It's Never Too Early: A Pilot Study of Financial Literacy for Young Children and Professional Development for their Educators

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Abstract

In this paper, we present our financial literacy pilot study with two classes (kindergarten and Grade 1/2, N=37) and their educators (N=3) in Ontario, Canada. Teachers were provided with two days of professional development about five concepts of financial literacy (scarcity, saving, money, exchange, and giving) as well as picture books and accompanying lessons to teach the concepts through a teaching unit. A financial literacy pre-assessment was conducted with each student, the teachers taught the financial literacy unit for three weeks, and then students were reassessed on their financial literacy skills. Students' scores were 35% higher on the post-assessment compared to the pre-assessment. Kindergarten students had greater gains in scores than the Grade 1/2 students. Educators were also interviewed before the professional development sessions and after they taught the financial literacy unit. Educators believed the program was successful and engaging for students, expressed the desire to continue to teach financial literacy after the study was complete, and felt more confident in their abilities after participating in the study. We advocate that financial literacy needs to begin early and needs more attention in early childhood education programs so students develop skills over time.

Keywords

Financial literacy; personal finance; financial education; young children; early childhood

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Today's children are constantly bombarded with consumer choices and face spending and financial decisions earlier than previous generations. Suiter and Meszaros (2005) state that children and youth between the ages of 12 and 19 are significant consumers and spenders, thus highlighting the importance of cultivating good spending and saving habits from an early age. Most students do not receive financial education until they are in high school. We think this comes too late after habits have been formed and social influences have already made their mark (Meszaros & Evans, 2010; Schug, 1993-1994). In addition, most current financial education programs tend to focus on financial knowledge and not on attitudes and skills. Grody, Grody, Kromann and Sutliff (2008) also found most financial literacy programs for elementary students focus solely on numeration and piggy bank savings.

Renowned educational theorist, Jerome Bruner (1966) posited that young children can understand complex concepts if taught in a developmentally appropriate way. Friedline (2015) argued that children are capable of economic agency by the age of five or six. Sari et al. (2017) investigated the impact of a financial literacy program on Grades 1-6 children in Indonesia. Using a treatment and control group, Sari and colleagues (2017) found that the students who had the financial literacy program had improved financial knowledge compared to the control group. Researchers argue that young students are successfully able to grasp financial literacy concepts and that financial literacy education is appropriate and should start at an early age so students can benefit from cumulative knowledge throughout their schooling years (Sari et al., 2017).

We, therefore, advocate for financial education starting in early childhood, so that misconceptions and any negative attitudes or behaviours can be addressed early on. We believe that young children can be taught personal finance skills in an enjoyable and age-appropriate manner and obtain these crucial life skills at a young age.

Perspectives on Financial Literacy

Otter (2010) surveyed over two thousand Kindergarten to Grade 12 teachers in California about their attitudes and beliefs about teaching financial literacy. Teachers overwhelmingly supported teaching personal finance in schools with some participants noting, however, that the curriculum was already packed (Otter, 2010). Most teachers also supported beginning financial literacy instruction in the elementary grades, indicating a preference for beginning in either kindergarten or Grade 6, compared to the usual high school start for personal finance (Otter, 2010). Otter (2010) also reported that teachers want more professional development both in financial literacy instruction and financial literacy content knowledge.

Gold (2016) interviewed and surveyed kindergarten to Grade 2 teachers in Ohio about their perceptions of financial literacy in the classroom. Gold (2016) reported that teachers valued financial literacy for the younger grades but were unsure about implementation as well as the available commercial programs, and state curricular requirements. In addition, teachers used hands-on strategies such as centres, games, manipulatives, and calendar time for financial literacy instruction. This use of hands-on opportunities to explore economic knowledge and financial literacy is supported by theories of child development (Friedline, 2015).

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Sawatzki and Sullivan (2017) conducted a study with 35 primary school teachers in Australia. Teachers participated in two professional development sessions as an intervention and completed pre- and post-intervention assessments about their perceptions of financial literacy. The researchers found that 75% of teachers agreed or strongly agreed that they were financially literate, yet only about half indicated that they felt confident teaching financial literacy (Sawatzki & Sullivan, 2017). The majority of teachers (85%) wanted more professional development in the area of financial literacy. After the two professional development sessions, over 90% of the teachers felt more confident teaching financial literacy and stated that they would use the financial literacy tasks again. Sawatzki and Sullivan (2017) also found that teachers did not generally endorse premade financial literacy teaching programs and "preferred to be empowered to learn through experimentation how they might refine their practice" (p. 61). They suggest that teachers be given professional development, but teachers should be given time and freedom to implement and reflect on pedagogies to teach the financial literacy content (Sawatzki & Sullivan; 2017).

Henderson and Beach (2021) interviewed 157 elementary teachers in Ontario during the 2017-2018 school year and found that teachers overwhelmingly support the teaching of financial literacy in the classroom. Henderson and Beach advocate that teachers need, and teachers themselves want, additional professional development in the area of financial literacy. While teachers perceive financial literacy as important and want more professional development for financial literacy (Henderson & Beach, 2021; Otter, 2010; Sawatzki & Sullivan; 2017), teachers may also not be prepared to teach financial literacy to young students (Jayaraman et al., 2019). Lucey and Maxell (2011) report that preservice teachers have weak mathematics skills and personal finance skills, and are not prepared to teach financial literacy. Henning and Lucey (2017) explored perceptions of pre-service teachers and faculty members in one state in the U.S. They report that no faculty members felt that their pre-service students were well prepared to teach financial literacy and 37% felt that financial literacy should not be incorporated into their pre-service teaching courses (Henning & Lucey, 2017). In addition, a large majority of the pre-service teachers surveyed (66.6%) strongly or moderately agreed that "financial literacy concepts are too complicated for elementary school children" (Henning & Lucey, 2017, p. 168).

In sum, there is a need to start teaching financial literacy concepts to young children to create good financial habits, skills, and attitudes at an early age (Sari et al., 2017) and this can be done in a developmentally appropriate fashion (Bruner, 1966). It is also evident in the literature that teachers want more professional development in financial literacy (Henderson & Beach, 2021; Otter, 2010; Sawatzki & Sullivan; 2017), are unsure about implementation (Gold, 2016) and are not generally confident teaching financial literacy (Sawatzki & Sullivan, 2017). Despite this lack of knowledge and confidence, educators want autonomy to customize financial literacy teaching materials for their classrooms (Sawatzki & Sullivan, 2017). However, there is little in the literature that outlines how financial literacy can be practically taught to young children, how professional development in financial literacy impacts educators and students, and how a financial literacy curriculum affects young children's financial literacy.

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The Five Concepts of Financial Literacy and Literature

Recognizing this gap in the research literature and practical programs and units for teaching financial literacy to young children, we wanted to create an effective, engaging, and hands-on curriculum unit for young children. To do so, we conducted a literature review on financial literacy education. Using the first author's expertise in economics and finance and the second author's expertise in language arts and literacy, we developed a curriculum for teaching financial literacy to young children using the Max and Ruby books, written by Rosemary Wells (Brown & Ferguson, 2017). In Brown and Ferguson (2017), we proposed that five key concepts of financial literacy should be introduced to elementary students: scarcity, exchange, money, saving, and giving. These concepts were chosen as core elements of a financial literacy curriculum for young people based on simplicity and immediacy, that is, the ability and likelihood of young children utilizing them in their everyday lives. For the first concept, scarcity, our wants are unlimited, but our means are limited, so that means that we have to choose carefully. We face limitations throughout our lives; these limitations mean making choices; and every choice comes with sacrifice. The second concept is money; there are three key functions of money. We use money to buy things, give them value, and we can set it aside to meet future needs or long-term goals. When it comes to exchange, we can't just take things that we want; we have to trade for them. When one person trades an object with a second person for another object, these objects must have equal value. In essence, we must be able to recognize a fair trade. For the fourth concept, saving, we should set aside some of our money for the future or to meet some long-term goals. Saving is closely tied to goal setting - planning for future purchases and taking the steps necessary to achieve those goals. Finally, the last concept, giving means helping others is essential to being a full member of society, but we must also give responsibly. Instilling altruistic attitudes and philanthropic behaviours from an early age benefits society as a whole. Responsible giving means recognizing the limitations and needs of yourself and others (Brown & Ferguson, 2017). We strategically chose not to introduce the concept of debt because of the limited direct engagement that students would have with loans, credit cards, lines of credit, or other forms of debt at this stage of their lives.

In Brown and Ferguson (2017), we developed a curriculum unit to teach these five concepts of financial literacy to children ages three to seven using three books by Rosemary Wells following the antics of the spirited bunnies, Max and Ruby:

- in Bunny Money, Ruby has saved money and Max has a lucky quarter and they shop for a birthday present for Grandma;
- in Max's Dragon Shirt, Max needs a new pair of pants but gets distracted by a cool dragon shirt and other temptations at the department store;
- finally, in Bunny Business, Ruby and her friend Louise want to buy "Fire Angel" flashing earrings and raise money by setting up a lemonade stand. Max decides to set up his own business too.

Picture books are an effective means to support content area learning (Donoghue, 2001; Goerss, 1998; Schuld, 2014; Turner et al., 2004), and students gain both knowledge and problem-solving skills through picture books (Freeman, 2014). Further, Grody et al. (2008) report that the financial literacy of third graders improved by reading picture books about money. Lucey and Maxwell

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(2011) also argue that financial literacy should be taught in a cross-curricular fashion, making learning meaningful for students by blending subjects such as financial literacy, social studies, and language arts. Thus, we created several practical and hands-on classroom activities that integrate Wells' stories, language arts, and financial literacy (Brown & Ferguson, 2017). Activities include dramatic retelling, using graphic organizers, a learning centre, writing and drawing activities, and classroom conversations. Full activities for the five concepts of financial literacy using Max and Ruby books are outlined in Brown and Ferguson (2017).

Our Financial Literacy Pilot Study and Methods

Using our newly created financial literacy curriculum unit, we wanted to address the gaps in the research surrounding the impact of a financial literacy curriculum unit on young children's financial literacy and attitudes, as well as the impacts of financial literacy professional development for educators. In the spring of 2019, we conducted a pilot study testing our financial literacy professional development and curriculum learning unit with a kindergarten class (N=29) and a Grades 1 and 2 (N=18) split-grade class at an elementary school and their educators (N=3) in Ontario, Canada. The research questions guiding our study were:

1. What was the effectiveness of the unit as evidenced by young children's attainment of the five concepts of financial literacy pre- and post-teaching of the unit?
2. What are the perceptions of early childhood educators and teachers about their confidence as educators in teaching financial literacy before and after the professional development and implementation of our financial literacy curriculum unit?
3. What feedback and suggestions do early childhood educators and teachers have about the financial literacy curriculum unit?

We obtained ethical approval from the Research Ethics Board at Nipissing University (file # 101980). Consent forms were signed and obtained from educators and parents, as well as permission and support from the participating school board and school. Participation was voluntary and all data were anonymized.

Professional Development

Participants in our study included 29 Junior and Senior Kindergarten (JK/SK) students and 18 Grades 1 and 2 children, along with their teachers and a designated early childhood educator (ECE). We provided the educators (N=3) with 2 days of professional development, and following the suggestion of Otter (2010), provided both financial literacy content knowledge and pedagogical practices. For the first day of professional development, one author taught each of the five concepts of financial literacy. Each financial literacy concept was taught using real-life examples, to explain the concepts to both adults and young children. For the second day of professional development, another author and the educators read each Max and Ruby book by Wells and explored the accompanying activities that were developed to teach each financial literacy concept. Educators also had time during this professional development day to begin planning and creating how they would implement the lessons and activities.

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Following these two days of professional development, the educators taught the unit to their students over three weeks. While we presented our lessons and pre-made materials for the unit as part of the professional development, we expected some variation in the implementation of the activities to address individual student and class needs. The educators used the unit and activities as a guide and added their additional learning centre and writing activities, as advocated by (Sawatzki & Sullivan, 2017).

Data Collection

To answer our first research question about the efficacy of young children's attainment of the five concepts of financial literacy pre- and post-teaching of the Max and Ruby unit, we heuristically created an age-appropriate oral assessment of financial literacy that was administered before and after the teachers taught the financial literacy unit. We developed and wrote an assessment of ten questions, two hands-on oral questions about each of the five financial literacy concepts as taught in the unit, using our understanding and expertise in finance and financial literacy, literacy, and child development. Before administering the assessment, the educators in our study previewed the assessment and grading rubric and their feedback resulted in changes. The assessment has 5 sections – one for each concept of financial literacy. The maximum score for each concept is 8, while the maximum possible overall score is 40. In each section, students are presented with a scenario and asked how they would respond. For each scenario, the children were asked two questions and responses to each question were rated on a 4-point scale. Students received 1 point for the correct answer and between 0 and 3 points for the quality of their explanation. A score of zero means that the student was unable to explain their response, while a score of 3 reflects a thorough explanation. For example, in one of the questions for the concept of exchange, the teacher shows the students a picture card of a soccer ball and other picture cards with illustrations of items. The teacher then says, "Let's say you own this soccer ball. Now look at the other things. What would be a fair trade?" After the student responds, the teacher follows up with the prompt, "Tell me how you know." The teacher records student responses and marks students' answers using the provided 4-point scale for each question. The teachers and third author conducted the pre-intervention and post-intervention assessments with each child individually. Each assessment took between 15-20 minutes to complete. Students used pictures and other manipulatives to complete the assessments. Students answered orally and the teachers or third author recorded their answers.

To answer our second and third research questions, we used qualitative research to gather rich data about the insights and experiences of the educators in the study (Bogdan & Biklen, 2007). To address our second research question, we interviewed the educators in our study and asked them about their confidence as educators before and after the professional development and the teaching of the unit regarding financial literacy. We also wanted their insights into the unit itself to answer research question number three regarding feedback and possible suggestions for the Max and Ruby financial literacy curriculum unit. We thus also included interview questions asking educators about their experiences and thoughts for improvement about the unit. The teachers and ECE were interviewed both before the professional development and after teaching the unit. Educators were asked about their opinions of financial literacy, how efficacious they felt teaching financial literacy, the financial literacy knowledge, skills, and attitudes of their students, and their perceptions of using the Max and Ruby unit to teach financial literacy to their students. Sample questions for the first interview (prior to any professional development or teaching of financial literacy) included, "What

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do you think young children need to know about financial literacy?" and "How effective do you feel in your teaching of financial literacy?" For the follow-up interview after the professional development and teaching of the unit, sample questions included, "How has participating in the project broadened your knowledge about scarcity, exchange, money, saving, and giving?" and "After participating in this project, can you describe the financial knowledge and skill of your students?" and "How do you feel now about creating lesson plans and unit plans on financial literacy for your class?" A sample question to ask their opinions and feedback about the Max and Ruby unit included, "What do you like or not like about the Max and Ruby curriculum? (What worked well? What didn't?)".

Data Analysis

Data from the student assessments were entered into SPSS, allowing us to generate descriptive statistics and test hypotheses related to our first research question. Recall that for the student assessment, the maximum score for each concept is 8. We regarded scores between 0 and 2.5 (inclusive) as demonstrating a poor understanding and ability to apply a concept. Scores above 2.5 but less than or equal to 4 were seen as demonstrating a limited understanding of and ability to apply a concept. Scores above 4 but less than or equal to 5.5 were treated as demonstrating a good understanding of and ability to apply a concept. Finally, scores strictly above 5.5 were viewed as demonstrating a strong understanding of and ability to apply a concept.

All interviews were transcribed into Microsoft Word. We analyzed the interview data inductively based on themes that emerged from the data. We began by sorting the data from interview transcripts by interview questions and created documents for each interview question within Word. With all qualitative data now compiled by interview question, we then individually read the interview data, identified topics, and placed data into appropriate categories based on patterns that emerged (Miles et al., 2014). As a research team, we then met and compared categories and subcategories and developed agreed-upon themes that emerged from the data. (Bogdan & Biklen, 2007; Merriam & Tisdell, 2016). For instance, when analyzing the interview question about suggestions for the curriculum unit, all three educators mentioned the extended time requirements to teach the unit. Thus, when we met as a team, we agreed that "time to teach the unit" was an important theme that emerged from the data as a suggestion for improving the unit.

Results

Student Assessments

The results of the student assessments suggest that students possessed a limited understanding of the financial concepts before the unit. The average score for all students was 19.34 out of a possible 40 points on the pre-assessment. In particular, students struggled with the concepts of exchange and scarcity. Results from the post-assessment provided evidence of improvement in financial knowledge, skills, and attitudes. The average score for the post-assessment was 26.11, which is, 35% higher than the average score for the pre-assessment. The largest improvement was observed with the concept of scarcity. Meanwhile, students demonstrated the least improvement with the concept of exchange. The difference in the overall score is statistically significant, as are the differences in scores for the individual concepts. Table 1 shows the results of the pre-assessment and post-

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assessment for all students. Looking at all the students as a single group, the results suggest that students attained a good grasp of the key concepts following the teaching of the unit.

Table 1

Comparison of Pre-assessment and Post-assessment Scores for the Assessment of Financial Literacy

Concept	Pre-Assessment Mean Score N = 47	Post-Assessment Mean Score N = 47	Difference in Mean Score
Exchange (Max = 8)	3.00	4.09	1.09***
Money (Max = 8)	4.35	5.53	1.18***
Scarcity (Max = 8)	3.47	5.66	2.19***
Saving (Max = 8)	4.06	5.04	0.98***
Giving (Max = 8)	4.62	5.74	1.13***
Total (Max = 40)	19.34	26.11	6.77***

*** Statistically significant at $p < 0.001$.

Figure 1 shows the pre-assessment and post-assessment mean scores for kindergarten and Grades 1 and 2 students separately. The results were most dramatic for the JK/SK students. They started with a poor understanding of exchange (2.241) and scarcity (2.241). By the end of the unit, they demonstrated a good understanding of scarcity (5.466). Unfortunately, by the end of the study, their understanding of exchange had improved but was limited (3.138). While the improvement in the overall scores for Grades 1 and 2 students was statistically significant, it was not as dramatic as with the JK/SK students. Not surprisingly, Grades 1 and 2 students started the study with higher pre-assessment scores: 27.03 out of 40 points compared to 14.57 out of 40 points for JK/SK students. At the time the study was conducted, the Ontario Mathematics curriculum for Grades 1 and 2 did include some concepts of money including coin values, and these students would also possess more developed number sense skills than their kindergarten counterparts. Like the JK/SK students, the lowest scores for Grades 1 and 2 students were for the concepts of exchange (4.222) and scarcity (5.444). However, the largest improvement for this group of students was with the concept of exchange going from good to strong, although their understanding of this concept was still the lowest of the five concepts after the unit. While the improvement in scores for kindergarten students is statistically significant for all five concepts, only the improvements in scores for exchange, money, and giving are statistically significant for Grades 1 and 2. This result may be due in part to the smaller sample size for this group. Saving and giving were the highest-scoring concepts prior to and after the unit.

Figure 1

Pre-assessment and Post-assessment Scores for the Assessment of Financial Literacy by Grade Level

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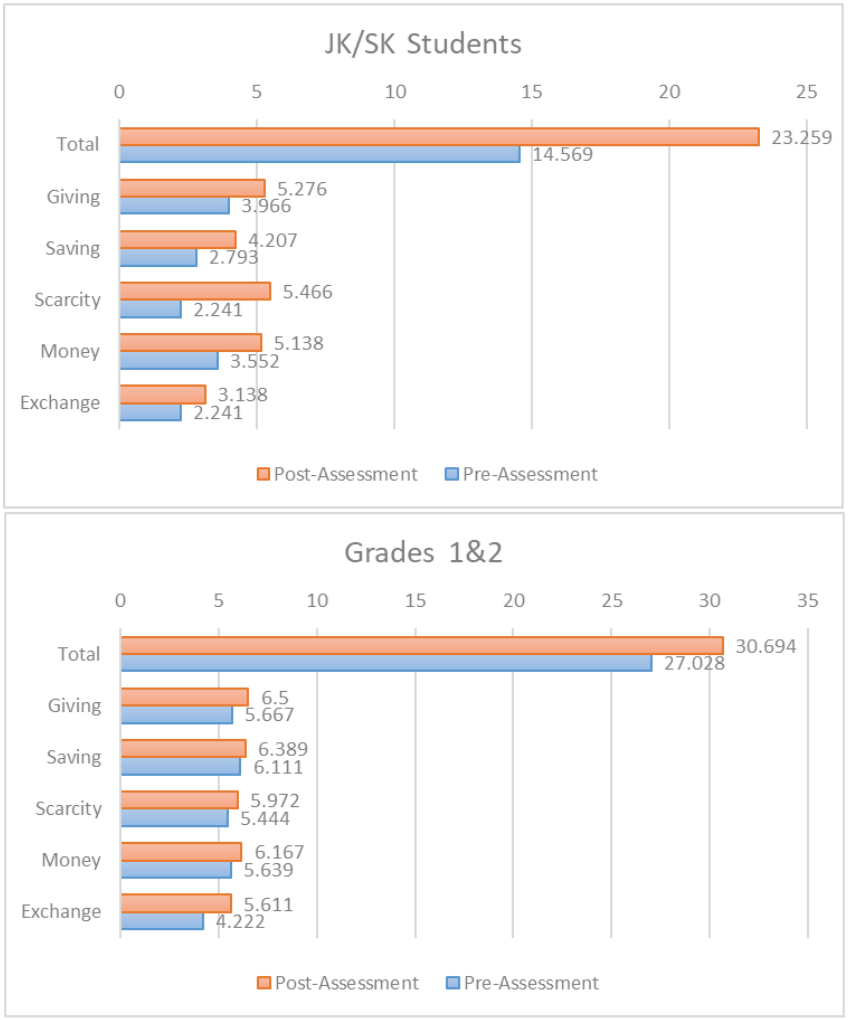

Table 2 shows the differences in mean scores between the pre-assessment and the post-assessment for JK/SK students and Grades 1 and 2 students separately. There was no statistically significant difference in the improvement of male students versus female students. However, male students started with a lower pre-assessment score (17.87) compared to female students (20.75). The lower mean score for male students is most likely because the majority of male students were in the JK/SK class, while female students were evenly split between the JK/SK and Grades 1 and 2 classes.

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Table 2

Difference between Pre-assessment and Post-assessment Scores for the Assessment of Financial Literacy by Grade Level

Concept	Mean Difference JK/SK N =29	Mean Difference Grades 1&2 N = 18
Exchange	0.90**	1.39***
Money	1.59***	0.53*
Scarcity	3.22***	0.53
Saving	1.41***	0.28
Giving	1.31***	0.83***
Total	8.69***	3.67***

* Statistically significant at $p < 0.10$.
** Statistically significant at $p < 0.05$.
*** Statistically significant at $p < 0.001$.

Table 3 provides a sample of quotations from five different students' pre-assessments and post-assessments for the concepts. For each concept, the quotations are from the same student to demonstrate the changes in the student's awareness, understanding, and confidence. The post-intervention responses are more complex.

Table 3

Quotations from Students' Assessments

Concept	Pre-Assessment	Post-Assessment
Exchange	*Reason why the button [incorrect response] is a fair trade for the soccer ball:* "Because the soccer ball is round and the button is round so they both look the same." – Grade 2 student	*Reason why the teddy bear [correct response] is a fair trade for the soccer ball*: "If I don't like the soccer [ball], but I like teddy bears and my friend likes soccer, that would be a fair trade." – Grade 2 student
Money	*How do you get money?* "From work." – Junior Kindergarten student	*How do you get money?* "By going to work, you have to earn money." – Junior Kindergarten student
Scarcity	*Explaining answers to the question "What else can't you buy?"* "Because I have a lot of money, so there is stuff I can buy but some are	*Explaining answers to the question "What else can't you buy?"* "Because they are the lowest, it would be $3. I have 2 loonies[1] left – can't buy

[1] A loonie is the common term for a Canadian one-dollar coin.

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	a little bit higher." – Senior Kindergarten student	anymore." – Senior Kindergarten student
Saving	*What if you decide to spend some of the money that you have on the skipping rope, but you still want to buy car?* "I needed more money."– Grade 2 student	*What if you decide to spend some of the money that you have on the skipping rope, but you still want to buy car?* "I need $7. That is 7 days of chores." – Grade 2 student
Giving	*Suppose it is pizza day and pizza costs 2 loonies per slice. You have 3 loonies but your friend only has 1 loonie. What would you do?* "Give it to somebody. Because it's pizza day." – Junior Kindergarten student	*Suppose it is pizza day and pizza costs 2 loonies per slice. You have 3 loonies but your friend only has 1 loonie. What would you do?* "I would give it to my friend. Now, both of us would have money for pizza." – Junior Kindergarten student

Educator Perspectives

The qualitative results from the interviews with educators gleaned insight into the perceived importance of financial literacy for students, their confidence in teaching financial literacy, the importance of professional development for educators in financial literacy, and educators' reflections about teaching the financial literacy curriculum unit with their classes. First, the educators in our study recognized the importance of financial literacy and the need to start early with students. One educator said, "It's an important skill and it's a life skill," while another felt that the five concepts are "foundational things that need to be taught." Another educator felt that good financial habits would be "harder to learn later on." One educator noted that students "have a basic knowledge of knowing what a dime is, a nickel is," but also that "there are not lessons behind it to support where the money is coming from or to understand the concepts." One educator said about her class, "I have never [before] taught them the skill of how to save and budget and the importance of planning to purchase something."

However, the interview data also revealed that educators felt comfortable and confident in their ability to teach the concepts with the teaching unit as a guide. One educator said, "I feel like with this as my guide I will be a little more confident in teaching the concepts but like anything you have to try it out once and then you assess how well it went and then tweak it next time." While educators liked "not having to start from scratch and invent something," they were free to tweak the teaching unit and add to it. While acknowledging that "some of it is new," another educator indicated that she was more comfortable with some concepts but less so on others, saying, "I would be more comfortable creating my own for some of the key concepts – exchange and money, savings … but some more than others."

Following the professional development and after teaching the unit, the educators felt more comfortable with financial literacy. One educator noted, "I feel like I have a better understanding of what financial literacy is and what children should be exposed to at an early age," while another

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stated, "I feel like I learned something too." Educators observed that their students also appeared to be more aware, knowledgeable, and confident in using the terminology. One educator said, "A student used 'scarcity' in her answers, and 'exchange.' She's using the language." Another educator explained, "My students feel more confident in the way they explain money and the way people use money."

In terms of feedback and suggestions for the Max and Ruby unit, the educators believed the unit to be age-appropriate, and particularly liked the tie-in with children's books. One educator stated, "The Max and Ruby books are great. I don't think I realized how beneficial they can be for teaching financial literacy." Another educator said,

> I like that we have the literature connection because when you have a good book to teach a concept, I feel like the students have an anchor or something to connect with to understand if they've never experienced it, they can experience it through the character.

The teachers also expressed the desire to teach the unit again and to use the terminology throughout the academic year. One educator explained, "I can use more books – I know what to look for," and added, "It didn't feel like more work. It flowed into the different centres."

As mentioned earlier, the educators had the autonomy to make the unit their own with our unit as a guide. In terms of the implementation, one educator said, "We would take one book and we would read it all week but there were different points that you could bring out of it every time you did it." Another educator said,

> Overall, it was engaging, I did a lot of writing activities but there were a lot of drama and centre activities that I extended the learning with … Like any teacher would do you try it out and then you tweak it to make it your own and I know I did some extension activities.

The educators felt, however, that the three-week time frame was too tight and needed to be extended. One educator suggested "starting it earlier" and that "every month you could focus on a concept of financial literacy." Meanwhile, another educator thought "Six weeks would have been a great amount of time." All educators agreed that the student assessments needed to be oral and one-on-one but that administering the assessments took a lot of time.

Educators felt that the financial education unit had value for parents and guardians too. One educator stated the next step would be "making parents more aware, giving them the knowledge that financial literacy starts in kindergarten." Another educator recommended going one step further:

> I think even having a simple letter that goes home that says, "These are the terms we're discussing, and this is the stuff we are talking about," and then if kids have questions or if parents have questions, they can either ask their parents or ask us.

The general sentiment was that the students enjoyed the unit. As one educator said, "It's neat to see when you empower the kindergarten students to have that knowledge that they can use it." One educator said, "I will use that again. You can integrate everything. The kids loved it."

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Educators also felt the personal and professional benefits from the professional development and from implementing the unit. One teacher explained, "Before I wouldn't have been able to do it on my own." Another said,

> What I have learned through it is that financial literacy isn't just dollars and cents … there's a lot about giving and fair trade, there's a lot about exchange and sometimes we don't think of that as financial literacy … I think it has helped us to look at it in a different way.

And finally, the other educator explained,

> It definitely made me more aware of my own personal finances and I think overall it was a great experience for both myself and the children. I feel more confident teaching financial literacy now that I have done the activities with Max and Ruby books.

Discussions and Recommendations for Practice

The results of the assessments and the feedback from the educators in our pilot strongly support the efficacy of the financial literacy curriculum and teaching unit developed and its appropriateness for young children. Linking back to our first research question, about the efficacy of the unit, as evidenced by their scores on the assessment of the five concepts of financial literacy, the unit was impactful and made an improvement on students' financial literacy, as students' scores were 35% higher on the post-assessment compared to the pre-assessment. The results were most dramatic for the kindergarten students. This makes sense as students in Grade 1 receive some curricular instruction in money and coin values in their math curriculum, in addition to having generally more life experience as consumers. Kindergarten students initially had a poor understanding of concepts such as scarcity, but by the end of the study, most children had a good grasp of this key concept. Educator interview data supported the qualitative assessments. Teachers reported that their students were able to grasp financial literacy concepts and were able to integrate financial literacy language into their vocabulary and use it appropriately in context. Thus, the children's performance demonstrated that they are indeed capable of understanding these concepts of financial literacy presented in a developmentally appropriate way (Bruner, 1966; Friedline, 2015). We found no significant difference between male and female students' financial literacy results, suggesting that both genders equally benefitted from instruction in financial literacy. However, given our small sample size and that the majority of male students were in the JK/SK class, caution should be taken regarding interpreting these results. Nevertheless, we argue that young children can indeed make significant gains in financial literacy through instruction, making our study an important contribution to the rather scant research on the prospects of early childhood financial literacy attainment and the value of its teaching (such as Sari et al., 2017). Our study is significant to teacher practice as it may change negative attitudes toward young children's ability to learn financial literacy, as was found by Henning and Lucey (2017), as well as open up new topics for learning and exploration through play in the classroom. Our study also supports the inclusion of financial literacy into early childhood and primary school age mandated curricula as an age-appropriate addition to be formally taught to young children and valued as a needed skill by school administrations and school systems.

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In examining our second research question about educators' perceptions of their confidence in teaching financial literacy, our interview data found that the professional development sessions and implementing the unit were successful in increasing the levels of self-efficacy among educators. In addition to improving their own personal knowledge of financial literacy, like Sawatzki and Sullivan (2017), the educators in our study felt more self-efficacious in their teaching of financial literacy after our professional development sessions and after the opportunity to try the unit in their classrooms. While the educators at the beginning of our study valued the teaching of financial literacy (Gold, 2016; Otter, 2010), like the educators in Otter (2010), Sawatzki and Sullivan (2017), and Henderson and Beach (2021), teachers needed and wanted professional development to support their understanding and implementation of financial literacy and its possibilities for pedagogy. Maintaining teacher autonomy in the delivery of the unit was important to fostering strong teacher buy-in. We found, as did Sawatzki and Sullivan (2017), that teachers wanted to be able to adapt materials presented in professional development sessions to suit the needs of their students. Teachers felt empowered knowing financial literacy content which gave them the confidence to make changes and to create their own activities. As Gold (2016) also found, teachers used a variety of hands-on and genuine experiences to teach financial literacy to young children through play such as centres, manipulatives, and games. Our study adds to the literature to support the need for quality and customizable lessons and units to teach financial literacy that are age appropriate and engaging for young children. Without the support of quality resources and training, we feel that the calibre of teaching and thus student outcomes would not be as strong.

The results from the third research question regarding educator feedback and suggestions about the Max and Ruby financial curriculum indicate that teachers thought the unit was age-appropriate, enjoyed the connection to children's literature, were enthusiastic about using it again next year, and were engaged teaching financial literacy in general. In terms of tweaking the unit, educators suggested that a longer timeframe of at least six weeks to implement the unit would give students more time to learn the concepts and place less stress on the educators. Connecting with parents and guardians throughout the implementation of a financial literacy unit would also be beneficial to the students and their families. We recommend sending a letter home to parents/guardians and preparing and distributing an informational pamphlet with resources. In addition, given the struggles the children had with the concept of exchange on the student assessment, going forward we will alter our professional development materials and the unit to include more emphasis on this key concept, particularly what makes an exchange a fair one. The results of our study have practical implications for the broader implementation and classroom practice of financial literacy programs for young children, topics which appear to be scarce in the extant research. Teachers need to be able to allot time in their long-range plans to teach financial literacy as well as set context within the classroom and with parents at home. At a system level, school leaders and administrators need to support the implementation of early childhood financial literacy programs by providing quality resources, professional development, (including release time for training), and supporting the home/school connection with parents/guardians.

Limitations and Suggestions for Future Research

Our study is limited in that it was a pilot study with only two classes of young students and three educators. A larger sample size of students and educators, with a control group of students,

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would be a next step for future research to explore results and patterns of our curriculum unit across a greater population and for more generalizable results. We anticipate expanding our financial literacy unit to more teachers and schools to delve into the research further. In addition, while we collected data about educators' attitudes regarding financial literacy, there was no data collected about the attitudes of the young children regarding learning about financial literacy in the study. Adding this component to future studies to seek feedback and data about attitudes and enjoyment of the topic could provide researchers and educators with valuable and practical data about how to better implement classroom lessons and activities in the future.

The teachers who participated in our study were also eager to learn more about financial literacy and teaching it in the classroom. In a larger sample of teachers, it is highly likely there may be less enthusiastic teachers, and less willing to dedicate class time to financial literacy; this teacher buy-in would be likely to impact the implementation of the unit, student outcomes, and educator perceptions of the program. To address possible reluctance from teachers (Otter, 2010), we feel the professional development component for teachers is crucial, and as Henderson and Beach (2021) suggest, future research and practical implementation of financial literacy programs must include a monetary investment for school systems to support financial literacy professional development for educators.

Finally, we conducted our pilot study in 2019. Since that time, the government of Ontario has published a new curriculum for Mathematics Grades 1-8 that contains mandatory financial learning that includes "understanding the value and use of money over time, how to manage financial well-being and the value of budgeting" (Government of Ontario, n.d.). Research independent from the government is needed to analyze the curriculum content, professional development provided for educators, how teachers implement the curriculum within their classroom, and student financial literacy outcomes because of this curricular change.

Conclusion

Our pilot study is significant because it adds to the scant research literature about the success of a financial literacy curriculum unit for young children, how a financial literacy program for young children can be practically implemented, as well as the impact of teaching such a unit and the related professional development on educator self-efficacy. Our research has practical implications for both the school system level as well as for teaching in the classroom with young children. In sum, young students are capable of learning and applying financial literacy concepts in their lives. Having these tools helps prepare children for real-world finances and provides life-long skills. We also know teachers are crucial in this journey, as they teach children and implement curriculum. Devoting time, quality resources, and money for teacher professional development in financial literacy are critical in the process of students becoming financially literate.

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