



Knology

A New History of Investment in

Financial Education across the United States

February 9, 2021

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Executive Summary

Investment in financial education across the U.S. varies from state to state. Besides the resources spent by states on classes for students in middle through high school, there is investment coming from the nonprofit sector. These organizations run out-of-school programs, develop education products, and provide teacher professional development programs. To date, few studies have assessed the impact of this investment in financial education on individual outcomes. Part of the challenge is that public records on financial education that people are exposed to, and data on people's financial behaviors come from different sources. The project called A New History of Investment in Financial Education across the United States addressed this gap by assembling data on students' exposure to relevant academic content standards, as well as nonprofits' program service expenses.

This research is the product of Knology, with support from the National Endowment for Financial Education® (NEFE), which began in 2018. The initial research plan focused on understanding the return on investment of state mandates for financial education by looking at individual economic security outcomes captured in the national Survey of Household Economics and Decisionmaking (SHED), with an eye towards improving policy. That remained true throughout the project, and we expanded the scope to include information on nonprofit spending and activities related to financial education. This made sense given that a report from the Consumer Finance Protection Bureau showed that nonprofit organizations make substantial investments in financial education in some states.

Research Goals

The overarching research question for the study was to identify the impact of greater spending on youth financial education for low- and moderate-income U.S. residents. Today, various states have financial education requirements for high school graduation, but what was lacking was data on historical spending on financial education by state and year. One of our first steps was to try to fill this gap going back roughly two decades. We looked at financial education activities from state requirements and academic standards which students would be exposed to, as well as those from financial education nonprofits. We performed internet searches and reviewed state board of education websites and other online resources to understand existing state requirements and mandates as well as graduation requirements for each state. We supplemented this with two historical compilations of data on nonprofits' spending on financial education. First, focusing on a single organization, we gathered program service expenses and other data for Council for Economic Education state councils using IRS 990 Forms databases. The national office of the Council for Economic Education also generously supported this effort. Second, zooming out, we gathered total expenses by financial education nonprofits using data from the National Center for Charitable Statistics. After we finished gathering the data, we connected this information to outcomes reported in the SHED survey.

The Database

One of the major products that has emerged from our work is a new, robust research database that features information on financial education dating back to 2001. Locating the data needed for our analysis proved one of the more challenging aspects of the project, with some states showing large gaps in their public records. We made adjustments to our study based on these issues that allowed us to answer the research question we had originally asked, but this challenge highlighted the importance of the work we did. As states and nonprofits invest in financial education, measuring the impact of their work is crucial for making decisions about future investments and programming. The database was one of the key components of our study. The second were the responses submitted by thousands of individuals who completed the SHED survey in the last seven years.

Findings & Implications

The data shows that states sharply increased financial education for students after the Great Recession of the early 21st century. Overall, our analysis showed modest connections in several outcome areas, where “connections” indicates that we can identify relationships between trends but not causation. Among them, we found that increases in spending on financial education per student in public schools is associated with a small, yet positive change in people’s assessments of their own financial health. Increased financial education mandates for public schools is also linked to a decrease in financial fragility. This means that people are more likely to be able to cover emergency expenses. However, we did not find that financial education is associated with people’s ability to afford routine healthcare. And surprisingly, the data showed that increasing spending by financial education nonprofits is connected to a lower likelihood to have retirement savings accounts. This may mean that nonprofits are reacting to, rather than causing, these behaviors. Lastly, different analytical tools suggest that the story is more complicated than these general trends. For example, there are specific thresholds of spending by financial education nonprofits -- relating to total expenses or program service expenses -- that are associated with especially good or especially bad retirement savings or financial fragility outcomes.

These findings have implications for policy makers and state boards of education, nonprofit organizations, researchers interested in studying financial education, and journalists covering this area. Financial education coursework seems to be helpful in encouraging people to adopt healthier financial behaviors, but states still need to implement economic policies that address persistent, fundamental issues such as access to healthcare and jobs. For their part, nonprofits’ investment in financial education seems to be an important complement to public schools’ coursework. Our analysis suggests that there may be room for these organizations to expand their investment and increase their impact. Crucial to accomplishing that goal will be collecting data on the groups that have benefitted from nonprofit-led efforts, including both students and educators. Lastly, researchers now have access to clean baseline data and other resources from which they can begin to perform more detailed analysis of spending on financial education.

In working on this study, we relied on recommendations and input from various organizations and partners. This included the Council for Economic Education and its various state-level affiliates, the Jump\$tart Coalition for Personal Financial Literacy, and a handful of

advisors from academia and the nonprofit world with relevant expertise. Their insights were valuable in shaping the research direction as well as pointing us to resources that we may not otherwise have used.

Products & Resources

With this project, we produced a suite of resources for policy makers and state education board members, researchers, and educators. It is our hope that this research serves as a catalyst for conversation about financial education spending in ways that improve policy and foster meaningful change. We will be releasing these resources over the course of 2021. To stay up to date on these announcements, you can sign up for our monthly newsletters [here](#).

The Project Report - This publication tells the story of this project, from beginning to end. It describes the groups and individuals who contributed to the project, our methods for building the database, how we used the database for research, and the lessons we learned throughout the process.

The SHED Crosswalk - This resource offers a comparison of the Survey of Household Economics and Decisionmaking questions and response categories for each year from 2013 to 2020. The SHED is a valuable public dataset and the crosswalk tool can help users ensure their analysis of the data is accurate.

Financial Education Mapping Tool - This tool offers maps that represent changes in financial education investments and financial health outcomes from 2001 to 2019. Designed as a Shiny app, the interactive Mapping Tool enables users to manipulate variables such as types of financial education investment and types of financial health indicator, as well as compare data across states and years.

Database & R Package - This is the database of historical investment in financial education and financial health outcomes for residents across the United States. This complete database is open access and is offered in .CSV format and as an R package titled *KnologyFinEdSpending*.

Behind the Research: The Big Picture - This article is one of a pair of stories that give a view into our process of designing a complex research process. We explore the questions that inspired our work and how we navigated unexpected intricacies of working with these types of financial education data.

Behind the Research: Defining the Terms & Gaps - This is the second article that offers deeper insight into our research process. This story illustrates our experience of encountering gaps in our data sources and how we adapted our approach to fill in the missing pieces of financial education information.

Peer Review Paper - We anticipate our analysis of the database and findings will be published in 2021.



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Introduction

History of the Project

The National Endowment for Financial Education (NEFE) champions effective financial education. They are the independent, centralizing voice providing leadership, research and collaboration to advance financial well-being (National Endowment for Financial Education, 2020a). While the organization took its current form in 1997, the roots of NEFE's leadership in financial education research and practice reach to 1984 (National Endowment for Financial Education, 2020b). One component of the organization is the NEFE Research Funding Program. NEFE offers calls for proposals, welcoming original research questions and replication studies that align with NEFE's funding priorities: 1) Measurement; 2) Systemic Inequality; 3) Data and Methodological Limitations; and 4) Youth. Since 2010, NEFE has funded over 30 completed or ongoing research projects in the financial education field.

In 2018, NEFE's Research Funding program tendered a request for Letters of Interest (LOI). Knology submitted an LOI that proposed estimating a cost-benefit analysis of state investments in financial education to identify the most efficient course requirements. This LOI posited state policymakers as investors who needed to understand the return on investment of state mandates for financial education with respect to key economic security outcomes in the Survey of Household Economics and Decisionmaking (SHED). We believed we could make use of an underutilized publicly available dataset (the SHED) to answer a novel question – what is the return on investment to financial education interventions? – with more robust data, as recent years provided greater variation among state mandates.

After consideration of our LOI, NEFE invited us to provide a full proposal, discuss the plan in greater detail in person, and establish professional ties. They also provided feedback prior to submitting the final proposal. Through conversations and meetings, NEFE suggested that we drop the focus on policymakers and policy advocacy as well as that we ensure the collection of information on some nonprofit activities. These suggestions stem from NEFE's focus on research and a recognized need for data on nonprofit activities to advance the field.

This report summarizes the work that was completed over the course of the project and describes progress made toward answering the research question posed in the LOI. It covers details about how the project was conceived and implemented, modifications we made as we learned more about the data, research products that have been created through our work, and opportunities for further study in the financial education field.

Project Partners & Roles

The project involved a number of different organizations and partners, whom we describe below:

- **Knology** - Lead research team, responsible for research design and execution of the study. Knology is a nonprofit research organization made up of scientists, writers, and educators dedicated to studying and untangling complex social issues. Equity, transparency, and deliberation are the foundation of our work process. We recognize that no issue exists in isolation from its social and environmental context. As a result, our research is embedded in real-world application to develop practical approaches to thorny problems. We are committed to serving the public good by sharing our data and clearly reporting our results.
- **National Endowment for Financial Education** - Project funder, thought partner, and liaison to experts in the field. As described above, NEFE is a longstanding champion of effective financial education.
- **Expert Advisors** - NEFE contacts who made contributions to the project. A mix of academics and nonprofit leaders in the field of financial education selected by NEFE for their potential to provide important insights, suggestions, and questions to improve the research project. Each expert advisor is highlighted later in the report.
- **The Council for Economic Education (CEE)** - Nonprofit leader in resource development and teacher training in the financial education field. NEFE and Knology engaged CEE to furnish the project with state-year data that filled some critical gaps in CEE activities nationwide. For over 70 years, CEE has provided resources and training on personal finance and economics to K-12 educators across the United States. The organization works to deliver financial literacy skills to youth across the country, by developing current curriculum, by providing teachers with training on how to teach personal finance and economics, and by pushing state legislatures and school districts toward requiring more education in personal finance and economics (About the Council for Economic Education, 2020).
- **CEE Affiliates** - State-level affiliates of The Council for Economic Education. The project team engaged the CEE affiliates to provide important context about the nonprofit organization's activities within states, and to make key data collection decisions.
- **The Jump\$tart Coalition for Personal Financial Literacy (Jump\$tart Coalition)** - a nonprofit that supports and guides financial education for youth. We engaged this group to provide important context about the organization's activities within states, and to make key data collection decisions. Jump\$tart Coalition is based in Washington, D.C and consists of a national network of 51 independent affiliated state coalitions made up of over 100 organizations that share a commitment to advancing youth financial literacy (JumpStart Coalition for Personal Financial Literacy, 2020).

Final Proposal

Our main research question was, *“What is the impact of greater spending on youth financial education upon measures designed to capture the experiences and challenges of low- and moderate-income U.S. residents?”* Our motivation for this question was that despite the explosion in the incidence of financial education mandates as requirements for high school graduation (Stoddard & Urban, 2020, Table 1), there is no canonical data on an important variable: historical spending on financial education by state and by year. We believe that such spending may tell us far more about the quality and depth of financial education than the existence of a mandate. This project proposed to first fill that historical spending gap via desk research. Then, to concretely answer our research question, we proposed to estimate the impact of such spending on the measures noted above as found in an underutilized but public dataset, the Survey of Household Economics and Decisionmaking (SHED).

Taking into account feedback from NEFE, the final proposal differed from the LOI. In the full proposal, Knology proposed to estimate spending on financial education activities by state and year for all states back to 1993, extending research relying upon state mandates for financial education (Bernheim et al., 2001; Brown et al., 2016; Goodman, 2012; Urban & Schmeiser, 2015), as a way to add to the literature on the impact of financial education. This would focus on two types of financial education activities: (1) those stemming from state requirements and academic standards to which the mean student would be exposed, and (2) those stemming from financial education nonprofits. This would address *“next steps for the research community”* by responding to those who have asked, *“are the mandates funded and does that funding change year to year?”* (Stoddard & Urban, 2018, p. 13). Further, we would connect this to outcomes in the SHED in order to test our hypotheses. These would be valuable in their focus on economic security issues relevant to the experiences and challenges faced by low- and moderate-income US residents.

Notable Changes to the Project

Our project changed in several substantive ways, based on input from NEFE, as well as constraints of the data and project schedule.

- The LOI focused on a cost-benefit analysis that considered benefits in terms of dollars, and a comparison of course requirements. In the final project, benefits are measured on the scales constructed from SHED items and all course requirements are flattened to a unidimensional measure with a natural zero. The reasons for this change are: (a) that it removes a step from the research design that would require translating the SHED scales into dollar values, (b) it removes the enormous step of estimating all of the costs and benefits, (c) it is an easier first step to flatten different varieties of course requirements to a single scale than to create a multi-scale taxonomy, and (d) the statistical power of the tests of our hypothesis is greater by using a single dimension for all states and years.
- The LOI focused a moderate amount of energy on policymakers at the state level. The final project is much closer to pure research, with less emphasis on policy. Through discussions with NEFE during the research phase, we agreed to focus project time on other data collection efforts and shift away from discussion of policymakers.

- The LOI did not mention expert advisors. NEFE suggested including a number of interviews with expert advisors with whom they would be able to connect us with. We included these advisors in the final proposal as help with nonprofit data collection. Ultimately, the final project leaned on expert advisors for exploration of other topics as well as with data collection efforts.
- The final proposal included a plan to collect requirements and academic standards from all 50 states by year, back to 1993. The final project reaches 2001 for half of the states. The reason for this change is that our data on nonprofit activity, designed to work in tandem with the academic data, was deemed irrecoverable prior to 2001 if we could not find it in archived IRS 990 Forms. It is also true that the collection of academic standards became increasingly difficult as we switched from desk research on the internet to cold calls to state departments of education.



Building the Database

What We Planned to Do, and How

One of the major goals of the project was to build a suite of data products that facilitated hypothesis testing with respect to the impact of financial education interventions. It is not that no such data products were available - notable data include Urban and Schmeiser's data on state financial education mandates (Urban, 2020; Urban & Schmeiser, 2015). What we aimed to do was create a database with numerous complementary datasets relevant to our purpose and for future researchers to use. This would include information such as state by year economic and demographic data and the number of students enrolled in public school. We also aimed to create datasets on state financial education requirements and financial education academic standards, as well as nonprofit and other external non-state financial education activities. We would be able to capture, for example, a financial education partnership between a national company and a state treasury office to bring students financial education through video games.

What We Actually Did, and How

We first collected state financial education requirements or mandates. Our method was to review requirements that we could find in state legislation or in regulatory text from the state board of education. We used a combination of internet searches, reviews of state board of education websites, and LexisNexis to understand the landscape of state requirements and mandates. When we began this process, in the summer of 2019, we knew that Urban and Schmeiser's comprehensive work on state mandates (2015) would be more than five years old and Kasman et al.'s snapshot of 2017 (2018) would be over two years old by the time we released our data. We believed that our method would provide a complementary and auditable triangulation of data, both expanding on and updating these two similar datasets. By auditable, we mean that we would be able to point the user of the data to the universal resource locator (URL) for the underlying document from which we derived our data. For example, we can point data users directly to North Dakota's state level financial education requirements: e.g., *North Dakota Title 15.1 Chapter 21*. Further backing this up, in almost all cases, we captured and stored the underlying documents for the data user.

To carry out our objective, we turned primarily to LexisNexis to document legislative and regulatory text relevant to graduation requirements for each state. Such searches would often turn up multiple results that allowed us to capture the historical differences among different versions of the relevant text (cf. "Diff," 2020). For example, we could see that Michigan added "financial literacy" as a course that satisfied required credits in mathematics in MCLS § 380.1278a in 2009, and then built on this by allowing a half-credit economics requirement in 2016 to be satisfied by "personal economics that includes a financial literacy component." While we were primarily concerned with understanding financial education

requirements, this approach enabled us to further capture graduation requirements within social studies and economics frameworks.

In order to search for financial education academic standards, we turned to less specialized internet search engines such as <https://duckduckgo.com> and <https://google.com>. Once we found a document for a state, this typically became a string of yarn to tug that led us to the next document for this state and so on (cf. “Snowball Sampling,” 2020). Once there, we referenced JumpStart Coalition’s national standards (JumpStart Coalition for Personal Financial Literacy, 2017) to count the number of standards in the collected standards documents that were “financial education” standards. This portion of the dataset is likewise auditable in the sense described above, e.g., *Georgia Social Studies Standards*.

In addition, we collected the total number of credits in all subjects required for high school graduation in each state. This allowed us to harmonize states so that we could convert the fraction of standards devoted to strict financial education standards to a fraction of a school year.

Capturing the course requirements was a labor-intensive endeavor. Our initial thoughts were that collecting the financial education requirements by state and year would serve four purposes. First, it would update the most recent historical work by including state requirements for years after 2014 (Urban & Schmeiser, 2015). Second, we thought that this would serve a triangulation purpose, in that reaching the same or very similar results through multiple methods increases confidence in the accuracy of the results. Third, we thought that this would serve an audit purpose as we would be able to share the source documents for our results, enabling other researchers to verify them. Fourth, sharing the source documents enables researchers to use them for new purposes. As it turned out, Urban updated her dataset on mandates in 2020 (Urban, 2020). While this did mitigate our first purpose, this data collection effort still fully served the latter three purposes. For the academic standards, we had the same three purposes. We sought to create new datasets for the literature that are auditable and open source.

Landscape Analysis

In the fall of 2019, we spent time cataloguing and categorizing financial education activities in the states. Many states, for example, had a “Resources” webpage with links to local, state, and national financial education organizations. Others, such as *Tennessee*, *Alabama*, or *Colorado*, had programs through the state Treasury or Attorney General.

The purpose of this landscape analysis was to catalogue and categorize a snapshot of financial education activities as well as to identify whether there were other core nonprofit organizations that we would add to CEE as we tried to estimate the relative spending of nonprofits by state and by year.

Ultimately, we decided to supplement the academic content standards data with two historical compilations of data on nonprofits’ spending on financial education. First, focusing on a single organization, we gathered program service expenses and other data for the Council for Economic Education state councils using IRS 990 Forms databases. The national office of the Council for Economic Education also generously supported this effort. Second,

zooming out, we gathered total expenses by financial education nonprofits using data from the National Center for Charitable Statistics. After we finished gathering the data, we connected this information to outcomes reported in the SHED survey.

Considerations for Ease of Use for Future Researchers

As we built this database, the possibility of future researchers (including ourselves) who might benefit from our work was always at the forefront of our minds. Although we had initially started data entry with a single mammoth spreadsheet to encompass all information, we eventually transitioned into a state requirements dataset and a separate state standards dataset that could be joined together. This separation of requirements and standards was part of our research plan as we expected, and confirmed, difficulties combining into a single row information about all the different year-based variables: the typically staggered years in which requirements and standards were passed and implemented.

In addition, this focus on future researchers prompted the understanding of the database as composed of multiple datasets that could be combined as desired to test similar, and sometimes not so similar, hypotheses. For example, economic and demographic data by state by year does not exist, to our knowledge, in such a user-friendly format, i.e., in an easily downloadable, open-source format with rigorous attention to data provenance citation.



Support from Experts in the Field

Selection Process for Experts

We asked NEFE early on in the project about identifying contacts that could provide expert advice about the goals of the project, and make recommendations about data that could be used throughout the project. In early fall 2019, on our behalf, NEFE reached out to some professional contacts to gauge whether any of them would be willing and able to speak with us. Many experts generously volunteered their time to speak with us in November and December 2019 and help facilitate our search process.

Scholars & Nonprofit Leaders

The experts we spoke with are a mix of academic researchers and nonprofit leaders in the financial education space. To set some of these expert advisors in context of the project, we briefly describe the missions of their affiliated organizations below:

- Christopher Caltabiano, Chief Program Officer, Council for Economic Education.

CEE is a nonprofit leader in resource development and teacher training in the financial education field. For more details, see page 2.

- Hallie Davis, Senior Research Associate, Global Financial Literacy Excellence Center

The Global Financial Literacy Excellence Center (GFLEC) envisions a world in which individuals have the financial knowledge they need to fully participate in the economy and build secure futures. In working toward that vision, GFLEC has positioned itself as the world's leading incubator for financial literacy research, policy, and solutions. GFLEC launched in 2011 at the George Washington University School of Business in Washington, D.C. Since then, it has pioneered breakthrough tools to measure financial literacy, developed and advised on educational programs, and crafted policy guidelines aimed at advancing financial knowledge in the United States and around the globe (Global Financial Literacy Excellence Center, 2020).

- John Pelletier, Director, Champlain College Center for Financial Literacy

Established in 2010, Champlain's Center for Financial Literacy (CFL) was designed to promote and develop financial literacy skills among individuals, allowing them to make more sound decisions about spending, credit, debt, investments, and complex financial situations such as buying a home and saving for retirement. The CFL is nationally acclaimed for its efforts to increase the personal finance knowledge of our citizens and has become the credible, go-to source for national media coverage of financial literacy (Center for Financial Literacy, 2020).

- Tim Ranzetta, Co-Founder, Next Gen Personal Finance

In 2014, Tim Ranzetta and Jessica Endlich founded Next Gen Personal Finance as a nonprofit organization to partner with teachers by sharing timely and relevant curricular resources,

providing effective professional development, and advocating to increase access to financial education. Given the organization's commitment to reach ALL students, NGPF provides its curriculum and PD at no cost to schools (Next Gen Personal Finance, 2020).

- Carly Urban, Associate Professor of Economics, Montana State University

Dr. Urban is Associate Professor of Economics and a Research Fellow at the Institute for the Study of Labor (IZA). She is also a Faculty Affiliate of the Center for Financial Security at the University of Wisconsin-Madison. Her research fields include Public Economics, Political Economy, and Applied Microeconomics (Urban, 2020a).

In addition to the above contact, we worked with other contacts within NEFE, including Susan Sharkey, Senior Director of Learning and Content Development.

Role of Experts: Help Shape Database & Inspiration for Research Study

Given the breadth and depth of knowledge our experts possessed, we shared our research design with them and sought their feedback on its strengths, weaknesses, and any alternatives of which they were aware. In addition, we asked whether key steps of our research plan would be redundant as someone else had already collected exactly that data. Furthermore, we asked if they had any specific nonprofit organizations, which they would recommend for data collection as we sought to estimate nonprofit spending levels by state and year.

Instrument

For interviews with the expert advisors, we created a semi-structured interview instrument to help us make the best use of the experts' time. This semi-structured interview focused on topics of paramount importance to us while also enabling time and flexibility to gather as much as we could in a conversational manner guided equally by Knology and the experts. Guiding questions included:

- Do you know of existing data that would answer X question?
- What concerns might you have as a referee reviewing a paper with our research design?
- What else should we know that we haven't asked about?

Recommendations

The conversations with the expert advisors were of enormous value. In these conversations, we learned of existing and forthcoming research that would help us to triangulate state financial education requirements or anchor estimates for the probability that students in fact took a course relevant to financial education. Following these conversations we made a decision tree that allowed us to follow conversation threads through to a suitable place within the research project. While it is true that not all branches of the decision tree bore fruit in the way we hoped, these conversations eventually culminated in the addition of three new datasets. The experts also highlighted a number of caveats we needed to keep in mind during the research and the reporting thereof. These include the imperfection of using the state as the unit of analysis when school districts and classrooms in the same state show great variation; that course time estimations will miss the diversity of teacher training; the

theoretical gap between using course time to estimate spending and using course time estimate impact; and that it will be difficult to obtain post high-school financial education exposure, among others.

In the case of CEE, the conversation helped us to start an initial relationship with the national headquarters, and understand where to start our search for data representing nonprofit spending on programs and teacher training, among other data points. Ultimately, we worked with CEE as a formal project partner, requesting additional elusive data on nonprofit activities. This is described further below.

CEE Affiliates

Goals

Part of our research was a landscape analysis (described above) to understand the programs and activities of nonprofits working in the financial education space. That review focused on CEE state affiliates, and allowed us to build our understanding about their programs. In order to dive deeper into our understanding of CEE work, we used publicly available Federal 990 data to estimate the amount of money spent yearly by CEE state affiliates on students and teachers. We found that data on CEE affiliate spending was highly variable across states. Many states do not have CEE affiliates, some states have university-based affiliates who do not fill out their own Federal 990s, and the remaining states all provide varying levels of detail in their Federal 990s. Without direct access to CEE state affiliates at this point in the project, building a robust database of CEE state affiliate spending on these programs and activities was difficult to complete through this simple desk review.

In March of 2020, the United States of America began to experience the economic and workforce effects of the viral spread of SARS-CoV-2, colloquially known as COVID-19. We felt that cold-calling CEE state affiliates during a global pandemic would not be respectful of their time and energy. We delayed this process and sought NEFE's advice on the next steps and on potentially making introductions. In June 2020, NEFE introduced us to state coalition leaders at CEE. After speaking with the CEE state council leaders, we learned that the data we were seeking would be varied by state affiliate, as we encountered in the 990 forms, due to each state affiliate employing different means and methods of tracking such data. However, we were optimistic that CEE state affiliates and/or CEE national would be able to help fill in some, if not all, of the gaps we encountered.

In order to fill the missing gaps, we consulted with NEFE again to determine which of the following was the best possible step forward; 1) sending a direct data request to individual CEE state affiliate councils; or 2) sending a direct data request to CEE national to fill gaps in CEE data. Based on feedback from the state affiliates, NEFE recommended option 2 over option 1, and introduced us to another contact at CEE to help with this data collection exercise.

Instrument

Prior to speaking with these contacts, we created a brief instrument with three modules, focused on students, teachers, and other expenses by the CEE state affiliates. Each was a

simple table designed to isolate three categories of activities (i.e., students, teachers, and other), capture outputs (e.g., the number of students reached by program activities), and capture expenses (e.g., \$120,000 toward teacher training). This represented what we could gather in an ideal world. We then showed our interlocutors the type of data collection we had in mind in order that they might better advise us with respect to its potential burden on respondents, and, where we needed to trim our data request. Ultimately, this instrument was never deployed as we worked with CEE national on the data request rather than directly with the state affiliates, however a copy of the instrument was sent to CEE national for their records.

Conversation & Recommendations

The contacts we spoke with at CEE state affiliates were all leaders at their respective organizations. They include:

- Steven Cobb, Director, University of North Texas Center for Economic Education
- J.W. Fansler, Assistant Director, Indiana Council for Economic Education
- Jeff Sanson, Executive Director, Indiana Council for Economic Education
- Elena Zee, President and CEO, Arizona Council on Economic Education

We learned immediately that our initial method (collecting data from IRS 990 Forms) had a few drawbacks that explained our missing data. First, not all states had a CEE state council. Second, some CEE state councils were not formally structured as a 501(c)3 (or other tax exempt organization) required to file IRS 990 Forms. Third, some CEE state councils were below the budgetary threshold that triggers an IRS 990 detailed filing. That is, the IRS merely requires that nonprofit organizations in this last group file IRS 990 EZ postcards that lack the data we sought.

The second thing that we heard from these leaders was that this data collection effort, even if we simplified our two modes into a single table of cells for the respondent, represented an undue burden that would limit the survey response rate and excessively tax the limited resources available. Many of the state level nonprofit organizations have 1-5 employees and some are volunteer run.

We learned that the national CEE had periodically collected some similar data over the years, and we discussed with NEFE the possibility of a collaboration between NEFE and CEE on this grant. NEFE reached out to CEE to see if they would be able to share these data with us. NEFE introduced us to Kevin Gotchet, Director, Programs at CEE National, with the specific goal of filling some of the gaps in our data about CEE program service spending by state by year. Through an initial written data request discussing the particular states and years of interest and follow-up clarifying conversations, CEE was able to comb through their national records to add to our dataset.

Jump\$tart Coalition for Personal Financial Literacy

The method we used with CEE state affiliates had not obtained the same type of data from Jump\$tart Coalition's state affiliates. When we spoke to NEFE about introductions to CEE state affiliates, we also requested re-engaging with Jump\$tart Coalition to better understand their spending and to introduce their voice into the project.

Conversation & Recommendations

NEFE introduced us to the following leaders at Jump\$tart Coalition:

- Dan Hebert, Senior Director of Education
- Laura Levine, President and CEO

We learned right away that while almost every state has a Jump\$tart Coalition affiliate that files 990 Forms to the IRS, about 40 of those states have finances below the threshold that requires a detailed 990 Form. That is, their "annual gross receipts are normally \$50,000 or less" (Annual Electronic Notice (Form 990-N), n.d.). This means that we would gain very little, and quite unevenly, if we attempted to add Jump\$tart Coalition numbers by state to our estimate of financial education activities by nonprofits by state by year.

What we lose due to the fact that Jump\$tart Coalition's members spend little through their affiliates themselves, however, is the understanding of program service expenses by all of the organizations who belong to the state Jump\$tart Coalition affiliates. Many of these organizations, of course, are those initially identified by the CFPB as "leading nonprofit organizations in the financial education field" (Consumer Financial Protection Bureau, 2013). Nonetheless, our expert advisors told us that nonprofit spending by state by year was most likely correlated across nonprofits. This means that our hypothesis tests are still valid.



Using the Database for Research: Hypotheses, Analysis, & Opportunities

Our Hypothesis

The hypothesis that motivated our research was that financial education interventions have a causal impact on key economic security outcomes. In order to ascertain causality, our method would lean on the natural experiment conducted by 50 states, each with their own set of requirements and academic standards to which public school students were exposed. The time period for our hypothesis is 2001 - 2017. While this largely correlates with convenience—data prior to 2001 was scarce—this is the best time period to test the hypotheses because this is when variation among the state requirements and standards significantly increased.

We used our database as the inputs that measured financial education exposure for the mean student by graduation year for each of the 50 states. We used responses in the SHED as the outputs among which we would test for changes related to changes in financial education exposure.

How We Tackled the SHED Data

The SHED surveys thousands of US residents each year, starting in 2013 and now including 2020 data. Each survey year includes data from US adults 18 years and older from all 50 states. Despite a sample size in the thousands, we wanted to maximize the power of our statistical tests by pooling all respondents into a supersurvey. This offered us over 60,000 respondents in total. It also enabled us to account for temporally lagged effects both within and between graduation years. That is, a 24-year-old in 2014 was 18 in 2008, while a 25-year-old in 2014 was 18 in 2007, and a 26-year-old in 2016 was, like our first respondent, 18 years old in 2008. This helps us see if changes in a state in 2008 had a greater impact on 2008 graduates than 2007 graduates as well as whether such changes needed 6 or 8 years to come to fruition.

We began by lining up all survey years to search for items that frequently or always recurred. This led us to focus on constructing four scales: subjective well-being, foregone necessities, retirement savings, and financial fragility. As it turns out, not all items in each scale were present in all survey years. Furthermore, sometimes an item would receive a code (e.g., item “K2a”) in one year that did not match that item in other years and, furthermore, conflicted with other items that also had the same “K2a” label. This required us to carefully review the SHED’s codebooks and datasets to rectify all mismatches. An accompanying product on our

SHED crosswalk, described in detail below, will illuminate some of the foregoing in greater detail.

Opportunities with Other Datasets

The unit of analysis in our project is the state-year. We may use it to test financial education hypotheses on outputs for which we have state-year level data (or can construct such). The temporal coverage of our database with the most information relevant to financial education begins in 2001. As such, the database could be used to test financial education hypotheses on outputs that occurred after 2001, but preferably after 2010 where there is more variation among states' financial education activities. We could attempt to test hypotheses on single year outputs (e.g., what is the impact of financial education exposure on presidential ballots in 2016?). However, the data is better suited to hypotheses on outputs with multiple years of state-level data where we can distinguish between temporally lagged effects both within and between graduation years. Financial education hypotheses could include those related to topics such as the impact of financial education on borrowing for college, credit scores, debt, homeownership, and other topics with a theoretical link to financial education. Further afield, we could look at family, education, or health outcomes.

Of course, the opportunities are not merely limited to financial education inputs. We have gathered state-year data on economic measures such as unemployment, gross domestic product, population, public school enrollment, political measures such as partisan control of legislature or governorship, and regulatory measures such as the strength or scope of state law with respect to unfair and deceptive practices. These variables are now gathered in one machine-readable dataset and can serve as control variables in research on any topic in which the unit of analysis is the state-year.

Communicating the Research

The project generated five central products that are designed to communicate the research in different ways: Peer Review Paper, Behind-the-Research Articles Based on the Research Diary, SHED crosswalk, Mapping Tool, and the Database. We provide an overview of each of these products below. Over the course of 2021, we will make these products available to the public. All products will be free to use, except where noted.

Peer Review Article

The peer review paper is designed to communicate with academic stakeholders interested in financial education and its impacts. Its goals are to test a hypothesis and extend the current academic literature on the impact of financial education. The academic article manuscript is currently under review. Since many academic journals publish papers behind paywalls, this article may be inaccessible to some potential audiences. To enable more people to use the research, we will publish a web article that explains the implications of the research in a conversational style.

Behind-the-Research Articles Based on the Research Diary

Throughout the project, we maintained a research diary to explore potential research questions, memorialize changes to the research plan, and reflect on project and process.

The majority of diary content focuses on the early parts of the project, as we navigated how to operationalize a hypothesis in the research study. In particular, we described in detail the process of building tools, particularly the database. Even though we documented our decision-making throughout, some parts of the project are described in less detail or omitted from the research diary, due to the varying momentum of the work.

As a result of the diary's format, technical nature, and the varying levels of detail, we anticipate this document will not be useful to most readers. Instead of presenting the research diary as a public document, we will publish two web articles that tell stories about the project, which draw from the diary. Each article will provide a behind-the-scenes look at our process, exploring an unexpected or interesting twist or turn in the research and database assembly. We designed the articles to be conversational and accessible in style and tone, to invite a broad audience into the research work. The articles will be published on Knology.org, and co-publishing elsewhere with NEFE.

SHED Crosswalk

An additional set of data that will be made public is our crosswalk of the Survey of Economics and Household Decisionmaking (SHED) database. When reviewing this data set, we realized that we needed to verify the coding used by the United States Federal Reserve year-over-year. To accomplish a balanced comparison, a Knology researcher reviewed each year's codebook and question response categories to line up all of the questions that were asked. This enabled the team to understand which questions were longitudinal and where to find them. We found that this extra scrutiny of the data allowed us to identify specific places where the coding did not match up.

With the effort we put into this crosswalk, we believe this resource can help researchers more easily look through and use the SHED data. As a result, we will publish the crosswalk as a stand-alone resource that will be accompanied by a web article that explains how to use it. This article also offers guidance to researchers on how to do crosswalks on other public data sets.

The Financial Education Mapping Tool: Interactive Visualizations

While we hope the database will be useful to many people who are interested in financial education, we realize that it may not be an ideal tool for everyone. To encourage more audiences to use the data from this project, we have developed the Financial Education Mapping Tool, an interactive website that visualizes historical data on financial education spending and outcomes. The Mapping Tool presents users with a dashboard that features a series of interactive choropleth maps of the US, representing the total financial education intervention by state by year as gathered in this project's database.

The user can move a slider to view change across years, or hit a "Play" button to start an animation through all the years for which we show data. The sidebar includes links to several options for deeper information:

- Maps enabling the user to focus, by state by year, on “Public School” interventions, “Nonprofit” interventions, and a few details on relevant definitions and data sources;
- Maps enabling the user to focus, by state by year, on the four scales we constructed from the SHED survey and a few details on relevant definitions and data sources;
- Longitudinal plots enabling the user to select state(s) of interest and intervention measures of interest and plot that relationship; and
- Links to download data and connect to the R package, as well as an invitation to contribute to updating the data.

Database: CSV Files & R Package

The database is one of the most important products of this project. As described above, it centralizes existing datasets and new information that had not been previously brought together. We publish this database in two formats. First, we offer the nine complementary datasets in CSV files that most people can easily download. Second, we produced an R Package that enables us to quickly share the entire database and important project details in a format that many researchers already use, that is, as R package documentation via a web interface. The R Package also invites users to contribute additional data where there are gaps.

How the Products Work Together

All of these products can be accessible via the internet. They each refer to each other as an ecosystem that facilitates discovery and, we hope, increases use. The Mapping Tool and the R package will refer to all other elements of the ecosystem, the research diary articles and the SHED Crosswalk will refer to the peer-review article as well. In this way, the Mapping Tool can link visitors to the full scope of the project. At the same time, the R package can serve as a researcher and/or R user headquarters for this different audience. Overall, all products are described and linked to the Project Overview article, where this report is published.



Lessons Learned

While building the database became one of the strongest contributions of this project, our analysis of that data points to findings that can inform the financial education field. This analysis primarily focused on the effects of financial education spending in K-12 public schools and nonprofits' related spending. Specifically, we studied the following areas of outcomes: people's subjective assessments of their own financial health, assessments of the affordability of routine healthcare such as medical appointments or prescriptions, indications of saving for retirement, and assessments of financial fragility such as when people feel they cannot afford an unexpected \$400 expense.

Our data shows that policymakers sharply increased financial education for students in response to the Great Recession of the early 21st century. Overall, our analysis showed modest effects in the outcome areas we studied, some of which were counterintuitive. We found that increases in spending on financial education per student in the K-12 education system is associated with a small, yet positive change in people's assessments of their own financial health. Moreover, increased financial education mandates for public schools help to decrease people's sense of financial fragility. However, we also found that financial education is not associated with people's ability to afford routine healthcare. And unexpectedly, the data indicated that increasing spending for financial education in nonprofit programming is associated with lower indicators of retirement savings.

Our data shows that states dramatically increased financial education for students after the Great Recession. Overall, our analysis showed modest connections in several outcome areas, where "connections" indicates that we can identify relationships between trends but not causation. Among them, we found that increases in spending on financial education per student in K-12 schools is associated with a small, yet positive change in people's subjective assessments of their own financial health. Increased financial education mandates for public schools is also linked to a decrease in financial fragility, meaning that people are more likely to be able to cover emergency expenses. In spite of these positive findings, we did *not* find that financial education is associated with people's ability to afford healthcare. And unexpectedly, the data showed that increasing spending by financial education nonprofits is connected to a lower likelihood to have retirement savings accounts. This may mean that nonprofits are responding to, rather than causing, these behaviors. Lastly, different analytical tools suggest there is a deeper story beyond these general trends. For instance, there are specific thresholds of spending by financial education non-profits -- relating to total expenses or program service expenses -- that are associated with especially good or especially bad retirement savings and financial fragility outcomes.

Based on the research findings, we suggest several lessons that are valuable to the field. Financial education programs are likely doing what advocates hope for, by nudging people towards concrete behaviors that make them feel financially stable. While financial education can help improve some aspects of financial health, it is not a panacea for the systemic problems within the US economy. In other words, financial education that addresses long-

term financial planning will be less helpful in equipping people to handle second-degree financial behaviors, such as healthcare expenses. As a result, education programs should be bolstered by economic policies that address structural issues such as financial barriers to healthcare and income disparities. Financial education in tandem with financial regulation will be a better, complementary strategy for improving overall financial outcomes.

These findings start to build a picture of the impacts of financial education spending over time, but there are many opportunities to build this story. Our work provides a baseline and database in which to explore more fine-grained analyses of spending on financial education. Some possible areas for exploration are:

- We used CEE program service expenditures as one proxy for nonprofit spending on financial literacy. That research could be expanded by analyzing data from additional sources such as state by year data from members of the Jump\$tart Coalition. Given what we already know about this approach, this will not be easy but more data on nonprofit program spending exists and would be helpful for making more precise estimates of the sector's spending in financial education.
- It would be helpful to develop a standardized approach to tracking the number of students and teachers participating in nonprofit financial education programs. More detailed data in this area would offer researchers the ability to more study inputs and outputs in a more detailed way in this area.
- Trends in our data showed that retirement savings trend slightly down when nonprofits increase their spending on financial education. More data and research is needed to understand why we observe this association in our data.



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