

Online Financial Education Programs: Theory, Research, and Recommendations

Jinhee Kim

Mia B. Russell

Allison Schroeder

University of Maryland

Technological advances have created unprecedented opportunities for online financial education that can be used to improve financial literacy and money management practices. While online financial education programs have become popular, relevant research and theoretical frameworks have rarely been considered in the development of such programs. This article synthesizes lessons from literature and theories for the development of an effective online financial education program. Drawing from literature on financial literacy education and online education, implications and recommendations for integrating technology into online financial education programs for adults are discussed.

Keywords: Financial education, personal finance, online education, social learning theory, behavioral economics

Financial literacy is commonly defined as the understanding, ability, skills, and confidence to manage personal finances and improve financial decision-making (Lusardi & Mitchell, 2014). Lack of financial literacy among American adults has been well documented (Lusardi & Mitchell, 2009, 2014). Financial education has been associated with increased financial literacy, resulting in positive financial behavior changes (Hira, 2012; Lusardi & Mitchell, 2014; Way, 2014). Many financial education programs offer easily accessible and widely available educational materials designed to help adults increase their financial knowledge and better manage their money (Fox, Bartholomae, & Lee, 2005), yet, evidence suggests many programs lack grounding in theory and research (Willis, 2009). Although traditional printed materials and in-person classroom-style workshops are most prevalent, technological advances have created opportunities for online financial education in recent years (Hira, 2012). While an unprecedented array of financial education options abound for individuals with access to an internet-connected device, not all information available is trustworthy or reliable, of high quality content, nor does it effectively engage learners (Hira, 2012; Way, 2014). However, online financial education, if well designed, may have the unique potential to supplement or complement other delivery methods in improving financial knowledge and skills.

Direct correspondence to Jinhee Kim at jinkim@umd.edu

The purpose of this article is to review theories and literature for the integration of technology into financial education programs for adults. After a review of the current literature, we discuss the potential for technology integration to advance financial literacy and education. Finally, we discuss limitations of online financial education tools and resources, as well as offer future suggestions for researchers and practitioners.

Financial Education and Theoretical Frameworks

The underlying rationale of financial education is that it increases financial knowledge, which in turn leads to more effective financial behaviors and better consumer outcomes (Hathaway & Khatiwada, 2008). Although the rationale is clear, the literature paints an uneven picture of the benefit provided by financial literacy education programs (Collins & O'Rourke, 2010). While some find that the benefits of financial education are promising (Federal Deposit Insurance Corporation, 2007; Hogarth, 2006), others question the methodological rigor of studies of financial education (Hathaway & Khatiwada, 2008; Willis, 2009), as well as whether human psychology factors (i.e., personal biases and limitations) more accurately predict financial behavior than financial education (West, 2012). Research has also found the effects of financial education on financial behaviors diminish with time (Fernandes, Lynch, & Netemeyer, 2014).

Prior research offers implications for financial education programs. One implication is that “just-in-time” financial education tied to specific financial decisions may be more effective than general education designed to be applied at a later time (Collins & Holden, 2014; Fernandes et al., 2014). As knowledge and skills gained from financial education are more difficult to retrieve, retain, and apply in the future, effectiveness is greater when applied more immediately after learning (Fernandes et al., 2014; Thompson, Gentner, & Loewenstein, 2000). Online financial education programs and tools may meet the need for “just-in-time” education, as they provide access for individuals, anytime and anywhere, to gain relevant information to make informed decisions.

A second key implication of prior research is that many financial education programs lack an explicit theory to frame the delivery of information (Collins & Holden, 2014). Experts have pointed to the importance of theory in guiding both the development and evaluation of financial education programs (Collins & Holden, 2014).

Theories of behavioral economics and social learning are often applied in increasing confidence and knowledge, enhancing financial skills, and explaining human behavior. Social learning theory asserts that people learn through social interaction (Bandura, 1977; Perry, Baranowski, & Parcel, 1990). According to this theory, learning occurs through observation, imitation, and reinforcement among various environmental influences, such as family, friends, church, school, government, and media, which shape individuals' attitudes, knowledge, and values (Koonce et al., 2008; Perry et al., 1990).

Social learning theory has been used to study how people develop financial values, attitudes, knowledge, and behaviors. In particular, research has identified socialization agents such as family, peers, media, and schools that shape individuals' financial literacy (Danes & Brewton, 2014; Duflo & Saez, 2003). Studies have explored the impact of formal versus informal financial literacy training (Danes & Brewton, 2014; Duflo & Saez, 2003; Gudmunson & Danes, 2011). Further, social context and peer influence have been documented to influence financial education program attendance (Duflo & Saez, 2003) and retirement behaviors (Holden & Kock, 2011). Additionally, social learning theory suggests the need to foster learning communities that create accountability, engage adults, and encourage positive behaviors (Koonce et al., 2008).

Research related to behavioral economics investigates individuals' financial decision-making. Behavioral economics posits that human psychology factors, as well as social, cognitive, and emotional factors influence individual financial decisions (Byrne & Brooks, 2008). Shefrin and Statman (1985) argue that cognitive biases, emotions, and perceptions of risk may jeopardize good financial decision-making. Applications and interventions grounded in behavioral economics seek to trigger deliberate action and encourage positive financial behaviors through reduced procrastination as well as improved self-control and willpower (Benartzi, Peleg, & Thaler, 2007; Choi et al., 2004; Karlan et al., 2016; Soman & Zhao, 2011; Thaler & Benartzi, 2004). Strategies that have been shown to improve perceptions and decision-making include framing, choice architecture, automation, feedback, and reminders (Choi et al., 2004; Statman, Fisher, & Anginer, 2008). Framing provides a mental and emotional filter on which individuals rely to understand and respond to events as well as make decisions (Kahneman & Tversky, 2000; Karlan et al., 2016). Choice architecture is the deliberate design of presenting options that consider the impact of choices on consumer decision-making (Benartzi et al., 2007). Behavioral economics suggest automation can counter procrastination and inaction (Thaler & Benartzi, 2004), while feedback and reminders can trigger deliberate action and spur positive behaviors (Choi et al., 2004; Karlan et al., 2016; Soman & Zhao, 2011).

Various forms of nudges, such as choice architecture and automation, can be useful and cost-effective (Choi et al., 2004; Thaler & Sunstein, 2008). Consumers have a variety of needs and are required to make individual financial decisions. "Just-in-time" financial education can be provided alone or with tailored options for consumers (Fernandes et al., 2014). Research suggests that financial education should include tools that can be used when consumers are close to their decision making process (Fernandes et al., 2014). Online platforms can provide both choices and just-in-time education in one place. Further, online financial educational tools, such as smart phone apps, can be designed to provide immediate and personalized feedback for financial behaviors such as saving, as well as reminders for behavioral changes.

Online Financial Education

While the goal of financial education is to increase financial knowledge and skills, online financial education may be used to complement or supplement traditional financial education methods. Traditional financial education participants benefit from face-to-face interaction; however, online financial education offers an opportunity to reach broader audiences, meet participant needs in alternative ways, and engage learners beyond traditional teaching and in post-educational encounters. There is an increased demand for lifelong learning and a desire to receive education “on-demand” from emerging student segments, such as working adults and underserved populations (Fernandes et al., 2014; Volery & Lord, 2000).

Technological advances have ushered in opportunities to explore nontraditional financial education. Online financial education typically includes readily available and accessible lectures, webinars, videos, downloadable documents, activities, worksheets, and website resources. These online tools and resources may help expand access, increase engagement, and enhance financial education (Volery & Lord, 2000).

Factors that influence the effectiveness of online learning for adult populations include dynamism and relevance (Anderson & Elloumi, 2004), learner-centeredness, instructional quality (Snyder, 2009), and appropriateness of the design and delivery (Cercone, 2008; Greenagel, 2002). As with face-to-face educational encounters, individual learning styles and levels of engagement will differ. However, this variability becomes increasingly important when there are no verbal or visual cues to help educators know when, how, and to what extent modification is necessary. Delivery platforms must address various learning styles to adequately and appropriately reinforce and reward individuals for positive financial progress (Greenagel, 2002; Snyder, 2009). Moreover, as asserted by Cercone (2008) and Snyder (2009), adult learners need to be actively engaged in the learning process, early and often, to ensure deeper understanding and discovery. Creating immediate opportunities to practice and put knowledge to use is essential for success (Fernandes et al., 2014). Targeted online education programs can be developed to address specific financial needs such as opening a retirement account or applying for a credit card, mortgage, or student loan. Also, developers of online financial education programs can and should embed engaging activities throughout the program (Ahmed, 2010; Cercone, 2008; Rehm, Allison, Bencomo, & Godfrey, 2013) with the ultimate aim of helping learners make discoveries on their own rather than passively receiving information from an instructor (Volery & Lord, 2000).

Grounded in social learning theory and behavioral economics principles, there is some evidence that technology integration can support motivation and positive financial behaviors (Snyder, 2009). For example, programs that provide regular prompts or reminders can encourage positive financial behaviors (e.g., saving) and motivate individuals to take action and accomplish

predetermined financial goals (Karlan et al., 2016). For appropriate and effective implementation of online financial education programs, research and theory suggest that learning communities, learner accountability, and brief and goal-oriented tasks may translate into increased motivation and ultimately lead to behavior change.

Learning Communities

Social learning theory suggests the importance of learning communities, especially for adults. Online learning communities may provide an ideal opportunity to engage adults and encourage positive behaviors (Snyder, 2009). Specifically, learning communities support activities and interaction with others whereby learners transform information into meaningful knowledge (Greenagel, 2002; Yuan & Kim, 2014). These interactions help shape and reinforce attitudes, knowledge, and values about money and financial management. Learning is partly social; individuals enjoy talking, observing, and connecting with others. Adults bring a wealth of experience that can be built upon to encourage deeper understanding, confidence, and competence as they learn from one another (Koonce et al., 2008). The challenge for online education developers is to foster positive, social spaces using electronic platforms (Cercone, 2008).

Learner Accountability

As social learning theory suggests, learning is both social and constructive. Online financial education programs can maintain by providing regular feedback, as well as facilitating accountability among members of the learning community. Cercone (2008) suggests online programs should state learning goals and objectives at the beginning, with periodic reviews. It may be beneficial to encourage learners to formulate their own learning objectives by conducting an initial self-assessment and by testing participant knowledge with brief quizzes and self-assessments before, during, and after the program. As adults want to understand what they will learn and why, accountability can help adult learners maintain focus and concentration on their goals.

Brief and Goal-Oriented Tasks

Many consumers choose online education because they are too busy to take time out of their daily lives to attend regular classes (Volery & Lord, 2000). Consequently, keeping tasks or sessions short and goal-oriented is important for busy adult learners. Behavioral economics principles suggest reminders and prompts as strategies that can keep adults focused on their goals. Reminders draw attention to future goals and opportunities, keeping those future goals at the front of people's minds (Karlan et al., 2016). Adult learners vary in their level of initiative to complete or achieve certain goals or tasks; therefore, Cercone (2008) suggests providing brief, directed, and concrete tasks may help learners become more self-directed.

Effective online financial education – like financial education more broadly – should not only increase knowledge but also assist in improved financial decision-making and encourage positive behavior change (Hira, 2012; Lusardi & Mitchell, 2014; Way, 2014). Adults inherently learn and develop values, attitudes, and knowledge about money through social interaction, observation, imitation, and reinforcement. Social learning theory can be used to design online financial education programs that appropriately engage adults, while behavioral economics can be employed to more positively frame decisions, prompt deliberate action, and encourage positive behaviors.

Promising Online Tools to Promote Behavior Change

Several online tools have applied principles of behavioral economics, such as providing regular prompts or reminders via text messages and emails to help consumers overcome their personal biases and change their financial behaviors (Way, 2014). Two noteworthy resources that are available to promote behavior change are Stickk.com and PiggyMojo.com.

PiggyMojo.com is an online application designed to help users save money by quantifying opportunities to avoid spending and to visualize savings goals. Using behavioral economics principles, such as text reminders, PiggyMojo triggers deliberate savings and facilitates positive reinforcement and encouragement among peers (Choi et al., 2004; Karlan et al., 2016; Soman & Zhao, 2011). Stickk.com is another application that allows users to create a "Commitment Contract" to achieve personal goals. Using this free online service, users select a date or time period by which they contractually agree to accomplish their goals. Drawing from social learning theory, Stickk.com users can invite others to monitor their progress and act as supporters. These tools are promising examples of effective integration of theory, research, and technology in changing financial behaviors.

Limitations and Recommendations

For practitioners and researchers, there are challenges and limitations to implementing online financial education. Online education programs may not be able to completely replace unique interactions provided by face-to-face programs. A blended approach that integrates online and in-person learning might offer the best of both worlds to adult learners. Evaluating online financial education programs may be more challenging than face-to-face programs. While evaluation is an essential part of any program, formative or process evaluations will be especially important for investigating the effectiveness of online financial education and how its components support the learning needs of target audiences. Further, an understanding of new and emerging web tools and other strategies for fostering online learning communities need to be investigated. There is also the potential for security and privacy issues; as a result, it is important to investigate and verify evaluation tools and the extent to which they can be safely and securely embedded in the online financial program.

Technology is central to our lives. Embracing technology by offering online financial education may offer alternative and innovative ways to reach broader audiences. Embracing technology requires more than just publishing print materials online; financial educators and practitioners must design effective and interactive online programs and tools that build knowledge, facilitate improved financial decision-making, and foster positive behavior change. Several recommendations follow from this review of the literature. Firstly, educators and practitioners currently utilizing classroom-style programs can integrate technology by offering online tools and resources to extend in-person educational encounters. Second, websites should be created that offer tools, lectures, webinars, videos, downloadable documents, activities, worksheets, and other resources for “on demand” learning. Third, standalone online educational programs ought to be tailored for specific financial behaviors and decisions and for specific audiences; targeted programs may be more effective than general financial education. A brief survey can be used to identify the needs of individuals close to the time of decisions and provide a tailored educational program on the basis of their responses. Social media platforms can be employed to facilitate learning communities in which adults are able to receive support and maintain accountability. Fourth, educators and practitioners should employ diverse modalities and platforms such as chatrooms, blogs, online games, and smart phone apps to accommodate various learning styles and effectively engage participants. Finally, educators and practitioners can help individuals establish and monitor their goals by structuring programs with alerts, reminders, and prompts.

Conclusion

Summarizing lessons from the financial education literature, social learning and behavioral economics theories, and the integration of technology, this brief report suggests that online financial education programs can increase lifelong learning, help adult learners gain new skills and knowledge, and encourage specific financial decisions and behaviors (Rehm et al., 2013; Volery & Lord, 2000). Online financial education can complement or supplement face-to-face education programs, although their effectiveness relative to traditional financial education programming has not yet been studied. Integrating online tools and resources in a dynamic and interactive way has the potential to engage adult learners and create positive financial behavior changes. Best practices suggest embedding program evaluation and tracking both online experiences and actions of participants to create an effective and integrated program. More rigorous evaluation is needed to determine whether and how research- and theory-based online financial education tools and resources deliver on their potential to increase adults’ financial knowledge and help learners apply knowledge in their financial decisions and behaviors.

References

- Ahmed, H. M. S. (2010). Hybrid e-learning acceptance model: Learner perceptions. *Decision Sciences Journal of Innovative Education*, 8(2), 313–346. doi:10.1111/j.1540-4609.2010.00259.x
- Anderson, T., & Elloumi, F. (Eds.). (2004). *Theory and practice of online learning*. Retrieved from http://cde.athabasca.ca/online_book
- Bandura, A. (1977). *Social learning theory*. New York, NY: General Learning Press.
- Benartzi, S., Peleg, E., & Thaler, R. H. (2007). *Choice architecture and retirement saving plans*. doi:10.2139/ssrn.999420
- Byrne, A., & Brooks, M. (2008). *Behavioral finance: Theories and evidence*. Retrieved from <http://www.cfapubs.org/doi/pdf/10.2470/rflr.v3.n1.1>
- Cercone, K. (2008). Characteristics of adult learners with implications for online learning design. *AACE Journal*, 16(2), 137–159. Retrieved from <http://anitacrawley.net/Resources/Articles/adultlearneronline.pdf>
- Choi, J. J., Laibson, D., Madrian, B. C., & Metrick, A. (2004). For better or for worse: Default effects and 401 (k) savings behavior. In D. A. Wise (Ed.), *Perspectives on the economics of aging* (pp. 81–126). Chicago, IL: University of Chicago Press.
- Collins, J. M., & Holden, K. C. (2014). Measuring the impacts of financial literacy: Challenges for community-based financial education. *New Directions for Adult and Continuing Education*, 2014(141), 79–88. doi:10.1002/ace.20087
- Collins, J. M., & O'Rourke, C. M. (2010). Financial education and counseling—Still holding promise. *Journal of Consumer Affairs*, 44(3), 483–498. doi:10.1111/j.1745-6606.2010.01179.x
- Danes, S., & Brewton, K. (2014). The role of learning context in high school students' financial knowledge and behavior acquisition. *Journal of Family and Economic Issues*, 35(1), 81–94. doi:10.1007/s10834-013-9351-6
- Duflo, E., & Saez, E. (2003). *Implications of information and social interactions for retirement saving decisions*. Pension Research Council (Working Paper 2003-13). Retrieved from <https://eml.berkeley.edu/~saez/duflo-saezWP2003-13.pdf>
- Federal Deposit Insurance Corporation. (2007). *Financial education: Survey shows FDIC's money smart program improves consumers' money-management practices and financial confidence*. Retrieved from <https://www.fdic.gov/consumers/consumer/moneysmart/pubs/ms070424.pdf>
- Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science*, 60(8), 1861–1883. doi:10.1287/mnsc.2013.1849
- Fox, J., Bartholomae, S., & Lee, J. (2005). Building the case for financial education. *Journal of Consumer Affairs*, 39(1), 195–214. doi:10.1111/j.1745-6606.2005.00009.x

- Greenagel, F. L. (2002, August). *The illusion of e-learning: Why we're missing out on the promise of technology*. Retrieved from https://www.league.org/sites/default/files/private_data/imported/occasional_papers/0802.html
- Gudmunson, C. G., & Danes, S. M. (2011). Family financial socialization: Theory and critical review. *Journal of Family and Economic Issues*, 32(4), 644–667. doi:10.1007/s10834-011-9275-y
- Hathaway, I., & Khatiwada, S. (2008). *Do financial education programs work?* FRB of Cleveland (Working Paper No. 08-03). Retrieved from http://www.usc.edu/dept/chepa/IDApays/publications/do_financial_education.pdf
- Hira, T. K. (2012). Promoting sustainable financial behavior: Implications for education and research. *International Journal of Consumer Studies*, 36(5), 502–507. doi:10.1111/j.1470-6431.2012.01115.x
- Hogarth, J. M. (2006, November). *Financial education and economic development*. Paper prepared for G8 International Conference on Improving Financial Literacy. Retrieved from <http://www.oecd.org/finance/financial-education/37742200.pdf>
- Holden, K., & Kock, S. (2011). *Increasing retirement savings by working women: Understanding gender disparities in Wisconsin deferred compensation program account balances*. Center for Financial Security (Working Paper 10-1). Retrieved from <http://www.lafollette.wisc.edu/images/publications/workingpapers/holden2012-011.pdf>
- Kahneman, D., & Tversky, A. (2000). *Choices, values and frames*. Cambridge, UK: Russell Sage Foundation and Cambridge University Press.
- Karlan, D., McConnell, M., Mullainathan, S., & Zinman, J. (2016). Getting to the top of mind: How reminders increase saving. *Management Science*, 62(12), 3393–3411. doi:10.1287/mnsc.2015.2296
- Koonce, J., Mimura, Y., Mauldin, T., Rupured, M., & Jordan, J. (2008). Financial information: Is it related to savings and investing knowledge and financial behavior of teenagers? *Journal of Financial Counseling and Planning*, 19(2), 19–28.
- Lusardi, A., & Mitchell, O. S. (2009). *How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness*. National Bureau of Economic Research (No. W15350). Retrieved from <http://www.nber.org/papers/w15350.pdf>
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. doi:10.1257/jel.52.1.5
- Perry, C. L., Baranowski, T., & Parcel, G. S. (1990). How individuals, environments, and health behavior interact: Social learning theory. In K. Glanz, F. M. Lewis, & B. K. Rimer (Eds.), *Health behavior and health education: Theory, research, and practice* (pp. 161–186). San Francisco, CA: Jossey-Bass.
- Rehm, M., Allison, B. N., Bencomo, A., Godfrey, R. V. (2013). Online education in family and consumer sciences university programs and four models for teaching online. *Family and Consumer Sciences Research Journal*, 41(3), 235–253. doi:10.1111/fcsr.12011

- Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. *Journal of Finance*, 40(3), 777–790. doi:10.1111/j.1540-6261.1985.tb05002.x
- Snyder, M. (2009). Instructional-design theory to guide the creation of online learning communities for adults. *TechTrends*, 53(1), 45–57. Retrieved from <http://online-educator.pbworks.com/f/Snyder09OLlearningcommunity.pdf>
- Soman, D., & Zhao, M. (2011). The fewer the better: Number of goals and savings behavior. *Journal of Marketing Research*, 48(6), 944–957. doi:10.1509/jmr.10.0250
- Statman, M., Fisher, K. L., & Anginer, D. (2008). Affect in a behavioral asset-pricing model. *Financial Analysts Journal*, 64(2), 20–29. doi:10.2469/faj.v64.n2.8
- Thaler, R. H., & Benartzi, S. (2004). Save more tomorrow™: Using behavioral economics to increase employee saving. *Journal of Political Economy*, 112(S1), S164–S187. doi:10.1086/380085
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. London, England: Penguin.
- Thompson, L., Gentner, D., & Loewenstein, J. (2000). Avoiding missed opportunities in managerial life: Analogical training more powerful than individual case training. *Organizational Behavior and Human Decision Processes*, 82(1), 60–75. doi:10.1006/obhd.2000.2887
- Volery, T., & Lord, D. (2000). Critical success factors in online education. *International Journal of Educational Management*, 14(5), 216–223. doi:10.1108/09513540010344731
- Way, W. L. (2014). Contextual influences on financial behavior: A proposed model for adult financial literacy education. *New Directions for Adult and Continuing Education*, 2014(141), 25–35. doi:10.1002/ace.20082
- West, J. (2012). Financial literacy education and behaviour unhinged: Combating bias and poor product design. *International Journal of Consumer Studies*, 36(5), 523–530. doi:10.1111/j.1470-6431.2012.01118.x
- Willis, L. (2009). Evidence and ideology in assessing the effectiveness of financial literacy education. *San Diego Law Review*, 46, 415–458.
- Yuan, J., & Kim, C. (2014). Guidelines for facilitating the development of learning communities in online courses. *Journal of Computer Assisted Learning*, 30(3), 220–232. doi:10.1111/jcal.12042

Jinhee Kim, Ph.D., is an Associate Professor and Family Finance Extension Specialist at University of Maryland, College Park. She teaches courses in personal and family finance. Dr. Kim has developed, implemented, and evaluated financial education and counseling programs for a variety of audiences from low to moderate income individuals and families, employees at workplaces, teachers, financial educators and counselors, human service providers, volunteers, and more. Her research interests are financial strain and food insecurity in relation with family

and health outcomes. She also investigates financial socialization of youth and young adults, intergenerational transfer of time and financial assets, and financial management of immigrants.

Mia B. Russell, MBA, AFC, is a doctoral candidate at the University of Maryland, Eastern Shore. Her research interests include the intersection of personal finance, entrepreneurship, technology, and health insurance literacy among diverse and underbanked communities. She also investigates effects of financial education on workplace wellness and employee engagement.

Allison Schroeder, M.A., M.S., LGMFT, is a doctoral candidate at the University of Maryland and a licensed marriage and family therapist. Her research interests include maternal mental health in contexts of cumulative disadvantage, adverse childhood experiences, and policy and program interventions to reduce health disparities.