Findings from Year 3

MassMutual Foundation Longitudinal Study of Financial Capability among Adolescents

2023–2024 School Year

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Executive Summary

From Summer 2023 to Spring 2024, the Research Team of EVERFI continued the Financial Capability Longitudinal Study. After taking two courses in Year 2, the participants entered Year 3 of the study by first taking the seventh longitudinal survey after the summer break. The students in the treatment groups then took the *Venture* course in Fall 2023 and the *Pathways* course in Spring 2024. Using the rigorous repeated measure mixed model estimation method, the Year 3 Study revealed the unique and combined effects of the two courses and provided critical insights on the various ways in which financial education courses offered by EVERFI affected students' financial knowledge, self-efficacy and behaviors.

Main Findings from Year 3 Study:

- Taking multiple courses generated a long-lasting impact on students' confidence in their financial skills. Even if students stopped taking any courses, the improvement caused by the courses they had taken remained significant.
- Although the analysis did not give conclusive evidence about the individual effect of *Venture* or *Pathways* on students' financial self-efficacy, it was clear that taking both courses effectively made students more confident in their financial skills.
- Unlike *FutureSmart* and *EVERFI*, the courses students took in Year 2 had a short-term impact on students' financial behaviors. The improvement caused by *Money Moves*, probably due to the stimulated interest among the students in using mobile and online banking apps, diminished if students did not take any more courses.
- Although *Venture* and *Pathways* did not directly improve students' financial behaviors, the two courses combined indirectly benefited students by increasing their financial self-efficacy, which in turn, effectively improved students' financial behaviors.
- The positive effect of Year 2 courses on student-parent communication diminished after students stopped taking any courses during the summer. *Venture*, a course focusing on a specific but not imminently actionable topic, did not further improve student-parent communication on financial topics.
- Although *Pathways* did not increase the frequency of student-parent communication on financial topics, the course effectively prevented the decline in students' communication with their parents, which was observed among those who did not take any financial education courses.

Introduction

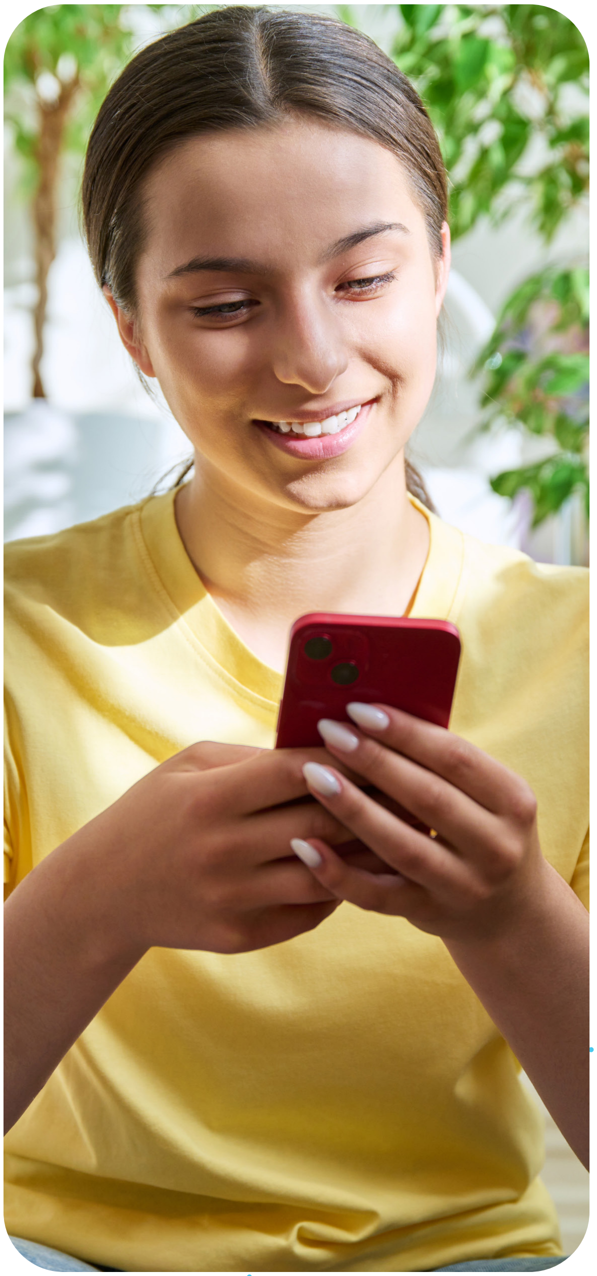
While most financial education has been historically provided to students in high school, research has shown that by age 12, students have an economic understanding that researchers describe as "essentially adult" (Jin & Chen, 2020). By the time adolescents reach middle school, they have already developed the capacity to understand complex economic concepts. They are beginning to understand consumer culture, make judgments, and assign value to purchases and brands. These beliefs and habits follow adolescents through their transition to financial independence and adulthood – and ultimately impact their adult financial capability.

Given the essential nature of this concept for teenagers' healthy development and future success, the *FutureSmart* course was designed to provide middle schoolers with an engaging learning experience that covers topics such as banking, saving and investing, budgeting, and planning for the future. In 2018 we conducted a two-year study of *FutureSmart* with the University of Massachusetts Donahue Institute to determine the efficacy of the program in changing KABs of students. The quasi-experimental study (Johnson, Spraggon, Stevenson, Levine, & Mancari, 2021) showed that knowledge increased significantly for all students taking *FutureSmart* (compared to a control group). However, the study did not find any statistical evidence of improvements in other outcomes such as financial confidence, communication with parents, or financial behaviors, possibly due to a shortened timeline for measurement and a lack of additional interventions.

Based on these findings and suggestions, in 2021, we started a longitudinal study on the development of financial capability among adolescents. In the longitudinal study, we are incorporated six of *EVERFI's* financial capability courses into the curriculum for adolescents so that we can examine the effect of *FutureSmart* alone and the cumulative and combined effects of multiple financial educational programs on students' financial knowledge, attitudes and behaviors.

"...research has shown that by age 12, students have an economic understanding that researchers describe as "essentially adult."

(Jin & Chen, 2020)



Year 1 and Year 2 Findings

Financial Knowledge

- *FutureSmart* and *EVERFI* significantly increased students' financial knowledge.
- If students already took *FutureSmart*, *EVERFI* did not further increase their knowledge.
- *Marketplaces* effectively increased students' financial knowledge.
- The effects of financial education courses on students' financial knowledge tend to fade away one semester after students completed the course.

Financial Self-Efficacy

- Both *FutureSmart* and *EVERFI* significantly increased students' financial self-efficacy.
- Taking *EVERFI* after *FutureSmart* further increased students' confidence in their financial skills.
- *Money Moves* effectively improved students' financial self-efficacy, while *Marketplaces* might help maintain the effect of *Money Moves*.
- The effects of taking multiple courses on students' financial self-efficacy lasted even after students stopped taking any course, while the effect of a single course completely diminished if students stopped taking courses.

Financial Behaviors

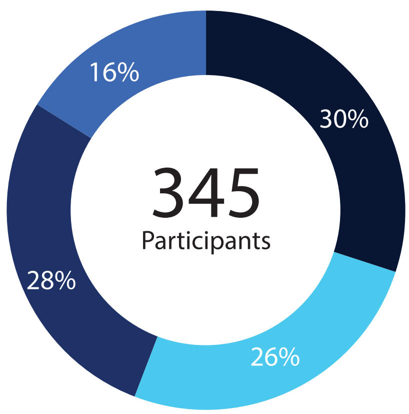
- *FutureSmart* significantly increased the frequency of desirable financial behaviors.
- Although *EVERFI* alone did not improve students' financial behaviors, it helped maintain the positive effect of *FutureSmart*.
- *Money Moves* had a significantly positive effect on students' financial behaviors, and *Marketplaces* might help maintain the effect of *Money Moves*.
- The effects of taking multiple courses on students' financial behaviors sustained even after students stopped taking courses, while the effect of a single course completed diminished if students stopped taking courses.

Study Procedure and Measurement

Study Procedure

To analyze the long-term effect of *FutureSmart* as well as the cumulative effects of other financial education courses on the participants' financial knowledge, attitudes, and behaviors, each participant was randomly assigned to one of the four condition groups before the study began:

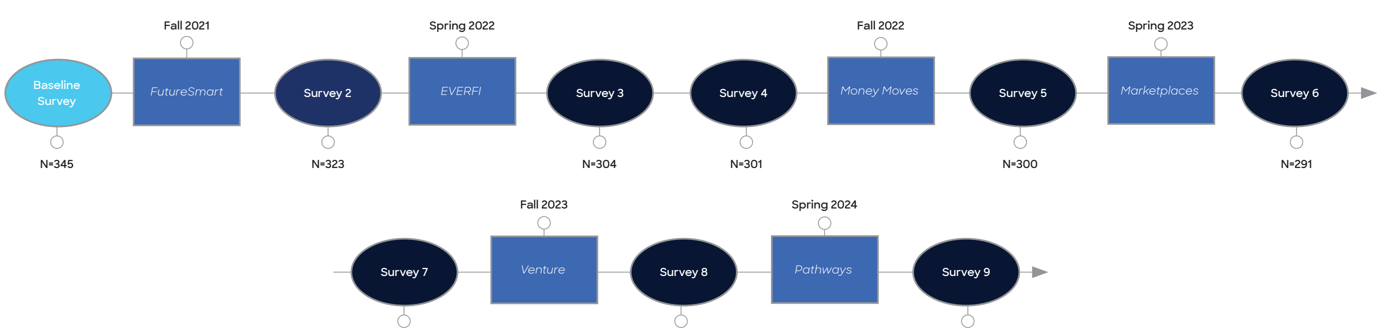
The Whole-Shebang Group:	**The Power-Up Group**:
Participants in this group will take all of *EVERFI's* financial education courses for K12 students.	Participants in this group will take all of EVERFI's financial education courses except *FutureSmart*.
The FutureSmart Group:	**The Essential Group**:
Participants in this group will take only the *FutureSmart* course.	Participants in this group will not take any courses but are still surveyed.



After the random assignment, 30% of the 345 participants were in the Whole-Shebang Group, 26% were in the FutureSmart Group, 28% were in the Power-Up Group, and 16% were in the Essential Group.

Sample Size at Data Collection Points

As of Summer 2023, 81% of the participants remained in the study. The comparison analysis showed that the demographics and baseline measures of financial knowledge, attitudes, and behaviors (KABs) of the current sample were not different from those of the baseline sample. The attribution rate was equal across the four condition groups, and the relative sizes of each group remained stable.



Measurement

In order to capture the effects of the courses, a comprehensive measurement survey that evaluates the students' financial knowledge, self-efficacy and behaviors was administered before and after each course window:

Financial Knowledge: The financial knowledge of the students was tested using a simplified version of the Test of Financial Knowledge for upper middle school or lower high school students developed by the Council for Economic Education (2016) covering essential financial topics such as jobs and income, saving, budgeting, and financial investing.

Financial Self-Efficacy: The financial self-efficacy measurement for students evaluates how much confidence the students have in performing essential financial tasks suitable for their age such as making financial plans and managing a savings account. The measurement tool has been used and validated in the published study conducted by Johnson and colleagues (2021).

Financial Behaviors: The financial behavior instrument measures the frequency that students engage with desirable financial behaviors such as tracking their monthly expenses and saving money for long-term goals.

Student-Parent Communications: One of the strongest predictors of financial capability in adulthood is the frequency of money-related conversations during adolescence (Jorgensen, Rappleyea, Schweichler, Fang, & Moran, 2017). Students were asked how often they had conversations with their parents on important financial topics such as how to use their money and long-term educational and career goals.

Given the profound influence of parents on their children, the financial knowledge, attitudes and behaviors of the participants' parents were also measured and included in the analysis as control variables.

Efficacy Analysis

The efficacy analysis used the rigorous repeated measure mixed model method to analyze the effect of the courses on financial knowledge, attitudes and behaviors as compared to natural change over time. After controlling for the effects of parental financial KABs, student demographics and parental demographics, the analysis showed whether there were significant changes in the students' financial KABs after they took the courses. It also revealed whether they achieved better outcomes than those who did not take any courses. This report focuses on the findings from the third year of the study, i.e., the effects of *Venture* and *Pathways*.

As suggested by the widely adopted Planned Behavior Theory, an individual's behaviors are largely determined by his or her attitudes towards the target behavior, which could be influenced by, among many other factors, the knowledge and information one has about the subject (Ajzen, 1991). Therefore, it is possible that a course's effect on a learning outcome could be mediated by its effect on other outcomes. For example, the effect of a course on students' financial behaviors could be completely mediated by students' financial attitudes, i.e., the course could impact students' financial behaviors completely through improving their financial attitudes, which in turn, affect students' behaviors. In this case, the analysis may show no direct impact of the course on students' financial behaviors. Considering the possible existence of mediation effects, in the study, when the model showed no significant direct impact of a course on students' financial self-efficacy or behaviors, a mediation analysis was conducted to determine whether an indirect mediation effect existed.

Year 3 Findings

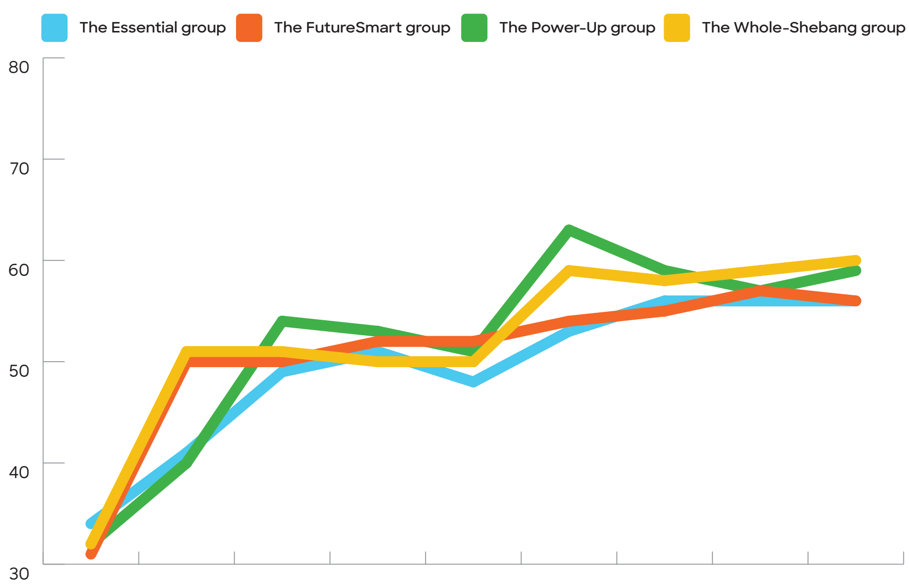
In Year 3 of the study (from Survey 6 to Survey 9), the participants were not assigned any course in the summer of 2023 but were still surveyed. Students in the Power-Up and Whole-Shebang groups took the *Venture* course in 2023 Fall and the *Pathways* course in the spring of 2024. Students in the *FutureSmart* and Essential groups did not take any course during this period.

Financial Knowledge

During the summer of 2023 (between Surveys 6 and 7), students did not take any financial capability courses. The analysis shows that during this period, their financial knowledge had no significant changes, and the average knowledge scores of the treatment groups (The Whole-Shebang, FutureSmart and Power-Up groups) were not significantly different from that of the control group. Given that students who took *Marketplaces* had a significant increase in their financial knowledge (as shown by the change from Survey 5 to Survey 6), this finding shows that the effect of *Marketplaces* on students' financial knowledge faded away if no further intervention was given. Consistent with the Year 1 and Year 2 findings, the knowledge-enhancing effect of financial education courses tended to be a short-term one. Figure 1 below shows the financial knowledge scores over the study.

Students in the Whole-Shebang and Power-Up groups took *Venture* in Fall 2023 (between Survey 7 and Survey 8) and *Pathways* in Spring 2024 (between Survey 8 and Survey 9). The analysis showed no significant changes in their financial knowledge scores after they took the course, and the average scores of those who took the courses did not differ significantly from that of the control group. This finding was expected as both the *Venture* and the *Pathways* courses covered skills which were not sufficiently tested in the financial knowledge test instrument, which primarily focuses on general financial literacy topics such as interest rates, savings, budgeting, building credit and investing.

Figure 1. Financial Knowledge Score over Time by Group (out of 100)

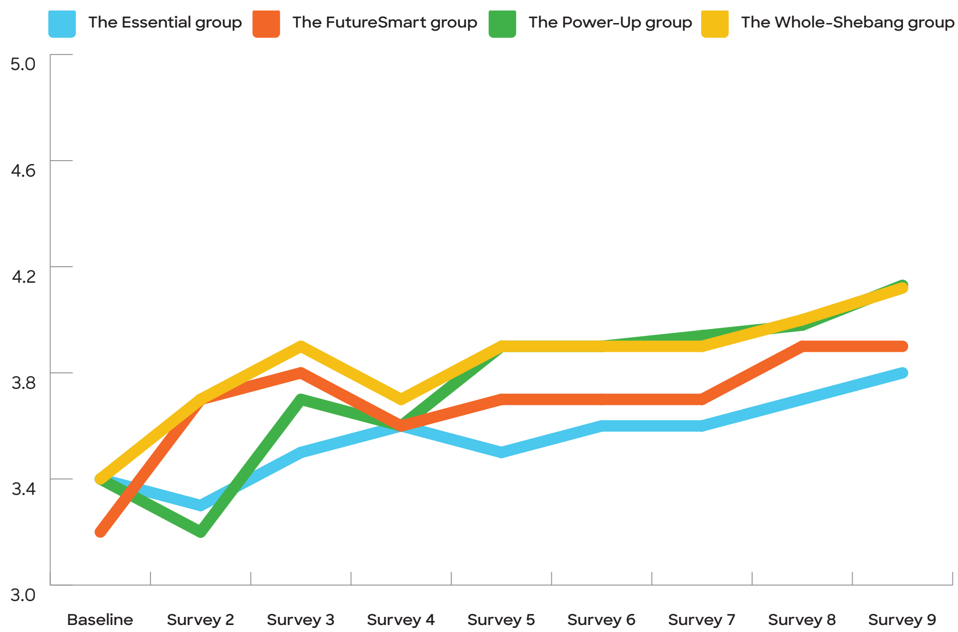


Financial Self-Efficacy

As shown by Figure 2, between Surveys 6 and 7 when students did not take any course and the financial self-efficacy of those who took *Marketplaces* before the summer did not have a significant change. However, compared to the control group, those who took *Marketplaces* were still significantly more confident in their financial skills. Similar to the findings in Year 1 and Year 2, the effect of financial education courses remained even when no further reinforcement was given.

The same change trajectory was observed after students took *Venture* in Fall 2023 and *Pathways* in Spring 2024. Although their confidence in their financial skills did not further increase, it was still significantly higher than that of the control group at Survey 9. This finding could not clearly indicate the unique effect of each individual course. It is possible that these two courses, although not further improving students' confidence, helped maintain the effect of previous courses, or it might indicate that the effects of previous courses remained significant, and *Venture* and *Pathways* had no effect as an individual course. However, it is evident that students' self-efficacy at Survey 9 was significantly higher than that at Survey 7. Therefore, although the unique effect of each course was unclear, there was a significant combined effect of the two courses.

Figure 2. Financial Self-Efficacy Change Over Time by Group
(Preparedness Score, out of 5)

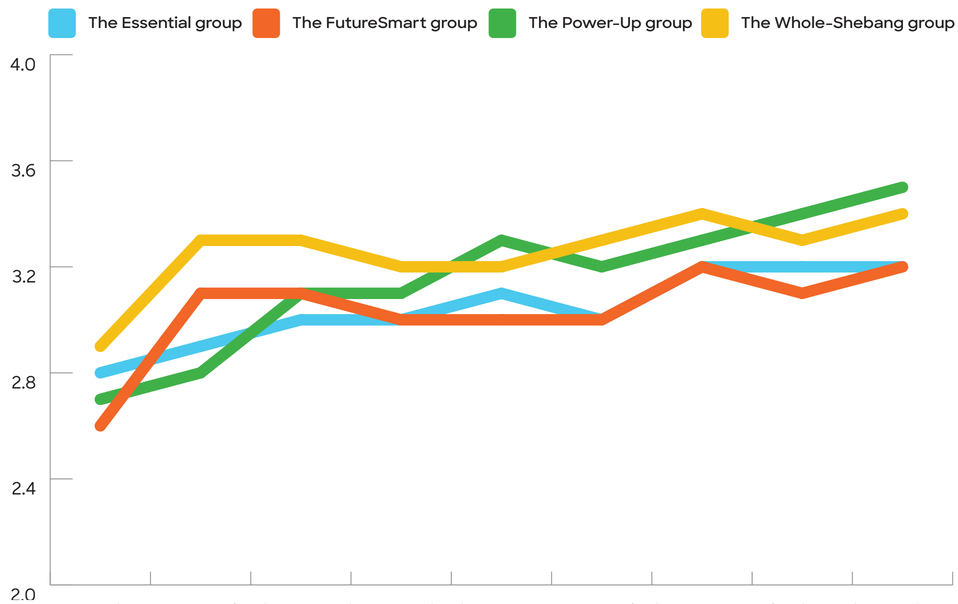


Financial Behaviors

Based on the repeated measure mixed model estimation, the frequency of healthy financial behaviors among the students who took courses in Year 2 increased significantly during the summer of 2023, but it was not significantly different from that of the control group, which also had a significant improvement in financial behaviors during the same period. This indicated that the effect of the previous two courses students took, *Money Moves* and *Marketplaces*, on students' financial behaviors were short-term and faded away if the students stopped taking courses.

In Year 3, students in the Whole-Shebang and Power-Up groups took *Venture* in Fall 2023 and *Pathways* in Spring 2024. There were no significant changes in the students' financial behaviors after they finished the courses, and the frequency of their desirable financial behaviors was not significantly different from that of the control group. Therefore, neither course had a significant direct impact on the students' financial behaviors.

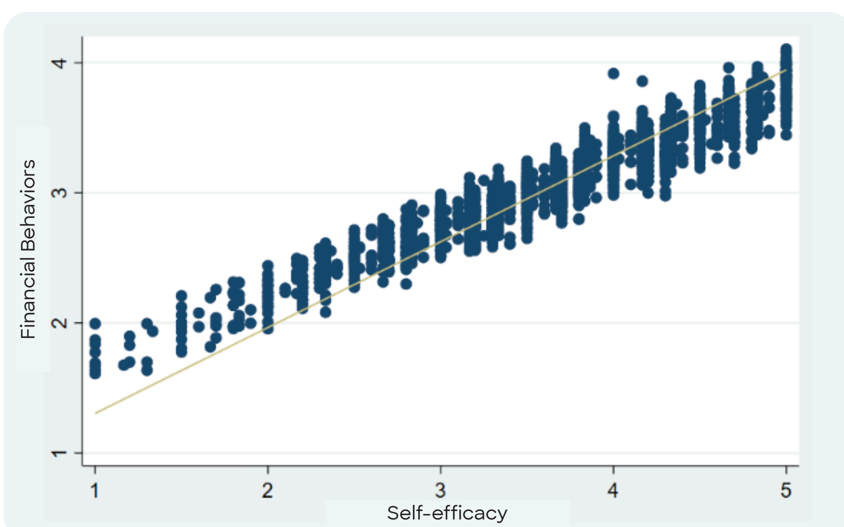
Figure 3. Frequency of Desirable Financial Behavior over Time by Group (frequency of desirable financial behaviors, out of 5)



Note: The expected values not the actual values are presented. The expected values show what the scores would be after controlling for the influence of other factors and therefore are a better indicator to show the direct impact of the course.

As suggested by the Planned Behavior Theory (Azjen, 1991), increasing self-efficacy is a prerequisite for behavioral changes. Therefore, it is worth testing if the impact of *Venture* and *Pathways* on students' financial behaviors was in fact mediated by improved self-efficacy, i.e., the courses could have affected students' financial behaviors indirectly through making students more confident in their financial skills. A mediation analysis was conducted using the PROCESS method proposed by Hayes (2022) to show if the lack of significant impact of the two courses students took in Year 3 could be explained by a strong mediation effect of financial self-efficacy. The analysis showed that *Venture* and *Pathways* combined effectively increased students' confidence in their financial skills (as shown in the prior section), and the improved self-efficacy led to increased frequency of desirable financial behaviors from Survey 7 to Survey 9, as shown by Figure 4 below. Based on this finding, we can conclude that taking both *Venture* and *Pathways* indirectly improved students' financial behaviors through increasing students' financial self-efficacy.

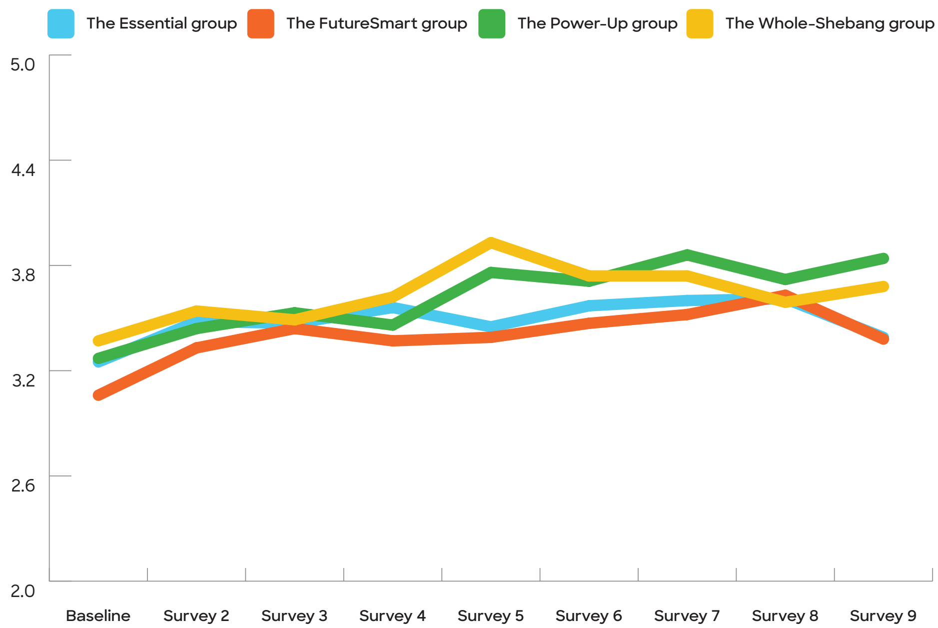
Figure 4. Self Efficacy and Frequency of Desirable Financial Behaviors



Financial Communication

The expected frequency of student-parent communication is shown in the chart below (Figure 5). During the summer of 2023 when students did not take any course, there was no significant change in how often they communicated with their parents, and no significant differences were found between those who took courses before the summer and those who did not. Therefore, the effect of previous courses, *Money Moves* and *Marketplaces*, on parental communication tended to be short-term and faded away when students stopped taking any courses.

Figure 5. Frequency of Parent-Student Communication (Frequency of Communications, out of 5)



In Fall 2023 (between Survey 7 and Survey 8), students in the Whole-Shebang and Power-Up groups took *Venture*, a course about entrepreneurship and encouraging students to open their own businesses. The analysis showed that this course did not increase the students' communication with their parents on financial topics as their frequency score did not change significantly from Survey 7 to Survey 8, and it was not significantly different from that of the control group. A mediation analysis was also conducted, and no evidence was found for the existence of any indirect effect of the course on parent-student communications through improved financial self-efficacy or knowledge.

In contrast, a sharp difference was observed between those who took Pathways and those who did not take any course during the same period. Specifically, as Figure 5 shows, during the spring of 2024 (between Survey 8 and Survey 9), those who did not take any courses had a significant decline in how often they communicated with their parents on financial topics, whereas those who took the *Pathway* course, though not communicating with their parents more frequently, did not have a decrease in how often they communicated. Based on this finding, it can be argued that *Pathways* benefited students by preventing a decline in parent-student communications on financial topics.

Qualitative Data Findings

In addition to collecting quantitative data from students about their knowledge, attitudes, and behaviors, our study also sought to paint a fuller picture of the student journey by asking families about their experiences with the courses and their perceived effect. In total, we received qualitative feedback from 35 families in our study representing 11 different states in the US, and the themes derived from each question are summarized below.

Course Experience

"Do you think the content covered in the courses was easy or difficult? What were the topics covered in our courses that you didn't know before?"

About half of the respondents felt that the content covered a range of easy and difficult topics, while the other half felt all the content was easy. For novel concepts, the most popular answers were: Digital payment methods, affording higher education, and stocks/bonds. About a quarter of the students claimed all the content was totally new to them.

"How are our courses different from the ones you have taken before? What do you like most about our courses?"

Only a fifth of students said they had ever taken a financial capability course before and the best answer we got about how it differed from other products was: **"how interactive and engaging they were, always doing something during the courses rather than just reading or passively learning."** Another student reported that they liked how **"the courses were significantly more in-depth and take on complicated financial knowledge issues."** Several students also mentioned that they appreciated the interactive nature of the courses and the engaging way information was presented visually.

"How do you like your first financial education experience?"

While responses from parents were 100% positive, four families mentioned their child did not enjoy the "extra work" of the experience as much. The rest all believed their child sincerely enjoyed the experience. Several families mentioned how much they enjoyed learning about money in an interactive format and felt more confident about their future. One specifically stated: **"It would be beneficial for high schools to use the program in their curriculum"** and another believed we should **"consider making an accrediated version for schools to use in place of the finance classes."**

Course Effect

"Can you tell me the most useful tips or knowledge you learned from (the latest course)?"

About half of the respondents referenced general topics as the most useful such as spending, saving, or planning for the future. The other half noted more advanced financial behaviors like growing a starting and building credit, financing higher education, and saving for retirement. One student said, **"When looking at college, I will make sure to apply for scholarships and of course fill out the FAFSA."** One parent noted that their child **"learned how to set up a bank account, and how to manage all of their expenses."**

Did the courses in any way change your financial behaviors? Can you give us some examples?

Most examples from students revolved around starting savings accounts or planning to save in the near future. A few students mentioned specific budgeting behaviors they engaged in and several mentioned saving for retirement when they were old enough. Two students reported no change in behavior and another student was not sure of any change. One family stated: **"We started writing down everything we spent and cut out a lot of wasteful spending to create an emergency fund and savings. We still need to do more work here, but we've charted nearly a year of spending. I wish I would have been able to save for college for [child]. As a single mom though, I'm happy I've gotten him this far. Since the course, he has now become very aware of how getting As and applying for scholarships will help with college."**

Parental Communication:

Do you think it is difficult to talk about financial topics with your child? How much do you think our courses help to make it easier for you and child to have conversations on financial topics?

Three quarters of the families we interviewed told us that conversations about financial topics were not difficult to have with their child. Most of those respondents noted that the courses had provided vocabulary, specific topics, and actions that made it more natural to have these types of discussions. One parent noted, however, that it was **"It is easy for me to talk, about it, it is difficult for her to listen"**, but several families also said that they were appreciative to have the same information they had been providing to their child from another source. Some parents also stated that the content

"...because it is very diverse, and not child-like. It has a nice middle ground, instead of either being very babyish or very complicated and hard to understand." – *student, CA*

gave them a common ground to start conversations with and helped their children understand more complex topics.

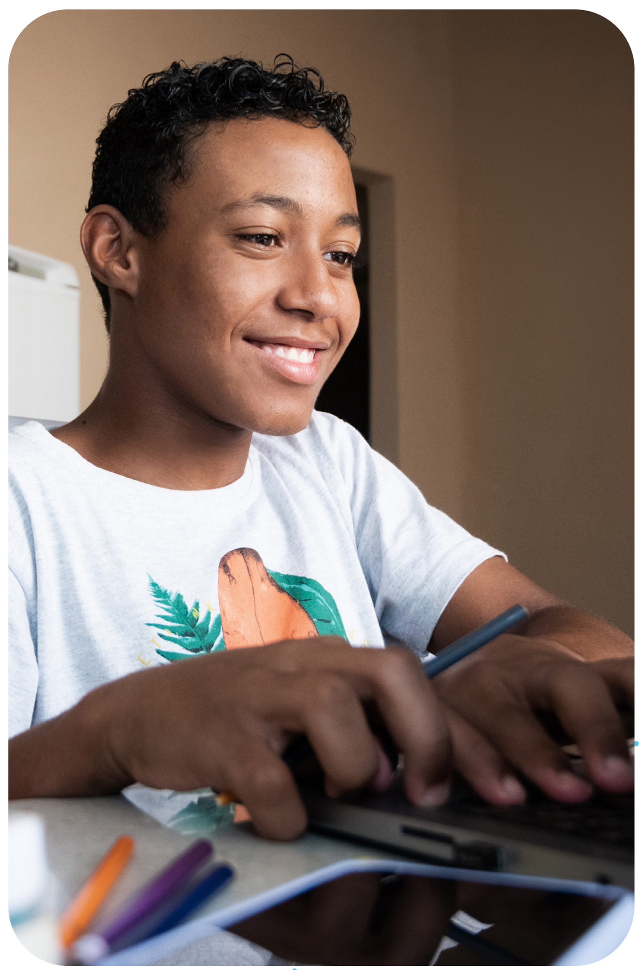
When was the last time you talked about any financial topic with your parents(children)? What did you talk about?

More than three-quarters of our respondents said that their last conversation with their parents about financial topics took place within the past week and most of the rest were in the last month. About half of the conversations were about money management, either saving or spending or making plans for future financial goals. A few conversations also took place about investing, starting employment, career development, and planning for higher education. Interestingly, one parent stated that **"In our house, talking about spending wisely is a daily conversation. We have not had many talks about the myriad of different financial knowledge topics such as how to pay for college, how to buy a home and investing."** One parent told us that they thought it was **"great to discuss these topics with children as early as possible so they are able to grow up to be financially responsible adults."**

Anything else you want to say about the study and the courses?

In our final, open-ended question to families, we received a huge amount of positive validation for the courses and their participation in the study, including several very valuable examples of impact. One family told us that their state had **"a new diploma seal that students can earn and completing the EVERFI coursework is one of the requirements! [Our child] would like to be able to achieve this for her diploma."** Another told us **"They had been very informative courses and had helped guide my child in understanding how our own family finances work."** Finally, one parent mentioned that they believed **"the courses are well thought out, organized and the tests do reflect the knowledge taught in the module"** and that **"the modules are a way for kids to get the**

"One of the most useful tips I learned was that you can have someone invest in stocks for you, so that if you don't trust yourself to invest properly, you can pay someone to do it for you. This way you can stay safe in investing, without having to be a professional. This is especially helpful when you are younger, but still old enough to own stocks."
-student, VA



information at a pace that works for them, when they are ready to learn." It was very clear that families enjoyed the experience with the course content and participation in the study and walked away with something valuable.

Conclusion and Discussion

During the study's third year, students were surveyed in the summer of 2023, when none took a course. This arrangement enabled us to examine whether the improvement they made in their financial knowledge, attitudes and behaviors in Year 2 was sustained when no intervention was given. In Year 3, students in the Whole-Shebang and Power-Up groups took two more courses, *Venture* and *Pathways*. The Year 3 analysis revealed the effects of each individual course and the combined impact of multiple courses on students' financial KABs.

Like the Year 1 and Year 2 findings, the analysis showed that the positive effects of the courses on students' financial knowledge did not last long, as the test scores of those who completed two courses in Year 2 converged to the same level of those who did not take any course in Year 2. Neither did the analysis find evidence that the two courses students took in Year 3 had a significant impact on their financial knowledge. This finding, however, was somewhat expected by the researchers, as the financial knowledge test instrument used in the study had very few questions related to the topics covered by the courses, i.e., entrepreneurship in *Venture* and financing higher education in *Pathways*.

The effects of financial education courses on students' financial self-efficacy were shown to be sustained even when students stopped taking any courses. After students took *Venture* in Fall 2023 and *Pathways* in Spring 2024, their financial self-efficacy did not further improve. Nevertheless, at both points, the students who took a course were significantly more confident in their financial skills than those who did not take any courses. Although it is difficult to assess the unique effect of each individual course students took in Year 3 due to the limit of the study design, the two courses combined had a significantly

"I used to spend money on things I don't even use anymore and I could have just saved that money instead and I would have probably thought that out more and saved the money instead of spending it if I had done this course earlier." *-student, NJ*

positive effect on students' confidence in their financial skills.

Although the analysis showed that during the summer of 2023, the frequency of desirable financial behaviors increased significantly among the students who took courses in Year 2, the frequency also increased among those who did not take any course in Year 2, and the students who took courses in the treatment groups did not conduct healthy financial behaviors significantly more often than the control group at the end of the summer. This finding indicated that the effects of the two courses students took in Year 2, and particularly, the *Money Moves* course which significantly improved students' financial behaviors, did not last long and faded away when students did not take any course. Noticeably, in the Year 2 study, we showed that the improvement in financial behaviors caused by *FutureSmart* and *EVERFI* was sustained during the subsequent summer when students stopped taking courses. This difference might reflect different levels of sustainability of various types of behavioral changes. Specifically, *FutureSmart* and *EVERFI* are fundamental financial literacy courses focused on fostering basic financial skills and practices such as saving and budget management, whereas *Money Moves* is a program focused on encouraging use of mobile and online banking applications. Therefore, the improvement caused by *FutureSmart* and *EVERFI* was likely to be the result of increased awareness of the importance of fundamental financial practices and lasted longer, while the improvement caused by *Money Moves* was more likely to be the result of stimulated curiosity of students toward using the apps. Over time however, their interest in using the apps faded away and accordingly, the desirable behaviors boosted by the increased use of the apps, such as more saving and more budget management, returned to their prior levels.

The Year 3 findings also revealed an indirect effect of *Venture* and *Pathway* combined on students' financial behaviors. Based on our analysis, although taking *Venture* and *Pathways* did not directly lead to increased frequency of desirable financial behaviors, they could effectively improve students' financial self-efficacy, which in turn led to increased frequency of desirable financial behaviors among the students. This finding provided a useful insight into financial education program design and goal setting. Consistent with the Planned Behavior Theory, although changes in financial behaviors may be the primary objectives of financial education, educators and course designers should pay no less attention to the fostering of financial self-efficacy among the students, as the attitudinal changes could be an important prerequisite for behavior modification.

In Year 2, the study showed that *Money Moves* effectively encouraged students to have more conversations with their parents on financial topics, and *Marketplaces* might help maintain the effect. The Year 3 analysis showed that the positive effects of the courses in Year 2 faded away during the summer of 2023 when students did not take any courses. The analysis did not find any evidence to show that the *Venture* course had a significant impact on how often students talked with parents about financial topics. One likely explanation for this finding is that unlike *Money Moves*, which covers highly specific and actionable topics (use of mobile and online banking apps), the *Venture* course, though also covering a very specific topic (entrepreneurship), does not introduce any actionable target behaviors students can conduct in the near future and therefore, did not stimulate more conversations between the students and their parents. The proposition that financial education focusing on specific and actionable topics is more effective in encouraging parent-student communication is strengthened by the effect of *Pathways*, a course that teaches students how to finance college education and covering many practical tips on how to identify and secure different sources of funding. During the third year of the study, the frequency of parent-student communication on financial topics decreased among the participants who did not take any course, whereas those who took *Pathways* maintained the same level of communication frequency. Although *Pathways* did not encourage students talk with their parents more frequently, it effectively prevented the communication decline, which is often observed among adolescents.

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