

Evaluating MoneySKILL[®]

Effects on financial
knowledge and behaviors

Prepared by Dr. Carly Urban

*Professor of Economics, Montana State University
Research Fellow, Institute for Labor Economics*

April 2023



Brought to you by the



**AFSA EDUCATION
FOUNDATION**

Brightening Your Financial Horizon



CONTENTS

Executive Summary	3
1. Introduction	5
2. Background	7
3. Data Construction.....	8
4. Knowledge Gains	11
5. Effects on Behaviors.....	14
6. Discussion.....	16
References	17



Executive Summary

The importance of financial education in the development of young adults' financial independence remains important. Fifteen states now have policies that require a full semester of personal finance prior to high school graduation, and seven of those states have not fully implemented their requirements yet.¹ This leaves many states considering which curricula will best fit their student bodies. In making these decisions, evaluation serves an important role in determining the long-run benefits of specific curricula.

The evaluation in this report updates a 2021 evaluation of the Money SKILL curriculum –a free-for-users, fully-online financial education curriculum for middle school, high school, or college users developed by the AFSA Education Foundation. The MoneySKILL platform has collected data beginning in 2014. The 2021 evaluation found that the MoneySKILL curriculum was associated with an increase in financial knowledge for all levels of students, a short-run improvement in applications for the Free Application for Federal Student Aid (FAFSA), and a long-run improvement in having a bank account for the 2014-2019 data. However, the COVID-19 Pandemic's disruption to schools across the country could have vastly disrupted the impact of MoneySKILL.

This report seeks to understand how the effectiveness of MoneySKILL persisted through the pandemic. In addition, it adds to the previous report by investigating for whom the curriculum is most effective. The findings are as follows:

DEMAND

Areas using MoneySKILL and not using MoneySKILL are very similar across economic and demographic characteristics, suggesting that educators select the curriculum for a diverse set of students.

KNOWLEDGE

When comparing U.S. pre- and post-tests from 102,279 students from 2014-2022, improvements in financial knowledge are 65% on average, or 1.5 standard deviations. These improvements are similar in magnitude across all settings of instruction: middle school, high school, and college. The knowledge gains are not concentrated among a small fraction of students: about 90% of students see improvements in financial knowledge. These knowledge gains remained consistent after the start of the pandemic for all levels of instruction.

¹For more on the current state of personal finance legislation, see <https://www.ngpf.org/state-of-fin-ed-report-2021-2022/>.



BEHAVIORS

MoneySKILL continues to improve FAFSA completions, even after including data for 2020 during COVID-19. The magnitudes of the effects are not statistically different from the 2021 evaluation.

WHO BENEFITS

The effect of MoneySKILL on FAFSA completions is higher in areas with more students in poverty, as measured by the fraction of students receiving free or reduced-price lunch. The effects are also larger in schools that are located in rural areas or cities, when compared to schools in suburbs. There are not large differences in the effectiveness of the curriculum by race and ethnicity, suggesting that the benefits accrue to all students.

MoneySKILL remains a strong option for teachers incorporating personal finance into coursework, as well as homeschooling parents.



1. Introduction

While financial distress was common during the Great Recession, the COVID-19 pandemic highlighted the importance of being prepared for a completely unanticipated shock. While making the importance of financial preparedness salient, the pandemic also disrupted regular schooling for students across the nation. Research continues to document the effectiveness of financial education interventions (Kaiser et al., 2022). One of the most effective domains for financial education is schools (Kaiser and Menkhoff, 2020). With 15 states requiring a semester-long course in personal finance prior to high school graduation and research consistently showing that personal finance graduation requirements improve credit and debt behavior (Harvey, 2019; Urban et al., 2020; Stoddard and Urban, 2020; Brown et al., 2016; Mangrum, 2022), understanding which specific curricula are effective at improving behaviors and for whom remains important. This report evaluates one of these curricula: the widely available free of charge, MoneySKILL, developed by the AFSA Education Foundation.

A first evaluation of the MoneySKILL curriculum was conducted in 2021, based on data from January 2014 through August 2020. The findings were threefold. First, a comparison of pre- and post- tests shows clear and sizable knowledge gains for nearly all students who participated in MoneySKILL. These knowledge gains are apparent in all settings: middle school, high school, and college. Second, an analysis of high school MoneySKILL participation suggests that the curriculum improved short-run financial behaviors. Schools that adopted MoneySKILL had a higher number of applications for the Free Application for Federal Student Aid (FAFSA), when compared to schools that do not have MoneySKILL and within the same school district before the MoneySKILL curriculum was adopted. Adopting MoneySKILL led to two more FAFSA completions in that year. Third, using data from middle school MoneySKILL participation at the state level, states with increased participation also exhibited an increase in the likelihood that teens had bank accounts while in high school.

The purpose of this evaluation is to first extend the findings on knowledge gains and FAFSA completions for two additional years of data. This provides evidence on the sustainability of the MoneySKILL curriculum throughout the pandemic. Second, this report will determine for whom MoneySKILL is most popular, as well as for whom MoneySKILL is most effective.

¹. This is from the author's own calculation of data from the Federal Reserve Board's Survey of Household Economic Decision-making (2020).



There are four clear takeaways in this report. First, demand for MoneySKILL is not specific to student characteristics or geography. Areas with and without MoneySKILL are similar in terms of racial and ethnic composition, as well as poverty rates; areas with MoneySKILL are distributed across the country geographically. This evidence suggests that teachers serving all different types of students are choosing MoneySKILL to meet the needs of diverse students.

Second, students completing MoneySKILL continued to have increases in financial knowledge of similar magnitudes both before and after the pandemic, despite disruptions in schooling.

Third, MoneySKILL continued to improve FAFSA completions after the start of the pandemic, with similar effect sizes as in the previous study.

Fourth, the effects were largest for schools with higher rates of free and reduced-price lunch (FRPL)—a common proxy for poverty. This suggests that MoneySKILL helped more vulnerable students at higher rates. At the same time, there were not measurable differences in the effect sizes by racial and ethnic composition of the school, suggesting that MoneySKILL is lifting up all groups.



2. Background

MoneySKILL is an online personal finance curriculum designed for either a middle school or high school and college population.² The content contains 37 modules for the high school and college population that range from financial planning, income volatility and life-cycle models, specific financial accounts, debt, savings, fraud, credit, health insurance, student loans, and a variety of other specific financial topics.³ A subset (12) of these modules are recommended as appropriate for the middle school population. The AFSA Education Foundation also offers MoneySKILL courses to nonprofits, businesses, and other organizations for use in adult education; however, those settings are not a part of this evaluation.

The curriculum is highly customizable, where teachers can decide which modules are most important to their specific students. For example, a high school class with a high fraction of students who will be applying to college may use the unit on student loans, whereas a class within a career and technical education program may focus on earned income and skill demand, as this population may begin earning sooner. Similarly, a high school class in an inner-city where public transit is common may choose not to cover the module on vehicle financing, but a rural high school class may find that topic valuable. Since a one-size-fits-all approach does not accommodate the heterogeneous backgrounds of students when delivering financial education, the MoneySKILL curriculum allows instructors to be flexible.

Another advantage of the customizable curriculum comes from the differences in what states require of high school students when it comes to personal finance. In some states, students are required to complete a standalone personal finance course prior to graduation. In other states, personal finance content must be incorporated into another required course, such as Economics, or as standards in a broader curriculum, such as Social Studies.

Other states still have no requirement, but individual schools still require personal finance content to be offered or completed in some ways. MoneySKILL gives teachers an excellent curriculum that can be molded to any of these policy demands.

Though the MoneySKILL curriculum was first developed in 2002, it has been updated regularly to remain relevant to a constantly-evolving financial world. The data on MoneySKILL participation started to be collected in 2014. The time frame between January 2014 and July 2022 will be the focus of the remainder of the report.

² For more on the MoneySKILL curriculum see <https://afsaef.org/MoneySKILL/About>.

³ For a full list of the modules, see <https://afsaef.org/MoneySKILL/About/Course-Content>.



3. Data Construction

I begin with two datasets provided directly from MoneySKILL. First, I use a dataset of deidentified individual-level test scores to complete a pre-post analysis. Importantly, these data contain pre-test and post-test scores for all students who initiated the curriculum. To protect the identity of students, all data has been scrubbed of identifying information. The student-level data include: a unique but randomly-generated ID, the grade level (middle school, high school, middle school students who took a subset of the high school curricula, and college), the month and year the exam was completed, a pre-test score, a post-test score, the modules completed, and the scores for each of the modules' exams.

If MoneySKILL instructors enable pre- and post-test exams, students are required to complete a pre-test benchmark exam and a post-test exam to measure changes in financial knowledge following the completion of a MoneySKILL course. Pre-test benchmark exams are administered before students begin their MoneySKILL course. The exam questions are automatically generated to include one topical question per MoneySKILL course module. For example, if a student is enrolled in a MoneySKILL course with 10 modules, their pre-test exam will include 10 questions each addressing one of the 10 topics in their course. Post-test exams are administered after students complete their MoneySKILL course. Similar to the pre-test exam, the exam questions are automatically generated to include one topical question per module covered in the students' MoneySKILL course.

While MoneySKILL was first developed in 2002, comprehensive data were collected beginning in 2014. The final sample includes 102,279 students from 2014–2022. This final sample for analysis purposes includes only the students who took the pre-test and also completed the post-test.

Second, I use a dataset of total starts of MoneySKILL identified as having started a pre-test at the ZIP code level.⁴ These aggregate tallies allow students to remain anonymous. I merge the ZIP-code level MoneySKILL participation data to FAFSA completions from academic years 2014–2015 through 2020–2021 (henceforth, the FAFSA results will be referred to as the Spring terms, 2015–2021). I do this by downloading the database of high schools in the U.S. Department of Education's NCES data and matching ZIP codes to schools. Those ZIP codes that do not match to any high schools are assumed to have no MoneySKILL participants in that year. ZIP codes that match to multiple schools are all assigned the MoneySKILL participants for that ZIP code, which would attenuate any effects. I then downloaded the FAFSA data directly from NCES and constructed a measure of cumulative FAFSA applications from January through the end of May of the given academic year for each school.⁵ I performed a fuzzy match of school names

⁴ The results remain similar if I instead look at those who logged in at some point, which is a greater number since not all users complete a pre- or post-test.

⁵ The data can be obtained here: <https://studentaid.gov/data-center/student/application-volume/afsa-completion-data>.



from the FAFSA data to the NCES data, where 94% of observations had matches. I use the NCES indicator for a school district (LEAID) in order to make within-school district comparisons throughout the analysis. The final sample includes 2,714 “treatment” high schools that adopted MoneySKILL at some point and 12,971 “control” high schools that never had MoneySKILL from 2015-2021; across all years, this amounts to 89,275 observations in total.

I merge in additional level on school-level characteristics from the Stanford Educational Data Archive (SEDA) on the fraction of students who are non-Hispanic white, non-Hispanic Black, and Hispanic; the fraction of students who receive free or reduced-price lunch, a common proxy for poverty; the fraction of families with a bachelors degree or more; and the geography of the school (city, suburb, or rural town). With the exception of geography, I transform each of these characteristics into above or below median in order to depict the effect of MoneySKILL existence in a school on FAFSA completions by subgroup.

3.1 Where is MoneySKILL?

Using the ZIP code-level data allows for comparisons of areas with and without MoneySKILL. Figure 1 shows the counties that have MoneySKILL participation from 2014- 2022 for the middle school, high school, and college curricula. MoneySKILL is widespread across the country geographically.

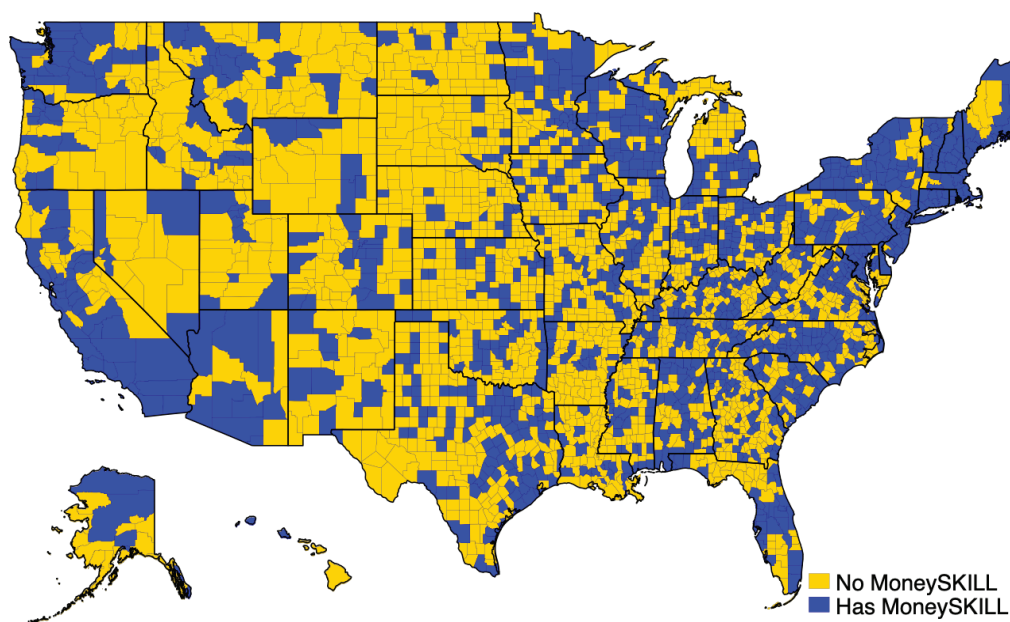




Table 1 then compares school characteristics of ZIP codes with and without MoneySKILL participation. On average, there is no substantive difference in areas that do and do not adopt MoneySKILL based on the fraction of students identifying as Asian, Hispanic, Black, or white; the fraction of students receiving free or reduced-price lunch; the educational attainment of adults in the area; the school enrollment levels. MoneySKILL is a little less prevalent in rural areas than in suburbs or cities. This suggests that MoneySKILL is not only serving certain student body characteristic and has more broad appeal.

TABLE 1: COMPARING AREAS WITH AND WITHOUT MONEYSKILL

	No MoneySKILL	MoneySKILL	All
% Asian Students	0.03 (0.06)	0.04 (0.06)	0.03 (0.06)
% Hispanic Students	0.17 (0.22)	0.17 (0.21)	0.17 (0.22)
% Black Students	0.12 (0.19)	0.16 (0.21)	0.13 (0.19)
% White Students	0.65 (0.31)	0.62 (0.30)	0.65 (0.31)
Number of Students	1963.78 (5532.47)	2103.03 (4789.96)	1972.29 (5490.02)
% Free and Reduced-Price Lunch	0.52 (0.22)	0.49 (0.21)	0.51 (0.22)
BA or more Education	0.25 (0.13)	0.27 (0.13)	0.25 (0.13)
City	0.19 (0.39)	0.21 (0.41)	0.19 (0.39)
Rural	0.56 (0.50)	0.36 (0.48)	0.55 (0.50)
Suburb	0.25 (0.43)	0.27 (0.44)	0.25 (0.43)
Observations	77031	5018	82049

Notes: Means reported with standard deviations in parentheses. The first columns are areas without MoneySKILL participation, the second column are areas with MoneySKILL participation, and the third column represents all areas. Each observation is a ZIP code for a given year. Student-characteristic data are at the school-level. Educational attainment and poverty rate are at the county-level.



4. Knowledge Gains

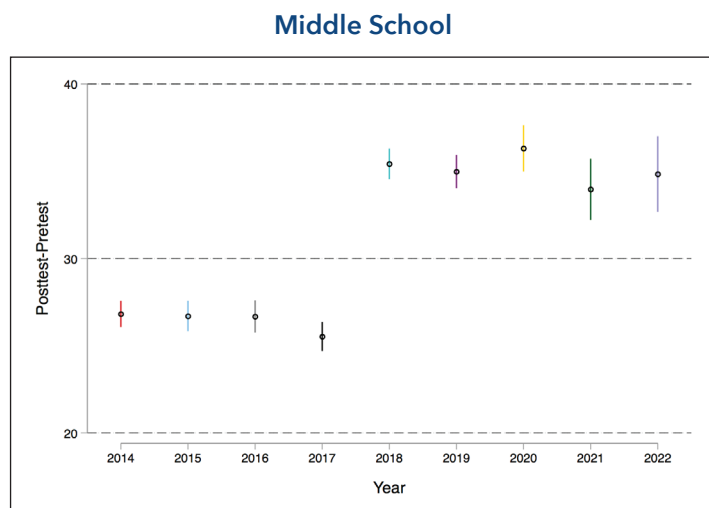
When comparing U.S. pre- and post-tests from 102,279 students from 2014-2022, improvements in financial knowledge are 65% on average, or 1.5 standard deviations. These improvements are similar in magnitude across all settings of instruction: middle school, high school, and college.

Figure 2 shows the knowledge improvements by year. The jump in middle school knowledge improvements happened in 2018, when the curriculum switched from a middle school-only curriculum to using part of the high school modules for middle school students.

Across all three grade levels, pre-pandemic knowledge improvements did not measurably differ from post-pandemic knowledge improvements. This suggests that despite school-based disruptions, students completing MoneySKILL learned similar amounts. The continuity of knowledge could be due to the fact that MoneySKILL was designed to be an online platform long before the onset of the COVID-19 pandemic.

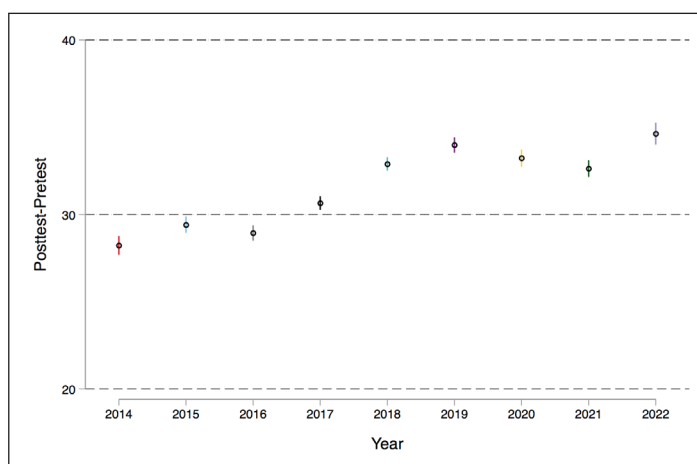
The documented knowledge gains are not concentrated among a small fraction of students: about 90% of students see improvements in financial knowledge. Figure 3 shows the gains in knowledge by student in a histogram. Very few students do worse on the post-test than the pre-test, and the vast majority of students who experience no change in score scored a 100 percent on the pre-test. Taken together, these findings suggest that MoneySKILL effectively teaches students personal finance content to both the average student, as well as the majority of students.

FIGURE 2: MoneySKILL Associated with Improvements in Financial Knowledge by Year

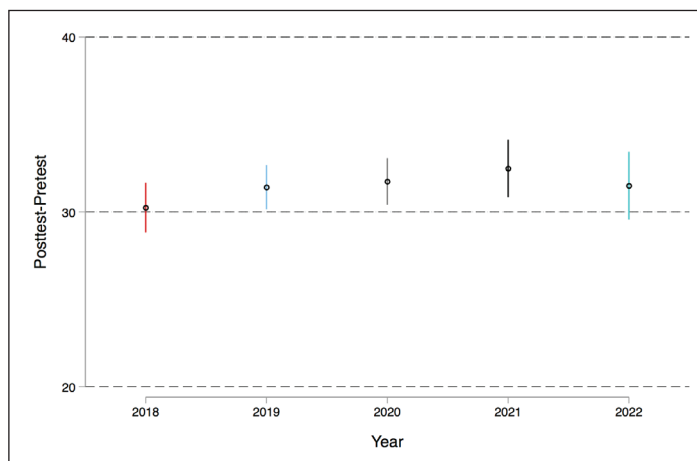




High School



College

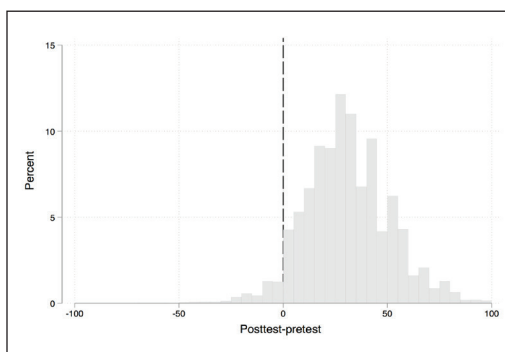


Notes: Each circle in this figure is the difference between pre- and post-tests within individual with 95% confidence intervals depicted. The exams are graded from 0 to 100. The AFSA Education Foundation did not begin tracking College data until 2018.

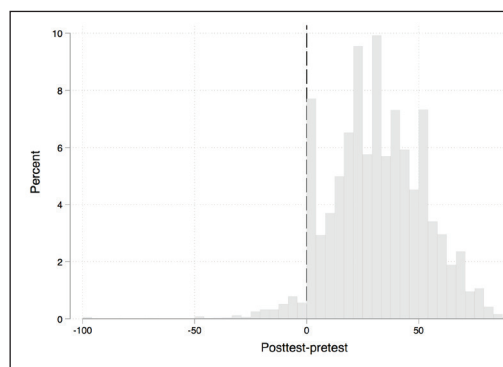


FIGURE 3: MONEYSKILL IMPROVES FINANCIAL KNOWLEDGE FOR NEARLY ALL STUDENTS

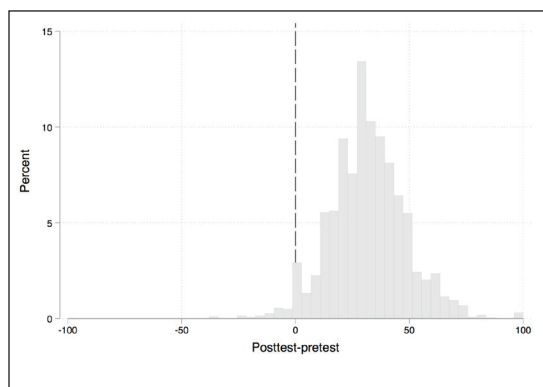
Middle School



High School



College



Notes: These data span 2014–2022 for the middle and high school samples and 2018–2022 for the college sample. The histograms depict the gains in financial knowledge at the student-level (post-test minus pre-test). The exams are graded from 0 to 100.



5. Effects on Behaviors

To determine the causal effects of MoneySKILL on short-run financial behaviors, I use the ZIP code level aggregate participation in high school MoneySKILL and administrative data that contains FAFSA application completions at the school level.

TABLE 2: High School MoneySKILL Participation Increases FAFSA Completions

	(1)	(2)	(3)	(4)
	Number of FAFSA Applications Completed			
Has MoneySKILL	2.158*	2.158*		
	(1.292)	(1.282)		
MoneySKILL Participants			0.0391***	0.0397***
			(0.0179)	(0.0176)
Observations	88,038	88,038	88,038	88,038
Includes State Fixed Effects	YES	NO	YES	NO
Includes Year Fixed Effects	YES	NO	YES	NO
Includes State-by-Year Fixed Effects	NO	YES	NO	YES
Includes School District Fixed Effects	YES	YES	YES	YES

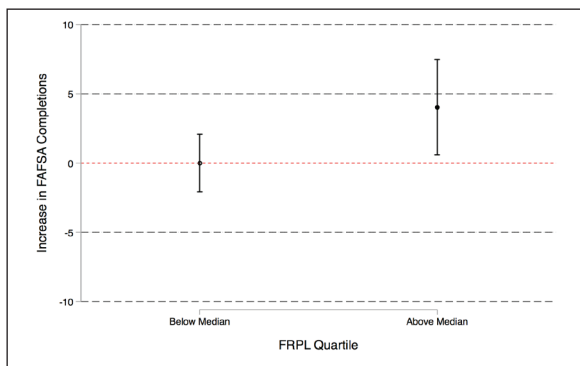
Notes: Robust standard errors clustered at the school-level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Columns (1) and (3) include school district fixed effects, year fixed effects, and control for enrollment at the school-by-year level. Columns (2) and (4) include school district fixed effects, state-by-year fixed effects, and control for enrollment at the school-by-year level. Pre-tests are the number of MoneySKILL pre-tests completed in that year. Has MoneySKILL equals 1 if the school had any MoneySKILL participants that year and zero otherwise. Enrollment is the number of students enrolled in the high school that year from NCES. FAFSA is the number of FAFSA applications completed from the given school for the given year. FAFSA data are from 2015-2020 and come from NCES. MoneySKILL participation data comes from the AFSA Education Foundation. Mean FAFSA completions are 109.5. Mean MoneySKILL participation is 2.45 unconditional on enrollment and 33.5 conditional on enrollment.

Table 2 shows that MoneySKILL continues to affect FAFSA completions, even when including updated data during COVID-19. The magnitudes of the coefficients were slightly smaller than in the 2021 report, but the magnitude is not statistically different. Further, the average rate of FAFSA completions decreased for the control group during 2020, so the relative magnitude of the effect of MoneySKILL on FAFSA remained nearly identical. Since many students think they are not eligible for federal aid when they are (McKinney and Novak, 2015) and millions of students who would have qualified for federal Pell Grants never applied (Kantrowitz, 2009), the curriculum seems to be filling information gaps for these students. While an increase in FAFSA applications is a short-run behavior, it could easily have long-run consequences. For example, Mangrum (2022) shows that financial education requirements increase student loan repayment nearly a decade later. To the extent that improved postsecondary financing decisions subsequently improve young adults' finances, these effects can persist for years to come and set young adults up for stronger financial futures.

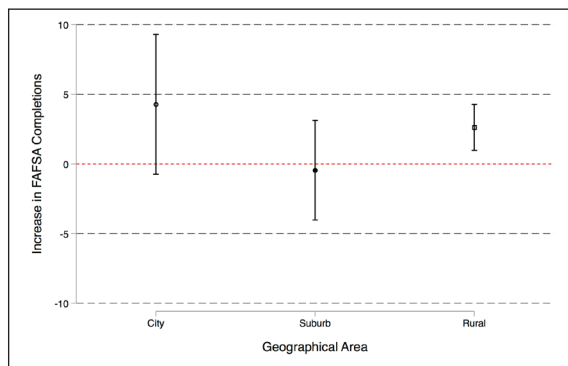


FIGURE 4: FAFSA Results by Education, Poverty, and Geography

By Free and Reduced-Price Lunch



By Geography



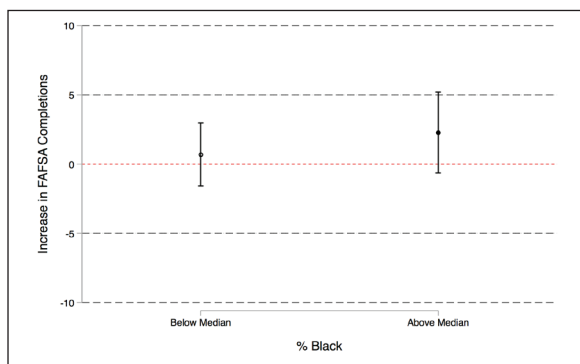
Notes: Results are the effect of MoneySKILL existence in the school's area on FAFSA completions. The median FRPL rate is 48%.

Figure 4 shows the effect of MoneySKILL on FAFSA completion by demographic group. I find that the effect is largest for higher poverty schools, measured by schools with an above median proportion of free and reduced-price lunch (FRPL); this translates to over 48% of students receiving FRPL. There is no effect for the lower poverty schools, where FAFSA completions were likely higher to start.

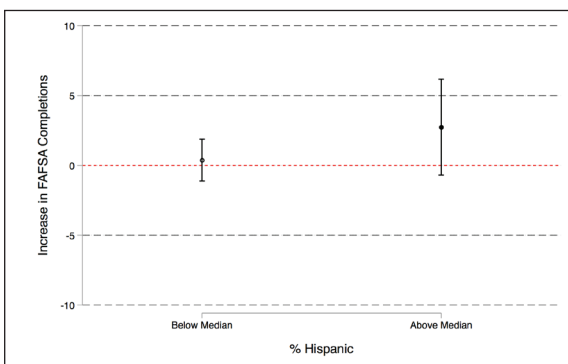
This figure further documents a larger effect in rural areas, where there may be more barriers to completing the FAFSA. The effects by race and ethnicity are not statistically different across groups, with positive (but noisy) effects for all demographic compositions (Figure 5). The effects are slightly larger for schools with an above median proportion of Black students and Hispanic students. However, these are not statistically different from the effects on average and should not be over-interpreted. I instead take this as evidence that MoneySKILL is not leaving some groups behind.

FIGURE 5: FAFSA Results by Race/Ethnicity

By Fraction of Black Students



By Fraction of Hispanic Students





6. Discussion

Despite the COVID-19 pandemic's disruption to schools, MoneySKILL remained impactful for students. The demand for MoneySKILL is similar across demographic areas, suggesting that it is not only certain types of students for whom teachers select the curriculum. Knowledge gains remained consistent through the pandemic, and short-run behaviors continued to improve. Further, the short-run gains were largest among those from areas with higher poverty, suggesting MoneySKILL has a higher return for students from more vulnerable households. There were not measurable differences in the effects of the curriculum by area race or ethnicity, suggesting that MoneySKILL may be well-suited for a diverse composition of students.

Continued evaluation should assess longer-run impacts of MoneySKILL curricula on financial behaviors, particularly to see if students who were affected by the pandemic had better (or worse) long-term outcomes after being exposed to MoneySKILL.



References

- Brown, Meta, John Grigsby, Wilbert van der Klaauw, Jaya Wen, and Basit Zafar.** 2016. "Financial Education and the Debt Behavior of the Young." *Review of Financial Studies*, 29(9).
- Harvey, Melody.** 2019. "Impact of Financial Education Mandates on Younger Consumers? Use of Alternative Financial Services." *Journal of Consumer Affairs*, 53: 731-769.
- Kaiser, Tim, and Lukas Menkhoff.** 2020. "Financial education in schools: A metaanalysis of experimental studies." *Economics of Education Review*, 78: 101930.
- Kaiser, Tim, Annamaria Lusardi, Lukas Menkhoff, and Carly J Urban.** 2022. "Financial education affects financial knowledge and downstream behaviors." *Journal of Financial Economics*.
- Kantrowitz, Mark.** 2009. "Student Aid Policy Analysis: Analysis of Why Some Students Do Not Apply for Financial Aid." *Research in Higher Education*, April.
- Mangrum, Daniel.** 2022. "Personal Finance Education Mandates and Student Loan Repayment." *Journal of Financial Economics*.
- McKinney, Lyle, and Heather Novak.** 2015. "FAFSA Filing Among First-Year College Students: Who Files on Time, Who Doesn't, and Why Does it Matter?" *Research in Higher Education*, 56: 1-28.
- Stoddard, Christiana, and Carly Urban.** 2020. "The Effects of State-Mandated Financial Education on College Financing Behaviors." *Journal of Money, Credit, and Banking*.
- Urban, Carly, Maximilian D. Schmeiser, J. Michael Collins, and Alexandra Brown.** 2020. "The effects of high school personal financial education policies on financial behavior." *Economics of Education Review*.

The AFSA Education Foundation was founded as a nonprofit in 1990 with the mission to educate consumers of all ages on personal finance concepts and responsible money management. For more than 30 years, the foundation has been dedicated to providing free personal finance education, resources, and training to educators of all types from schools to the workplace.

In support of its mission, the foundation developed MoneySKILL® in 2002 as one of the first online personal finance curriculums. MoneySKILL is designed to allow instructors to create custom, web-based personal finance courses primarily for middle school, high school, and college students and consists of 37 different topic areas focusing on a broad range of money management fundamentals. In addition to being completely free with no commercial advertisements for all educators, MoneySKILL is offered in English and Spanish, contains audio dictation options, and aligns with nationally recognized personal finance standards.

To learn more about MoneySKILL and sign up today, visit www.moneyskill.org or contact the foundation at info@moneyskill.org.

AFSA Education Foundation
1750 H Street Northwest, Suite 650
Washington, DC 20006
www.afsaef.org



Brought to you by the



**AFSA EDUCATION
FOUNDATION**

Brightening Your Financial Horizon