Enhancing Links between Research and Practice to Improve Consumer Financial Education and Well-Being

Billy J. Hensley[1]

A recent meta-analysis of the effect of financial literacy and financial education on downstream financial behaviors has shown a weak collective impact of the work of financial education. While the findings are not stellar, they do not support a dismantling of financial education programs and funding. This paper examines the findings of the meta-analysis and discusses the implications for the field. In this discussion, a more thoughtful consideration of the ways to provide financial education and the manner about how to influence behavior is highlighted. In addition, this article proposes a systematic examination of why timely educational approaches should coexist with longer-term financial education programming. The field also needs a more rigorous examination of factors that impact intervention effectiveness, including a call for improved research protocol and evaluation and a plea for greater visibility between researchers and practitioners.

Keywords: financial capability, financial education, financial literacy, financial well-being, practitioner research

Introduction

The field of financial literacy, education, and capability includes many educators, practitioners, and academics dedicated to improving learners' ability to implement sound, well-informed personal finance strategies. The community has continued to provide educational opportunities for learners in the face of overwhelming statistics that highlight low savings rates, the prevalence of ill-informed consumers, and emphasize the excessive utilization of high-cost services. Instead of being deterred by the scope of work and competing messages, teachers, counselors, and researchers have faced the challenge with increased effort. Not to be deterred by cynics who infer that consumers are not smart enough to make informed choices, the community has worked diligently to promote well-designed programs, impactful classes, and effective financial counseling (Hira, 2010; Schuchardt, et al., 2009). In addition to the best practices of the field, there are studies that document an effect on financial behaviors that are both promising and benchmarks for practitioners and researchers alike (Batty, Collins, & Odders-White, 2015; Bell, Goren, & Hogarth, 2009; Lusardi, 2003; Lyons, 2007).

However, despite the well-meaning and mission-focused efforts of many practitioners and researchers, there are several studies that show little to no impact of education and counseling on long-term financial behaviors (Cole, Paulson & Shastry 2012; Willis, 2009, 2011). The interpretations of why the field has or has not demonstrated an impact are myriad. While few people deny the need for an informed and confident citizenry, the debate about how to build financial capability in ways that lead to healthier financial behaviors continues to face a lack of agreement on the evidence about what works—and lack of agreement about whether an increase in knowledge results in positive behavior change.

Informing Practice and Future Investigation

Still, the manner about how to influence behavior is becoming clearer. Fernandes, Lynch, and Netemeyer (2014) sought to answer the question "What is the connection between financial education, financial literacy, and the choices that people make about their finances?" The researchers investigated data from 201 peer-reviewed studies (a meta-analysis) and used a single-measure to compare the findings, resulting in three key conclusions that can be utilized to guide future research and practice. The 201 studies included data from 585,168 participants whose financial behaviors where documented at least three months after the initial contact. Fifteen of the studies measured long-term behavior in a randomized control trial format, 75 studies documented behavior in a non-randomized control trial format, 24 studies explored links between behaviors and existing financial literacy using advanced statistics, and 87 studies explored links between behaviors and existing financial literacy using basic statistics. Three of the main conclusions from this meta-analysis provide clarity about the duration of impact, the scope of impact, and the need for improved research practices.

Length of Training Relates to Corresponding Effect on Behavior

The amount and timing of financial education have

[1]*Director of Education, National Endowment for Financial Education, 1331 17th Street, Suite 1200, Denver, CO 80202, 303-224-3505, bjh@nefe.org*

© 2015 Association for Financial Counseling and Planning Education®. All rights of reproduction in any form reserved

corresponding effects on behavior (Fernandes et al., 2014). The impact of education on behavior varies with how much instruction people receive and when they get it in relation to relevant decisions or behaviors. Interventions with many hours of education have larger effects than shorter interventions, and effects on behavior from all types of interventions are larger when measured right after the intervention (e.g., class, workshop, or professional development) than after a delay. The data show diminishing returns as time elapses; after 22 months, the impact on behavior became statistically insignificant for even the longest interventions (some interventions were several days of instruction). Thus, one-and-done classes and/or workshops clearly are not the answer. It is time to begin a more thoughtful consideration of ways to provide financial education throughout life, linking to individuals' upcoming financial decisions. The challenge for the field is defining "timely" and "relevant" as related to educational interventions.

For example, program goals, instructional tools, and course topics should link to decisions that learners are readily able to make (Rhine & Toussaint-Comeau, 2002; Taylor, 2008). If the topics cover themes that are many years in the future, alternative examples should be used which convey similar concepts, but that are relevant to a near-term decision or practical implementation. This concept is especially true if the program has a limited time to convey the content. For instance, teaching teenagers about mortgages may be less effective than using examples of student loans or automobiles and highlighting the planning process associated with sensible use of secured debt. Furthermore, learners should have access to program materials, such as a website, to allow the opportunity for utilization of content and exercises at times that are opportune and after the course concludes.

As with timely instruction, relevant subject matter is essential in fostering engagement with the content and improving the prospects for changing behavior. If learners are unable to relate to the topics, examples, and content provided by educators, then the level of engagement will be reduced (Taylor, 2008). Consider young adult learners who are attending a money management workshop who mostly have jobs that do not offer 401(k) or 403(b) plans. Without an understanding of the audience and the context, an instructor might focus their presentation on mutual-funds instead of focusing on the need for emergency plans and savings, and explaining the fundamentals of savings accounts, CDs, ROTH IRAs and the MyRA.

The meta-analysis revealed both encouraging and troubling conclusions. For instance, the largest effect sizes were reported for interventions that involved high school instruction. This is reassuring for those who teach unit, semester, or year-long courses. Conversely, effects were slightly lower for studies of low-income consumers compared to the general population. These results are similar to educational studies from other subject areas that document lower scores in schools and communities where income and education levels are lower than national averages (Petty, Wang, & Harbaugh, 2013). Based on these data, the need to replicate what works well in high school instruction (e.g., the use of well-vetted materials, trained teachers, and competency-based instruction) within multiple contexts may result in a clearer path toward creating interventions and classes that will result in positive behavior change. Well-trained educators are essential to learning. Subject matter experts are not necessarily the most effective educators. While timely approaches are very helpful to learners of all ages and contexts, this is not a recommendation that comprehensive education be replaced by "just in time" approaches. More precisely, an examination of the educational literature to identify the best instructional practices to promote retention and application, in addition to timely and relevant opportunities, is in order.

For further consideration, statements that need validating and questions that need to be answered by practitioners and researchers alike, and are ripe for research, include: more financial education research is needed to identify the best pedagogical practices and implementation strategies to improve the effectiveness of financial education. How do we mitigate the behavior-effect decay? How do we deliver appropriate education close to the point in time when those receiving the education might act on it? And should financial education take place throughout life and always link to an upcoming financial decision? Note, appropriate "close to the point" education does not replace thoughtful, transferrable proficiencies like financial planning or financial decision making skills that are honed in financial education courses and workshops.

The Link Between Behavior and Literacy is Not Sufficiently Robust

Behaviors and literacy, as measured to date, are weakly linked (Fernandes et al., 2014). Only about 0.1 percent of the variability in whether people perform healthy or unhealthy financial behaviors is explained by whether or not they received financial education. An effect size below 0.1 percent is small. Effect sizes at 0.4 percent and above are large. So, in the aggregate, we are at the minimal point of effectiveness. While this should not be interpreted as the end of financial education, it also is not something to celebrate. The point can be argued that despite all the factors that influence educational effectiveness (e.g., educator and counselor quality, teacher preparation and training, program materials, topics covered, developmentally appropriate content, learner engagement, etc.) the fact that all 201 studies in the aggregate show a statistical significance is promising. For example, Guion and Free (2010) share examples of how to infuse behavior change theories into financial education programs, which is a great assembly of theory and practice. Since there is not a single, agreed upon measure of financial literacy, nor is there a universal minimum standard for anyone who wants to teach personal finance in communities, schools, and the workplace, the small effect is something upon which we can build. However, the looming challenge is to create opportunities to build upon those classes and interventions that are proven to work (programs where effect size is larger than 0.1 percent). To simply toss aside the collective work of the field due to small effect size is misguided. Instead, a more rigorous examination of factors that impact intervention effect is needed. After all, math or science or reading instruction is not abandoned if a school has weak scores; instead, effort would be employed to understand why the math scores are low and then tactics instituted to try and improve instructional outcomes.

Action must begin now to raise the minimum standard for effective instruction and to more widely disseminate the strategies that have the greatest impact on behavior. Simply integrating personal finance topics into a class or workshop is not enough. The educator needs to be confident, competent, and knowledgeable about personal finance in order to create a learning environment that results in effective consumer behaviors. Also, the educator needs to have a strong grasp of pedagogy. Instructors and counselors can attain this proficiency by attending college-level courses, pre- and post-certification workshops, and other training opportunities that demonstrate improvements in instructor effectiveness (Allison, 2013; Desimone, 2009; Guskey, 2002; Smith, Hofer, Gillespie, Solomon, & Rowe, 2003). Fundamentally, educators should exhibit high levels of understanding—both with the content and the pedagogy—of personal finance topics. Other school-based instruction areas demand this of educators, why not personal finance?

In consideration of school-based courses and community/adult education initiatives, educators need to be fully prepared to teach personal finance. Just like any other subject area, educators need content expertise, in addition to in-depth understanding of pedagogical best practices. When educators and counselors can demonstrate robust knowledge of financial literacy and can apply these practices to their own personal finances, their confidence with the topic increases, which leads to improved instructional effectiveness (Hunsicker, 2011; Klein & Rioran, 2011; Loibl & Fisher, 2013; Lown, 2011; Lumpe, 2007; Richter, Kunter, Klusmann, Ludtke, & Baumert, 2011; Xiao, Chen, & Chen, 2014) and positive student outcomes (Polly & Hannafin, 2011). In addition, professional educators and counselors, as well as volunteers, need to consider the materials used and the instructional strategies needed to affect student outcomes. For example, when considering adult learners, the Adult Education literature contends that active, participatory approaches are best for learning retention and integration in the learning process (Burke, 2013; Forte, Taylor, & Tisdell, 2014; Garet, Porter, Desimore, Birman, & Yoon, 2001; Hanna, Salzmann, Reynolds, & Fergus, 2010; Raider-Roth, Stieha, & Hensley, 2012).

Well-trained educators and counselors need strong content and effective programs (e.g., classroom activities, topical examples, and assignments) that are created with the consultation of content experts (e.g., insurance agents and financial planners). The resources should be appropriate for the audience for whom the class/workshop/counseling session is being implemented (Forte et al., 2014). For example, all instructional materials should include accurate and up-to-date information, be guided by thoughtful learning outcomes, use clearly articulated objectives that are age appropriate, and be tested to be effective by external evaluators. While these many initial steps may be daunting, in order to embrace a process that is built upon educational research and pedagogical best practice, this exercise is necessary for improving impact—and effect sizes.

Analysis, Protocol, and Assessments Need Improvement

The third and most multifaceted point is that future studies and program evaluations need improvement. Enhancing educational interventions is imperative, but the tools we use to evaluate impact need to be enhanced as well. With better measurement, as well as improved interventions, the effect of financial education should close the gap that currently lags behind comparable domains—such as workplace instruction or career counseling (Bayer, Bernheim, & Scholz, 2009). The improvement in measurement needs to be embraced by both researchers and practitioners who evaluate their programs. Simply, more robust research protocols will provide more accurate assessments of the classes, workshops, and counseling sessions that are providing financial education. As such, with better data, the outcomes and program goals can be more precisely assessed. Plainly, focusing on what is done well is only part of the answer; much more can be learned about what is not working well.

It is imperative to find out if an intervention is not working, if it is not working well, and if it is effective. Ineffective evaluations are unable to provide a detailed and accurate picture of what outcomes, if any, are demonstrable. In other words, simple evaluations may show an impact, but a strong evaluation will show the scale of the impact (if any) and what needs to be improved. To take the results of a superficial evaluation and declare victory is irresponsible. What will best serve financial literacy students and clients are programs and educators who seek to continually refine and improve program and instructional weaknesses. Simple research protocols and rudimentary evaluations are insufficient. The field will be better served by exposing what does not work well and describing how to improve it, than by supporting blanket statements that all financial education and counseling programs and interventions work for all learners, in all contexts, all of the time.

Continuously seeking information on the impact of a program or educational session is imperative. Well-designed evaluations, which can be managed internally or by an external party, tell educators whether and where they are improving behavior, knowledge, and confidence, and where improvements need to be made. Without evaluation, or by using elementary measurement tools, instructors rely on anecdotes to inform their work, where a more robust assessment can show where immediate improvements can be made and which areas of success can be capitalized. As a community, we need to explore our weaknesses so we can build an atmosphere of collective accountability that will ultimately inspire the creation of a roadmap toward success, including articulate parameters within which we work—resulting in a shared vision and definition of effective financial education.

In addition to this, the field needs to identify what metrics we should track toward gains in knowledge, confidence, behavior, and access to financial products. For example, what should financial education programs measure? Knowledge of facts and calculation strategies? Ability to create a financial plan? Confidence to find answers on financial topics? Delinquency rates? Credit scores? Debt service (financial obligation) ratios? Income volatility? Retirement saving participation? Emergency plan strategies? Emergency fund adequacy? The meta-analysis shows that different types of studies yielded vastly contrasting results—more varied than science would predict (Fernandes et al., 2014). We must question to what extent those differences stem from widely varying research designs and analyses, including what is actually measured. Defining a minimum quality research and evaluation standard and increasing the use of fully-experimental and quasi-experimental research studies are steps in the right direction.

What's Next for Practitioners and Researchers

There needs to be more effort to create venues for representatives of all the field's constituencies to share ideas together—not just a space, but a mutual desire to understand and learn from each other. This is no small feat for a community that includes academics and scholars, classroom teachers and community educators, counselors and financial planners, and corporate and nonprofit program providers. While there are many barriers, the first to overcome may be language. Jargon is often an obstacle toward understanding, so those of us who see through a particular lens would be wise to question our individual communication system and seek out colleagues from differing occupational outlooks to discuss the implications of both research and practice. The easy road is for practitioners to talk only to themselves and for researchers, theorists, and academics to discuss what their findings mean within the peer-reviewed, jargon-laden research literature—both options create barriers to entry for other points of view. These single-point discussions are very important and serve a great purpose, but should not be seen as the only way to obtain feedback and critique. It is not easy to bridge practice and inquiry, but taking small steps toward creating this conduit will bring an easier dialogue between the two factions of the community. Our community needs to remove the real and perceived views that practitioners cannot learn from researchers and vice versa. Neither practitioner nor researcher loses anything by adding supplementary perspective nor do they lose anything by learning to interpret the work of the other.

For Practitioners

Practitioners will be well-served by research if they build relationships and learn how to bypass research methodological intricacies. A first step is to open dialogue with local researchers and university faculty. While there may not be a local researcher who is conducting studies within your particular area of practice, getting to know some of the components of research and how researchers approach a new hypothesis is a good use of time. Some associations have a directory that includes both practitioners and researchers; use it. Getting to know researchers and what informs their research agendas is a means for building a rapport and greater understanding on how to interpret research. The research methodology and jargon-laden theory will become less of an obstacle when practitioners learn how to seek out the relevant components of research presentations and papers that directly inform their practice.

For example, while most practitioners may perceive the statistical tables and research methodology sections of papers and presentations as overwhelming, many will appreciate the discussion and implications of the research. Fundamentally, practitioners will not only learn from the results, but also lend an informed and insightful critique to the results of many research studies. Do not allow the methodological and procedural intricacies of research to prohibit a much needed engagement with the hypotheses and results, which are areas that can be most informed by the practitioner lens. When in doubt, ask a researcher how she thinks the findings of a study will change what is done within the classrooms, offices, and programs of your community.

For Researchers

Researchers that seek out opportunities for collaboration and those who learn how to "translate" studies for direct use in the field are the exemplars for making the most practical contributions to both academia and practice. Alas, there are few places where barriers have been removed that keep both our practitioner and research community members from sharing ideas and discourse. For example, academics are not normally rewarded for publishing in commercial or consumer publications or speaking at practitioner-focused or client events. It does not mean these opportunities do not exist; only that with demanding schedules and the position of career evaluation metrics for academics, collaboration with practitioners is often precluded. It is the same for practitioners; rarely is a practitioner asked to speak to a group of academics. The few venues for this should be highlighted and upheld as models. However, when researchers are speaking to a group of practitioners, it will be most appreciated if the remarks focus on the population, findings, and implications.

While the opportunities for practitioner collaboration are few, there are very few reasons that a researcher should not discuss study ideas and hypotheses with local educators, counselors, planners, or program providers. This is a simple step that can bring much insight to the course of a burgeoning research study, resulting in a refinement of context or a focused attention on a particular problem or need. When researchers are helping to answer questions based on the needs of those working directly with learners, there is great potential to get the most out of data collection. The field of Action Research can provide some good examples of how to examine research questions and how collaborative engagement can, in some cases, provide more meaningful research (Brydon-Miller, Greenwood, & Maguire, 2003; Stringer, 2008).

Additional Factors to Consider

Among the many considerations for the future of the field, none are more pressing than engaging in opportunities to share ideas, inform each other, and strive to articulate a better path forward. How else can we overcome these factors? For example, there are many other issues, such as advertising and marketing that influence consumers and have the power to overwhelm the best intentions of well-designed programs and thoughtful educators and counselors. Attentively raising the minimum standards for education and sharing best practices for combating competing messages can create inroads to offset negative factors that impede positive financial behaviors. The meta-analysis (Fernandes et al., 2014) highlighted the point that a lifetime of education may have more impact than what is seen in single-dose interventions. An example used to illustrate this is that twenty years of advertising has more effect than exposure to a single billboard—an interesting analogy for our work needing to embrace a lifelong learning paradigm.

There are many competing ideas and entities that either misuse the label of financial education or seek to harm consumers' financial well-being. A great deal of money can be made from poor financial decisions and many players who, in veiled and covert efforts, seek out means to take advantage of ill-informed customers. The pressure on financial educators to have an impact is loftier than other educational venues, as there are very few businesses trying to make money off someone's lack of knowledge of biology, chemistry, or calculus. Then there are the "other" competing ideas and intents to consider—that of the struggle of the learner/consumer about whom should they trust or model or heed. For example, research shows that parents are the most influential voices for financial lessons, followed by peers and teachers (Serido, Shim, Mishra, & Tang, 2010). Many parents and guardians give excellent advice. However, some do not and it may be more impactful what parents do than what they say one should do. For example, watching parents use payday loans and other high interest products may be influencing children about how to handle monthly budgeting or financial shortfalls.

Beyond these top trusted groups, others have influential power. Sometimes it is extended family. Other times it is religious leaders. More often than may be evident, it is celebrities and the media. There are also competing voices seeking (paying) to be at the top of the Google search for Internet inquiries. Beyond who is providing the information, the conflict about which message should be heeded is daunting. When the consumer ignores what was taught in class, or during a counseling session, or in a planner's office, for the opinion of the more familiar, un-vetted voice, does the learner then experience conflict over whether to save or spend, buy now or buy later, and pay off small balances first or pay off high interest first?

Financial educators will never be able to control what learners/consumers hear, see, or experience outside the context of their educational interventions. Nor will educators be able to establish regulations or create the architecture within which consumers make financial choices. However, the measureable impact lies within the workshops, counseling sessions, classrooms, and webinars that are provided by well-trained instructors, counselors, and teachers. Financial capability is a broad concept with many moving parts; financial education is one part of the overall approach to empower financially capable consumers. For too long the weight of financial capability has been seen to rest on the shoulders of financial educators, while some feel regulation is the best or only path to protecting consumers, and still others prefer to rely exclusively on better product and choice design. When all of these avenues are viewed as essential elements, a more attainable strategy for improving the financial capability of all Americans can be achieved.

Financial educators and counselors can embrace an approach for helping consumers achieve financial capability by implementing effective financial education at the same time that the experts in access, financial products, regulators, and economists can refine their strategies so that a comprehensive plan for consumers can move forward. The silver-bullet approach (one single option that is straightforward, with extreme effectiveness) does not work, as evidenced many times over. Instead of the old tactic of singly approaching the problems of financial illiteracy with education, regulation, access, or financial product improvement, the field should embrace an approach that incorporates all of these elements. Implementing the best of what works from each paradigm will benefit consumers. To belabor a point, the work is stronger in the aggregate. The financial education and counseling community can implement effective financial education by increasing the number of well-trained educators, seeking out and using vetted program materials, using timely instructional opportunities, and executing regular program evaluations.

Conclusion

While our past collective work has had an impact, the level of effect needed to help consumers has yet to be achieved. Let's more fully embrace a culture that values a continual improvement in practice and research. One way to do this is to identify and disseminate those projects that have demonstrated the most promise. Another is to look to other fields that have shown improvement in participant behaviors, such as, school-based changes that have increased student scores in domains including math, reading, and science.

There is no such thing as an effective one-size-fits-all approach to financial education, but we do have the capacity to scrutinize our current work, upgrade our efforts, and remove barriers between practitioner and researcher. While education alone is not the single answer to improving financial capability, it is an essential component. There is no doubt that within the next few years our community can create the best interventions within the field of school-based and adult instruction; with our combined efforts, we can identify and transcend the factors that inhibit effective financial education.

References

Allison, A. (2013). No art teacher left behind: Professional development that really matters in an age of accountability. *Arts Education Policy Review, 114*(4), 178-190.

Batty, M. Collins, J. M., & Odders-White, E. (2015). Experimental evidence on the effects of financial education on elementary school students' knowledge, behavior, and attitudes. *Journal of Consumer Affairs, 49*(1), 69-96.

Bayer, P. J., Bernheim, P. D., & Scholz, J. K. (2009). The effects of financial education in the workplace: Evidence from a survey of employers. *Economic Inquiry, 47*(4), 605-624.

Bell, C., Gorin, D., & Hogarth, J.M. (2009). Does financial education affect soldiers' financial behavior? *Federal Reserve System Community Affairs Research Conference*. [WWW document]. URL http://www.kansascityfed.org/publicat/events/community/2009carc/Hogarth.pdf (accessed on 31 March 2015).

Brydon-Miller, M., Greenwood, D., & Maguire, P. (2003). Why action research? *Action Research, 1*(1), 9-28.

Burke, B. M. (2013). Experiential professional development: A model for meaningful and long-lasting change in classrooms. *Journal of Experiential Education, 36*(3), 247-263.

Cole, S. A., Paulson, A. L., & Shastry, G. K. (2012, April 11). Smart money: The effect of education on financial behavior. *Harvard Business School Finance Working Paper No. 09-071*. Available at SSRN: http://ssrn.com/abstract=1317298 or http://dx.doi.org/10.2139/ssrn.1317298

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher, 38*(3), 181-199.

Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science 60*(8), 1861-1883.

Forte, K. S., Taylor, E. W., & Tisdell, E. J. (2014). *Financial Literacy and Adult Education: New Directions for Adult and Continuing Education*, Number 141. Hoboken: Wiley.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38*, 915-945.

Guion, L. A., & Free, T. R. (2010). A conceptual framework for infusing behavior change theories into program design, delivery and evaluation: A financial education example. In *The Forum for Family and Consumer Issues, [e-journal]* (Vol. 15, No. 1). http://ncsu.edu/ffci/publications/2010/v15-n1-2010-spring/guion-free.php

Guskey, T. R. (2002). *Evaluating professional development*. Alexandria, VA: Association of Supervision and Curriculum Development.

Hanna, M. B., Salzman, J. A., Reynolds, S. L., & Fergus, K. B. (2010). Engaging teachers as learners: Modeling professional development for adult literacy providers. *Adult Basic Education and Literacy Journal, 4*(3), 173-177.

Hira, T. K. (2010). *The NEFE quarter century project: Implications for researchers, educators, and policy makers from a quarter century of financial education*. Denver: National Endowment for Financial Education.

Hunzicker, J. (2011). Effective professional development for teachers: A checklist. *Professional Development Education, 37*(2), 177-179.

Klein, E. J., & Rioran, M. (2011). Wearing the "student hat": Experiential professional development in expeditionary learning schools. *Journal of Experiential Education, 34*(1), 35-54.

Loibl, C., & Fisher, P. (2013). Academic discipline and personal finance instruction in high school. *Journal of Financial Counseling and Planning, 24*(1), 15-33.

Lown, J. M. (2011). Development and validation of a financial self-efficacy scale. *Journal of Financial Counseling and Planning, 22*(2), 54-63.

Lumpe, A. T. (2007). Research-based professional development: Teachers engaged in professional learning communities. *Journal of Science Teaching Education, 18*(1), 125-128.

Lusardi, A. (2003). The impact of financial education on savings and asset allocation. *University of Michigan Retirement Research Centre Working Paper WP 2003-061*. [WWW document]. URL http://www.mrrc.isr.umich.edu.echo.louisville.edu/publications/papers/pdf/wp061.pdf (accessed on 31 March 2015).

Lyons, A.C. (2007). Credit practices and financial education needs of Midwest college students. *Networks Financial Institute Working Paper WP 2007-23*. [WWW document]. URL http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1060801 (accessed on 31 March 2015).

Petty, T., Wang, C., & Harbaugh, A. P. (2013). Relationships between student, teacher, and school characteristics and mathematics achievement. *School Science and Mathematics, 113*(7), 333-344.

Polly, D., & Hannafin, M. (2011). Examining how learner-centered professional development influences teachers' espoused and enacted practices. *The Journal of Educational Research, 104*, 120-130.

Raider-Roth, M. B., Stieha, V., & Hensley, B. (2012). Rupture and repair: Episodes of resistance and resilience in teachers' learning. *Teaching and Teacher Education, 28*(4), 493-502.

Rhine, S., & Toussaint-Comeau, M. (2002). Adult preferences for the delivery of personal finance information. *Journal of Financial Counseling and Planning, 13*(2), 11-25.

Richter, D., Kunter, M., Klusmann, U., Ludtke, O., & Baumert, J. (2011). Professional development across the teaching career: Teachers' uptake of formal and informal learning opportunities. *Teaching and Teacher Education, 27*(1), 116-126.

Schuchardt, J., Hanna, S, D., Hira, T. K., Lyons, A. C., Palmer, L., & Xiao, J. J. (2009). Financial literacy and education research priorities. *Journal of Financial Counseling and*

Planning, 20(1), 84-95.
Serido, S., Shim, S., Mishra, A., & Tang, C. (2010). Financial parenting, financial coping behaviors, and well-being of emerging adults. *Family Relations, 59*(4), 453-464. DOI:10.1111/j.1741-3729.2010.00615.x
Smith, C., Hofer, J., Gillespie, M., Solomon, M., & Rowe, K. (2003). *How teachers change: A study of professional development in adult education*. (NCSALL Reports #25). Cambridge, MA: National Center for the Study of Adult Learning and Literacy. Retrieved from http://www.ncsall.net/index.php?id=29.
Stringer, E. (2008). *Action research in education*. Upper Saddle River, NJ: Pearson.
Taylor, E. (2008). Transformative learning theory. *New Directions for Adult and Continuing Education, 119*, 5-15.
Willis, L. E. (2009). Evidence and ideology in assessing the effectiveness of financial literacy education. *San Diego Law Review, 46*(2), 415-458.
Willis, L. E. (2011). The financial education fallacy. *American Economic Review, 101*(3), 429-434.
Xiao, J. J., Chen, C., & Chen, F. (2014). Consumer financial capability and financial satisfaction. *Social Indicators Research, 118*(1), 415-432.

About the Author

Billy J. Hensley, Ph.D. is the Director of Education for the National Endowment for Financial Education® (NEFE®) where he directs the grant-making, research, college, and consumer education programs for the foundation. Hensley joined NEFE in 2010 and has since managed a national teacher professional development enterprise, the foundation's research agenda, and several financial literacy initiatives. Prior to joining NEFE, Hensley was a Research Fellow at the University of Cincinnati, and has held positions at KnowledgeWorks Foundation, the Ohio College Access Network, and Union College. His primary research interests are interpersonal growth and development, teacher professional development, and the socio-cultural influences on choice. Hensley is the recipient of the Rising Star Alumni Award from Union College, where he earned a BS and an MA. In addition, he received the Outstanding Doctoral Student of the Year Award in Educational Studies from the University of Cincinnati where he earned a PhD.