

# When I First Learned about Retirement: Financial and Retirement Concept Recognition among College Students

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**Abstract** It has long been argued that financial literacy education should begin in childhood or adolescence, but little is currently known about the ages at which individuals come to understand basic retirement and financial planning concepts. The primary goal of the present investigation is to provide data that reflect the reported ages at which key general and technical retirement planning concepts are acquired. A secondary goal is to identify individual difference dimensions—including one's financial literacy level and early parental learning experiences—that are associated with the age at which key concepts are reportedly acquired. Retrospective reports obtained from a sample of 646 college students revealed that an understanding of general concepts was widespread and took place during the pre-teen and early teenage years. Understanding of the technical concepts was suboptimal, however. Nearly half of the sample were unfamiliar with most of the technical terms. Among those who were familiar with the technical concepts, learning reportedly occurred later in adolescence. Understanding of both sets of concepts was linked to higher financial literacy scores and saving lessons learned during childhood from one's parents. Results have implications for financial literacy intervention programs designed to target children, adolescents, and young adults.

**Keywords** Retirement · Financial literacy · Financial knowledge · Early learning · Child · Saving

Numerous reports have documented the finding that in the United States, financial literacy and financial competency levels among members of the general population are abysmal (Lusardi and Mitchell 2011, 2014; Xiao et al. 2013). Insufficient financial literacy in adulthood results in a range of negative outcomes, from short-term implications such as mismanagement of day-to-day finances (Haynes-Bordas et al. 2008) to long-term consequences such as the inability to amass a sufficient retirement nest egg

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(Hibbert et al. 2012) and decrements in life satisfaction (Joo and Grable 2004). Moreover, a general lack of financial awareness extends down the age scale to American adolescents (Clarke et al. 2005; Mandell 2008). In the current saving and investing climate, financial literacy and financial competency are perhaps more important than in previous decades. This is because the majority of responsibility for one's retirement income is no longer predominantly determined by one's employer and the state, but instead, it is largely determined by the saving and investment decisions of individual American workers (Lusardi 2008).

One often touted solution to the literacy problem is to deliver financial education programs to children and adolescents, in order to cultivate a life-long pattern of responsible spending and saving. Thus, we draw upon Vygotsky's Sociocultural Theory of Cognitive Development (Vygotsky 1930-1934/1978) by positing that the acquisition and construction of knowledge for children is based on critical interactions with parents and caregivers. The learning of a particular concept is optimized when the child is said to be in a zone of proximal development. This is the point in time where he or she has the cognitive resources and knowledge base to understand a new concept (e.g., "nest egg"), but due to a lack of experiential knowledge still requires guidance to assimilate the concept into his or her existing schemas of the world.

Thus, the key to success of any financial literacy program is the ability of intervention agents—such as parents, teachers, caregivers, and financial educators—to introduce new ideas about finances at the appropriate developmental age or life stage. This is what childhood education researchers refer to as "scaffolding" the curriculum (Wood et al. 1976). One challenge then, in developing an appropriate learning plan for children and adolescents, is to know the age or developmental stage at which individuals *typically* acquire important domain-specific concepts. The goal of the present paper is to document the age at which college students report having learned about important retirement and financial planning concepts.

At the present time, only a handful of youth-based financial literacy programs and organizations are in existence. Some are sponsored by non-governmental organizations (NGOs), others by the federal government, and still others by traditional educational institutions. The Jump\$tart Coalition for Personal Financial Literacy is a good example of one such organization. Jump\$tart is a non-profit group that "strives to prepare youth for lifelong successful decision making" by sponsoring advocacy, research, and educational resources (Jump\$tart 2013). By partnering with more than 100 other national organizations, Jump\$tart has established a clearinghouse of resources and activities designed to promote youth financial literacy.

As opposed to the literacy training approach outlined above, a different approach to the challenge of stimulating a pattern of life-long saving can be found in attempts to establish youth retirement individual development accounts (IDAs; Shobe and Sturm 2007). Youth IDAs have been conceptualized in a variety of ways, however, one approach envisions providing every American child with starting funds earmarked for retirement. Additional tax-exempt contributions to the account could then be made by family members, friends, communities, and by the child as he or she begins to earn an income. The goal of establishing the account is to allow the individual to learn how to invest funds wisely in order to establish a suitable financial nest egg. It has been argued by Shobe and Sturm (2007) that this approach to literacy education would be particularly fruitful for children who live in low-income households. This is because

these children would be unlikely to have the same opportunities for financial education as their counterparts from moderate- or high-income households. Empirical evidence for the efficacy of IDAs in the area of financial savings has recently been demonstrated by Han and Sherraden (2009).

Some traditional educational institutions have also become involved in literacy education, by requiring students (primarily at the high school level) to complete a personal finance module as a part of the curriculum (Sherraden et al. 2011). At the time this paper was written, 20 states had mandates that required personal finance topics be taught to high school students by incorporating key concepts into the existing curriculum, and four states (Utah, Missouri, Kentucky, and Virginia) require students to complete a one-semester course devoted to personal finance (Jump\$tart 2013; National Council for Economic Education 2013). Early research that examined high school literacy programs was encouraging (Bernheim et al. 2001; Cowan et al. 2011); however more recent work has suggested that school-based programs may have a limited long-term impact on savings (Klein and Mandell 2009). One forward-thinking program was recently instituted in the Midwestern state of Ohio, which integrated financial literacy content standards for middle- and high-school students and mandated course completion with end-of-course tests. This program of standards draws upon sources from multiple disciplines including business, family and consumer science, and social studies (NASBE 2012).

The guiding belief behind each of the three efforts outlined above is that increased levels of financial literacy and awareness will lead to not only increased financial planning competence and savings over the course of one's lifetime, but also to clearer financial goals and more positive attitudes toward money management (Clark et al. 2006).

Not everyone, however, unquestioningly shares a broad vision of youth financial education programs. Ekerdt (2004) recounts a story in which he witnessed high school students attending a retirement planning seminar specifically designed to increase financial literacy. Although he is a strong advocate of retirement planning practices and financial education, Ekerdt questioned whether it is developmentally appropriate to introduce financial information to individuals who may not be ready to assimilate it. Guiso and Viviano (2013) take a more extreme position by suggesting that financial literacy education is a poor edge against financial mistakes, a conclusion drawn after having examined investors performance surrounding the 2008 global financial crisis (see also Willis [2008] on the case against financial literacy education). Others have suggested that instead of literacy intervention programs, libertarian paternalistic approaches may be the answer (Statman 2013). Paternalistic approaches involve developing choice architecture frameworks designed to help individuals make sound future-oriented decisions (Thaler and Benartzi 2012). It could be argued that these concerns about literacy education are well grounded given that little is known about the age at which children first gain recognition of basic financial concepts.

Establishing the ages at which different retirement planning concepts are first learned would be helpful for a variety of reasons. First, doing so would serve to identify an appropriate age at which children are old enough to understand key concepts, yet still young enough to fully benefit from knowledge of the concepts throughout the remainder of their lives. A second reason is that establishing ages at which concepts are learned could lead to insights into the types of retirement planning concepts that are

easily grasped, and which are more difficult to comprehend. Finally, establishing ages at which children learn basic financial concepts would help schools, educators, and governmental agencies target financial literacy interventions in a way that maximizes the likelihood of success.

In addition to establishing baseline ages at which retirement planning concepts are learned, it may be worthwhile to establish how many individuals fail to recognize key concepts in adulthood. In one study (Mayer et al. 2011), researchers assessed university employees' recognition of various retirement planning heuristics (i.e., rules of thumb). Overall, they found concept recognition was low, and there were little in the way of differences as a function of age and gender. By demonstrating that many individuals are not familiar with even basic financial and investing heuristics, the authors were able to shed light on specific areas that could be targeted for improvement.

The present investigation sought to establish ages at which various financial and retirement concepts were reportedly acquired. Two key research questions were addressed. The first was, *at what age do children and adolescents report acquiring knowledge about fundamental retirement and financial planning concepts?* And the second question was, *based on self-reports what percentage of individuals fail to acquire key concepts by the time they enter college?* By documenting the age at which knowledge acquisition reportedly takes place, our hope is to establish a descriptive developmental timeline that could be used by parents, teachers, and intervention specialists when communicating retirement and financial planning concepts to America's youth.

Beyond the two research questions outlined above, additional inferential analyses focused on the extent to which certain psychological scales covaried with the age at which important retirement and financial lessons were ostensibly learned. Specifically, a recently developed measure of parental influences on saving (Koposko and Hershey 2014) was administered, in addition to a measure of financial literacy (OECD-INFE 2011). We hypothesized that individuals whose parents had a stronger influence on their savings practices during childhood would report learning about retirement and financial concepts at an earlier age (hypothesis 1).<sup>1</sup> We further predicted that respondents who report learning about the concepts at an earlier age would report having higher levels of financial knowledge relative to individuals who learned the concepts later or not at all (hypothesis 2). Both hypotheses were tested using planned comparisons. Moreover, both hypotheses were tested separately for general and technical concepts, which is a conceptual distinction described more fully in the Measures section.

## Method

### Participants

A total of 722 undergraduate students were included in the study. Of these participants, 646 provided useable data. Their age ranged from 17 to 22 ( $M=19.54$  years,  $SD=2.95$ ),

<sup>1</sup> Our working assumption here was if parents cultivated an environment conducive to saving, children would have been more open to learning about concepts related to finances and retirement planning.

and 64.7 % of the sample ( $n=418$ ) was female. Ninety-four percent of respondents reported being single (including 1 % who were divorced or widowed) and 6.0 % reported being married or living with a partner at the time of testing. Less than one-fourth of the sample (23.1 %) were employed on either a full or part time basis, with an annual personal income of \$4,800. Moreover, the median parental household income level of respondents (\$75,000) was higher than the national household average, as would be expected among a sample of college attendees. Finally, 80.2 % of respondents reported being white and 91.0 % of individuals self-identified as non-Hispanic.

All participants were recruited from a large Midwestern university, and each received partial course credit for his or her involvement in the study. Psychology majors made up the largest group of respondents (17 %), followed by students who were “undecided” (10 %). The remainder of participants indicated they were majors in other departments from across the university. Although psychology majors were somewhat overrepresented in the present investigation, in terms of age, gender, and prior level of education the members of the sample can be viewed as being representative of undergraduate college students attending a large state-based educational institution. Relative to a non-student sample, members of this sample were likely somewhat better educated and had a lower income than members of the general population in the 17–22 year age range.

## Procedure

Data were collected as part of a larger study on retirement attitudes, knowledge, and perceptions. Individuals were made aware of the study through the department of psychology research participation system. Each respondent completed a questionnaire administered via an online data collection website (Survey Gizmo) at the time and place of their choosing. Thus, all responses were collected and coded online. All participants were treated in accordance with the 2010 ethical guidelines specified by the American Psychological Association.

## Measures

Three measures were included in the study: (1) A measure of retirement and financial concept recognition, (2) a measure of financial literacy, and (3) a measure of parental influences on saving. In addition, demographic information was collected from all respondents.

The 14-item concept recognition measure asked students to indicate at what educational stage they became familiar with various retirement and financial concepts. Of the 14 items, five focused on general concepts related to retirement (e.g., “*I understood that retirement is a typical part of life*”), and seven other items tapped more technical financial concepts (e.g., “*I understood the concept of retirement income replacement rates*”). Given the possibility of socially desirable responding—that is, participants endorsing items they were not actually familiar with—two foils were included among the set of 12 valid concepts (e.g., “*Double income replacement reversal*”). At the outset of the study the a priori decision was made to exclude from consideration the entire set of responses for any individual who endorsed both foils as valid concepts they learned while growing up.

Rather than asking participants the age at which they acquired knowledge of key concepts, the decision was made to ask students to retrospectively report their educational level when learning took place. This is because one's age can be a rather narrow and abstract representation of one's developmental stage. Enquiring about one's educational level, in contrast, provides for the respondent a rich context in which life lessons were learned. Thus, it was felt that participants would be better able to pinpoint when lessons were learned by providing the option of four broad educational epochs. For each of the 14 items, the following six response options were provided: "*When I was elementary school,*" "*When I was in middle school,*" "*When I was in high school,*" "*When I was in college,*" "*I'm still somewhat unfamiliar with this concept,*" and "*I'm not at all familiar with this concept.*" To compute mean ages at which students reported becoming familiar with particular concepts, the age students typically reach by the middle of the education epoch was used for coding purposes. These age scores were as follows: elementary school (8.5 years), middle-school (13.0 years), high school (15.5 years), and college (20.0 years).<sup>2</sup> Responses to the last two response categories ("*somewhat unfamiliar*" and "*not at all familiar*") were both coded as non-familiar concepts, and therefore, not included in the computation of mean scores. Rather, these responses were analyzed separately as "Don't Know" (DK) responses.

The 4-item parental influences on saving measure (Koposko and Hershey 2014) was designed to assess the effect one's parents had on children when it came to money management and saving. A sample item is, "*My parents had a strong influence on my current opinions about saving.*" The measure uses a 7-point Likert-type response format (1=*strongly disagree*; 7=*strongly agree*). The parental influences on saving score for each participant was the mean of the four items, with higher scores indicating a greater degree of positive parental influences on saving. This measure was shown to have a Chronbach's alpha level of .86, thus demonstrating a degree of internal consistency reliability that was above threshold. For analysis purposes reported below, this variable was dichotomized using a median split to create high and low parental influence groups.

In addition to the parental early learning measure, the 8-item "Financial Literacy Measurement Core Questions" test developed by the Organization for Economic Cooperation and Development (OECD-INFE 2011) was administered. Items on this literacy test, which has been validated in numerous countries around the world, are scored dichotomously (correct/incorrect), with a higher score indicative of a higher level of literacy. In the present investigation, the Kuder-Richardson reliability coefficient for the measure (KR-20) was found to be somewhat low at 0.44, which could not be improved upon by eliminating individual items. Despite the low level of internal consistency reliability, however, the decision was made to retain the scale in the study given previous evidence of validation, its widespread use, and general acceptance by members of the academic community as a reasonable way to assess financial literacy.

<sup>2</sup> It is acknowledged that a degree of error may be introduced for any one individual by asking respondents to report a broad band educational period. That is, a student who learns about compound interest in high school at the age of 17 would be assigned an age score of 15.5 years, which under-represents the age of learning. However, by aggregating scores to create means, these under-representations would in all likelihood be offset by corresponding over-representations of other students. Therefore, to the extent that deviations surrounding the measure of central tendency is random, the mean should serve as an unbiased representation of participants' age.



## Results

As an initial step in the analysis process, we sought to determine whether there were participants who endorsed knowledge of both foil items, and thus, may have been responding on the basis of demand characteristics. Just under 10 percent of respondents endorsed either one or the other foil. Seventy-six individuals (10.5 % of the sample) endorsed both foils, and thus, their data were deemed to be unusable.<sup>3</sup> Responses from these 76 respondents from the initial sample of 722 were therefore excluded from the investigation, leaving 646 participants in the database.

Next, all data distributions were cleansed and checked for skew, kurtosis, and any other distorting factors that could have compromised general linear model statistical procedures. No aberrant data characteristics were identified in this regard.

We then turned to our primary focus, which was to determine the reported age at which different financial and retirement concepts were initially learned. As seen in Table 1, reported ages of learning for the various concepts are rank ordered from 1 through 12 (the two foil items were not ranked as valid concepts). In terms of early learning, respondents reported becoming familiar with two general retirement concepts at roughly 11 years of age: “*I understand that retirement from work is a typical part of life*” and “*I understand that I am likely to retire one day.*” At the other end of the spectrum were three financial concepts that were learned at roughly 16 years of age: familiarity with “*401(k) plans,*” “*vesting,*” and “*retirement income replacement rates.*” One general trend seen among the rank orders is that general retirement concepts were learned earlier than technical concepts, with general concepts included in the top five of the first six ranks.

Also of interest was the proportion of individuals who indicated that they were only somewhat or not at all familiar with the 12 concepts. Only a small subset of participants reported being unfamiliar with the general retirement planning concepts; fewer than 3 % of respondents provided DK responses for each of these five items. This degree of familiarity stands in sharp contrast to the familiarity levels seen for the technical concepts—four of which were found to be unfamiliar to more than 50 percent of respondents. Notably, more than 75 % of college students reported being unfamiliar with the concepts of vesting and retirement income replacement rates. This finding is important for two reasons. First, it suggests the mean age at which individuals reported having learned certain technical concepts may be based on only a small subset of respondents. And second, it suggests that the reader must interpret the mean concept acquisition ages for technical concepts with caution, because the “real average age” at which young American adults become familiar with these concepts is actually much higher, and beyond the scope of this sample.

We next examined the extent to which general financial concepts covaried with (i) respondents’ reported exposure to early savings lessons learned from their parents, and (ii) participants’ level of financial literacy as assessed by the OECD literacy measure.

<sup>3</sup> These 76 individuals were not demographically different from the remainder of the sample, as all participants were men and women of roughly the same age, work status, and educational background. However, those who failed both foils had significantly lower mean scores on the OECD financial literacy measure compared to those who did not,  $t(720)=2.83, p=.01$ . Although this does not increase faith in the validity of responses from participants who did not fail both foil items, it does suggest that those who did may have been responding on the basis of demand characteristics as a way to compensate for their perceived lack of knowledge.

**Table 1** Mean Age, Item Rank Order, and Percentage of Don't Know (DK) Responses for the 12 General and Technical Concepts

Rank Order	Item	Item Type	Mean Age Learned	SD	% DK Responses
1	I understand that retirement from work is a typical part of life	General	11.44	2.87	1.4
2	I understood that I am likely to retire one day.	General	11.49	2.98	0.8
3	I understood that people who do not work in old age still need money to live on, and many retirees receive their financial support from sources other than work.	General	13.33	2.76	2.8
4	I understood that I needed to save money in order to see my financial resources accumulate.	General	13.74	2.97	1.9
5	I became familiar with the concept of Social Security.	Technical	14.28	2.25	7.7
6	I understood that preparation for a successful retirement includes planning, saving, and learning about different financial options and resources.	General	14.56	2.35	1.7
7	I became familiar with the concept of inflation.	Technical	15.10	2.19	12.5
8	I became familiar with the term retirement nest egg.	Technical	15.37	2.64	58.0
9	I became familiar with the concept of pension plans.	Technical	15.49	2.20	53.4
10	I became familiar with the concept of 401 (K) plans.	Technical	15.83	2.08	38.9
11	I became familiar with the concept of vesting.	Technical	15.95	2.22	78.8
12	I became familiar with the concept of retirement income replacement rates.	Technical	16.71	2.26	77.6
NA	I became familiar with the concept of a double income replacement reversal.	Foil	16.75	2.34	91.8
NA	I became familiar with short-switch pension financing.	Foil	16.95	2.33	93.8

Participants who reported having low levels of parental influences on saving learned general retirement concepts at a later age ( $M_{\text{age}}=13.19$  years), on average, than those who reported more in the way of parental learning experiences ( $M_{\text{age}}=12.60$  years),  $t(643)=3.74, p<.01, d=.29$ . This finding provides support for hypothesis 1 as it relates to general financial and retirement concepts. Furthermore, high/low scores on the OECD financial literacy measure—again, based on a median split of the knowledge scale—revealed that low financial literacy participants reported learning concepts later in adolescence ( $M_{\text{age}}=13.06$  years) than high literacy respondents ( $M_{\text{age}}=12.55$  years),  $t(643)=2.77, p<.01, d=.22$ . We interpret this result to mean that those individuals who learned the general concepts earlier in life went on to have higher financial literacy scores by the time they reached college, thereby providing support for hypothesis 2 as it relates to general concepts.<sup>4</sup>

<sup>4</sup> In the analyses reported in this paragraph, the parental influences scale and OECD financial literacy measure were dichotomized as a way of conveniently reporting mean ages for the acquisition of general and technical concepts. However, analyses based on continuous versions of these two scales were also calculated. The Pearson correlations between the (non-dichotomized) parental influences scale and general and technical concepts were  $-0.19 (p<.01)$  and  $-0.08 (p=.055)$ , respectively. Furthermore, the correlation between the OECD literacy measure and the general and technical concepts was  $-0.18 (p<.01)$  and  $-0.10 (p<.05)$ , respectively.



The original analysis plan was to examine the technical concepts the same way the general concepts were analyzed, above. That is, to determine whether the mean age at which concepts were learned differed as a function of high and low levels of early learning and financial literacy scores. However, given the high DK rates for technical concepts, an age-based analysis such as this would be invalid, as it would be conducted on only those respondents who reported being familiar with the technical terms (about half the sample). Therefore, to explore the nature of the technical concepts more fully, analyses were carried out in which parental early learning experiences and financial literacy scores were used as dependent variables, and DK status for the set of technical concepts was used as the independent variable. Specifically, the sample was dichotomized into those who reported knowing a majority of technical terms (i.e., 0 to 3 DK responses from the set of 7; 55.7 % of the sample) and those who reported knowing fewer than half of the technical terms (i.e., those who produced 4 or more DK responses; 44.3 % of the sample). Consistent with the rationale for hypotheses 1 and 2 stated in the introduction, we anticipated that those individuals who reported having richer early learning experiences and who had higher levels of financial literacy would produce fewer DK responses.

Respondents who reported knowing a majority of the technical concepts were found to have significantly higher scores on the early learning variable ( $M=5.85$ ) than individuals who reported not knowing the majority of concepts ( $M=5.48$ ),  $t(644)=3.77$ ,  $p<.01$ ,  $d=.30$ . This finding reveals that those who experienced strong early learning messages from their parents during childhood produced a higher number of valid responses to the technical concepts than those whose parents provided lower levels of tutelage. Furthermore, participants who reported knowing a majority of technical concepts were found to have significantly higher financial literacy scores ( $M=5.73$ ) than those who produced a majority of DK responses to the technical items ( $M=5.17$ ),  $t(644)=4.77$ ,  $p<.01$ ,  $d=.38$ . Taken together, these findings suggest that financially literate individuals and those who experience a rich early learning environment during childhood are more likely to be aware of the meaning of technical financial and general retirement concepts. Both of these findings are consistent with the predictions associated with hypotheses 1 and 2.

## Discussion

The findings from this study paint an interesting picture of college students' awareness of various financial and retirement concepts, as well as the reported age at which those concepts were acquired. General concepts (e.g., "*Retirement is a typical part of life*" and "*I need to save money to see my financial resources accumulate*") are understood by virtually all members of the sample and they are learned during the pre-teen and early teenage years, on average. Understanding of technical concepts (e.g., "*Inflation*" and "*401 K Plan*"), in contrast, was poor among respondents. Only just over half of the sample reported being aware of the meaning of at least half of the seven technical concepts, and DK responses for some items ("*Vesting*" and "*Retirement Income Replacement Rate*") were in the 70 to 80 percent range. These DK responses are informative as they provide an indication of lack of understanding (cf., Ekerdt and Hackney 2002; Mayer et al. 2011) among young American adults. For those who did

report understanding the technical concepts, most learned them between 14 and 17 years of age.

Findings also revealed that learning savings concepts from one's parents was associated with the age at which general and technical concepts were reportedly acquired. This parent-child link is consistent with other finance research that shows parental money management skills influence children's asset-building outcomes in adulthood (Grinstein-Weiss et al. 2012). A different investigation (Hershey et al. 2010) assessed cross-culturally the impact parental financial lessons had on financial planning and saving practices among Dutch and American workers. Across four different empirical models representing younger and older adults from both countries, early financial lessons learned from parents resulted in the development of a longer future time perspective by the time children reached adulthood. A longer future time perspective, in turn, was predictive of clearer retirement goals and financial knowledge, which themselves were positively related to retirement planning activities and saving practices. Taken together, the findings from the present study, the Grinstein-Weiss et al. (2012) investigation and the Hershey et al. (2010) investigation highlight the important role parents play in the development of their children's future financial competence.

As the twig is bent, so grows the tree; or at least, so goes the time-honored educational saw. This saying seems apropos in light of the findings from the present investigation. To the extent that one of the keys to youth financial intervention programs involves scaffolding critical concepts at the appropriate cognitive-developmental stage for the child (Vygotsky 1930-1934/1978; Wood et al. 1976), then the outcomes from this study should prove informative. The findings suggest that children reportedly learn basic concepts about retirement from roughly 10–14 years of age and more technical concepts after the age of 14. Although these might be thought of as reflecting benchmark ages for knowledge acquisition, from a finance education perspective they might be more profitably be thought of as the age of cognitive maturity or readiness to learn these concepts. That is, these are the ages at which most children and adolescents have the requisite world knowledge and cognitive resources to assimilate these concepts into their existing schemas. Whether financial and retirement concepts can successfully be introduced at an earlier point in the lifespan is an empirical question that educational and intervention specialists might profitably debate.

The point made above regarding the child's readiness to acquire certain concepts raises a larger issue and an inherent limitation to our investigation. Certainly, there are many different parental individual difference dimensions (parental financial knowledge, socio-economic status, perceived importance of financial literacy) and child individual difference dimensions (e.g., intellectual ability, interest in topic) that predispose some children to acquire concepts earlier in life, and other at a later point in time. That being the case, it is important to bear in mind that the reported age of acquisition data we present are mean scores, made up of children who acquired concepts at a variety of different ages. For that reason, we do not advocate a one-size-fits-all approach to children's financial education. Rather, the parent should be well prepared to convey certain concepts and the child should be prepared acquire them. Therefore, the findings from this study should be viewed as a first step toward identifying the range of constructs that have bearing on a child or adolescent's financial knowledge acquisition.

One unequivocal conclusion from this study is that societally, we need to do a better job preparing adolescents to understand certain technical concepts by the time they enter college. Many adults in the 18–25 year age range are at a point in life where they need to make important decisions about a workplace *pension* program; the suitability of a variable-rate mortgage that is linked to the rate of *inflation*; and the best way to develop their own retirement *nest egg*. It seems unacceptable that many if not most of these college-age respondents are unfamiliar with the concepts *pension*, *inflation*, and *nest egg*—to name just three of the twelve words included in the concept recognition measure.

Clearly, both formal and informal modes of childhood financial education need to be strengthened in our country, rather than making financial education an instructional or parenting afterthought. Rather than establishing content standards for school-based literacy education on a state by state basis (cf., NASBE 2012), a broader educational agenda is warranted. Toward that end, policy makers need to commit to making financial literacy education a national priority, and concomitant with that goal resources need to be allocated to make that objective a reality. Moreover, parents themselves need appropriate resources to become better financial educators (JumpStart 2013), and they need to become better role models when it comes to saving and managing debt (Henegar et al. 2013).

Teaching money management skills will also be an important goal when it comes to nurturing financial self-efficacy, as competence in this regard is a pre-requisite to demonstrating regulatory self-control (Bandura 2001; Scholer and Higgins 2010). Furthermore, forging positive attitudes toward money management will also be important, as evidenced by dozens of psychological investigations that demonstrate a link between affect, attitudes, and behavior (Forgas 2008). Thus, a multipronged approach to shaping knowledge, skills, and abilities is needed; however, such an approach is admittedly ambitious. Any such approach would ideally involve interventions both at school and in the home.

## Limitations and Conclusion

Certain limitations of this study should be acknowledged. One is that the twelve-item measure of retirement concept recognition used in this study was rather brief. In future studies, more comprehensive measures of retirement concept recognition should be employed. A second limitation is that participants were asked to provide retrospective reports of the age at which they learned certain concepts, which may have been subject to biases or memory errors. Perhaps in future studies convergent data could be collected from parents to help establish the validity of participants' responses. One other limitation involves the fact that cross-sectional data were solicited from college students in order to draw inferences about a long-term developmental phenomenon that applies to a young adults beyond those enrolled at a university. Thus, our sampling design ultimately limited the broad generalizability of our findings. That being the case, we see the value in conducting a longitudinal investigation of naturally occurring financial and retirement awareness among children and adolescents. Although such a study would be costly and challenging to carry out, the findings from such a project could be extremely informative.

For more than two decades, financial professionals and educators have been strongly supportive of childhood and adolescent financial literacy programs. What we now have in our country, however, is an inconsistent patchwork of intervention programs across states, which has left many students ill-informed. In our opinion, what is needed is a comprehensive, wrap-around approach to literacy education (Hershey et al. 2015) that ensures all Americans—children and adolescents included—have access to appropriate literacy training. It has become increasingly apparent that policy makers, researchers, educators, and NGOs will need to work collaboratively in order to establish a comprehensive, national youth financial literacy and money management program. Such a program should help ensure that future cohorts will have the requisite skills to competently chart their own financial futures.

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