



Teachers' perceptions of teaching financial literacy in mathematics at secondary schools in Vietnam

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ABSTRACT

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The Organization for Economic Co-operation and Development (OECD) has emphasized the need to apply financial education from an early stage in school. In Vietnam, financial literacy has been integrated into the national educational curriculum since 2018. This knowledge has appeared in several subjects, including mathematics at secondary schools. Considering this phenomenon, this study explores mathematics teachers' perceptions relating to financial literacy in classroom instruction. A researcher-developed questionnaire about financial literacy in education was distributed and explained to secondary school mathematics teachers. The survey was completed by 60 teachers working in Hanoi, the capital of Vietnam. The majority of teachers possess more than five years' teaching tenure, guaranteeing their completion of a full implementation cycle of the 2018 mathematics education curriculum. The author gains insights into Vietnamese teachers' understanding of financial literacy and the instructional challenges they face after conducting the research. Teachers showed high confidence in basic financial concepts. However, regarding more complex terms, such as *securities*, *inflation* and teachers themselves were not familiar with using them. There were existing challenges in terms of financial literacy instruction in mathematics. A majority of teachers agree that it is of great importance to gain more knowledge in the field. Finally, teachers should be equipped with more professional development training and comprehensive teaching resources to support them in integrating financial education successfully into the subject of mathematics.

Contribution/Originality: This study is the first empirical investigation of secondary mathematics teachers' perceptions of financial literacy integration in Vietnam's 2018 curriculum reform using a researcher-developed questionnaire to clarify their confidence with basic rather than complex concepts, instructional challenges, and professional development requirements.

1. INTRODUCTION

Recently, there has been growing interest in financial literacy. It is even considered a vital competency for youngsters in the competitive job market. OECD (2015) claims that financial literacy is considered important to individuals' economic well-being that several countries have decided to insert this knowledge into their national curricula. Vietnam has also recognized the significance of teaching financial-related matters to children. Therefore, the country has introduced financial education into the national mathematics curriculum with a view to promoting students' financial literacy by linking mathematical concepts with real-world financial situations. There has been a great deal of existing literature worldwide highlighting the significance of financial education as in Sawatzki and

Sullivan's (2017) work which highlights that teachers' perceptions and confidence play a crucial role in determining the effectiveness of implementing financial education. However, concerning the teaching context in Vietnam, especially within the secondary mathematics curriculum, not much has been done. This study has been conducted to gain more insights into Vietnamese secondary school mathematics teachers' perceptions of financial literacy. The challenges they are facing and the ways they can be supported to enhance their teaching's effectiveness. The goal of this research is to take into account Vietnamese secondary school mathematics teachers' perception and preparedness in teaching financial literacy.

This paper aims to find out:

1. Vietnamese secondary school mathematics teachers' awareness and attitudes toward financial literacy education.
2. Challenges faced by Vietnamese secondary school mathematics teachers in integrating financial literacy into mathematics instruction.
3. Vietnamese secondary school mathematics teachers' self-reported confidence and competence in delivering financial literacy concepts.
4. The necessary professional development needs to enhance Vietnamese secondary school mathematics teachers' effectiveness in financial literacy education.

Based on the aims and objectives mentioned, the research questions are as follows:

1. How confident are Vietnamese secondary school mathematics teachers in terms of their financial literacy?
2. What challenges do Vietnamese secondary school mathematics teachers face in integrating financial literacy into their own teaching context?
3. How competent do teachers feel in delivering financial literacy content?

2. LITERATURE REVIEW

2.1. Financial Education and Financial Literacy

According to the OECD (2005), financial education is the process through which consumers and financial investors enhance their understanding of financial products, concepts, and risks by receiving information, guidance, and/or objective advice, develop skills and confidence and gain a greater awareness of financial risks and opportunities, enabling them to seek support, make informed decisions, and take effective actions to gradually improve their financial well-being.

According to the Financial Literacy and Education Commission (2020), financial education delivered through formal schooling, counseling/coaching, technology-based learning, or self-directed study enables individuals to acquire knowledge, refine skills, enhance confidence, and develop positive motivation for financial decision-making. The goal of financial education is to achieve financial stability, ensuring the ability to meet current and future financial obligations while maintaining a fulfilling and secure life.

Financial education is the process of developing an individual's ability to make effective and responsible financial decisions in daily life and within their broader social and economic context. In the K-12 educational system, financial education encompasses the transmission of knowledge, skill development, behavioral adjustments, and the cultivation of financial attitudes and values, with the overarching objective of equipping students with the ability to make rational, well-informed, and effective financial decisions, both in their daily lives and as they transition into adulthood.

There are two concepts of financial education: financial literacy (FL) and financial capability (FCap). Regarding financial literacy, OECD (2024) believes that the term not only concerns knowledge of financial concepts and risks but also learners' ability to apply that understanding to real life. Having such insights into finance, students are enabled to make wise decisions in diverse financial contexts, thereby contributing to their overall well-being in their lives and economic paths.

Besides OECD, several scholars have raised their voices about the definition of financial literacy. Mandell and Klein (2009) interpret FL more from the personal perspectives, emphasizing that it is a person's ability to determine which financial decisions are effective for their short-term and long-term needs.

On the other hand, Lusardi and Mitchell (2011) believe that FL is simply a basic understanding of financial concepts and the ability to do some simple calculations. Meanwhile, Xiao, Chen, and Chen (2014) consider FL to be an element of FCap.

However, the OECD's definition may vary in different teaching contexts. In Australia, the national curriculum refers to the term "consumer and financial literacy," thereby explicitly linking FL to consumer-related financial decisions. The United States' curriculum adopts "personal financial literacy," emphasizing its individual and personal financial decision-making context.

In this study, we use the financial literacy definition of the OECD (2024) as "knowledge and understanding of financial concepts and risks as well as the skills and attitudes to apply such knowledge and understanding to make effective decisions across a range of financial contexts to improve the financial well-being of individuals and society and to enable participation in economic life."

2.2. Financial Literacy in the Vietnam Mathematics Curriculum

Before 2006, financial literacy content was mentioned to some extent in the national curriculum in Vietnam across several subjects. However, it was vague and lacked clarity (Tran, 2017). In mathematics, financial literacy was addressed within the "Quantities and Measurement" topic in grades 2 and 3. Students were expected to know how to exchange money and perform simple calculations in certain situations. In higher grades, examples related to financial literacy were integrated into some exercises in textbooks and workbooks. A study by Nguyen (2020) indicated that the proportion of financial-related tasks in middle school mathematics textbooks and workbooks accounted for only 1.3% of the total number of tasks in both books.

In 2018, the latest national curriculum emphasizes practice and the application of knowledge and skills learnt to solve problems in both academic and everyday life. Financial literacy serves as a practical context for real-life issues and has been explicitly incorporated into the curriculum of several subjects, particularly mathematics from grade 2 through grade 12. According to the research scope, we focus solely on financial literacy within the lower secondary mathematics curriculum as presented in Table 1.

Table 1. Financial literacy elements in the mathematics curriculum

Grade 6	
Content	Learning outcomes
Natural numbers	Solve practical problems related to performing calculations (e.g., calculating shopping expenses, determining the quantity of goods that can be purchased with a given amount of money, etc.). Apply arithmetic knowledge to solve real-life problems (e.g., financial calculations, determining the number of objects needed to arrange them according to given rules, etc.).
Integers	Solve real-life problems involving calculations with integers (e.g., profit and loss calculations in business transactions, etc.).
Decimal numbers	Solve real-world problems involving decimal numbers, ratios, and percentages (e.g., problems related to credit interest rates, chemical composition percentages in chemistry, etc.).
Data analysis and processing	Recognize the relationship between statistics and knowledge from other subjects in the grade 6 curriculum (e.g., history and geography, natural sciences, etc.) and real-life contexts (e.g., climate, market prices, etc.).
Practical and experiential activities	Introduction to savings and bank loans; understanding profit, loss, and outstanding debt; practicing interest rate calculations for savings and loans. Correctly paying the amount stated on invoices or calculating change when making purchases; practicing recording income and expenses, keeping receipts for future reference.

Grade 7	
Content	Learning outcomes
Real numbers	Solve simple problems involving direct proportionality (e.g., total product output and labor productivity, etc.). Solve simple problems involving inverse proportionality (e.g., completion time of a plan versus labor productivity, etc.).
Data collection and organization	Explain the reasonableness of data using simple mathematical criteria (e.g., evaluating the validity and representativeness of survey conclusions; assessing the reasonableness of advertisements, etc.).
Data analysis and processing	Recognize the relationship between statistics and knowledge from other subjects in the grade 7 curriculum (e.g., history and geography, natural sciences, etc.) and real-world contexts (e.g., environment, medicine, finance, etc.).
Practical and experiential activities	Practice calculating percentage-based increases and decreases for goods or business plans. Introduction to banking transactions. Introduction to taxes and tax calculations.
Grade 8	
Content	Learning outcomes
Data collection and organization	Collect and classify data according to given criteria from various sources: texts, tables, other academic subjects (geography, history, environmental education, financial education, etc.), interviews, media, the Internet, and real-life situations (environment, finance, healthcare, market prices, etc.). Verify the reasonableness of data using simple mathematical criteria (e.g., reasonableness of survey data, validity of advertisements, etc.).
Data analysis and processing	Recognize the relationship between statistics and knowledge from other subjects in the Grade 8 curriculum (e.g., history and geography, natural sciences, etc.) and real-world contexts.
Practical and experiential activities	Planning personal expenses. Introduction to personal investment problems (determining investment capital to achieve expected returns). Understanding bank statements (real or example statements) to track transactions, income, and expenses; choosing appropriate payment methods.
Grade 9	
Practical and experiential activities	Practicing personal investment planning. Introduction to insurance. Introduction to growth-related problems (determining investment capital to achieve a desired growth rate).

Source: MOET (2018).

Financial literacy primarily appears in the content areas of numbers, algebra, and statistics. This is relatively consistent with the mathematics curricula of several countries worldwide, such as Australia (ACARA, 2025), the United Kingdom (Department for Education, 2021) and Singapore (MOE, 2024). The mathematics curriculum in Vietnam allocates approximately 7% of instructional time to practical and experiential activities. This time allocation is considered a potential opportunity for integrating financial literacy into teaching across different grade levels. Personal finance-related topics are introduced progressively with increasing complexity across grade levels: purchasing, selling, profit, loss, saving, and debt in grade 6; banking transactions and taxation in grade 7; investment and expense management in grade 8; and insurance in grade 9.

2.3. Teacher's Perception in Implementing Financial Education

Henning and Lucey (2017) indicate that teachers and preservice teachers recognize financial literacy as beneficial for students' "real-world" needs. Nevertheless, it remains a relatively low priority within teacher education. Notably, pre-service teachers report higher confidence than teachers in meeting financial literacy standards and using online resources, suggesting opportunities for peer-led learning and collaboration. Both groups endorse cross-disciplinary approaches, such as integrating financial concepts into math, social studies, and language arts and welcome partnerships with financial industry representatives and parents.

Sawatzki and Sullivan (2017) show that many teachers consider themselves financially literate while they are less confident in teaching financial literacy, indicating a professional development gap in translating personal competence into instructional practice. The results point to a need for teacher education programs that equip preservice and practicing teachers with both curricular knowledge (e.g., navigating the Australian Curriculum's interdisciplinary opportunities) and refined pedagogy (e.g., guiding students through complex, real-world financial decision-making processes). Encouraging students to evaluate multiple options, integrate social and mathematical reasoning, and develop critical perspectives requires instructional sophistication beyond basic "Best Buy" or change-calculation tasks. This study further highlights the limitations of finance industry-sponsored programs that may not foster critical or skeptical engagement with financial choices. Lastly, teacher participation in the EPMC project improved their confidence to teach financial literacy, suggesting that design-based, pedagogically focused professional learning can meaningfully impact both teachers' practice and student outcomes and thus warrants deeper investigation in future research.

Johnston-Rodriguez and Henning (2019) highlight a significant gap in training preservice special teachers, despite existing mandates (Individuals with Disabilities Education Improvement Act, 2004). Research emphasizes the need to prepare students with disabilities for adulthood. Given the financial vulnerability of young people particularly those with disabilities early introduction to financial literacy is crucial. In this specific context of teaching, the integration of rubrics that demonstrate universal design principles for learning and cultural responsiveness is of great importance. The researchers have pointed out several curricula that serve as strong resources in terms of cultural relevance, such as practical money skills for life, finance in the classroom, money talks for teens, and money smart for young adults. In a nutshell, the paper emphasizes the urgency of equipping teachers with appropriate materials in special teaching contexts.

Kozina and Metljak (2022) strongly believe that teachers who are well aware of the significance of FL tend to utilize authentic materials in their lessons. These teachers also pay more attention to enhance students' critical thinking skills. It is an example to illustrate that teacher's beliefs have affected the way they prepare and perform the lessons that engage students to think critically and make good use of what they have learnt in real-life contexts.

Although existing literature has been trying to tackle several issues regarding financial education, there is still a lack of investigation from teachers' perspectives such as their perceptions and competencies, especially in mathematics in the context of Vietnam.

3. METHOD

3.1. Participants and Procedures

A random sample of 60 teachers from 22 schools in Hanoi Capital was chosen. Among the teachers who participated in the survey, 40 teachers (66.7%) were female, and 20 teachers (33.3%) were male. The number of teachers with less than 5 years of experience was 18 (30%), and the number of teachers with over 5 years of experience was 42 (70%) as present in Table 2.

Table 2. Demographic characteristics

Characteristics	Teachers (N = 60)
	Frequency (%)
Gender	
Male	20 (33.3)
Female	40 (66.7)
Teaching experience	
Less than 5 years	18 (30)
Over 5 years	42 (70)

The gathering of the data was carried out in accordance with ethical principles and a detailed plan. The participants agreed to take part in the survey of their own free will and had the option to withdraw at any moment. On the same day that their data was collected, participants were given the opportunity to give their informed consent.

3.2. Design Survey

The survey instrument was designed in two main sections. In the first section, the survey focuses on teachers' general understanding of financial concepts and the types of financial mathematics featured in the mathematics curriculum and textbooks; their ability to integrate financial elements into mathematics instruction; the challenges they may encounter when teaching financial elements in mathematics and the need for additional teaching materials on financial topics within mathematics.

In the second section, based on the "Big 3" questions of Lusardi and Mitchell (2011), we modified and supplemented several questions to better suit the Vietnamese teaching context. Additionally, teachers were asked to self-assess their level of confidence based on their survey responses and to describe the difficulties they encountered when assuming the role of a student in answering the questions. The survey questions and the corresponding results will be presented in the following section.

4. RESULT

4.1. Survey on General Understanding

Using a five-point rating system where 0 means "never heard of it," 1 means "have heard of it but not clearly understood," 2 means "somewhat knowledgeable," 3 means "proficient," and 4 means "very proficient." Table 3 shows teachers' self-rated proficiency in common financial concepts. The concepts of savings, compound interest, simple interest, revenue, profit, and listed price have a relatively high average (from 2.5 to 2.8). Notable examples include list price (mean = 2.70 and SD = 0.696) and compound interest (mean = 2.8 and SD = 0.708). These financial topics are familiar due to daily life experiences or simple examples in math education. By contrast, more specialized concepts such as stocks (mean = 1.8 and SD = 0.84), bonds (mean = 1.63 and SD = 1.205), inflation (mean = 2.07 and SD = 0.778), and insurance (mean = 2.07 and SD = 0.733) are less commonly mastered by teachers. There is a notable lack of understanding regarding investment instruments with 10% of teachers stating they are unfamiliar with bonds.

Table 3. Teachers' self-rated proficiency of the financial concepts (in percentage)

Concept	0	1	2	3	4	M (SD)	Concept	0	1	2	3	4	M (SD)
Personal finance	3.3	3.4	70	23.3	0	2.13 (0.623)	Value-added tax	0	6.7	46.7	33.3	13.3	2.53 (0.812)
Financial statement	0	16.7	73.3	10	0	1.93 (0.516)	Credit card	0	20	50	20	10	2.20 (0.879)
Investment	0	13.3	70	16.7	0	2.03 (0.551)	Debit card	10	16.7	53.3	10	10	1.93 (1.039)
Savings	0	3.3	46.7	43.3	6.7	2.53 (0.676)	Simple interest	0	6.7	23.3	60	10	2.73 (0.773)
Cost	0	3.3	50	36.7	10	2.53 (0.724)	Compound interest	0	6.7	16.6	66.7	10	2.80 (0.708)
Loans	0	10	50	30	10	2.40 (0.807)	Stock	0	43.3	36.7	16.7	3.3	1.80 (0.840)
Revenue	0	6.7	36.7	46.7	10	2.60 (0.764)	Insurance	0	20	56.7	20	3.3	2.07 (0.733)
Profit	0	6.7	33.3	50	10	2.63 (0.758)	Inflation	0	20	60	13.3	6.7	2.07 (0.778)
List price	0	0	43.3	43.4	13.3	2.70 (0.696)	Promotion	0	0	50	40	10	2.60 (0.669)
Income	0	0	33.3	53.4	13.3	2.80 (0.659)	Bonds	10	43.3	23.4	20	3.3	1.63 (1.205)

Moreover, debit cards and credit cards also have medium-to-low averages (1.93 and 2.2, respectively). This suggests that although non-cash payment tools have become increasingly common in daily life, many teachers (perhaps due to habit or infrequent use) still do not fully grasp the features and operational mechanisms of these two types of cards. A practical lesson emerges to understand a specific concept related to finance, one need multiple activities related to that concept. This aligns with the activity-oriented viewpoint in education, namely learning through and by engaging in activities.

Results from Table 4 show that 96.7% of teachers know the “profit–loss in business” problem type and how to calculate savings interest rates. This matches the reality of mathematics instruction in secondary schools where “profit–loss” and “interest rate” problems appear very early (often in grades 6–7). However, only 46.7% know problem types related to stock and securities investment. This percentage reflects how rarely topics with higher financial-market relevance are included in the curriculum (how little attention teachers’ pay to them).

Table 4. Commonly encountered types of financial literacy tasks in mathematics

Type of tasks	Frequency	Percentage (%)
Profit and loss in business	58	96.7%
Savings (simple interest, compound interest, etc.)	60	100%
Investment (stock, bonds, etc.)	28	46.7%
Others	12	20%

In addition to the problem types for which hints are provided, the teacher introduces several other categories, such as calculating product prices with VAT, calculating personal income tax and comparing investment options. Capital allocation ratios, cost optimization, production optimization, calculating telecommunications fees, taxi fares, construction costs; paying salaries when hiring; Installment payments, financial accumulation, investment in home purchases, discount and promotion programs, currency exchange, installment payments. The mathematical concepts commonly employed by teachers to solve financial problems include operations with natural numbers, integers, fractions, and percentage calculations, rounding rules, quadratic functions, exponential functions, logarithmic functions, maximum and minimum values of functions, equations and systems of equations, arithmetic sequences and geometric sequences, analytic geometry, identities and inequalities. This result aligns with the distribution of financial literacy tasks across the mathematical content strands specified in the 2018 General Education Mathematics Curriculum, detailed in Table 5.

Table 5. Teacher-perceived potential of financial literacy tasks allocation in content strands

Content strands	Frequency	Percentage (%)
Number	24	40%
Algebra	48	80%
Calculus	11	18.3%
Geometry and measurement	8	13.3%
Statistics and probability	30	50%

Regarding the difficulties of teaching financial literacy in mathematics, 90% of teachers believe that financial literacy could be introduced during the “problem-posing” stage (see Table 6), and 93.3% see it as applicable at the end of the lesson.

This is a positive sign, suggesting they are interested in using financial examples to “open a lesson,” “develop knowledge,” or “apply and reinforce.”

Table 6. Teacher-perceived affordances of financial literacy tasks in mathematics learning activities

Activities	Frequency	Percentage (%)
Engaging/ introduction the lesson	54	90%
Knowledge formation/problem-solving/task execution	28	46.7%
Practice	38	63.3%
Applying knowledge	56	93.3%

However, in Table 7, teachers themselves recognize that “students’ understanding of finance is still limited” (mean = 3.07 and SD = 0.578) as the biggest barrier. In addition, the comment “it takes a lot of time to explain terminology” has a mean of 2.8 (SD = 0.755), indicating teachers’ reluctance to engage in “extra lectures” on financial definitions and formulas. 73.3% of teachers admit that their own financial knowledge is not yet solid (mean = 2.73). Furthermore, around 23.3% mention difficulties in assessing student learning outcomes. Follow-up interviews revealed that there are currently no criteria or standards for evaluating students’ financial mathematics competencies. If there were such a scale or framework, teachers could more easily conduct assessments.

Table 7. Teacher-reported challenges in teaching financial literacy tasks

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	M (SD)
My own financial knowledge is limited.	0	10	16.7	63.3	10	2.73 (0.778)
Too much time is required to prepare the content.	0	13.3	26.7	53.3	6.7	2.53 (0.812)
Too much time is needed to explain the related mathematical formulas and terms.	0	10	10	70	10	2.80 (0.755)
Difficulty in evaluating student performance.	3.3	36.7	36.7	23.3	0	1.80 (0.840)
Students’ understanding of financial knowledge is limited.	0	0	13.3	66.7	20	3.07 (0.578)
Students focus more on financial elements than on mathematical knowledge.	10	30	26.7	23.3	10	1.93 (1.163)

In Table 8, on the topic of adding financial literacy to the mathematics curriculum, 33.4% of teachers feel that “no addition is needed.” 43.3% want “a little more” content, 20% think “much more” is needed, and 3.3% believe “it should be reduced.” Opinions are quite divided, but in summary, 63.3% favor adding more (in some quantity) versus 36.7% who choose to keep the status quo or reduce content. This outcome aligns with the desire to enhance real-world relevance, while also implying the need for solutions to support teachers in terms of knowledge, teaching materials, and time for lesson design.

Table 8. Teachers' opinions on supplementing financial literacy tasks in mathematics teaching

Statement	Frequency	Percentage (%)
Should reduce.	2	3.3
No need to supplement.	20	33.4
Need a little supplement.	26	43.3
Need significant supplementation.	12	20

4.2. Survey on Mathematical and Financial Literacy

In Table 9, many teachers performed well on the compound interest question or the question about how long it takes for a loan to double if no repayment is made (question 10). About 83.4% correctly chose 5–9 years, consistent with the “Rule of 72” (with an interest rate of 10% per year, it takes about 7–8 years for the principal to double). However, for the question comparing “1-month deposit – 3.30%” with “12-month deposit – 6.30%” (question 11), as many as 73.3% of teachers selected making repeated 1-month deposits, and only 20% chose the 12-month deposit.

One reason might be a misunderstanding about whether the 3.30% figure is “per month” or “per year” or about how monthly compounding works. This reveals confusion between the annual advertised interest rate and the actual monthly rate, leading to incorrect answers.

Table 9. Teacher feedback on financial literacy assessment questions

Questions	Options			
Question 9: Suppose a person has 100 million VND in savings in a bank with an annual interest rate of 7%. How much money will be in the account after 2 years if no withdrawals are made?	More than 120 million VND	Exactly 120 million VND	Less than 120 million VND	Cannot answer
Frequency (percentage)	4 (6.7%)	0 (0%)	56 (93.3%)	0 (0%)
Question 10: Suppose a person has a loan of 100 million VND with an annual interest rate of 10. If no repayments are made and the interest rate remains constant, how many years will it take for the debt to double?	Less than 2 years	Between 2 and 4 years	Between 5 and 9 years	More than 10 years
Frequency (percentage)	0 (0%)	2 (3.3%)	50 (83.4%)	8 (13.3%)
Question 11: Suppose a person has 100 million VND and wants to save it in a bank. Based on online information, two saving options are available: Option A: 1 month – 3.30%; option B: 12 months – 6.30%. Which option should the person choose to obtain the highest interest after 12 months?	Option A	Option B	Both options are the same.	Cannot answer
Frequency (percentage)	44 (73.3%)	12 (20%)	0 (0%)	4 (6.7%)
Question 12: Suppose a person saves money in a bank with an annual interest rate of 7%, and the inflation rate is 4% per year. After one year, compared to before saving, the purchasing power of the money in the bank is	Greater	Equal	Less	Cannot answer
Frequency (percentage)	28 (46.7%)	0 (0%)	8 (13.3%)	24 (40%)

The inflation question (question 12) also posed challenges with 40% of respondents “unable to answer.” Only 46.7% stated that purchasing power would increase (if the nominal interest rate is 7% and inflation is 4%). This rate corresponds to the observed weakness in teachers’ understanding of inflation (mean = 2.07 and SD = 0.778). Moreover, when asked whether “selling more always increases profit” (question 13), only 23.1% chose the correct response, indicating that most teachers understand that profit depends not only on revenue but also on costs, price, and the market. Nonetheless, 30% answered “cannot say,” reflecting uncertainty about microeconomic calculations.

Following completion, teachers were asked to assess their confidence level regarding their answers in the mathematics and financial literacy tests. Results showed that 36.7% of teachers felt uncertain, 53.3% felt confident, and 10% felt very confident about their responses. There are 26 teachers (43.3%) who reported no difficulties while 34 teachers (56.7%) faced difficulties. The main challenges were due to a lack of clear understanding of the term “inflation,” difficulty in comprehending the questions, and insufficient depth in financial knowledge.

5. DISCUSSION

The financial knowledge of teachers in Vietnam appears limited based on the survey outcomes. Their self-assessment scores regarding mastery of modern financial concepts (e.g., stocks, bonds, or credit/debit card use for consumption) were low and highly dispersed. This is consistent with the findings of Van Nguyen, Ha, Nguyen, Doan, and Phan (2022) from their study on 600 adults in Vietnam. Follow-up conversations with a few teachers after the survey revealed that while these teachers are aware of stock and securities problems, almost none of them have ever invested in stocks or securities, and no teacher mentioned participating in cryptocurrency (Bitcoin). Meanwhile, in recent times (late 2024, early 2025), crypto investment transactions have been quite active and “hot” again in the Vietnamese market. School education should update its content to prepare students for changes in the

economy and society. When asked further about other types of financial literacy tasks, some teachers mentioned calculations involving VAT, personal income tax, telecommunications costs, construction costs, optimizing production costs, installment payments, and accumulating investment for home purchases. These findings suggest that the financial elements of the 2018 mathematics curriculum are more explicit than in the 2016 curriculum, garnering more attention from teachers. Consequently, the need to incorporate financial literacy and integrate it into classroom instruction has also notably increased.

Performance on the Big 3 test questions was inconsistent with the survey outcomes on general understanding despite the long-standing presence of bank interest problems in Vietnam's math curriculum and teachers' high self-assessment of their mastery of these concepts. Over 16.6% of teachers answered question 10 incorrectly, and 80% answered question 11 incorrectly. For the inflation-related questions, almost half of teachers either did not answer or provided an incorrect response. Performance was even poorer on the question concerning the link between sales and profit. Thus, we noted that corporate and public finance topics are generally unfamiliar to teachers.

The research findings highlight the necessity of professional development programs to enhance teachers' financial literacy, underscoring that the strengthening of financial elements in mathematics needs to go hand in hand with enhancing teachers' professional knowledge in order to be able to teach this content (De Beckker, Compen, De Bock, & Schelfhout, 2019; Matheson, DeLuca, & Matheson, 2020). Teacher training is the core factor for successful implementation of financial education at the general education level (Compen, De Witte, & Schelfhout, 2019).

6. CONCLUSION AND FUTURE WORK

Teachers' perceptions of financial education play a crucial role in shaping the effectiveness of financial literacy instruction. Based on practical observations, the surveyed teachers demonstrate a firm grasp of basic financial concepts and profit–loss problem types. However, when it comes to more advanced knowledge (securities, bonds, inflation and credit/debit cards), they are less confident and often face challenges in dealing with more complex economic issues. Most teachers are willing to incorporate financial elements to make mathematics problems more realistic, provided clear guidance to avoid taking too much class time. These data suggest a need to enhance teachers' financial literacy, helping them gain a deeper understanding of concepts such as accurate interest rates, inflation, investment, and funds through systematically organized financial math topics suitable for each grade and level. It is also important to implement appropriate teaching methods, such as experiential learning activities and mathematical modeling based on the content already in textbooks, to not overwhelm teachers or students with excessive material. In future research, the number of participating teachers should be increased to enhance the representativeness of the sample. Moreover, the collection of background data, such as qualifications, gender, and years of teaching experience would allow for a more in-depth examination of factors influencing the integration of financial literacy in mathematics instruction.

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Transparency: The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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