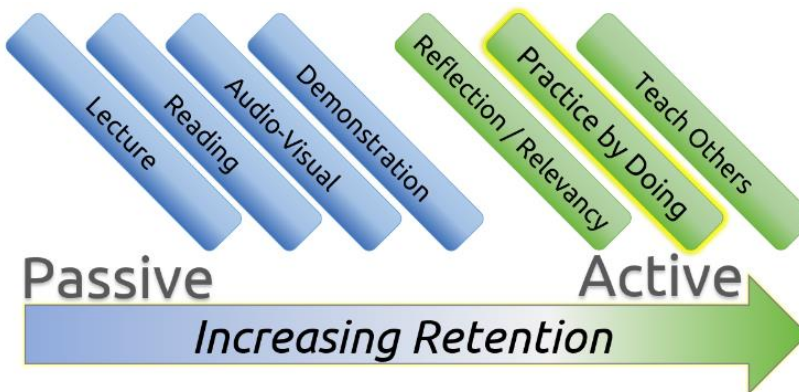
Student performance on an assessment of financial knowledge and skills

Students given pre and post-tests of core financial literacy and capability concepts showed significant improvement.

**31% Improvement in Financial Skills and Knowledge
as a result of the program.** *19,672 students 2020-21*

Instilling positive financial habits and behaviors

Participating in Budget Challenge exemplifies active learning and completing multiple tasks requiring higher-order thinking skills. This experience results in increased retention compared to traditional financial education. It also results in developing skills and positive financial behaviors and attitudes.



Students were asked to reflect on their learning and predict the program's impact on their ability to perform important adult-level financial tasks.

Financial Attitudes Survey

101,501 students 2018-19

"For the following questions: Think back to the start of the simulation. Would You agree now as a result of taking Budget Challenge you are:"

- more able to avoid fees from vendors and banks **Yes 82.3%**
- more knowledgeable about how to write checks **Yes 88.1%**
- more likely to check account balances before writing checks **Yes 89.7%**
- more skilled at creating budgets **Yes 83.3%**
- more confident about managing money **Yes 84.6%**

Budget Challenge invites third-party analysis of our results and student data set

The data shown comes from large sample population sets from a wide range of schools representing broad geographic and socio-economic diversity. Budget Challenge is always interested in working with any advocacy group or scholars interested in researching the program's impact on students.