

CURRICULUM DEVELOPMENT AND CLASSROOM PRACTICE

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## Financial Education for Children: the Israeli case

IRIS BENDAVID-HADAR & YANIV HADAD

*Bar Ilan University, Tel Aviv, Israel*

**ABSTRACT** This article focuses on the financial education of children. Education is a key factor in achieving economic development and socio-economic equality. Financial education can provide children with some of the additional knowledge and skills required to this end. Second and third grade Israeli students ( $n = 121$ ), enrolled in three differently situated schools (in terms of religiosity level and socio-economic status [SES]), filled in a multiple-choice questionnaire constructed especially for this study, designed as a pre-test before starting a course on financial education. The analysis included an ANOVA test and t-tests. Results revealed an overall low level of financial literacy amongst Israeli children. Religious students displayed higher financial literacy in comparison to secular students, and students of high SES showed a higher level of financial literacy compared with low SES students. Mistaken preconceptions were also revealed. The insights gained will contribute towards developing more effective financial education for children, thereby improving their chances of future success.

### Introduction

The knowledge-based economy and the global age create many challenges for the traditional education system. Specifically, the new era changes the kind of skills and knowledge students need in order to effectively participate in the social and economic life. Financial education (FE) encompasses some of the additional skills and the body of knowledge required to participate in the global economy. As Lusardi argued, it is not possible to live in today's world without being financially literate (Council for Economic Education, 2011).

Both primary and secondary education significantly contribute to economic development and growth. The literature recognises human capital development and demonstrates how increased quality education provides future returns to the economy through increases in labour productivity (Hanushek & Kimko, 2000; Krueger & Lindahl, 2000). Moreover, better quality education increases average earnings and productivity and reduces the likelihood of social problems that, in turn, are harmful to economic development.

Sahlberg (2006) claimed that successful economies compete on the basis of high human capital development, which is best guaranteed by educated personnel. He argues that globalisation has increased economic competition between countries. Furthermore, Sahlberg highlights the general assumption that, to increase competitiveness, citizens must acquire knowledge, skills and attitudes necessary for civic success and the knowledge-based economy.

Additionally, a salient argument in the literature is that the distribution of education attainment affects socio-economic equality. Thus, countries with education systems producing more equal outcomes are more likely to promote future socio-economic equality than countries in which education is distributed less equitably (Green & Preston, 2001).

Education is an important ingredient for fostering socio-economic equality (Beauvais & Jenson, 2002). Moreover, a state's economic and social policies (for example, as regards its educational system) are an important factor for achieving future socio-economic equality.

UNESCO also argued for the importance of education and education policy for socio-economic equality.

Israeli society is characterised by high and increasing income inequality. Specifically, the Gini coefficient of income inequality (0.392) in Israel increased between 2000 and 2009 (in comparison to, for example, 0.408 in the United States of America). The poverty rate, compared to the Organisation for Economic Cooperation and Development (OECD) countries, is high: 24% of permanent residents are poor, as are 34% of Israeli children (National Insurance publication, 2009).

In light of the above-mentioned Israeli background, and in light of the literature that highlights the importance of education for achieving the goals of economic development and socio-economic equality at the state level, we further perceive FE, especially for children, as a key factor that may contribute towards reaching both of these goals. Our focus on FE in the early years of primary school is inspired by the OECD report that argues that, for people to be educated as early as possible, FE should start at school (OECD, 2012).

This article focuses on FE at the primary school level. The premise of this article is that the education process is an important factor in achieving economic development and socio-economic equality, and that FE is one of the important components in this process. Similarly, Grimes and Millea (2003) found poverty to be negatively associated with a state's requirement of its schools to include economics in their curriculum.

The research conducted answers three main questions:

1. To what extent are children financially literate, and in which sub-topics of financial literacy (FL)?
2. To what extent, if at all, do socio-economic status (SES) and religiosity level affect the FL level of children?
3. Amongst children, what are the common preconceptions related to FE?

## **Theoretical Framework**

### *The Growing Interest in Financial Education for Children*

Education is perceived as a process by which democratic countries strive to achieve competitiveness and social cohesiveness. The rapid changes that characterise the knowledge-based economy require schools to adjust and reform their curricula in order to sustain and achieve equality of opportunities. One such change is the computer literacy reform that is currently taking place in the schooling system. Another example is the necessary FE reform that is taking place in the United States of America (USA).

Almost half a century ago, Nobel laureate George Stigler (1970) reasoned that economically literate citizens are better able to make decisions about educational investment, job opportunities, personal finances, and politics, and that better individual decisions ultimately result in stronger societal outcomes.

Currently, this argument is specifically focused on FE. Lusardi argues that FL is a core life skill. She further states that, 'financial literacy is an essential tool for anyone who wants to be able to succeed in today's society, make sound financial decisions, and – ultimately – be a good citizen' (Council for Economic Education, 2011, p. 2).

The interest in FL stems in part from concern over people's lack of FL, a lack of knowledge that is acute in our global era and knowledge-based economy. This is particularly true when individuals are viewed as consumers of financial products. Concern has been expressed about the ability of these consumers to make effective decisions (e.g. Schagen & Lines 1996; Jennings et al, 1997). Van Rooij et al (2007) relate FL to financial decision-making. The evidence available suggests that financial information is used ineffectively to make decisions regarding financial products.

There is a growing consensus that the above-mentioned concerns may be resolved by education. Bernheim et al, (2001) indicate that increasing exposure to high school FE elevates the rate at which individuals save and accumulate wealth during their adult lives. They conclude that education may be a powerful tool for stimulating personal FL.

Furthermore, this conclusion is relevant not only for high school education. Kourilsky (1987) asserts that elementary school children can learn economics if they are exposed to appropriate strategies and materials. Additionally, she claims that successful implementation requires the

effective use of learning principles, as children can learn economic concepts through a variety of instructional methodologies.

Additionally, Armento (1987) claims learning principles derived from learning theories (cognitive and behavioural schools of thoughts) can help improve instruction in K-12 (ages 5-18) economic education. Specifically, the behavioural principles of contiguity, classical conditioning, operant conditioning, and social learning can help to change existing classroom behaviour or to shape new learning outcomes. Additionally, she claims, the cognitive views on learning can help in finding better ways of attracting student attention, improving comprehension and retention, and developing the higher level processes of concept learning and problem solving.

Schug and Birkey (1985) examined the development of economic reasoning in young children from the theoretical perspective of Piaget's work on cognitive development. They argued that the economic understanding of children develops in a way reflective of Piaget's theory. Specifically, their findings indicated that the children's reasoning type showed significant differences at the grade level for all concepts, except exchange and scarcity. Moreover, the pattern of responses in all cases but opportunity costs showed an upward progression from simple to abstract reasoning by grade level. Additionally, economic understanding varied depending on children's experience. They suggest that children's economic reasoning could be enhanced through class activities and field trips.

McCormick (2009) conducted a literature review on youth financial education and concluded that the field of FE for youth and children is in need of further development and research compared to the more developed field of adults' financial education. However, she argues that adult strategies and approaches cannot simply be re-engineered down to more age-appropriate versions and imposed on a K-12 educational system, but rather that they need more development.

Moreover, Lucey and Cooter (2008) demonstrated that FL needs to become an important component of the K-12 curriculum in all schools in the USA. They revealed that schools do too little to ensure that students leave school prepared to manage their financial lives. Furthermore, they argued that FE can assist in escaping socio-economic marginalisation.

#### *Definitions of Financial Literacy*

Although the definitions of FL vary, most have similar components. Each of the different FL definitions refers to the importance of having the skill sets and knowledge to make informed financial decisions. The National Financial Educators' Council's definition of FL also adds a psychological component. FL definitions either directly or indirectly refer to the situation of a changing economic environment.

Mason and Wilson's (2000) conceptualisation of FL emphasised viewing FL as a process leading to desired outcomes. Their model of conceptualising FL proposed that individuals use a combination of skills, technologies, resources and contextual knowledge to make sense of information in order to be sufficiently informed to make decisions with an awareness of their financial consequences.

They suggested that FL must be conceptualised as a complex phenomenon whereby individuals make sense of information in order to assess the financial consequences of their decisions, made in order to achieve desired outcomes. They further asserted that financial awareness is a part of FL. In order to be financially literate, individuals must be financially aware. However, individuals may be financially aware without being financially literate.

Similarly, Lusardi and Mitchell (2011) found that the financially savvy are more likely to plan and to succeed in their planning; they rely on formal methods such as calculators, and on the advice of financial experts, instead of those of family, relatives or co-workers. They also asserted that these results have implications for targeted FE efforts. In a report for the National Foundation for Educational Research in the United Kingdom, Schagen and Lines (1996) defined FL as 'the ability to make informed judgments and to take effective decisions regarding the use and management of money'.

Worthington (2006) argued that FL is about people being informed and confident decision-makers in all aspects of their budgeting, spending and saving, but that measures of FL should reflect individual circumstances, and are therefore relative. Alternatively, Beal and Delpachitra (2003)

argued that the financially literate should not only have the ability to understand key concepts in money management, a working knowledge of financial institutions, systems and services, and a range of analytical skills, but should also possess an attitude towards the effective and responsible management of financial affairs. Hogarth (2002) found that most definitions of FL include knowledge and understanding of basic financial concepts and the ability to use these to plan and implement financial decisions.

#### *Research on FE*

Previous research indicates that FE should be developed further. Beal and Delpachitra (2003) surveyed a wide cross-section of the student population of a regional Australian university with a substantial external student enrolment. First-year Faculty of Business students, as well as students in other faculties or disciplines, were targeted. The research found that FL amongst these students was not high, which likely stems from the lack of financial skills education in high schools. Of the five identified areas of financial skills or knowledge, decision-making skills and knowledge of insurance appeared to be the least well developed. The weighted average score for decision-making skills was 47% and for knowledge of insurance was 46%.

Beal and Delpachitra found that respondents scored reasonably well on basic concepts, but the questions were simple. The most difficult question, which only 52.9% of the respondents answered correctly, tested basic knowledge of compound interest (with no calculation involved). Similarly, the planning questions tested low-level skills and knowledge, but only 27.9% of respondents appeared to understand the method for effecting bank reconciliation.

Finally, they found that the students who undertook business studies, even those who were in their first year of university, scored better. This result was probably due to a higher inherent interest in financial matters, a greater level of directed reading and more attentive listening to financial reports in the media.

They concluded that university students in Australia are not skilled or knowledgeable in financial matters. This lack of financial skills may impact negatively on their future lives through incompetent financial management. It also does not augur well for the national economy, where an assumption made by both the government and the private sector is that individuals are skilled agents, operating at a high level of competence.

They also claimed that the lack of a comprehensive FE programme in both primary and secondary schools is evident. The sooner such a programme is implemented in all states, they asserted, the better the outcomes for both the individuals and the economy as a whole.

Research also indicates that there is a need to develop FE for the young. Markow and Bagnaschi (2005) claimed that high school students in the USA still show room for improvement in their understanding of personal finance. They found that most of the students underestimate the impact of a college degree on earnings. Only 20% knew that adults who are college graduates earn about 70% more per year on average than adults who are only high school graduates. Some half of the students did not know that keeping savings as cash at home has the greatest risk of losing value due to inflation.

Schug and Birkey (1985) argued that the majority of third graders (ages 8 to 9) are beginning to use more advanced types of economic reasoning. One reason for this may be that young consumers in grade three and above are having more economic experiences and are starting to make some economic decisions. Schug (1983) and Schug and Birkey (1985) suggested that the upper primary grades are an appropriate level at which to emphasise instruction about fundamental economic concepts.

#### **Method**

The research conducted here is based on the Mason and Wilson (2000) model. We developed a multiple-choice closed questionnaire as a pre-test prior to the development and implementation of a special FE programme. The questionnaire was specifically designed for children aged 7 to 9. Similarly to Mason and Wilson (2000), our view on FE also emphasises the process of learning. We also used Bloom's Taxonomy (1956) in developing the questionnaire; some of the questions are

aimed at examining knowledge, while other questions are aimed at examining higher levels of skills, such as application (i.e. using new knowledge to solve problems in new situations by applying acquired knowledge, facts, techniques and rules in a different way). The questionnaire was given to the students at the beginning of the school year.

#### *The Questionnaire*

The questionnaire encompasses two parts: one examines knowledge by attempting to reveal the most common mistaken preconceptions of students, and the second part examines their application of financial knowledge (e.g. in problem solving). There is a total of 36 closed items in the questionnaire. Each item includes four answer choices. Of these answers, only one is the correct answer, and the rest are based on common mistaken preconceptions discovered in a prior round of student interviews. The questions encompass key sub-topics of FE that are grouped into the following four categories: Consumption, Money, Banking, and Saving, each of which encompasses several questions (16, 12, 3, and 5 questions, respectively).

The reliability of the questionnaire is high (Cronbach's alpha = 0.875). The validity of the questionnaire was analysed in the development stage by three independent specialists of FE who provided insightful comments on the different items.

#### *The Sample*

The sample encompasses 121 primary school students who were randomly selected from low-level classes at a high SES located primary school and two low SES located schools in the periphery. One half of the students are second graders and the other half are third graders. Their ages range from seven to eight years old. The students had received no prior FE in school.

About one half of the students are enrolled in a low SES school, about a third of the participants are enrolled in a high SES school, and the rest are enrolled in a low or average SES school. Specifically, each school is in a locality with a different level of SES, with the high SES level school located in Tel-Aviv (32%), the average SES level in Hadera (46%), and the low SES level in Ashkelon (22%). The Hadera School is a secular school (46%) and the two other schools are religious (54%). Approximately one half of the students attend a religious state school (the curriculum in these schools resembles that of other schools in Israel, however they are characterised by the religious beliefs of the students and their parents), and the other half of the students attend secular state schools.

#### *Methodology*

The questionnaires were analysed using SPSS software. The analysis conducted was comprised of descriptive statistics, an ANOVA and t-tests. The analysis was conducted in three steps. In order to answer the first research question – to what extent are children financially educated and in which sub-topics of FE – the overall average of correct answers was calculated. Additionally, the average of correct answers for each of the four categories was calculated. This analysis gives us some insights for the development and implementation of a new programme for learning FE, regarding which of the sub-topics require more attention and further instruction in order for the children to become more financially literate.

In order to answer the second research question – to what extent do SES and religiosity level affect the FL level of children – we conducted an ANOVA, and compared the mean differences using a Scheffé test and t-tests. This stage provides us with insights on the relationship between school and student background characteristics and their pre-FE level. The insights gained from this stage of analysis will assist us in developing a gradual learning programme adjusted to these background characteristics.

Finally, in order to answer the third research question – the most common mistaken preconceptions of financial concepts amongst children – we analysed the frequencies of the answers given to each of the questions. The most frequently repeated answers were defined as major misconceptions. This stage of analysis provides us with insights on children's existing

knowledge about finances and related issues, prior to the learning process, and will assist us in developing the future course.

## Results

### *Results of Stage I: overall FL level*

There is a low overall level of FL amongst Israeli children that participated in this study. Less than a quarter of the students answered more than 60% of the questions (21 questions out of 36) correctly. The distribution of answers is presented in Table I.

The number of correct answers	Percentage of correct answers
0-21	76
22-25	16
26-30	8
31-36	–

Table I. Overall performance distribution.

The correct answer grades range from 0%, which represents 0 correct answers, to 83%, which represents 30 correct answers out of the total 36 questions in the questionnaire.

As previously mentioned, the questionnaire encompasses four categories of FE. Each category is related to a different sub-topic of FE, including: Banking; Consumption; Money; and Saving (comprised of 3, 16, 12, and 5 questions, respectively). Each category encompasses questions that examine the students' knowledge and skills at problem solving.

Category	Percentage of answered questions
Banking	46
Consumption	5
Money	7
Saving	21

Note: answered questions are those questions for which the student provides an answer.

Table II. The percentage of answered questions by category.

Table II indicates that students' FL levels are relatively low in regard to the categories of Banking and Saving, compared with the FL level in the categories of Consumption and Money. One reason may be that they are more familiar with the terminology of consumption and money, and therefore find related questions easier to answer. Nonetheless, the FL levels in each of the four categories are low.

Specifically, the average percentages of correct answers for the categories of Banking and Saving (46% and 21% of the questions were answered, respectively) are rather low (27% and 37%, respectively). The averages for the categories Money and Consumption are higher in comparison to the former categories; however they are still not high (44% and 43%, respectively).

### *Results of Stage II: background characteristics' effect on FE level*

The results reveal that background characteristics indeed affect the pre-FL level of children. Based on t-test analysis of between-groups means comparison, it is evident that the religious students display a higher level of FL in comparison to their secular peers ( $t = -3.16^{**}$  [ $**p \leq 0.01$ ],  $\text{sig} = 0.002 < 0.01$ , mean = 17 and 13, respectively).

Additionally, based on an ANOVA test of mean difference across the three SES groups, it is evident that the FL level of students enrolled at the high SES school (Tel Aviv) is higher compared

to that of students enrolled at the lower SES schools (Hadera, an average SES school, and Ashkelon, a low SES school). Specifically, students enrolled at the high SES school answered more questions correctly compared to students enrolled at the lower SES schools (means of the number of correct answers = 21, 13, and 12, for high, average, and low SES, respectively,  $F = 25.897$ ,  $\text{sig} = 0.00$ , Scheffe test for homogeneity was statistically significant). The overall average of correct answers is higher at the high SES school (mean = 58.26,  $n = 27$ ), compared to the low SES school (mean = 33.33,  $n = 39$ ).

### Results Stage III: preconceptions in FE

The results regarding the preconceptions of students are as follows.

Question number	Question	Preconception	%
1	'Income is ... ?'	'saving' or 'interest'	22
2	'What do the following words have in common: monetary gift, salary, and allowance?'	'monetary activities'	52
3	'Effective activity before buying is?'	'go to the bank'	29
4	'The prices are high on ...'	'final sale'	32
13	'Comparing prices is ...'	'done after buying'	23
17	'Historically money was made of ...'	'Bronze'	41
20	'The highest denomination paper bill in Israel is ... ?'	'500'	46
21	'The lowest denomination paper bill in Israel is ... ?'	'10'	41
26	'Where can we save money?'	'in a piggy bank or safe, in the bank, give to your parents'	29
30	'Interest rate is ... ?'	'parallel to a receipt'	28
34	'Your pizza delivery is late, what should you do?'	'I will call and find out what is going on'	37

Table III. Preconceptions.

As mentioned before, in this part we analyse the preconceptions of students by trying to determine for each question which erroneous answer was given most frequently. Though our students had not studied FE before, they still had some knowledge and still held beliefs related to financial concepts, many of which were incorrect and might have an adverse effect on future learning. Our method reveals these mistaken preconceptions, which will assist us in further understanding the financial knowledge that students have before receiving formal FE. This will contribute towards better tailoring FE to the needs and characteristics of the children.

To exemplify, about a quarter of the students think that comparing prices is an operation that one does after purchasing (see question number 13, in Table III), but actually it is done before. In another example, almost half of the students think that a 500 NIS bill is the highest paper bill in Israeli currency, however, the highest current denomination is the 200 NIS bill (see question number 20, in Table III).

Additionally, preconceptions are also evident in the decision-making process. For example, when students were asked what they would do if their pizza delivery was late, about a third answered they would call to find out what was going on (rather than asking for a discount as a compensation or even demanding their money back).

### Discussion and Conclusions

FE encompasses some of the additional skills and knowledge required to participate in the global economy. Lusardi's comments on the Survey of the States (Council for Economic Education, 2011) stress that: 'FE is like all other education: just as it was not possible to live in an industrialized society without print literacy – the ability to read and write – so it is not possible to live in today's world without being financially literate. To fully participate in society today, financial literacy is critical' (p. 1).

The increasing interest in the FE of school-aged children in Israel has emerged after the OECD's announcement that the next Programme for International Student Assessment (PISA) examination will additionally include a section regarding FL. The PISA examinations are focused on measuring the skills and capabilities needed to participate in the social and economic life. Currently, plans are being made by the Israeli Ministry of Education and Ministry of Finance for the development of a related curriculum for school-age children.

The results of the current study highlight the overall low FL level of Israeli children. They reveal that in some sub-topics of FE (i.e. Banking, Saving) the level is even lower compared to others (i.e. Consumption, Money). These results are in line with those of Schug (1983), who found some evidence to support the notion that the economic reasoning of children develops in a manner consistent with cognitive development theory, and that some of the concepts develop earlier than others.

Also, the relationships found between school and student background characteristics and their pre-FL level provide us with insights that will assist in developing a course adapted to these background characteristics.

The analysis of students' mistaken preconceptions highlights students' existing knowledge and their financial decision-making process before receiving FE, and will further assist us in developing the future course.

It should be noted that this study used a modest sample. Therefore, its conclusions are in need of elaboration using a larger sample that will make it possible to reach more generalised conclusions regarding the overall population of Israeli children.

However, the current study is significant for several reasons. First, it is pioneering research that reveals, for the first time, the low level of FL amongst Israeli primary school students. Second, it elaborates their mistaken preconceptions of financial issues. In the short term, the insights gained from this study will assist in developing a FE course for children, and in designing the desired learning process. In the long term, these insights may potentially contribute to achieving economic development and narrowing the socio-economic gap, as they help improve FE and inform the relevant policymakers.

A low level of FL might lead to undesirable consequences both at the individual level and at the state level. Citizens' lack of awareness regarding financial planning and pension programmes could lead to increasing the numbers of elderly poor in the population, a problem Israel can ill afford given its high and increasing percentage of working poor. Increasing the FL level of children is expected to increase their awareness and knowledge of these aspects and to assist them in wisely planning their future. Furthermore, since children's level of FL was found to be related to socio-economic factors, it may very well be that increasing it would contribute towards narrowing down gaps.

The findings of this research highlight the importance of policy recommendations that are needed in order to increase the level of children's FL. One such policy recommendation could be to design programmes, or at least add to existing courses, modules covering basic knowledge of financial aspects, as well as relevant practical skills, and to implement them at the national level.

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**IRIS BENDAVID-HADAR** is a Lecturer (equivalent to Assistant Prof.) at the Bar Ilan University School of Education. Previously, she was a Visiting Scholar at the School of Education at Stanford

University. Dr BenDavid-Hadar's research focuses on economics of education, school finance policy and social justice. *Correspondence:* [iris.bendavidhadar@gamil.com](mailto:iris.bendavidhadar@gamil.com)

**YANIV HADAD** is a PhD candidate at the Bar Ilan University School of Education. Previously, he developed a curriculum on financial literacy for primary school students.