ON THE EFFECTIVENESS OF FINANCIAL LITERACY EDUCATION: EVIDENCE FROM THE INVESTOR EDUCATION FUND

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ABSTRACT

This paper is the first to evaluate the effectiveness of youth financial literacy education programs in an environment of a government mandate to embed financial literacy education across the curriculum in grades four to twelve. It presents results from a unique data set of survey and focus group responses about the active efforts by a non-profit organization, the Investor Education Fund, to implement a suite of support tools designed to make teachers more effective at delivering financial literacy education in the classroom. Overall, the results suggest the IEF is effective at improving financial literacy awareness, intentions, and actual behaviors for both teachers and students.

Keywords: Financial Literacy, Focus Group Study, Education Program.

I. INTRODUCTION

The purpose of this study is to measure the effectiveness of financial literacy education, using a program developed by the Investor Education Fund (IEF) as a test case. As defined benefit pension plans become increasingly rare and individual debt burden continues to rise, average Canadians may struggle to meet financial commitments, and may not be financially prepared for retirement. A dearth of financial literacy amongst the general population could impact policy at all levels of government. Canadians may not possess the requisite financial literacy skills to navigate the budgeting and investment decision-making processes required to plan adequately for comfortable and secure retirement. Effective for the 2012/13 academic year, the Ontario Ministry of Education (MOE) made curriculum changes to embed financial literacy education into existing courses for grades four through twelve. The Investor Education Fund is a non-profit organization funded by fines imposed by the Ontario Securities Commission. One of the IEF's mandates is to provide training and resources to Ontario teachers in support of the MOE directive on financial literacy education. In 2014, the IEF provided the author with the opportunity to

evaluate the effectiveness of its programs based on a unique data set of survey responses and focus group feedback.

Haynes and Chinadle (2007) argue that financial literacy education content needs to recognize the distinct needs of educators whose expertise often excludes financial topics and must also emphasize active learning and multiple intelligence models. Godsted and McCormick (2007) document the need for teacher professional development required to ensure confidence with the subject matter and note current obstacles including lack of resources and materials. There has been no investigation to date on the challenges and effectiveness of embedding financial literacy education in the overall curriculum.

The objective of this paper is to make inferences about improvements to students' financial outcomes that are attributable to the impact of IEF education programs using pre and post surveying and focus group techniques. This is the best feasible approach given that statistically superior experimental and quasi-experimental designs suffer from implementation barriers — it is inappropriate to form control groups by excluding some students and teachers from financial literacy education programs. This paper presents an evaluation of program effectiveness based on survey results from participants at high school assemblies and teacher workshops and discusses the synthesis of feedback from teacher focus groups. The emphasis is on financial literacy awareness, intentions, and actual behaviors.

There is clear evidence that high school assemblies are an effective financial literacy education resource. Overall performance on awareness and knowledge improved by 79.6% and overall performance on intention improved by 56.4% — both results are significant at the 1% level. Overall performance on behavior improved by 7.2% but the result is not statistically significant.[1] Teacher workshops are an effective way for the IEF to expand reach and influence in the education community. Almost 90% of participants were attending their first IEF workshop. Participants represented a wide range of schools, grade levels, and subject areas. IEF workshops are effective at raising awareness about curriculum changes and removing barriers to implementing financial literacy education in the classroom. There is a 65.0% increase in awareness and a 10.8% decrease in teachers facing barriers. Almost all attendees (98.4%) would recommend IEF

[1] Given that the timing of the post survey was two to four weeks after the assembly, it is not particularly surprising that student behavior had not yet changed to a significant extent.

resources to colleagues. Teacher workshops are also effective at influencing teacher intentions — 96.0% of participants plan to use IEF resources in the classroom. The 30-day post survey results suggest that the workshops are effective at changing teacher behaviors and intentions (i.e., increased deployment of financial literacy education in the classroom, decreased barriers, and increased use and intention to use IEF lesson plans). Focus groups provided teacher feedback on the effectiveness of IEF education programs, including areas for improvement for teacher workshops and lesson plans, and on mechanisms for effectively surveying students who are exposed to the lesson plans and teachers who attend IEF workshops and use IEF lesson plans.

The primary contributions of this paper are twofold. It is the first to evaluate the effectiveness of youth financial literacy education programs in the context of a government mandate to embed financial literacy education across the curriculum. Second, it introduces a unique data set of survey and focus group responses about the efforts by a non-profit organization, the Investor Education Fund, to implement a suite of support tools designed to make teachers more effective at delivering financial literacy education in the classroom. Taken together, my results suggest the IEF is effective at improving financial literacy awareness, intentions, and actual behaviors for both teachers and students. The remainder of this paper proceeds as follows: the next section provides a brief literature review; section three discusses best practices for the evaluation of financial literacy education; section four presents the framework for evaluating effectiveness; section five describes the data and presents the results. The final section summarizes and concludes.

II. LITERATURE REVIEW

Literacy is the possession of basic knowledge or competence and education is the means to build that capacity (McCormick, 2009). Kozup and Hogarth (2008) find that worthwhile financial education programs start with a user-defined goal (e.g., reducing debt or saving for a real estate down payment). However, it is inappropriate to assume that it is easy or even possible to modify effective strategies for adults and maintain relevance for students in grades four to twelve — youth financial literacy education must be handled differently than traditional adult oriented programs (e.g., Godsted and McCormick, 2006). For example, in deploying financial literacy education for youth, it is not appropriate to start with their goals. Moreover, the topics deemed essential to financial literacy often do not resonate with youth (e.g., money management skills with respect to banking, finance, savings, and credit). In order for youth financial

literacy education to be effective, the programs must be relevant, capitalize on intrinsic motivation, start early, and avoid commercialization (e.g., Grody, Grody, Kromann and Sutliff, 2008, Borden, Lee, Serido and Collins, 2008, Meier and Sprenger, 2007, and Mandell and Klein, 2007). Furthermore, effective training for teachers is crucial — Loibl (2008) finds that teacher confidence with financial literacy subject matter is essential. While an opportunity exists to bridge gaps through public/private partnerships, there are potential problems with using corporate sponsorships to foster financial literacy (e.g., Kozup and Hogarth, 2008). There is an important distinction between holistic financial education and corporate-sponsored financial literacy education focused on future consumers of financial services.

McCormick (2009) finds that typical evaluation of youth financial literacy education (if it occurs at all) uses a pre and post-test model of assessment, but notes several well documented limitations of current evaluation practices including: biases with respect to self-reporting and self-evaluation (e.g., a tendency to overestimate the amount learned), measuring intentions to change rather than actual behavioral changes; lack of longitudinal follow-up to measure the retention of financial literacy education over time. A major impediment to measuring the effectiveness of financial literacy education is the widespread tendency to accept as a given that financial literacy education is essential to society — Hathaway and Khatiwada (2008) criticize the assumed causal link between financial literacy education and financial outcomes in spite of the scarcity of statistically significant evaluation. It is difficult, time-consuming, and expensive to monitor teacher actions. Typical evaluation results and conclusions are suspect because of missing variable bias (i.e., since many factors could affect behavior, it is difficult to definitively attribute changes in behavior to specific programs). There is a tendency to measure outputs (e.g., number of programs or number of attendees) instead of outcomes (e.g., changes in behavior such as goal setting, budgeting, and saving). Willis (2008) documents the bias in existing studies toward concluding that financial literacy education has been effective, finding that participants overestimate their extent of learning and cannot disentangle financial literacy education outcomes from direct assistance. There is self-selection bias in most studies. It is not possible to randomize subjects into treatment and control groups since adult financial literacy education is largely voluntary and there are legal, policy, and moral issues related to excluding some groups of youth from financial literacy education. Willis also highlights an important risk associated with financial literacy education in that it absolves the financial service industry and policy makers, from responsibilities (i.e., financially literate citizens have no one to blame but themselves when their

freely made decisions have poor outcomes). Gross (2005) identifies the error in assuming knowledge acquisition will produce fundamental change in consumer financial markets.

Best Practices for the Evaluation of Financial Literacy Education

Good evaluation is systematic, evidence-based, makes assessments, and contributes to decision making. Formative evaluation provides feedback on how to improve programs; summative evaluation determines whether programs are making a difference in pre-identified and desired outcomes. The cyclical evaluation process includes planning for evaluation, implementing the evaluation, reporting and using the evaluation findings.

The nature of youth financial literacy education precludes the use of statistically superior true experimental design (i.e., it is not fair or acceptable to create an evaluation plan that excludes students from financial literacy education to allow for evaluation using a control group). It is also very difficult to implement a quasi-experimental design which compares participants with non-participants (e.g., there would be data collection and matching issues in defining a control group of "teachers not exposed to financial literacy education teacher training"). As such, for valid practical reasons, the IEF chose a non-experimental evaluation design using standard pre and post evaluation techniques to investigate how much participants have changed as a result of the treatment or intervention. For example, in the case of teacher seminars, one measure was the subsequent actual use of IEF lesson plans. Although limited in comparison to other approaches, this design can be effective in studying changes in attitudes, learning, and behaviors.

The IEF collected data using pre and post surveys for teachers who attend seminars and for students attending high school assemblies about financial literacy. The intent of the data collection and analysis was to better understand the effectiveness of IEF education programs. The overall evaluation includes: impact evaluation — What impact is the program having on the financial education of Ontario students in grades 4 to 12?; outcome evaluation — How have Ontario teachers benefited from IEF education programs? Are the education programs having the desired effects?; design evaluation — Are the lesson plans contributing to the success of the program? Are there better ways to achieve the results?; and implementation evaluation — Are the lesson plans being used? By whom? How often? How many students are reached? What is the effect? Do the seminars improve teacher confidence? Does improved confidence increase the likelihood of lesson plan use?

Framework for Evaluating Effectiveness

The IEF views its work with schools and teachers to be one of its strongest assets. By providing teachers with solutions, the IEF embraces its mandate of transforming financial learning from an academic exercise into a practical instrument of change. The IEF played a key role in influencing the government of Ontario's decision to bring financial literacy education to grades four to twelve. Consistent with recent curriculum changes at Ontario schools, the IEF lesson plans, developed in partnership with University of Toronto's Institute for Studies in Education, are based on grade level (grade four through twelve) and subject (business studies, Canadian and world studies, English, guidance and career education, health and physical education, language, mathematics, science, social sciences and humanities, social studies, and the arts). The lesson plans focus on real life applications of personal finance matters. Professional development tools include customized workshops and presentations designed to provide teachers with resources and to highlight tips and strategies for developing students' financial skills. Classroom programs include the high school assembly "Funny Money" and lesson plans for integrating financial literacy educations into existing courses. IEF education programs do many things well; the challenge was to leverage existing positive initiatives to establish a framework for the robust long-term evidence-based evaluation of the effectiveness of the programs in improving financial outcomes for Ontario students.

Consider the summary of strengths, weaknesses, opportunities, and threats in Figure 1. Strengths and weaknesses are internal and within the control of the IEF; opportunities and threats are external to the IEF and may be critical to the success of IEF programs. The evaluation framework acknowledges and capitalizes on the strengths and opportunities and addresses (within constraints) the weaknesses and threats.

III. MEASUREMENTS

You cannot manage what you do not measure — it is essential to measure what is important. Based on the IEF youth survey (see Appendix A for further detail), effective financial literacy education focuses on topics that engage the target audience and that are applicable in the short to medium term. Moreover, students will likely be engaged by topics for which there is a large gap between their knowledge level and interest (i.e., relatively low knowledge and high interest). School courses and websites are the best methods for disseminating

financial education information to students. Students also want to receive more financial information from school assemblies. The perceived extent and quality of school programs has an impact on students' level of financial literacy. Student satisfaction with school personal finance programs has a direct and significant impact on self-perception of confidence in being prepared for the future. Approaches to financial literacy education need to consider the learning styles of different psychographic types.

The IEF has been effective in meeting the expectations of Ontario Ministry of Education curriculum changes regarding financial literacy education. See Appendix B for a more thorough discussion. The IEF developed lesson plans by grade level and by subject to assist Ontario teachers in meeting curriculum changes to include financial literacy education in existing courses. The lesson plans recognize the need for differentiated strategies to foster effective learning by students with different backgrounds and learning styles. The IEF provides teacher training and supports teachers in the classroom with lesson plans, web resources, interactive software tools, and resources to help teachers improve their self-confidence with financial topics.

Measuring the Effectiveness of Teacher Seminars and Lesson Plans

The first phase of the framework for evaluating IEF teacher seminars and lesson plans solicits feedback from Ontario teachers. Survey questions fall into different categories. Logistical questions assist with the quantitative evaluation of results and help establish high-level metrics with respect to program reach. Logistical questions typically do not require pre and post responses (e.g., questions about school, board, grade, and subject). The IEF is the largest provider of financial literacy education seminars and resources to Ontario teachers. To measure the effectiveness of IEF programs, surveys solicit feedback about participants' awareness, intentions, and behaviors; whether IEF resources meet participants' expectations; and ways to improve IEF resources and programs. The key areas of investigation are teacher seminars, lesson plans, and teacher self-confidence. Surveys are pre, immediate post, and 30-day post.

The second phase of the framework is the use of focus groups. The focus groups provide feedback on areas for improvement for teacher seminars; areas for improvement for IEF lesson plans; and mechanisms for effectively surveying students who are exposed to the lesson plans. Focus groups consisted of four or five teacher volunteers, plus a moderator and assistant moderator, and lasted between 70 and 90 minutes. The participants formed a homogenous group, but,

did not know each other. Within each focus group, teachers came from a cross section of schools and courses taught. There was a reasonable mix based on age and gender. All participants had previously completed an IEF seminar.

Measuring the Effectiveness of Funny Money Assemblies

The Funny Money assembly program is popular, fun, and engaging. Anecdotal evidence from previous assemblies indicated the program's value in raising awareness amongst high school students of the importance of financial literacy. To get a better measure of the areas of effectiveness of this program, the IEF uses pre and post surveying of a sample of students who attend the assemblies. The twelve survey elements address four core areas of financial literacy: budgeting, credit, time value of money, and investment & saving, making it possible to evaluate overall and core area performance improvement by students.

The intent of the above framework is to provide a systematic and evidence-based approach to assess the effectiveness of IEF literacy programs and to provide input for program improvement. The surveying provides a summative evaluation for determining whether IEF education programs are effectively making a difference in pre-identified and desired outcomes. The focus groups provide both summative and formative evaluation and solicit direct feedback for program improvement and enhancement.

IV. DATA AND EMPIRICAL RESULTS

Effectiveness of Funny Money Assemblies

Teachers (who volunteered to assist with data collection) conducted the pre-survey in class during the week prior to the assembly and the post-survey between two and four weeks after the assembly depending on class schedules.

Table 1 presents results based on 447 pre and 426 post-survey responses. The results separate awareness and knowledge statements from behavior and intention ones. For the awareness and knowledge statements, the average performance improvement of 79.6% is statistically significant at the 1% level. The areas of awareness and knowledge that showed the most improvement were I can explain the concept of compound growth (207% improvement), I know what a mutual fund is (161% improvement), and I can list three types of investment products (105% improvement).

In the survey, there are three behavior and intention statements. The results show that for the statement I track my spending and income, respondents had already started to change behavior by the time they completed the post-survey.

There was a 13.7% improvement in self-reported behavior (statistically significant at the 5% level) plus an additional 31.8% improvement in intention (statistically significant at the 1% level). The other two behavior and intention statements had statistically significant intention improvements at the 1% level. I spend less money than I have/earn improved by 88.1% and I save money regularly improved by 49.3%. The average overall intention improvement for the behavior and intention statements was 56.4%.

Effectiveness of Teacher Workshops and Lesson Plans

Phase 1 for evaluating IEF teacher workshops and lesson plans solicits feedback from Ontario teachers. The surveys focus on participants' awareness, intentions, and behaviors with respect to financial literacy education. Key areas of investigation are teacher workshops, lesson plans, and teacher self-confidence. Surveys are pre, immediate post, and 30-day post. During the 2013/14 school year, the IEF collected responses for 480 pre surveys, 424 immediate post surveys, and 41 30-day post surveys.

Table 2 presents summary demographic information. Almost 90% of respondents were first time IEF workshop attendees, and of prior attendees, 72% attended more than 12 months prior. Half were high school teachers and one-quarter were elementary teachers (who tend to provide instruction across all subject areas). Although Math (at 22.6%) and Business (at 12.1%) were the most common specific subject areas, the table shows that teachers across a wide range of subject areas attended IEF seminars.

Table 3 presents summary results comparing pre and immediate post surveys. There is a clear need to make teachers aware of changes to include financial literacy education across the curriculum. 39.5% of respondents were unaware of changes implemented by the Ministry of Education. Since IEF workshops clearly highlight the curriculum changes, the implied improvement in awareness is 65%.[2] Only 25.9% of teachers have introduced financial literacy in the classroom. Note there is a high response (31.3%) of N/A (not applicable). Given that the Table 2 results show that only 2.1% of respondents self-report as non-classroom teachers, the results suggest that those who were unaware of curriculum changes also believe that there is no requirement for them to introduce financial literacy in the classroom.

[2] 65% = 0.395/0.605. Given the general difficulty in getting attendees to participate in surveying, the IEF purposely chose not to repeat the "awareness" question in the immediate post survey to avoid perceived repetition and redundancy in pre and post surveys.

Pre-survey results show that three-quarters of classroom teachers face barriers to integrating financial literacy education. Of those, a third cite *resource availability* and half cite *self-confidence* with financial topics as barriers. In comparison, the immediate post survey results show that IEF workshops are effective at removing barriers. By the end of the workshop, two-thirds of classroom teachers still face barriers. The 10.8% decrease in teachers facing barriers to integrating financial literacy is statistically significant at the 1% level. Before the workshop, only one in ten attendees were aware that the IEF provides free financial literacy education lesson plans by grade level and subject. Post survey results show that almost all attendees (98.4%) would recommend IEF resources to colleagues. Of those who were aware of IEF lesson plans, half had downloaded at least one lesson plan, 86% intended to use or continue to use lesson plans, and almost 40% had already used lesson plans. A key insight is that when teachers download IEF lesson plans there is a strong probability that those teachers will integrate financial literacy education into their classrooms. The post survey results demonstrate the effectiveness of IEF workshops at changing teacher intentions with respect to financial literacy education. 96% of workshop attendees plan to use IEF resources. Of those, however, over 70% are not specific about the timing.

Table 4 presents results for 30-day post surveys. Only 41 workshop participants (i.e., fewer than one in ten) completed the online survey 30 days after the workshop. While the results suggest some interesting trends, the low sample size makes it impossible to draw statistically significant conclusions. In terms of the effectiveness of IEF workshops in changing teacher behaviors, the table shows the following:

a. 31.7% of respondents had introduced financial literacy education in the classroom (compared to 25.9% before the workshop — an improvement of 22.4%[3])

b. Continuing the trend of decreasing barriers, 43.5% of respondents faced barriers 30 days after the workshop (compared to 66.4% immediately after the workshop — a reduction of 33.5% — and 74.5% prior to the workshop — a reduction of 57.4%). Moreover, there was a shift in the nature of the barriers with teacher confidence becoming less of an issue, and "other", particularly time constraints, becoming the biggest barrier to integrating financial literacy education in the classroom.

[3] 22.4% = (0.317-0.259)/0.259

c. 23.1% of respondents have used IEF resources in the classroom and over 90% intend to use IEF resources in the classroom within the next 6 months.
d. All are willing to recommend IEF resources to colleagues.

Overall, these results suggest that IEF teacher workshops, lesson plans, and other resources are effective in making positive changes in teacher awareness, intentions, and behaviors with respect to financial literacy education.

Teacher Focus Group Results

The second phase of the evaluation of the effectiveness of IEF Education Programs involved focus groups. We conducted separate sessions on June 3 and 4, 2014 and solicited feedback on areas for improvement for teacher workshops; areas for improvement for IEF lesson plans; and mechanisms for effectively surveying students who are exposed to the lesson plans and teachers who attend IEF workshops and use IEF lesson plans.

Each focus group lasted approximately 70 minutes — all participants had attended an IEF workshop within the past twelve months, and all but one had downloaded and used at least one IEF lesson plan. The June 3, 2014, session had four teacher participants (grade 9 to 12) representing four different schools from both the Toronto District School Board (TDSB) and the Toronto Catholic District School Board (TCDSB). The June 4, 2014, session had five teacher participants (three grade 4 to 6, one grade 6 to 8, and one grade 9 to 12) representing four different schools from both the TDSB and the TCDSB. Collectively the group had experience teaching Business, English, Guidance and Career Education, Health and Physical Education, Mathematics, Social Studies and Humanities, Social Studies, the Arts, Science, Communication Technology, and Credit Recovery. The following is a synthesis of the key themes that emerged from the sessions.

Question 1 - What are the biggest challenges people face in making good financial decisions?

The most frequent responses related to the following:

Knowledge of and confidence about financial matters — Comments ran the gamut from not knowing where to begin to the ever-increasing complexity of financial products and markets. The IEF fills a critical need by providing resources for a wide range of constituents to improve knowledge and confidence.

Society, peer and media pressure — Large-scale marketing campaigns have elevated consumerism, blurring the line between wants and needs, and fostering endless competition with friends, neighbors, and coworkers. Society today is more complex compared to previous generations and many advances have increased the cost of living. Buying on credit provides a short term solution.

Avoidance of hard decisions — Individuals find it very difficult to forsake immediate (tangible) pleasure derived from current consumption for the much less tangible reward of future financial security.

A key insight is that effective financial literacy education must clearly address all of these issues.

Question 2 - Describe how financial literacy education at your school is instilling the skills and attitudes that lead to good money management, everyday?

The discussion focused on the following:
The relevance of financial literacy education depends on grade level, subject, and student attitude — For example, grade 4 to 6 students typically have very high interest in learning about money[4], as do grade 12 students who are graduating and facing life choices. By high school, however, there is an overall tendency for teachers and school administrators to view financial literacy education as a "business department thing". This perception is counter to Ministry of Education changes that call for the inclusion of financial literacy education across the curriculum.

Teachers need to cater to student needs and abilities

> "When they place value on the discussion, when they see that every financial decision has a consequence, when they understand the cause and effect — it gets to them."

> "Brain development in students, especially teenagers, makes it difficult to teach abstract concepts; our challenge is that it is difficult to integrate financial literacy into their daily lives because the brain does not process abstract thinking and logical reasoning. The lunch today is much more tempting than $100 ten years from now because ten years is half their lifetime."

[4] This aligns nicely with the IEF and Ministry of Education initiative of introducing financial literacy education early.

Parents and family demographics have big impact — Students learn and respond better when teachers share their personal journeys with financial literacy — a key insight is that teachers do not have to be experts in financial literacy to be effective educators.

Focus group participants also noted that there are several factors limiting the effectiveness of financial literacy education including the perception that the subject matter is the domain of the business department, lack of teacher endorsement or confidence, time constraints, and lack of a mandate from the Ministry of Education to officially assess financial literacy education.

Question 3 - What part of the IEF teacher workshops influenced you the most? Why?

The most frequent responses related to awareness, relevance, and ease of use of resources, and to the fact that IEF resources are created and endorsed by teaching experts. IEF workshop leaders are professional and knowledgeable, and the workshops include hands-on activities with clear linkage to the resources available on the IEF website.

Question 4 - What changes would you make to improve the IEF teacher workshops or the lesson plans?

There was general agreement that IEF teacher workshops and lesson plans are very good and that the IEF should continue to develop quality resources and to foster strong relationships between IEF workshop leaders and teachers — the resulting human capital is a significant contributor to the effectiveness of the IEF teacher programs. As the discussion turned to opportunities for improvement, the most frequent responses related to:

Connection to parents — ensuring that the classroom learning is supported at home. While the IEF website has resources for parents, it is important to have clear and formal linkages between what happens in the classroom and at home.

Clear identification of progressive themes that fit with different subjects — This is particularly important for subjects such as English in which numeracy is not a factor.

> "Kids need to know how to think about money that will help them when they think about people or think about emotions - it needs to be an overarching thing. The conversation about money will then make

> sense because it is more about how the student organizes her life better, as opposed to just learning about how to manage money better. Create a series of financial literacy themes from grade 9 to 12. For example, build as series of 10 minute Ted Talk lectures that actually teach you something about the economy, and not just the superficial part you can get from the newspapers, but how these things work on the inside and why it is necessary that they work that way, because that I can connect to a novel."

Providing real life examples, expanded interactive tools, and specific examples of how other teachers use IEF resources in the classroom.

Questions 5 - What motivated you to download lesson plans?

Participants were motivated to download lesson plans because of the quality and relevance of the resources, their desire to improve their abilities as (financial literacy) educators, the long-term importance of financial literacy education to society, and their personal relationships with IEF workshop leaders.

Questions 6 - Describe any difficulties you had in selecting and implementing lesson plans as part of your classes?

For most participants, implementation difficulties have little to do with the quality or availability of IEF resources. There was a general consensus that, overall, there is no widespread acceptance amongst teachers that financial literacy education is part of the curriculum and no expectation of change until the Ministry of Education mandates assessment of financial literacy that forms part of students' overall grades.

> "Maybe it is a ministry issue — maybe the MOE has to do more. Similar to media literacy[5], financial literacy is not assessed. There is not a financial literacy mark, so it is not implemented in every classroom."

Elementary teachers are more open to embedding financial literacy education because they are generalists. In high school, teachers specialize. The perspective of the teacher or department can create challenges.

[5] Media literacy is part of the language program but there is no requirement to assess it.

> "For us, the challenge was to find ways in which to make aspects of financial literacy the metaphor or the simile or whatever it was that we were focusing on at the time, so it still became a lesson about English - it was just that we were using financial literacy as our tool."

Questions 7 - How has your confidence level changed over time?

Respondents indicated an improvement in confidence about financial resulting from self-learning and helping others learn by sharing their own experiences (good and bad) making financial decisions.

> "I like that you can go to Get Smart About Money[6] and learn something for yourself and then take it into the classroom."

They also cited that their personal journeys with respect to financial literacy (i.e., the realization of the need to take control of their financial situation) have changed their own parenting styles and family interaction.

Question 8 - How can we increase the response rates to our surveys?

There was clear feedback that low survey response rates were not a poor reflection on the IEF, rather directly related to time pressures of respondents.

> "The world of teaching is chaotic. It is not that we don't like you. It is just that things like surveys do not get done."

Two key factors that will improve response rates are to continue to foster strong interpersonal relationships between IEF workshop leaders and teachers and to specifically ask for teacher commitment to engage in a simple surveying process that clearly identifies the teacher's time commitment.

> "Tell them the importance. Give them an incentive, not necessarily financial."

> "Teachers have more time in the summer. It is not that they do not want to do it. It is just a matter of priority."

Question 9 - How do you assess whether the students are learning the financial concepts that you are trying to teach?

[6] An IEF web resource.

Focus group participants rely primarily on anecdotal feedback to measure success with financial literacy education in the classroom.

> "I know it was successful when students come back and tell me their stories"

> "Students who are connected with the message give feedback and stay in touch with the teacher - for example, the boy who recommends reading *The Wealthy Barber Returns* or the girl who self-identifies as being frugal."

Teachers assess for curriculum expectations, not specifically for financial literacy. There is little or no formal assessment of the effectiveness of classroom financial literacy education.

Question 10 - How should you/we assess financial literacy education?

The most dynamic response was for IEF staff to integrate with School Improvement Teams. There was an open offer for IEF staff to work with specific schools starting in September 2014 to make *Financial Literacy Education* a formal project. While the jargon varied depending on the school, the idea was the same. School improvement teams select specific formal projects that get support across a department or the entire school. Assessment is part of any project, so the assessment needs of both the school and the IEF are met with a single initiative.

> "We would welcome advice and participation in setting up a focus around *financial literacy*, and our team would be supportive because Chris would be sharing in the work. For example, our focus this first term could be to embed financial literacy vocabulary into our subject areas. How do we go about doing that? Let's set the plan in motion. How do we assess it? What resources do we need?"

Respondents also identified the need for scaffolding tools that help teachers provide successive levels of support to ensure that students reach higher levels of comprehension. The IEF could build assessment into the tool. The assessment tool would create a win-win situation, teachers benefit because it improves learning and the IEF would get assessment results. There was clear feedback that

to get widespread adoption, any classroom assessment needs to satisfy teacher and IEF needs at the same time.

> "Come up with category based checklist or definition of what sound financial planning is, then the lesson could allow the teacher to put every student in the position of getting to that point by the end of the lesson, with no other option available. There would then be a lot more successes to share. The lesson plan should include the evaluation checklist."

Question 11 - What would entice teachers to use IEF supported assessment tools?

The most frequent response related to a clear Ministry of Education mandate for financial literacy education assessment.

> "Financial literacy must be part of *overall* expectations (not *specific* expectations where it just needs to be covered, not assessed). There is no accountability if it is not *overall*."

Moreover, there is a much higher likelihood of acceptance and use if assessment tools are user-friendly and satisfy teacher needs, and if there are strong interpersonal relationships between the IEF and teachers.

V. CONCLUSIONS

There is evidence that IEF teacher workshops, lesson plans, and student assemblies are effective in influencing awareness, intentions, and behaviors of teachers and students with respect to financial literacy. The IEF programs have addressed issues highlighted in the literature. Consistent with the call for resources recognizing the distinct needs of educators who expertise often excludes financial topics and emphasizing active learning and multiple intelligence models, the IEF provides financial literacy education designed specifically for the grade four to twelve target audience. The IEF has developed a wide selection of age-appropriate lesson plans (created by education experts) available at no charge to educators. The literature suggests that programs must be relevant, capitalize on intrinsic motivation, start early, and avoid commercialization. The IEF (a non-profit organization) used input from student opinion surveys to influence program content. Related to the finding that

teacher confidence with financial literacy subject matter is essential, survey feedback confirms that IEF resources increase teacher knowledge and confidence with financial literacy topics.

Focus group feedback shows clear testimonial to the effectiveness of IEF financial literacy education resources and identifies areas for improvement for teacher workshops and other resources including: connection to parents; identification of progressive themes that fit with different subjects; and providing real life examples, expanded interactive tools, and specific examples of how other teachers use IEF resources in the classroom.

An important barrier to classroom deployment and assessment of financial literacy education across the curriculum is the lack of a clear assessment mandate from the Ministry of Education. What gets measured gets done.

APPENDIX A Insights from Youth Survey[7] Results

Overall, the survey measures and monitors financial confidence, behavior, educational preferences, and topics of most interest. Students get some experience with money management through work, savings, and daily activities, but they need guidance and focused educational programs at school to capitalize on their experience. The effectiveness of financial literacy education depends on the nature of the subject matter — in general, engaging topics are situations that will occur in the short to medium term. An essential principle in financial literacy education is to make learning applicable to decisions that students know they will have to make. Moreover, the survey finds that the "focus on financial education in schools should be instilling the skills and attitudes that lead to good money management, everyday" (survey page 3).

Identified gaps between (low) knowledge and (high) interest may highlight topics more likely to engage students: living cost after college or university (short/medium term), buying a car (short/medium term), saving to move out of home (short/medium term), investing money safely (longer term), and building a financial plan (longer term). Since immediacy is important in motivating learning, the short/medium term topics are most likely to generate student interest — the longer term topics should be reframed to shorter term situations.

Students identified how they get and how they want to get financial literacy information (i.e., their preferences with respect to methods of learning). The

[7] The *Youth Financial Literacy Study 2012*, commissioned by the IEF, was completed by the Brodesbury Group, Toronto, ON in August, 2012.

two most popular sources of financial information were websites (0.55 actual vs. 0.65 desired) and school courses (0.49 actual vs. 0.64 desired). Note that those who use websites are more likely to self-identify as knowledgeable about financial information (possible causality) and web use increases with grade level (0.46 for grade 9 compared to 0.61 for grade 12). Students want more school assemblies than they get (0.18 actual vs. 0.35 desired). Note the implications regarding the Funny Money assembly program (popular, anecdotally successful and effective). Most often, students rate parents and the internet as common sources of financial information. Students assign a very low rating for teachers as sources of financial information. Effective implementation of the IEF programs for teachers provides an opportunity for the required change in attitudes.

The dominant trends based on changes to survey results between 2009 and 2012 include the following: students attach more importance to knowledge of how to manage money and take care of finances (increase to 0.7 from 0.64); students find it increasingly important for schools to teach them about personal finance (increase to 0.69 from 0.57); although at a low rate of agreement, more students believe that schools provide them with all or most of their required information regarding financial information (increase to 0.26 from 0.17) — in comparison, the changing responses for "some" and "none or bare minimum" were (decrease to 0.27 from 0.35) and (decrease to 0.47 from 0.48), respectively. Key insights are that a) the perceived extent or quality of school programs has an impact on students' level of financial literacy and b) student satisfaction with school personal finance programs has a direct and significant impact on self-perception of confidence in being prepared for the future.

The survey identifies three psychographic segments. To what extent do the IEF educational programs recognize the different learning needs and expectations of these personality types? Each segment has different spending and savings habits although most exhibit both tendencies. The three segments are: a) conscientious consumers who are characterized by value for money, researching before buying, dealing with socially responsible companies, and buying practical things; b) trendy techies who are willing to self-indulge and follow trends, are affected by advertising, and are influenced by friends; and c) stylish spenders who focus on style, love to shop, and believe that fashion defines the person.

Self-assessment of financial knowledge and abilities improves with age. Overall it is low, particularly for stylish spenders. Savers are twice as likely as spenders to self-identify as knowledgeable. When students feel that schools provide most or all of the financial information they require, they are more than twice as

likely to discuss personal finance. Most students have some experience with money, either through allowances or jobs. Given that students show interest in decisions they will have to make, financial literacy education needs to focus on products that students have. Savings accounts are the most common financial products for youths. Credit cards are also an important topic since credit card use increases with age.

APPENDIX B Curriculum Changes at the Ontario Ministry of Education

Effective for the 2012/13 academic year, the Ontario Ministry of Education made curriculum changes[8] to embed financial literacy education into existing courses for grades 4 through 12, based on general consensus that: financial literacy is an essential lifelong skill; students need to develop the financial knowledge, skills, attitudes, behaviors that will help them make good financial decisions; and students will best acquire knowledge and skills in a sequential, age-appropriate manner (i.e., greater depth as grade level increases).

The key findings of the Working Group on Financial Literacy include:

The importance of financial literacy education in supporting success for all students.
The potential for financial literacy education to address social inequities — this finding highlighted the need for differentiated strategies.

The need to focus on core content and competencies for financial education. While the key topics often exist in current curriculum, there is a need for financial literacy education to enhance and expand existing linkages. Note that there is a learning obstacle in that the core content for financial education is not typically of interest to the grade 4-12 students (based on the 2012 youth survey).

The need to support teachers in the classroom. Professional teacher training is essential and the IEF is particularly good in this area. Teachers and students stand to benefit from external resources that bring real-life experience into the classroom — the IEF has extensive experience deploying guest speakers and presenters (e.g., the Funny Money assembly program for high school seniors is engaging and motivating). The IEF fosters integrated learning with resources

[8] The changes were largely influenced by the 2010 report of the ministry's Working Group on Financial Literacy — *A Sound Investment: Financial Literacy Education in Ontario Schools*. The IEF was an important stakeholder in the working group.

such as lesson plans by grade level and by subject. The IEF provides seminars and workshops for professional learning for practicing teachers.

The importance of measuring progress with respect to expectations relating to financial literacy education topics embedded in the Ontario curriculum. Currently, all measures of achievement of expectations are assessed and measured according to standard MOE policy. The IEF may be in a unique position to help the MOE measure progress. It is important to develop indicators for schools and boards to use in monitoring and assessing their progress in implementing financial literacy education.

The importance of engaging and consulting with key stakeholders. The interaction between the MOE and the IEF is a great example of collaboration across government, not for profit, and private sector.

The need to optimize technology in support of financial literacy education. The belief is that technology is complementary, not substitutable, for teaching. The IEF has demonstrated expertise in the use of technology for teaching resources such as lesson plans and supporting student learning (e.g., interactive software and web-based resources). There is an opportunity to improve with respect to instructional and assessment tools related to personal finance.

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FIGURES

Figure 1. SWOT Analysis of IEF Programs and Capabilities

Strengths	**Weaknesses**
Expertise and history re: financial literacy education	Limited tracking of longitudinal data
Duration and extent of data collection through surveys and other record keeping	Measuring intended versus actual behaviors
Use of pre and post survey techniques	Ad hoc nature of teacher seminars and workshops
Popularity and reach of Funny Money program	Nature of survey questions that tend to generate largely positive responses
Relationships with Ontario Ministry of Education (MOE) and school boards	Reliance on teacher self-evaluation of learning
Relationships with teachers	No IEF monitoring of students for effectiveness of lesson plans or teacher professional development programs
Existence and quality of lesson plans	
Interactive software and internet tools and videos	
Meeting the expectations of the Ontario Ministry of Education re: financial literacy education	
Resources to improve teacher confidence	
Youth Financial Literacy Study 2012 (and prior)	
Credibility of IEF as a "non-commercial" provider of financial literacy education resources	
Opportunities	**Threats**
Mandated curriculum changes	Low survey response rates
Increased likelihood of higher retention of financial literacy education that begins at earlier grade levels	Self-selection bias of seminar attendees and survey participants

Increased likelihood of higher retention of financial literacy education that is embedded in mandatory courses	Low teacher self-confidence re: financial expertise
Media and other focus on the societal impact of financial illiteracy	Difficulty in robustly evaluating impact of IEF Education Programs
Assisting the MOE in its goal of measuring progress re: expectations relating to financial literacy education topics embedded in the Ontario curriculum.	Gap between topics perceived as "core" by MOE and that will be relevant to students in the short/medium term (some topics do not resonate with youths)
	Harmony between unions and school boards
	Difficulty and expense of monitoring teacher actions and student behavior

TABLES

Table 1 Comparison of Pre and Post Survey Results for High School *Funny Money* Assemblies

This table presents pre and post survey results from a sample of grade 12 students who attended IEF financial literacy assemblies. The 12 survey elements address four core areas of financial literacy: budgeting, credit, time value of money, and investment & saving. Pre-surveys occurred in class during the week prior to the assembly and the post-survey between two and four weeks after the assembly depending on class schedules.

	Pre (n=447)		Post (n=426)		
Survey Statements - Awareness and Knowledge	Yes	No	Yes	No	% Improvement***
I can explain how a budget will help me to manage my money.	84.1%	15.9%	96.0%	4.0%	14.1%
I know why I should keep track of how much money I spent.	94.0%	6.0%	98.1%	1.9%	4.4%
I understand how buying on credit works.	55.7%	44.3%	90.1%	9.9%	61.8%
I can explain how debt can impact my credit rating.	48.1%	51.9%	89.2%	10.8%	85.5%
I know why I should spend less money on items that depreciate.	70.0%	30.0%	88.0%	12.0%	25.7%
I can explain the concept of compound growth.	17.2%	82.8%	52.8%	47.2%	206.6%
I know what a mutual fund is.	26.0%	74.0%	67.6%	32.4%	160.5%
I know where I can go to find information about saving money and investing.	59.1%	40.9%	90.1%	9.9%	52.6%
I can list three types of investment products.	35.8%	64.2%	73.5%	26.5%	105.3%
Average Overall Improvement					79.6%

*** All % Improvements are statistically significant at the 1% level

Survey Statements - Behavior and Intention	Pre (n=447)			Post (n=426)			% Improvement - Behavior**	% Improvement - Intention***
	Yes	No	Will Do	Yes	No	Will Do		
I track my spending and income.	42.7%	30.2%	27.1%	48.6%	15.7%	35.7%	13.7%	31.8%
I spend less money than I have/earn.	61.1%	27.1%	11.9%	62.4%	15.3%	22.3%	2.2%	88.1%
I save money regularly.	61.3%	22.8%	15.9%	64.8%	11.5%	23.7%	5.7%	49.3%
Average Overall Improvement							7.2%	56.4%

** % Behavior Improvements are not statistically significant except question 1 (significant at the 5% level)

*** All % Intention Improvement are statistically significant at the 1% level

Table 2 IEF Mind over Money Teacher Workshops – Summary Demographics

This table present summary demographic information about participants in IEF sponsored teacher workshops on financial literacy.

Pre Survey Summary Demographics	n = 480		
		Yes	No
1. Have you attended an IEF workshop previously?		10.4%	89.6%
If yes, when			
Last 6 months	16.0%		
12 months	12.0%		
12+ months	72.0%		
2. What grades do you teach ?			
Grades 3 and lower	1.4%		
Grades 4-6 (including some Primary)	27.1%		
Grades 7-8	18.6%		
Grades 9-12	50.8%		
N/A	2.1%		
3. What subject do you teach?			
Elementary - All Subjects	25.4%		
Math	22.6%		
Business	12.1%		
Science/Chemistry/Physics	10.9%		
English/History/Geography/French	11.4%		
Art/Music/PhysEd	5.3%		
Social Science/Social Studies/Culinary Arts	3.6%		
Guidance/Co-op/Hospitality	4.0%		
Computer science/Broadcasting	2.2%		
Civics	1.6%		
Special Education	0.9%		

Table 3 IEF Teacher Workshops – Pre and Post Summary Survey Results

This table presents summary results comparing pre and immediate post survey results. Participants complete both surveys at the workshops. Table 2 provides a demographic summary of the teacher participants.

Pre Survey Summary Results	n = 480			
		Yes	No	N/A
1. Are you aware that the grade 4 to 12 curriculum has changed to include financial literacy?		60.5%	39.5%	
2. Have you introduced financial literacy in your classroom?		25.9%	42.8%	31.3%
3. Do you face any barriers integrating financial literacy in your class? (Classroom teachers only: n = 411)		74.5%	25.5%	
If yes, what?				
Resource availability	33.3%			
Confidence	48.4%			
Other	18.3%			
4. Are you aware that IEF has free lesson plans by topics in financial literacy by grade level and area of study?		11.9%	88.1%	
If yes, have you downloaded lesson plans before?		50.0%	50.0%	
How many?				
1-2	58.8%			
3-5	41.2%			
6+	0.0%			
Do you intend to use these lesson plans?		86.0%	14.0%	
Have you already used lesson plans?		39.5%	60.5%	

Post Survey Summary Results	n = 424			
		Yes	No	N/A
1. Do you face any barriers integrating financial literacy in your class? (Classroom teachers only: n = 405)***		66.4%	33.6%	
What?				
Resource availability	29.7%			
Confidence	53.4%			
Other	16.9%			
2. Do you intend to use IEF resources in your class?		96.0%	2.6%	1.4%
If yes, when				
Next 2 months	21.9%			
Next 6 months	7.8%			
Sometime in the future	70.3%			
3. Would you recommend IEF resources to colleagues?		98.4%	1.2%	0.5%

*** The decrease in teachers facing barriers is 10.9% = (0.745-0.664)/0.745 and is statistically significant at the 1% level.

Table 4 IEF Teacher Workshops – 30-day Post Summary Survey Results

This table presents a summary of results that participants completed approximately 30 days after attending an IEF financial literacy workshop. Table 2 provides a demographic summary of the teacher participants.

30 Day Post Survey Summary Results	n = 41			
		Yes	No	N/A
1. Have you introduced financial literacy education in the classroom?		31.7%	24.4%	43.9%
2. Do you face any barriers integrating financial literacy in your class? (Classroom teachers only: n = 23)		43.5%	56.5%	
If yes, what?				
Resource availability	33.3%			
Confidence	20.0%			
Other	46.7%			
3. Have you ever downloaded any of the financial literacy lesson plans from IEF's website?		55.9%	44.1%	
If yes, how many?				
1-2	52.6%			
3-5	36.8%			
6+	10.5%			
4. Have you used IEF resources in your classroom?		23.1%	76.9%	
If yes,how many times?				
1	37.5%			
2	37.5%			
3+	25.0%			
5. Do you intend to use IEF resources in your class?		91.9%	8.1%	
If yes, when				
Next 2 months	33.3%			
Next 6 months	66.7%			
Sometime in the future	0.0%			
6. Will you recommend IEF resources to colleagues?		100.0%	0.0%	

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