Findings from Year 2

MassMutual Foundation Longitudinal Study of Financial Capability among Adolescents

2022–2023 School Year

MassMutual Foundation | EVERFI from Blackbaud

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Background

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 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 incorporating six of *EVERFI*'s financial capability courses into the curriculum for adolescents so that we can examine the effect of *FutureSmart*

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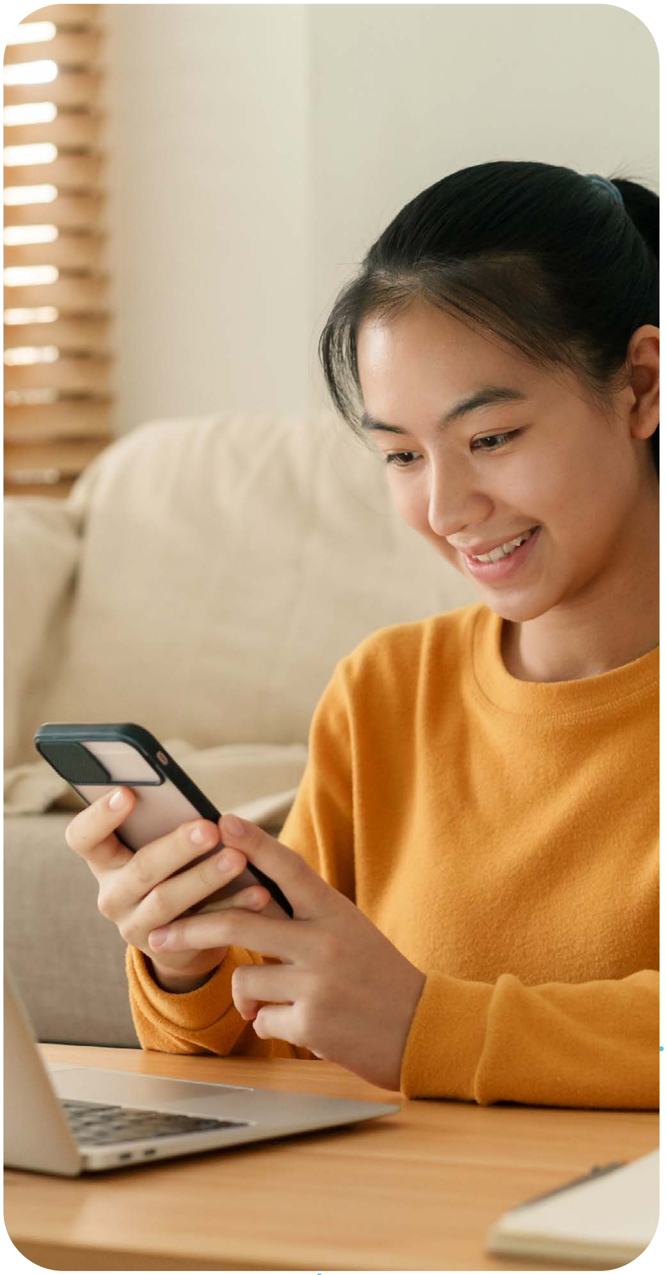
> **(Jin & Chen, 2020)**



alone and the cumulative and combined effects of multiple financial educational programs on students' financial knowledge, attitudes and behaviors. In Year 1 of the study, we examined the effects of *FutureSmart* and *EVERFI*, and the analysis revealed the unique and combined impacts of the courses. The main findings of the Year 1 study are summarized below:

Year 1 Findings

Financial Knowledge

- Both *FutureSmart* and *EVERFI* significantly increased students' financial knowledge.
- If students already took *FutureSmart*, *EVERFI* did not further increase their knowledge.
- The effect of *FutureSmart* faded way one semester after students finished 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.
- The effect of *FutureSmart* still existed one semester after students finished the course.

Financial Behaviors

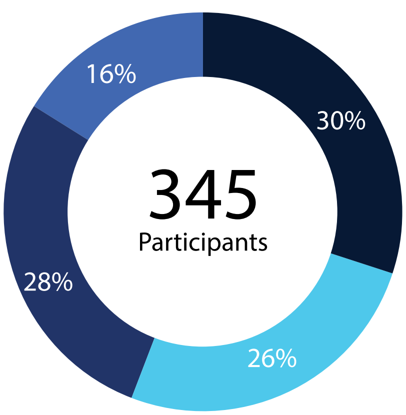
- *FutureSmart* significantly increased the frequency of desirable financial behaviors.
- Although *EVERFI* alone did not improve students' financial behaviors, it helped maintain the positive effect of *FutureSmart*.

Study Procedure and Measurement

Study Procedure

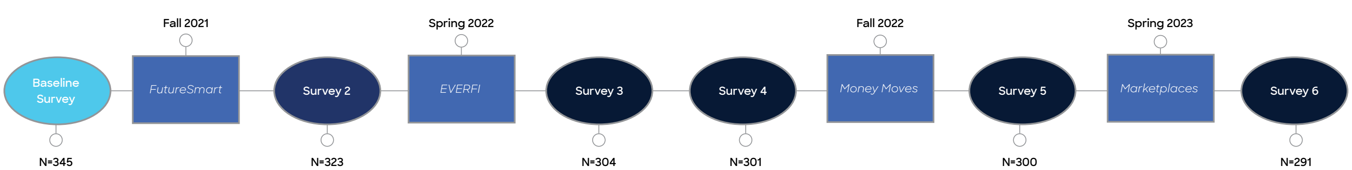
To analyze the long-term effect of *FutureSmart* as well as the cumulative effects of other financial education courses on the participants' financial knowledge, attitudes, and behaviors, each participant was randomly assigned to one of the four condition groups before the study began:

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, 84% 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 growth curve modeling to analyze the effect of the courses on financial knowledge, attitudes and behaviors as compared to natural change over time. Controlling for the effects of parental financial KABs, student demographics and parents' demographics, the growth curve model estimation shows whether there were significant changes in the students' financial KABs after they took the courses. It also reveals whether they achieved better outcomes than those who did not take any courses. This report focuses on the findings from the second year of the study, i.e., the effects of *Money Moves* and *Marketplaces*.

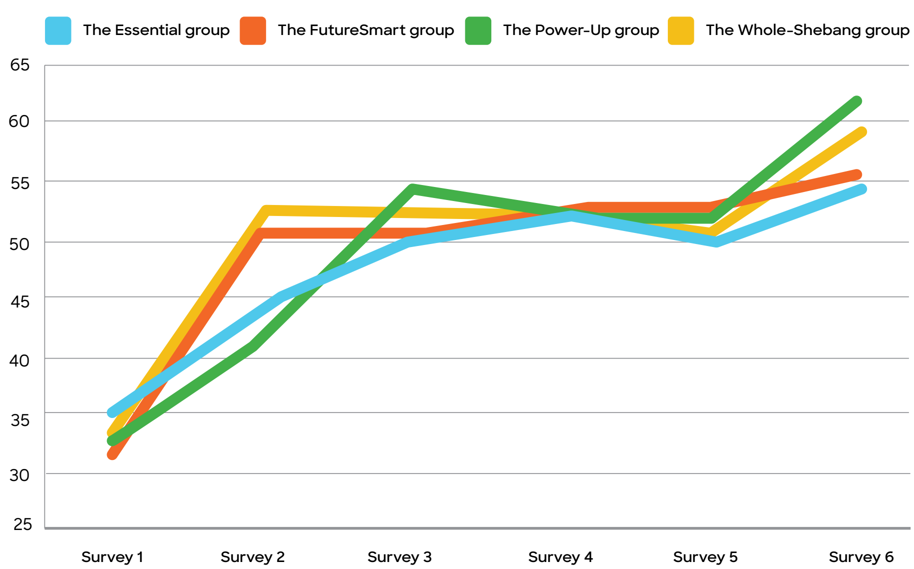
Year 2 Findings

In Year 2 of the study (from Survey 3 to Survey 6), all participants took the third and fourth longitudinal surveys during the summer of 2022 when the students were not assigned any content. Students in the Power-Up and Whole-Shebang groups took the *Money Moves* course in the fall of 2022 and the *Marketplaces* course in the spring of 2023.

Financial Knowledge

During the summer of 2022 (between Surveys 3 and 4), students did not take any financial capability courses. The analysis shows that during this period, the 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 (The Essential group). Given that students who only took *EVERFI* in Year 1 had a significant increase in their financial knowledge (from Survey 2 to Survey 3), the insignificant difference in financial knowledge scores between the students who took *EVERFI* and those in the control group during the summer of 2022 indicates that the positive effect of *EVERFI* on financial knowledge faded away within one semester after they finished the course. The figure below shows the changes in students' financial knowledge over the course of the study.

Figure 1. Financial Knowledge Change Over Time by Group (out of 100)



Students in the Whole-Shebang and the Power-Up groups took *Money Moves* during the fall of 2022 (between Survey 4 and Survey 5). The growth curve analysis shows that during this period, financial knowledge showed no significant change, and the average knowledge scores of those who took the course were not significantly different from that of the control group. This finding suggests that *Money Moves* did not increase the students' financial knowledge. However, it is worth noting that compared to the previous two courses students took, (*FutureSmart* and *EVERFI*) *Money Moves* covers a very specific and narrowly focused topic area: the responsible and safe use of online and mobile banking applications. Given that the financial knowledge test used in this study focuses on more general financial literacy concepts such as investing, income and financial risks, the new knowledge students acquired by taking *Money Moves* might not be fully reflected in our financial knowledge assessment.

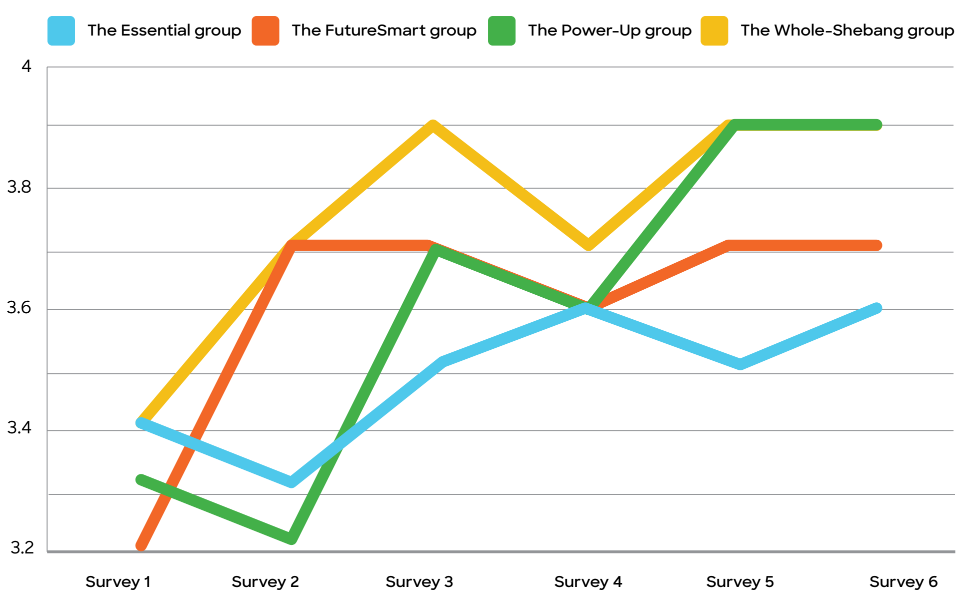
In the spring of 2023, students in the Whole-Shebang and Power-Up groups took the fourth course of the study, *Marketplaces*. The analysis indicates that after taking the course, students' financial knowledge showed a significant improvement, and the average scores of the Whole-Shebang and Power-Up groups were both significantly higher than that of those who did not take any course during the same period. This finding provides strong evidence that *Marketplaces* significantly increased the financial knowledge of students who took the program.

In general, the examination of the participants' financial knowledge changing over time confirms the importance of taking multiple financial educational programs, as opposed to only one. As Figure 1 illustrates, the financial knowledge of students who took only one course (the *FutureSmart* group) followed a change trajectory almost identical to that of students in the control group (after a short-term increase immediately after they finished *FutureSmart*). The findings, so far, do not indicate evidence of sustained effects of any program on students' financial knowledge, as the positive effects of *FutureSmart* and *EVERFI* both faded away within one semester after the students finished the courses. We will conduct another survey in the summer of 2023 and those results will reveal if the positive effect of *Marketplaces* still exists one semester after course completion.

Financial Self-Efficacy

Again, students did not take any course between Surveys 3 and 4. The changes in the participants' financial self-efficacy provided a good illustration of the difference between taking multiple financial educational programs and taking only one program. Students in the FutureSmart and Power-Up groups only took one course before the summer of 2022, and their financial confidence converged to the same level of the students in the control group. This finding indicated that the individual effects of *FutureSmart* and *EVERFI* no longer existed within two semesters after students finished the courses. While the confidence level of the students in the Whole-Shebang group declined between Surveys 3 and 4, it was still significantly higher than that of the students who did not take any course during the same period. In other words, the combined effects of *FutureSmart* and *EVERFI* on students' financial self-efficacy only partially faded.

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



After students in the Whole-Shebang and the Power-Up groups took *Money Moves* in the fall of 2022 (between Surveys 4 and 5), their confidence in their financial skills significantly increased and was significantly higher than that of the control group and the FutureSmart group. This is a strong indication that *Money Moves* effectively improved students' financial self-efficacy.

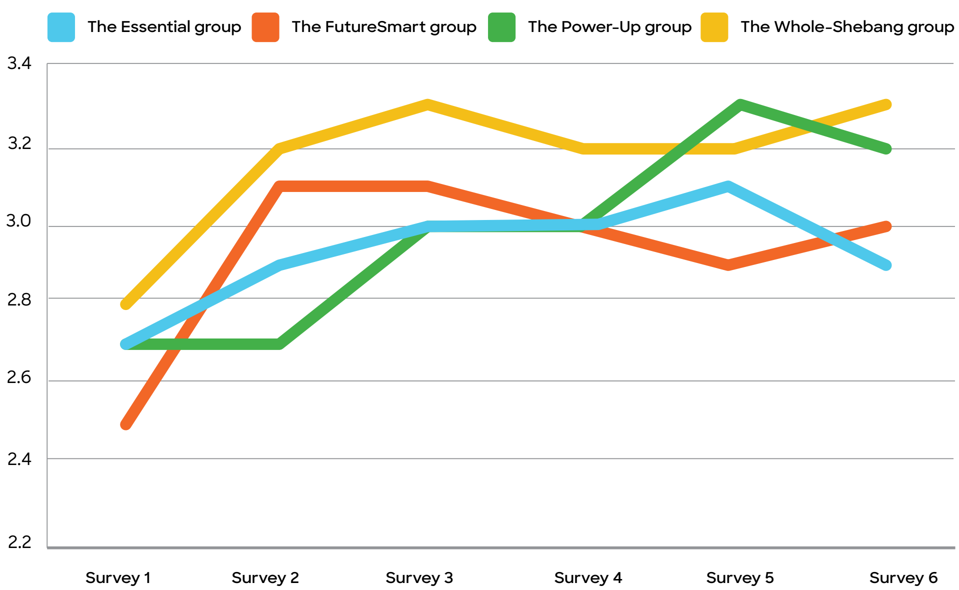
As Figure 2 shows, the confidence of participants in the Whole-Shebang and the Power-Up groups remained unchanged between Surveys 5 and 6, the period when students finished *Marketplaces*. Nevertheless, the average confidence of students in the two treatment groups was still significantly higher than that of the control group and the *FutureSmart* group. There are two possible explanations for this finding. First, it is possible that *Marketplaces*, although not further increasing students' financial self-efficacy, helped maintain the positive effect of *Money Moves*, which may have faded away between Survey 5 and Survey 6. Second, it may show that the effect of *Money Moves* still existed one semester after students finished the course, and *Marketplaces* had no effect at all. To figure out which case is the cause would require another condition group where the students take all courses except *Marketplaces*, which the current study design does not have. Therefore, neither of the two possible explanations can be ruled out.

The analysis also revealed that there might exist a maximum possible improvement that can be achieved in students' financial self-efficacy. Specifically, note that although the confidence of students in the Whole-Shebang group increased after they took their third course, *Money Moves*, it was not higher than the level which they achieved after they had finished the first two courses. For students in the Power-Up group, their financial self-efficacy reached the highest level (3.9 out of 5) after they finished their second course, *Money Moves*, and taking a third course did not further increase it. The participants still have two more courses to take in this study, and we will examine their financial self-efficacy as they finish the last two courses to confirm if such an improvement cap indeed exists.

Financial Behaviors

The change trajectories of the participants' financial behaviors between Surveys 3 and 4 are very similar to the changes in their financial self-efficacy. During the summer of 2022 when students did not take any course, the frequency of desirable financial behaviors of those in the FutureSmart and Power-Up groups converged to the same level of the control group. On the contrary, those in the Whole-Shebang group (who took two courses before the summer) did not have a significant change in their financial behaviors, and at Survey 4, they engaged in healthy financial behaviors much more frequently than the students in the other groups. Therefore, the conclusion can be made that while the effect of a single course on students' financial behaviors completely faded away within one semester after the program, the effect of taking two courses still existed one semester after students finished the programs.

Figure 3. Financial Behavior Change Over Time by Group (frequency of desirable financial behaviors, out of 5)



The effect of *Money Moves* on financial behavior was dependent on how many courses students had already taken. For students in the Power-Up group, who took only one course before *Money Moves*, taking the third course significantly increased how often they engaged in desirable financial behaviors, as shown in Figure 3. For students in the Whole-Shebang group who already finished two courses before *Money Moves*, the third course either helped maintain the effects of the previous two courses or had no further impact at all, as the frequency of the desirable financial behaviors of those students remained unchanged from Survey 4 to 5 but was still significantly higher than that of the control group and the FutureSmart group at Survey 5.

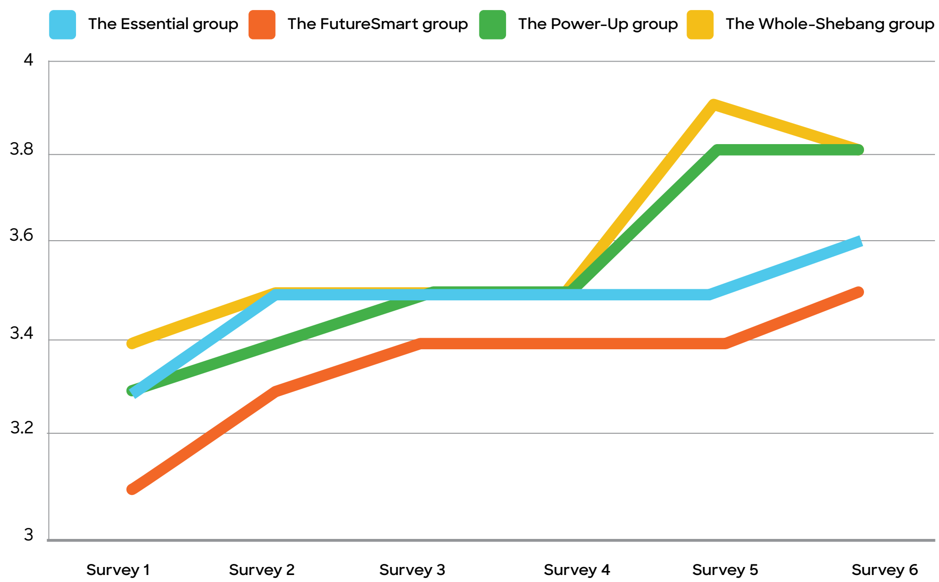
The frequency of desirable financial behaviors did not change significantly between Surveys 5 and 6, when students in the Whole-Shebang and Power-Up groups finished *Marketplaces*, but it was still significantly higher than that of other groups. As explained in the financial self-efficacy section, we cannot ascertain whether this showed the effect of *Money Moves* lasting one semester after students finished the course or *Marketplaces* helping to maintain *Money Moves*' positive effect, which may have disappeared at Survey 6.

The analysis also suggests there could exist a cap on how much improvement could be achieved. Specifically, the frequency of healthy financial behaviors reached its maximum level (3.3 out of 5) after students took two courses (at Survey 3 for students in the Whole-Shebang group and at Survey 5 for students in the Power-Up group) and did not further increase even after students finished the third and the fourth course.

Financial Communication

In Year 1 analysis (from Survey 1 to Survey 3), no significant change was found in how often the students communicated with their parents on financial topics (in any of the treatment groups or the control group). The finding indicated that neither *FutureSmart* or *EVERFI* could effectively encourage students to increase communication with their parents on financial topics.

Figure 4. Communication with Parents on Financial Topics (Frequency of Communications, out of 5)



As Figure 4 illustrates, a remarkable increase in the frequency of parent-student communications on financial topics took place after students finished *Money Moves*, and the frequency was significantly higher than that of the control group and the *FutureSmart* group at both Surveys 5 and 6. This finding suggests that *Money Moves* effectively encouraged students to talk more with their parents about financial topics, and this positive effect either remained one semester after they finished the course or was maintained by the fourth course, *Marketplaces*. Different from *FutureSmart* and *EVERFI*, which cover broader and more basic financial literacy topics, both *Money Moves* and *Marketplaces* focus on specific topics such as the use of mobile banking, how to identify financial fraud and financial investing skills. This difference may have revealed what it takes to encourage more student-parent communications about financial topics: students will be more likely to talk about personal finance with their parents if they have learned specific, actionable financial skills and practices rather than general concepts. This tentative proposition will be further tested as students take the last two courses of the study, both of which focus on specific 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 12 families in our study representing 9 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?"

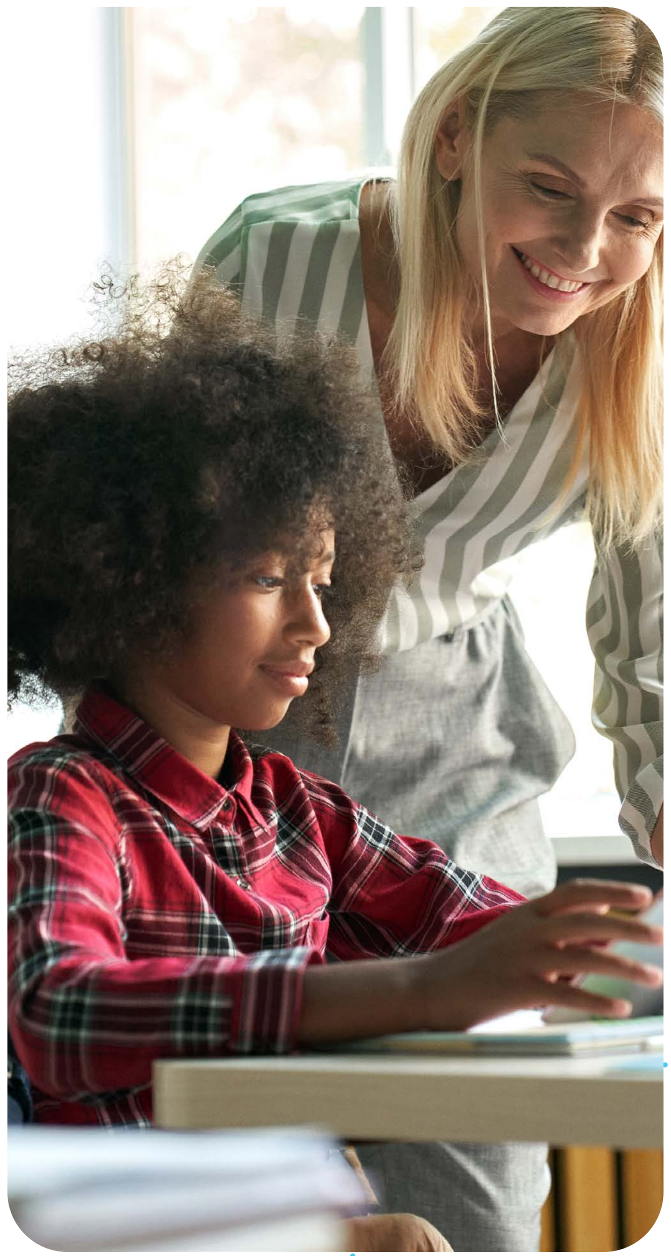
About half of the respondents felt that the content covered a range of easy and difficult topics, while a quarter of students felt all the content was easy and another quarter felt it was all difficult to some degree. For novel concepts, the most popular answers were: Interest rates, starting a business, and tax preparation. About a quarter of 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 quarter 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: "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." Another student reported that they liked how "the course adapts to you and how you learn and answer the questions." Students who had taken a course before liked these aspects of the course along with learning about entrepreneurship and different forms of payment.

"How do you like your first financial education experience? After this course, do you think you need a break or you can't wait to learn more?"

"...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*



For students who had never taken a financial education course before, the responses were 100% positive. They mentioned how much they enjoyed learning about money in an interactive format and felt more confident about their future. Students were pretty much split in whether they could use a break after each course or if they wanted to keep learning more.

Course Effect

"Can you tell me the most useful tips or knowledge you learned from the courses?"

Half of the respondents referenced general topics as their most useful such as spending, saving, or using different payment types. The other half noted more advanced financial behaviors like growing a self-owned business, using interest to grow savings, and investing in the stock market. One student said "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."

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 investing behaviors they planned on engaging in when they were old enough and one student stated that it had not changed their financial behaviors.

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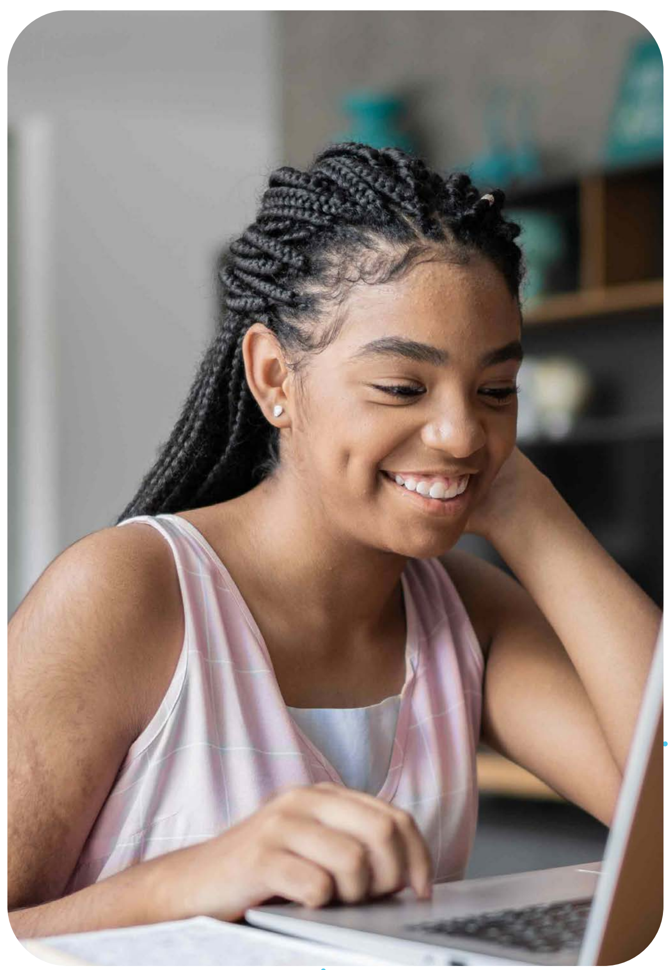
-student, VA



Can you think of any experience that you believe you could have done better if you were equipped with the knowledge you have now?

About a third of our students said they couldn't think of something they would have done differently because they haven't had many financial decisions to make so far in their life, but all the rest made specific references to times when they could have saved money instead of spending it. One student told us: "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."

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Parental Communication:

Who usually starts the conversations with your parents on financial topics?

Half of the students we interviewed told us their parents were more likely to start conversations about financial topics and the other students were split between telling us they started the conversation more often or that it was an equal mix of both.

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

Three-quarters of our respondents said that their last conversation with their parents about financial topics took place within the past week. Almost all 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 stocks and investing, starting employment and about planning for higher education. Most students felt it was difficult to talk about these issues with their parents, but all of those students indicated that taking these courses helped facilitate those conversations.

Conclusion and Discussion

During the second year of the study, students were first surveyed in the summer of 2022, when they were not provided with any educational content. This arrangement enabled us to examine whether the improvement they made in their financial knowledge, attitudes and behaviors in Year 1 was sustained when no intervention was given. In Year 2, students in the Whole-Shebang and Power-Up groups took two more courses, *Money Moves* and *Marketplaces*. The analysis revealed the effects of each individual course and the cumulative impact of multiple courses.

During the summer of 2022 students' financial knowledge test scores in the treatment groups converged to the same level as the control group. This suggests that the positive effect of the previous courses on the students' financial knowledge dissipated. After students finished *Money Moves*, their financial knowledge still did not increase significantly, and it was not significantly different from that of the control group. Noticeably, *Money Moves* covers very specific topics such as the use of online and mobile banking apps and financial fraud while the assessment we used in the study focuses more on general financial literacy concepts such as saving, budgeting, income and interest. Therefore, the specific knowledge students gained from *Money Moves* might not be fully captured by the current knowledge assessments. The significant increase in the students' financial knowledge after they finished *Marketplaces* provides strong evidence that the content difference was a very likely cause, since *Marketplaces* is a program focusing on financial investing and that is covered by many questions in the assessment instrument.

The Year 1 analysis showed that students who took *FutureSmart* or *EVERFI* had a significant improvement in their financial self-efficacy. During the summer of 2022, however, the confidence level of those who took only one course, either *FutureSmart* or *EVERFI*, was no longer different from that of the control group. However, if the students took both *FutureSmart* and *EVERFI* before the summer, their financial self-efficacy remained significantly higher than that of the other groups. This finding provides strong evidence for the importance of taking multiple financial educational programs, as the increase in students' financial self-efficacy generated by a single course could be short-lived. The analysis also showed that *Money Moves* significantly improved the students' financial confidence. Due to a study design limitation, although students' financial self-efficacy remained higher than that of the control group and the FutureSmart group after they finished *Marketplaces*, it is not clear whether this finding suggests that the effect of *Money Moves* remained one semester after students finished the course or that *Marketplaces* helped maintain the positive impact of *Money Moves*.

In the Year 1 analysis, we also found that students' self-reported financial behaviors improved significantly after they took *FutureSmart*. While *EVERFI* alone did not improve the participants' financial behaviors, it helped maintain the positive effect of *FutureSmart*. However, the frequency of desirable financial behaviors of the students who only took *FutureSmart* before was no longer different from that of the control group after the summer of 2022. In contrast, the students who took two courses in Year 1 still reported engaging in healthy financial behaviors much more frequently than other groups did. Thus, similar to the case of financial self-efficacy, to achieve sustainable improvement in financial behaviors, students need to take more than one educational program. The effect of *Money Moves* also depended on how many courses students had previously taken. The financial behaviors would further improve if the students only took one course before, while the frequency of healthy financial behaviors of those who finished two courses remained higher than that of the control group and the *FutureSmart* group but was not further improved.

The examination of changes in students' financial self-efficacy and behaviors revealed that there might be a cap of maximum possible improvement that could be achieved. Specifically, the financial self-efficacy and frequency of desirable financial behaviors both reached peak levels after students finished two courses. Taking a third and fourth course afterwards only helped maintain the effects of the first two courses but did not further improve the participants' financial self-efficacy and behaviors to higher levels. We will confirm if such a cap indeed exists as students continue to engage with the last two courses of the study.

The Year 2 analysis also revealed a possible cause that could explain the lack of improvement in student-parent communications in Year 1 when the participants were assigned to take *FutureSmart* and *EVERFI*. Specifically, students reported to have a sharp increase in how often they talked with parents on financial topics after they finished *Money Moves*. Given that *Money Moves* is quite different from the two courses students took in Year 1 in that it has a narrower focus on very specific topics (mobile banking apps and financial fraud detection), we can make a tentative conclusion that to increase parent-child conversations on financial topics, students must learn about more specific, actionable financial skills and practices as opposed to general financial literacy concepts. This finding will be further tested in Year 3 when students will take the last two courses of the study, both of which cover very specific financial skills and practices that should also stimulate conversations in the home.

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