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Cultural–Religious Challenges and Opportunities of FinTech in Financial Literacy Education for Children Aged 10–12 in Tehran

ABSTRACT

This study aimed to identify the cultural–religious challenges and opportunities of fintech in financial literacy education for children aged 10–12 in Tehran, using a qualitative approach and thematic analysis. Data were collected through semi-structured interviews with 36 participants until theoretical saturation was achieved. The results of the qualitative analysis led to the identification of 30 main themes and 119 sub-themes, aligned with the three dimensions of the OECD financial literacy model—financial knowledge, financial behavior, and financial attitudes—as well as the learning theories of Vygotsky, Piaget, and Ajzen. Key findings indicate that cultural–religious factors such as alignment with Islamic values, localization of content and instructional methods, data security and privacy, parental control, and game-based learning play a central role in the effective design and implementation of financial literacy education programs. Cohen’s kappa coefficient for most themes was calculated to be above 0.70, indicating high coding reliability. In addition, member checking was conducted with a participation rate exceeding 80%, and the feedback received was incorporated into the final analysis. This study provides a comprehensive framework for the development of localized financial literacy programs that, while adhering to international standards, are aligned with the cultural and religious values of Iranian society and can serve as a foundation for educational policymaking and digital content development in the field of children’s fintech.

Keywords: children’s financial literacy, fintech, financial education, thematic analysis, Islamic values, localization

Introduction

Financial literacy has emerged as a foundational competence for individual well-being, social equity, and sustainable economic development in contemporary societies. In an increasingly complex financial environment characterized by digitalization, financial innovation, and expanding access to financial products, individuals are required to make informed

decisions from an early age. Empirical evidence consistently demonstrates that insufficient financial literacy is associated with suboptimal financial behavior, heightened vulnerability to financial stress, and long-term socioeconomic risks (1-3). Consequently, policymakers, educators, and international organizations have emphasized the necessity of systematic financial education, particularly during childhood, when foundational cognitive, behavioral, and attitudinal patterns are formed (4, 5).

Early financial education is widely recognized as a critical intervention for shaping responsible financial attitudes and behaviors across the life course. Research indicates that children who receive structured financial education exhibit higher levels of financial knowledge, improved saving behaviors, and greater self-control in consumption decisions (1, 6). Curriculum-based approaches implemented at the elementary and junior high school levels have shown positive effects on long-term financial capability, particularly when instruction is developmentally appropriate and aligned with learners' sociocultural contexts (7-9). These findings underscore the importance of embedding financial literacy education within formal education systems rather than treating it as an optional or supplementary skill.

Parallel to the growing emphasis on financial education, financial technology (FinTech) has rapidly transformed the landscape of financial service delivery and financial learning. FinTech applications, including mobile banking, digital wallets, gamified learning platforms, and AI-driven educational tools, have expanded access to financial knowledge and facilitated interactive, personalized learning experiences (10, 11). Digital platforms are particularly relevant for younger generations, whose learning preferences increasingly favor technology-mediated, experiential, and game-based formats (12, 13). The integration of FinTech into financial education therefore represents both an opportunity and a challenge: while digital tools can enhance engagement and accessibility, they also raise concerns related to data security, ethical design, parental oversight, and cultural appropriateness (14, 15).

International policy frameworks have explicitly addressed the intersection of financial literacy and digital delivery mechanisms. The OECD/INFE guidance on the digital delivery of financial education highlights the need for age-appropriate design, inclusivity, and alignment with national educational objectives (4). However, the effectiveness of digital financial education initiatives is highly context-dependent. Studies conducted in diverse cultural and economic settings indicate that financial literacy outcomes are shaped not only by instructional content but also by family environments, social norms, and institutional trust (16-18). As such, one-size-fits-all digital solutions may fail to address localized needs, particularly in societies where cultural and religious values strongly influence financial attitudes and behaviors.

In culturally embedded contexts, financial decision-making is often guided by normative frameworks rooted in religious beliefs, collective identities, and traditional economic practices. Empirical research from regions with strong religious orientations demonstrates that financial behavior is closely linked to moral values, ethical norms, and socially constructed expectations (17, 19). In such contexts, financial education initiatives that neglect cultural and religious dimensions risk limited acceptance, reduced effectiveness, or even resistance among learners and families. This challenge is especially pronounced in childhood education, where value transmission and socialization processes play a central role (9, 20).

Theoretical frameworks provide valuable lenses for understanding how children acquire financial knowledge and behaviors. Piaget's cognitive development theory emphasizes that children's capacity to understand abstract financial concepts evolves through distinct developmental stages, necessitating instructional designs that match learners' cognitive readiness (1). Vygotsky's sociocultural learning theory further highlights the importance of social interaction, parental guidance, and culturally mediated tools in learning processes, suggesting that financial education is most effective when embedded within meaningful social contexts (12, 13). Complementing these perspectives, Ajzen's theory of planned behavior explains how attitudes, subjective norms, and perceived behavioral control shape financial intentions and actions, offering a robust framework for understanding the influence of cultural and religious norms on financial behavior (12, 17).

Recent empirical studies reinforce the relevance of family and parental involvement in children's financial learning. Parental modeling, shared financial activities, and guided digital engagement significantly enhance children's financial understanding and responsible behavior (13, 20). At the same time, digital financial environments introduce new risks, including exposure to inappropriate content, excessive consumption cues, and privacy vulnerabilities. Research on digital parenting and data surveillance underscores the necessity of balancing children's autonomy with protective oversight in technology-mediated financial education (14). These considerations highlight the need for FinTech-based educational solutions that incorporate mechanisms for parental control, ethical design, and child-centered safeguards.

From a broader socioeconomic perspective, financial literacy has been linked to financial inclusion, reduced inequality, and improved economic resilience. Studies demonstrate that enhanced financial literacy contributes to more effective asset allocation, improved investment decision-making, and greater financial well-being across demographic groups (10, 21, 22). Conversely, financial illiteracy has been identified as a systemic risk factor, increasing household vulnerability and amplifying macroeconomic instability (3, 23). These findings underscore the strategic importance of early financial education as a preventive policy tool with long-term societal benefits.

Despite the growing body of literature on financial literacy and FinTech, significant research gaps remain. Much of the existing research focuses on adolescents, university students, or adults, with comparatively limited attention to children in the late elementary years, particularly within non-Western cultural contexts (24, 25). Moreover, while numerous studies examine digital financial literacy and financial behavior, fewer investigations explore how cultural and religious values can be systematically integrated into FinTech-based financial education for children (6, 9). Addressing this gap is essential for developing contextually responsive educational models that align technological innovation with local value systems.

Recent international research highlights the importance of contextual moderation in digital financial education outcomes. For instance, studies in developing and emerging economies demonstrate that digital literacy, trust, and cultural relevance significantly moderate the impact of FinTech on financial inclusion and behavior (15, 19, 26). Similarly, investigations into lifestyle factors, self-control, and social norms reveal that financial behavior is embedded within broader cultural and familial ecosystems (27, 28). These insights reinforce the argument that effective financial education—particularly for children—must transcend technical skill development and engage with value formation and social learning processes.

In light of these considerations, there is a compelling need for integrative research that examines how FinTech-based financial education for children can be designed in a manner that is pedagogically sound, technologically responsible, and culturally congruent. Such research should synthesize international policy frameworks, learning theories, and empirical evidence while grounding analysis in local sociocultural realities. By doing so, it can contribute to the development of educational models that not only enhance financial knowledge but also foster ethical financial attitudes, responsible behaviors, and long-term economic resilience.

Accordingly, the aim of this study is to identify and analyze the cultural, educational, and technological dimensions of FinTech-based financial literacy education for children, with the objective of developing a contextually grounded framework that integrates international standards with local cultural and value-based considerations.

Methods and Materials

Study Design and Participants

This study was conducted using a predominantly inductive qualitative approach and employed thematic analysis based on the framework proposed by Braun and Clarke (2006).

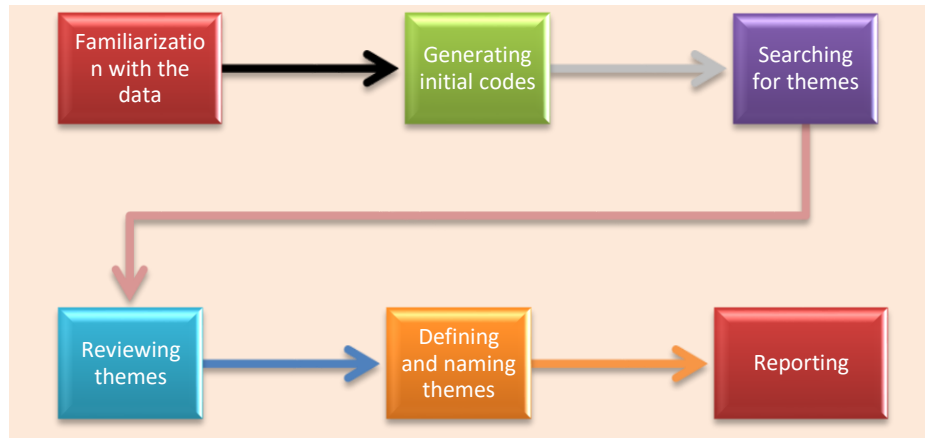


Figure 1. Six-phase framework of thematic analysis

The purpose of the analysis in this study was to extract meaningful themes from empirical data in order to conduct an in-depth examination of the experiences and perspectives of parents, teachers, and fintech experts regarding children’s financial literacy education through fintech tools. Participants were selected using purposive non-probability sampling, and data were collected through semi-structured interviews. This approach was chosen due to the qualitative nature of the study, the need to access experts, and the cultural–social complexities of Tehran as a metropolis characterized by diverse subcultures and economic stratification. This method facilitated engagement with key informants in a multicultural urban context and enabled the collection of rich data aligned with Islamic–Iranian values.

Although this method proved effective in Tehran as a technologically advanced city with widespread digital access, to enhance the generalizability of findings to other regions of the country with different demographic and cultural characteristics, future studies are recommended to employ complementary methods such as maximum variation sampling or criterion-based sampling. This is particularly important in comparative studies between Tehran and other cities, as it would contribute to a more comprehensive understanding of the cultural–social influences on the application of fintech in children’s financial literacy education. Integrating snowball sampling with other purposive approaches would further enhance the credibility and comprehensiveness of the findings.

For data analysis, the six stages of thematic analysis (Braun & Clarke, 2006) were implemented, and MaxQDA software was used for coding and categorization. To strengthen credibility and validity, strategies such as member checking and inter-coder agreement were applied. The research approach was primarily inductive but also incorporated deductive elements, as the findings were compared and analyzed in relation to theoretical frameworks such as Vygotsky’s sociocultural learning theory, Piaget’s cognitive development theory, Ajzen’s theory of planned behavior, and the OECD model (2020). Throughout all stages of the study, ethical principles including informed consent, confidentiality, and the right to withdraw freely were strictly observed.

This study employed snowball sampling, which is a form of non-probability purposive sampling. This approach was selected due to the qualitative nature of the study and the necessity of accessing individuals with direct experience in applying financial technologies (fintech) to educate children aged 10–12 in Tehran. The sampling process began with the identification of several initial participants (including parents, teachers, and fintech experts) who possessed relevant experience. These individuals were then asked to introduce other eligible participants. This cycle continued until theoretical saturation was reached, meaning that no new themes emerged from additional data.

To enhance diversity and the potential transferability of the findings, factors such as gender, educational level, and professional experience were considered in the selection of initial participants. This method facilitated access to diverse

perspectives by creating a network of relevant individuals and enabled a deeper analysis of the experiences of parents, teachers, and fintech experts.

Despite the study's focus on the 10–12 age group, direct participation of children was avoided due to ethical considerations, children's cognitive limitations in understanding complex financial–technological concepts, and practical challenges in designing child-centered interview tools. Instead, the perspectives of key stakeholders such as parents, teachers, and fintech experts—who act as primary mediators in children's learning processes—were examined. This approach not only adhered to ethical standards but also provided a comprehensive analysis of the role of adults in children's financial literacy education.

Data Collection

Semi-structured interviews were used to collect qualitative data in this study. The interview protocol was developed using the Interview Protocol Refinement (IPR) framework proposed by Castillo-Montoya (2016). The protocol was designed to explore the experiences, attitudes, and perspectives of parents, teachers, and fintech experts regarding the effectiveness of fintech platforms in financial literacy education for elementary school children (aged 7–12) and the alignment of these tools with Islamic–cultural values. Interview questions were structured into three sections: introductory (demographic) questions, core questions (both common and specialized), and concluding questions, to ensure a logical and in-depth flow of data collection.

To ensure alignment of the questions with the research objectives, clarity of language, and a coherent interview flow, the IPR refinement process was conducted in four stages: (1) alignment with research objectives, (2) enhancement of language and question clarity, (3) review of question sequence and flow, and (4) validation of the protocol through a pilot test. Data obtained from the interviews were analyzed using Braun and Clarke's (2006) thematic analysis approach and MaxQDA 2024 software.

Data Analysis

The analysis process was conducted in six stages in accordance with the Braun and Clarke (2006) model.

- Familiarization with the data: repeated listening to interviews and review of notes
- Initial coding: extraction of codes representing basic concepts from the data (using MaxQDA software)
- Searching for themes: integrating codes into initial themes
- Reviewing themes: aligning themes with codes and the entire dataset
- Defining and naming themes: clarifying the nature of each theme and its relationship to the research questions
- Reporting: presenting a coherent analysis of the findings

To enhance credibility (internal validity), two methods were employed.

1. Member checking: interpretations were returned to interviewees for final confirmation.
2. Inter-coder agreement: independent coding by two researchers and calculation of Cohen's kappa coefficient.

Conceptual Model of the Study

The conceptual model of the study (Figure 2) was developed based on the three key dimensions of financial literacy (knowledge, attitudes, and behavior) and integrates Piaget's theory (1952) to align educational content with children's stages of cognitive development, Vygotsky's theory (1978) to emphasize interactions among parents, teachers, and the social environment, and Ajzen's theory (1991) to explain the influence of cultural norms and religious teachings within the Iranian context. This framework connects individual, social, and cultural factors and provides a comprehensive basis for analyzing

children’s financial literacy education through a fintech-oriented approach that is consistent with local and religious considerations.

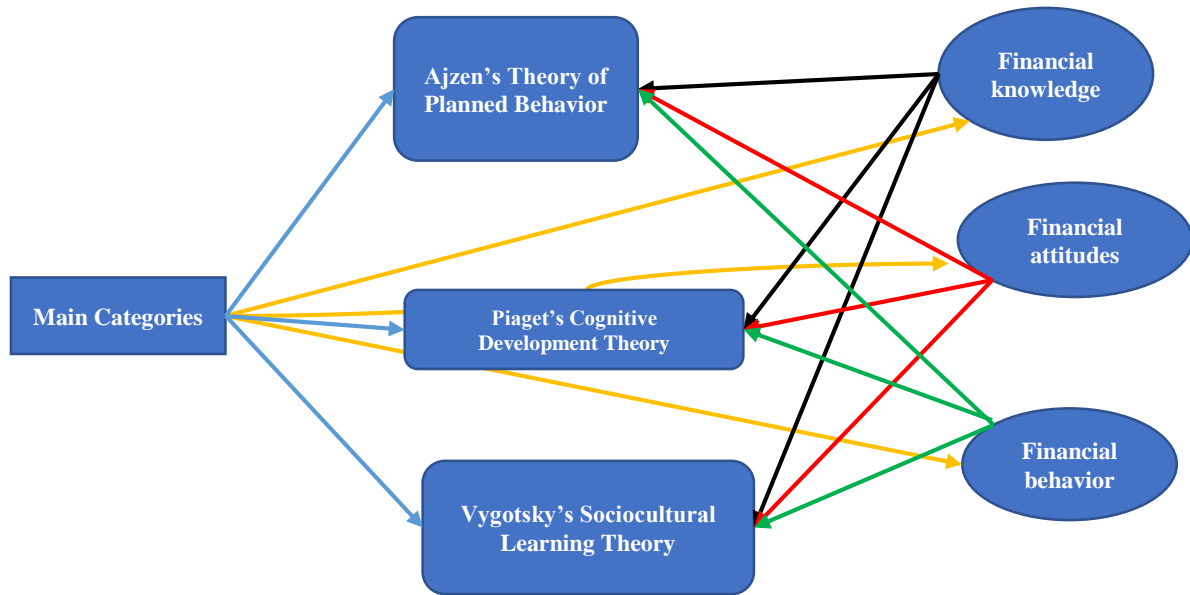


Figure 2. Conceptual model of the study

Findings and Results

The analysis of data from the semi-structured interviews began with 15 initial participants and continued until thematic saturation was reached with 36 participants (including 12 parents, 12 teachers, and 12 fintech and Islamic knowledge experts). This process identified 30 main themes aligned with the OECD financial literacy model (2020)—including financial knowledge, financial behavior, and financial attitudes—and with the learning theories of Vygotsky, Piaget, and Ajzen, along with 119 sub-themes covering cultural–religious dimensions (such as Islamic values and Qur’anic narratives), security and privacy challenges, educational dimensions (such as financial management and gamification), and the roles of key stakeholders (parents, teachers, schools, government, and developers). This comprehensive classification underscores the importance of cultural factors, security considerations, and localization in the design of innovative financial literacy education programs for children. In the following section, the assessment of coding reliability is presented along with themes and qualitative evidence.

To calculate Cohen’s kappa coefficient in order to assess inter-coder agreement between two coders in the qualitative data analysis, the data presented in Table 1 were used. This table provides information on the total number of codes and the level of agreement between coders for each thematic category. Cohen’s kappa coefficient measures the degree of agreement between two coders while accounting for the probability of chance agreement. The kappa formula is as follows:

$$K = (P_o - P_e) / (1 - P_e)$$

where:

P_o = observed agreement ratio = number of agreements / total number of codes

P_e = expected agreement by chance (calculated based on the distribution of “yes/no” responses by each coder)

Table 1. Cohen's Kappa Coefficients for the Main Themes of the Study

No.	Main Theme	Total Codes	Coder Agreements	P_o	P_e	Kappa
1	Alignment with Islamic and cultural values	155	140	0.903	0.650	0.723
2	Localization of content and visual design	103	93	0.903	0.613	0.749
3	Data security and privacy	99	89	0.899	0.562	0.769
4	Parental control over children's financial activities	62	56	0.903	0.588	0.765
5	Teaching financial concepts through gamification	71	64	0.901	0.608	0.748
6	Financial goal-setting and planning for children	63	57	0.905	0.592	0.767
7	Teaching money management skills	93	84	0.903	0.571	0.775
8	Continuous monitoring and evaluation of children's financial performance	70	67	0.957	0.569	0.901
9	Role of parents in financial literacy education	66	60	0.909	0.537	0.804
10	Role of teachers and schools in financial education	54	49	0.907	0.569	0.785
11	Role of government and cultural institutions	60	54	0.900	0.520	0.792
12	Social responsibility of fintech developers	53	48	0.906	0.509	0.808
13	Support and promotion of startups	66	59	0.894	0.507	0.785
14	Insurance education and risk management	70	63	0.900	0.549	0.778
15	Teaching saving principles	64	58	0.906	0.518	0.806
16	Teaching expenditure and income systems	58	52	0.897	0.505	0.791
17	Teaching interest-free lending and Islamic investment	54	49	0.907	0.503	0.814
18	Teaching coping strategies for advertising and purchasing	47	42	0.894	0.511	0.782
19	Teaching smart purchasing and frugal lifestyle	56	50	0.893	0.523	0.775
20	Teaching financial commitment and responsibility	68	61	0.897	0.528	0.782
21	Teaching financial teamwork	55	53	0.964	0.587	0.912
22	Attention to educational equity and universal access	76	68	0.895	0.589	0.744
23	Teaching prevention of financial fraud	67	61	0.910	0.570	0.792
24	Teaching financial rights and consumer laws	61	55	0.902	0.507	0.801
25	Linking to Qur'anic teachings and inspirational stories	62	59	0.952	0.606	0.877
26	Teaching analytical understanding of market transactions	75	65	0.867	0.520	0.722
27	Teaching asset management and smart investment	61	55	0.902	0.507	0.801
28	Digital technology competencies for children	65	55	0.846	0.527	0.675
29	Continuous assessment and feedback in financial learning	54	51	0.944	0.524	0.883
30	Healthy financial lifestyle	58	54	0.931	0.570	0.839

Based on the results presented in Table 4, in most themes the P_o values were above 0.90, and kappa coefficients generally fell within the range of moderate to good agreement. Instances of lower kappa values were primarily attributable to imbalanced data distributions or ambiguous theme definitions. The kappa index provided a practical guide for identifying and improving potential weaknesses in coding and enhancing the rigor of the qualitative analysis.

To enhance credibility and ensure alignment between the study findings and participants' lived experiences, the member checking method was employed. This approach, recognized as a fundamental strategy for strengthening credibility in qualitative research (Lincoln & Guba, 1985), involves presenting research findings or preliminary interpretations to participants to confirm their accuracy and consistency with participants' perspectives and experiences.

Following the initial analysis of semi-structured interview data using Braun and Clarke's (2006) thematic approach and MaxQDA software, a concise report of key themes (alignment with Islamic values, localization of education, financial gamification, and data security) was prepared and sent to the 36 participants (12 teachers, 12 parents, and 12 fintech experts). The report was distributed via email and messaging platforms with a seven-day response window to collect confirmatory and corrective feedback. Ultimately, 30 participants (over 80%) responded, and suggestions such as emphasizing parent-child interaction, adding Qur'anic examples, and strengthening data security contributed to enriching the themes.

The results of the member checking process indicated that the extracted themes were generally consistent with participants' experiences and viewpoints, thereby strengthening the internal credibility of the study. This process, together with the

calculation of Cohen’s kappa coefficient to assess inter-coder agreement, functioned as a complementary mechanism to ensure the reliability and accuracy of the data analysis.

Table 2. Main and Sub-Themes Derived From Interview Coding

No.	Main Theme	Sub-Theme
1	Alignment with Islamic and cultural values	Teaching Islamic financial concepts in simple language (financial halal and haram) Observing fairness, trustworthiness, and honesty in financial interactions Using Qur’anic stories and narrations from the Ahl al-Bayt in financial education Emphasizing contentment and avoiding extravagance Role modeling based on the conduct of the Ahl al-Bayt and prominent figures in Iranian–Islamic culture in financial management Practical exercises in charity (sadaqah) and philanthropic activities at school and home Encouraging social participation and helping those in need Teaching the concept of others’ rights (haqq al-nas) in financial matters (e.g., safeguarding entrusted money) Introducing the concepts of endowment (waqf) and interest-free lending (qard al-hasan) in practical ways
2	Localization of content and teaching methods	Promoting an Islamic consumption pattern in children’s lifestyles Using Iranian characters, stories, and myths in financial education Introducing Iranian saving traditions, such as the family piggy bank Depicting local markets and Iranian symbols in educational activities Using Iranian proverbs and humor to teach financial concepts Simulating bargaining in Iranian marketplaces Familiarizing learners with traditional forms of interest-free lending and family-based saving funds Using Iranian arts (painting, poetry, storytelling) in financial education Organizing charity bazaars or selling students’ handicrafts Inviting parents or local entrepreneurs to share financial experiences
3	Data security and privacy	Teaching the importance of confidentiality of financial information Practicing the use of secure passwords with parental involvement Defining financial privacy (what is “permissible” vs. “impermissible” to share as information) Encouraging reporting of financial risks to adults Teaching trustworthiness and raising awareness about information theft Storytelling about the consequences of adhering to or neglecting financial security Teaching the difference between healthy trust and misplaced trust in financial matters
4	Parental control over children’s financial activities	Setting transaction limits for children Providing parents with the child’s financial reports/notifications Setting shared financial goals between parents and the child Holding family encouragement sessions for financial management
5	Teaching financial concepts through gamification	Educational games based on Qur’anic stories Financial challenges centered on Islamic ethics Store- and saving-simulation games Virtual competitions on expense and budget management
6	Financial goal-setting and planning for children	Teaching how to set short-term and long-term financial goals Providing financial tracking tools (e.g., a notebook or an app) Encouraging selection of an annual financial goal Teaching planning for major future purchases
7	Teaching money management skills	Teaching weekly and monthly budgeting Distinguishing between needs and wants Effective management of pocket money Teaching the risks of impulsive or online purchases Practicing recording income and expenses in a game format
8	Continuous monitoring and evaluation of children’s financial performance	Providing periodic reports to parents Providing instructional feedback to children

		Assessing financial skills through online tests Holding a success celebration for children's financial achievements Parental counseling for financial education Using everyday examples in financial teaching Establishing household financial rules Implementing monthly family saving challenges
9	Role of parents in financial literacy education	Integrating financial concepts into the curriculum
10	Role of teachers and schools in financial education	Organizing training workshops for teachers Using fintech tools in the classroom Forming student groups to manage the school fund
11	Role of government and cultural institutions	Developing security standards for children's fintech Supporting financial education startups Producing educational content such as financial animations for children Organizing annual financial literacy festivals
12	Social responsibility of fintech developers	Observing ethical principles in product design Aligning content with different age groups Ensuring children's data security Creating a feedback module to improve products
13	Use of digital tools for financial education	Designing localized interactive applications Holding webinars and online workshops Producing short, entertaining content for social media Designing educational games based on Islamic economics
14	Promoting a saving culture and avoiding extravagance	Holding group competitions to record spending and saving Teaching through real examples of families successful in saving Encouraging maintenance of a shared family savings fund Explaining the impact of avoiding waste on the environment and the family Teaching the difference between needs and wants through storytelling
15	Emphasizing the concept of work and effort to earn income	Job-simulation games Encouraging small household tasks Inviting local entrepreneurs to give talks Organizing a bazaar for selling students' handicrafts
16	Developing economic life skills	Educating a financially aware generation Teaching financial ethics at school and in the family Organizing financial education events in schools
17	Developing economic decision-making skills	Simulating financial choices in class Holding group discussions on financial scenarios Teaching evaluation of simple financial opportunities
18	Familiarization with financial and banking services	Basic training on using children's bank accounts Virtual visits to banks Introducing new banking services specifically designed for children
19	Supporting domestic production and children's economic empowerment	Teaching the importance of consuming Iranian-made products Encouraging production and sale of home-made products Organizing student entrepreneurship competitions
20	Learning investment concepts and financial markets	Basic education on the stock market and shareholding Capital-market simulation games Organizing virtual investment courses for children
21	Economic justice and equal opportunities	Promoting the concept of justice in the distribution of financial resources Encouraging support for people in need Establishing a student interest-free lending fund (qard al-hasan)
22	Teaching the concept of risk and its management	Teaching identification of high-risk financial situations Introducing the concept of insurance in simple language Conceptual games about risk and insurance
23	Familiarization with household budgeting	Practicing recording income and expenses with simple tools Simulating weekly budgeting for leisure or shopping Teaching participation in household financial decision-making

24	Developing negotiation and bargaining skills	Practicing polite bargaining in simulated markets Group games for buying and selling
25	Environmental friendliness and sustainable development	Teaching sustainable consumption and protection of natural resources Implementing “green saving” projects Encouraging selection of products with the least environmental harm
26	Familiarization with occupations and their economic roles	Introducing local and global occupations Simulating occupations in educational games Inviting successful individuals to give talks
27	Developing financial motivation and individual goal-setting	Teaching definition of personal financial goals Recording children’s financial achievements Creating a “financial dream board”
28	Enhancing social cooperation and financial participation	Encouraging joint saving projects Implementing cooperative financial activities at school
29	Familiarization with financial inquiry and investigation processes	Teaching search and financial questioning skills Analyzing real examples of small businesses Organizing a financial research day at school
30	Developing long-term financial planning skills	Practicing multi-year goal planning Teaching the importance of saving for the future Designing a long-term financial goals booklet

In this study, the themes related to children’s financial literacy education were developed based on the OECD three-dimensional model (financial knowledge, financial attitudes, and financial behavior) and mapped onto the learning theories of Piaget, Vygotsky, and Ajzen. The content was localized by integrating Islamic values and cultural components and aligned with the social conditions of Iran. Table 3 demonstrates this comprehensive alignment, in which each theme is linked to the OECD dimensions and its theoretical justification is provided based on cognitive development, sociocultural learning, and behavioral norms. For example, game-based education emphasizes gradual understanding and interaction, whereas parental role modeling highlights cultural norms. Religious concepts such as endowment (waqf) and charity (sadaqah) create synergy with decision-making skills and social responsibility, thereby providing a coherent and up-to-date framework for designing educational programs.

In qualitative research, inherent constraints—such as the impossibility of covering every detail—naturally shift the analytical focus toward salient and frequently recurring themes. This is a standard and rational approach that prioritizes deep interrogation of meaning layers relevant to the research objectives, as recommended by Braun and Clarke (2006). In this study, in accordance with qualitative principles and field conditions, only 10 major themes from among those extracted were described; these themes show the strongest fit with Iran’s cultural–social context and are influential for designing fintech programs aimed at children’s financial literacy education. These focal areas include Iranian–Islamic values, content localization, digital tools, data security, the roles of parents and schools, and the practical teaching of financial skills. In the following, these themes are examined together with a selection of related sub-themes.

Table 3. Alignment of Children’s Financial Literacy Education Themes Based on OECD Model Dimensions and Learning Theories

No.	Main Theme	OECD-Related Dimension	Related Learning Theory(ies)	Explanation of Linkage to Learning Theory
1	Alignment with Islamic and cultural values	Financial attitudes	Ajzen; Vygotsky	Influence of religious–social norms and values (Ajzen) and their transmission through social/cultural interactions (Vygotsky).
2	Localization of content and visual design	Financial attitudes	Vygotsky; Ajzen	Transmission of culture, collective identity, and the role of symbols in financial learning (Vygotsky); formation of attitudinal norms (Ajzen).
3	Data security and privacy	Financial behavior	Piaget; Vygotsky	Teaching security in line with cognitive level (Piaget) and social skill-building related to financial information safety (Vygotsky).
4	Parental control over children’s financial activities	Financial behavior	Vygotsky	Family monitoring and guidance shaping children’s financial behavior; learning through social interaction and parental authority (Vygotsky).
5	Teaching financial concepts through gamification	Financial behavior	Piaget; Vygotsky	Development of staged financial cognition through play (Piaget); cooperative play, collective learning, and modeling (Vygotsky).
6	Children’s financial goal-setting and planning	Financial behavior	Piaget; Vygotsky	Goal-setting and planning depend on cognitive level (Piaget); adult modeling and scaffolding/support (Vygotsky).
7	Teaching money management skills	Financial behavior	Piaget	Financial skills and distinguishing needs from wants depend on cognitive level and developmental stage (Piaget).
8	Monitoring and evaluation of children’s financial performance	Financial behavior	Vygotsky	Role of social feedback from teachers and family in learning financial skills and reinforcing desirable behavior (Vygotsky).
9	Role of parents in financial literacy education	Financial behavior	Vygotsky	Observational and participatory learning and parental financial role modeling; the family as the child’s zone of proximal development (Vygotsky).
10	Role of teachers and schools in financial education	Financial knowledge	Vygotsky	Teachers and classrooms as contexts for social interaction; facilitation of collaborative learning (Vygotsky).
11	Role of government and cultural institutions	Financial attitudes	Vygotsky; Ajzen	Policymaking and regulation of collective norms shaping financial behavior (Vygotsky; Ajzen).
12	Social responsibility of fintech developers	Financial attitudes	Ajzen	Social ethics and professional responsibility grounded in societal values (Ajzen).
13	Use of digital tools for financial education	Financial knowledge	Piaget; Vygotsky	Digital tools as platforms for collective interaction and play (Vygotsky) and for individual skill development (Piaget).
14	Promoting a saving culture and avoiding extravagance	Financial behavior	Piaget; Ajzen	Understanding motivation for saving and avoiding waste depends on cognitive development and attitude formation (Piaget; Ajzen).
15	Emphasizing the concept of work and effort to earn income	Financial attitudes	Vygotsky; Ajzen	Development of attitudes toward work and independence through social role modeling and norm formation (Vygotsky; Ajzen).
16	Alignment with the country’s Fundamental Transformation Document of Education	Financial attitudes	Vygotsky; Ajzen	Transmission of national document objectives through interaction and group norms (Vygotsky; Ajzen).
17	Developing economic decision-making skills	Financial behavior	Piaget; Vygotsky	Decision-making depends on cognitive development and on group discussion and experiential learning (Piaget; Vygotsky).
18	Role of banks and financial institutions	Financial knowledge	Vygotsky	Banks’ educational–social role in developing children’s financial literacy through participation and interaction (Vygotsky).
19	Resistance economy and economic empowerment	Financial attitudes	Ajzen; Vygotsky	Institutionalizing norms of domestic production/consumption in attitudes and financial behavior through socialization (Ajzen; Vygotsky).
20	Familiarization with capital markets	Financial knowledge	Piaget; Vygotsky	Development of investment and risk cognition within a socially mediated educational framework (Piaget; Vygotsky).
21	Economic justice and equal opportunities	Financial attitudes	Vygotsky; Ajzen	Teaching cooperation and justice in school and society; socialization of equality values (Vygotsky; Ajzen).

22	Teaching the concept of risk and its management	Financial knowledge	Piaget; Vygotsky	Risk understanding based on level of comprehension and environmental experience (Piaget); learning through group practice (Vygotsky).
23	Familiarization with household budgeting	Financial behavior	Piaget; Vygotsky	Learning budgeting/consumption concepts grounded in cognitive development and group interaction (Piaget; Vygotsky).
24	Developing negotiation and bargaining skills	Financial behavior	Piaget; Vygotsky	Learning bargaining skills through practical exercises and collective interaction (Piaget; Vygotsky).
25	Environmental friendliness and sustainable development in financial consumption	Financial attitudes	Ajzen; Vygotsky	Cultivating responsible financial attitudes through social values and collective norms (Ajzen; Vygotsky).
26	Familiarization with occupations and their economic roles	Financial knowledge	Vygotsky	Observational and collective model-based learning about the economy and future careers (Vygotsky).
27	Developing financial motivation and individual goal-setting	Financial behavior	Piaget; Vygotsky	Goal-setting capability based on cognitive development and strengthening of social motivation (Piaget; Vygotsky).
28	Enhancing social cooperation and financial participation	Financial attitudes	Vygotsky; Ajzen	Learning participation and cooperation grounded in community and shared values (Vygotsky; Ajzen).
29	Familiarization with financial inquiry and investigation processes	Financial knowledge	Piaget; Vygotsky	Learning inquiry skills through hands-on experience and social guidance (Piaget; Vygotsky).
30	Developing long-term financial planning skills	Financial behavior	Piaget; Vygotsky	Growth of planning skills depends on cognitive level and a guided educational environment (Piaget; Vygotsky).

Alignment with Islamic and cultural values: Centrality of Indigenous Identity in Children’s Financial Education

This section emphasizes the necessity of aligning children’s financial education programs with Iranian–Islamic values and teachings. As interviewees (teachers, parents, and fintech experts) noted, the effectiveness and sustainability of financial education are rooted in integrating Islamic ethical concepts, traditions, and religious narratives.

Table 4. Thematic Codes (Sub-Themes) and Educational Strategies for Aligning Financial Education With Islamic Values

Sub-Theme	Implementation Method	Method of Teaching Children	Interviewees’ Quotations
Distinguishing halal and haram in financial matters	Organizing a student bazaar with handmade products and monitoring transactions	Teaching the difference between halal and haram money through simple examples such as fair buying and selling	“I told the children in the school bazaar to sell at a fair price so the money would be halal; if they sell too expensively or hide defects, the money becomes problematic.” (T3)
Fairness and trustworthiness	Conducting group games with transparent rules and monitoring adherence to fairness	Emphasizing honesty in games and everyday activities	“If there is no honesty in games, children will not understand the difference between their own property and others’.” (F1)
Using Qur’anic stories	Interactive storytelling with pantomime and drawing about the lives of the Imams	Narrating stories of prophets and Imams, such as Prophet Yusuf’s trustworthiness or Imam Ali’s contentment	“The story of Prophet Yusuf and Imam Ali is understandable for children and serves as a model.” (T7)
Contentment and avoiding extravagance	A “weekly shopping” program using a list of real needs and a limited budget	Teaching household financial constraints and linking them to religious teachings	“I tell my child: ‘If you don’t need it, don’t buy it!’” (P2)
Role modeling from the Ahl al-Bayt’s conduct	Visits to exhibitions on the simple lifestyle of the Imams and martyrs	Introducing the simple living of role models such as Imam Hasan or martyrs	“The exhibition on Imam Hasan’s simple lifestyle gave students a more lasting practical lesson than speeches.” (T9)
Practical charity and philanthropy	“Kind Companion” project using participatory class charity boxes	Placing donation piggy banks at school or home to support those in need	“A donation box at school makes doing good a practical activity.” (T8)
Social participation	“Purposeful saving” plan to support students in need	Encouraging children to save part of their allowance to help others	“The teacher told them to set aside part of their pocket money for a classmate in need.” (P6)
Teaching others’ rights (haqq al-nas)	Interactive theater with scenarios of financial misconduct	Designing interactive scenarios to illustrate consequences of incorrect financial behavior	“Apps that show the consequences of spending someone else’s money.” (F4)
Waqf and qard al-hasan	Establishing a class interest-free lending fund managed by students	Implementing group plans such as a family qard al-hasan fund	“A qard al-hasan fund, framed as a game, teaches the concept of mutual assistance.” (T11)
Islamic consumption pattern	“Lifestyle comparison” project analyzing consumption patterns	Comparing consumerism with Islamic values such as contentment	“Children grow up with trends, but contentment must be institutionalized.” (F7)

Localization of Content and Teaching Methods: Integrating Iranian Identity into Children’s Financial Literacy

In children’s financial literacy education, the localization of content and pedagogical methods plays a pivotal role. By integrating Iranian symbols, traditions, and lifestyle elements into educational programs, this process not only enhances learning effectiveness but also strengthens children’s cultural identity. According to the perspectives of participants in this study (including teachers, parents, and fintech experts), local culture, Iranian myths, and traditional household economic mechanisms were highlighted as key instruments for improving children’s financial knowledge, attitudes, and behaviors. The mind map presented (Figure 3) depicts this concept in a structured manner; its core is “localization of financial education,” which branches into nine sub-themes: the value of work and effort, saving traditions, local marketplaces, financial proverbs, transactional skills, traditional interest-free lending (*qard al-hasan*), art and financial education, charity bazaars, and local role models. This map visually represents the relationships among themes—for example, each branch extends from the central core, indicating conceptual linkages—and can be used as a practical tool for instructional program design. In what follows, each theme is described in terms of implementation methods, instructional approaches, and illustrative excerpts from participants’ views so that the reader can fully understand the content of the figure without the need for an additional table.

One of the key themes in Figure 3 is the “value of work and effort,” which emphasizes the importance of striving to earn income. Its implementation includes organizing various festivals centered on financial concepts, while instruction is delivered through classical narratives such as *Kalila wa Dimna* (stories of merchants), *Marzban-nameh* (resource management), *Qabus-nameh* (economic counsel), and the *Masnavi* (stories of business and livelihood). One teacher stated: “Classical stories and many texts about work and effort teach children that earning money is not simply about seeking comfort” (T5). This approach familiarizes children with cultural values and internalizes motivation for effort.

The theme of “saving traditions” focuses on revitalizing traditional practices. The “Generational Piggy Bank” project is implemented by comparing older and newer saving methods, and instruction is delivered through reviving family piggy banks. A parent noted: “In the past, piggy banks were common in households; this tradition should be revived in new programs” (P1). This method encourages children to manage resources and creates intergenerational linkage.

“Local marketplaces” are implemented through educational tours of traditional bazaars guided in a child-friendly manner, and instruction is reinforced by incorporating traditional markets and historical shopfronts into educational content. A fintech expert noted: “Children relate to traditional markets more effectively than to Western images” (F3). This activity provides a practical understanding of the local economy.

Within the theme of “financial proverbs,” a “proverb-writing” competition on economic topics is organized, and instruction draws on Iranian sayings such as “Little by little, it accumulates,” “A good accountant is a partner in others’ wealth,” and “If you have no income, spend more slowly.” A teacher emphasized: “These proverbs are effective for teaching financial concepts to children” (T12). This approach transforms cultural wisdom into an instructional resource.

“Transactional skills” are developed through the “Skills Bazaar,” which includes guided and controlled bargaining, while instruction is delivered through game-based simulations of bargaining in the Iranian marketplace. A parent stated: “In games, there should be room for bargaining, as in Iran’s bazaar culture” (P4). This method strengthens negotiation skills within a culturally congruent setting.

The theme of “traditional *qard al-hasan*” includes establishing a “class fund” with simple rules, accompanied by instruction that introduces family-based saving funds and local *qard al-hasan* practices. One expert stated: “Family funds teach children the spirit of financial participation” (F5). This activity conveys cooperative and mutual-support values.

“Art and financial education” is implemented through the “Art Assets” festival featuring finance-themed works, and instruction uses Iranian artistic forms such as poetry and handicrafts to convey financial concepts. A teacher noted: “Poetry and handicrafts about money increase both creativity and financial literacy” (T2). This approach makes learning more creative and engaging.

“Charity bazaars” are implemented through seasonal exhibitions of “philanthropic handicrafts,” and instruction is delivered via student bazaars where handicrafts are sold. A teacher stated: “The school charity bazaar taught children that earning money is not only for themselves” (T10). This method promotes social responsibility.

Finally, “local role models” are implemented through a “local apprenticeship” program with regional artisans, and instruction is reinforced by inviting parents or local entrepreneurs to discuss income-generation practices. A parent stated: “A local carpenter’s talk about craftsmanship had a deep impact on the children” (P8). This activity introduces tangible, real-world role models.

Ultimately, this mind map and localization approach provide a comprehensive foundation for educational programs that, while preserving Iranian identity, enhance children’s financial literacy in an appealing, sustainable, and culture-centered manner. This not only addresses instructional challenges but also contributes to reducing cultural gaps within Iranian society.

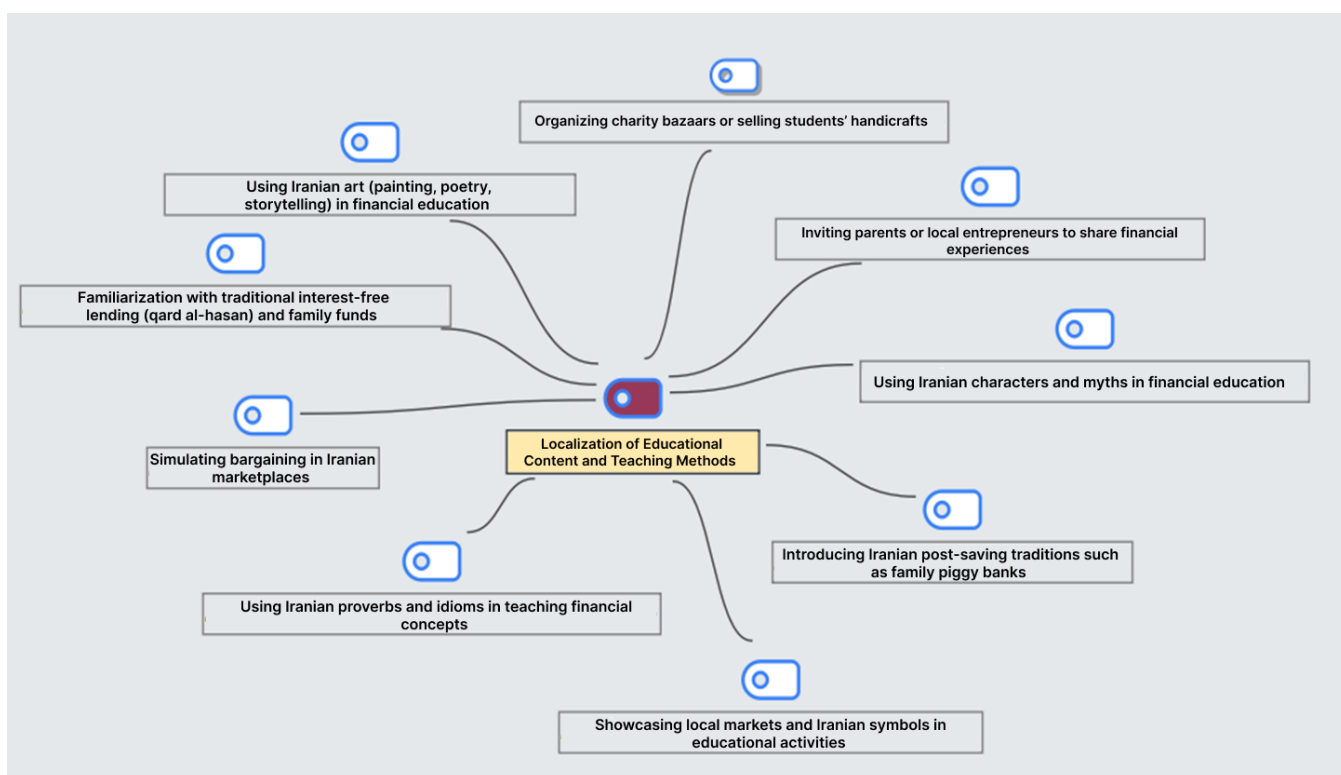


Figure 3. Mind Map of Localizing Children’s Financial Literacy Education With Emphasis on Iranian Cultural Identity

Discussion and Conclusion

The findings of the present study provide a comprehensive and context-sensitive understanding of FinTech-based financial literacy education for children, emphasizing the central role of cultural alignment, pedagogical appropriateness, and technological safeguards. Consistent with the OECD framework, the results demonstrate that effective financial literacy education for children must simultaneously address financial knowledge, financial attitudes, and financial behaviors, rather than treating these dimensions in isolation (4). The identification of multiple interrelated themes confirms that children’s

financial learning is a multidimensional and socially embedded process, shaped by family, school, digital environments, and broader cultural norms.

One of the most salient findings concerns the decisive influence of cultural and value-based alignment in shaping children's financial attitudes and behaviors. The results show that integrating cultural and ethical values into financial education enhances engagement, comprehension, and internalization of financial norms. This aligns with prior studies demonstrating that financial behavior is not value-neutral but deeply embedded in moral, cultural, and religious frameworks (17, 18). By embedding ethical considerations, social responsibility, and culturally meaningful narratives into financial learning, educational interventions can foster not only technical competence but also responsible and socially aware financial conduct. These findings corroborate earlier curriculum-based research indicating that culturally grounded financial education is more effective in reducing consumerism and promoting sustainable financial behaviors among children (6, 9).

The results further highlight the importance of content localization and pedagogical adaptation in FinTech-driven financial education. Digital tools were found to be most effective when they reflect local symbols, narratives, and everyday financial practices familiar to children. This finding supports sociocultural learning perspectives, which emphasize that learning is mediated by culturally meaningful tools and social interactions (12). Prior empirical work has shown that localized curricula improve learning transfer and retention, particularly in elementary education settings (7, 8). The present study extends this literature by demonstrating that localization is equally critical in digital and FinTech-based environments, where abstract financial concepts must be translated into concrete, culturally resonant experiences.

Another key result relates to the pedagogical effectiveness of experiential and gamified learning approaches. The findings indicate that game-based financial education enhances children's financial behaviors, particularly in areas such as saving, budgeting, and goal-setting. This is consistent with experimental evidence showing that interactive and experiential financial education leads to measurable improvements in children's financial knowledge and behaviors (1). Gamification appears to support developmental appropriateness by aligning with children's cognitive stages, thereby facilitating gradual understanding of financial concepts. These results also align with research highlighting the role of digital engagement and interactivity in improving learning outcomes in the digital era (13, 28).

Parental involvement emerged as a critical moderating factor in the effectiveness of FinTech-based financial education. The findings demonstrate that parental guidance, monitoring, and modeling significantly reinforce children's financial learning and responsible financial behavior. This supports previous studies indicating that family environments play a decisive role in shaping financial attitudes and behaviors, particularly during childhood (16, 20). Moreover, the results suggest that FinTech platforms that enable parental oversight and shared financial activities are better positioned to foster sustainable learning outcomes. These insights align with concerns raised in prior research regarding digital parenting, data surveillance, and the need for balanced autonomy and protection in children's digital learning environments (14).

Data security and privacy were also identified as pivotal dimensions in the design and implementation of FinTech-based financial education for children. The results indicate that concerns about data protection, ethical design, and digital safety significantly influence parental trust and willingness to adopt FinTech educational tools. This finding is consistent with studies emphasizing that trust, perceived security, and ethical transparency are fundamental determinants of FinTech adoption (15, 26). In the context of children's financial education, these concerns are amplified, underscoring the necessity of robust regulatory standards and child-centered data protection mechanisms, as advocated by international policy guidelines (4).

From a broader perspective, the study's findings reinforce the strategic importance of early financial literacy as a foundation for long-term financial well-being and economic resilience. The observed emphasis on early value formation, behavioral habits, and decision-making skills aligns with research demonstrating that financial literacy acquired during childhood has lasting

effects on adult financial behavior, investment decisions, and financial well-being (21, 22). Furthermore, by addressing systemic risks associated with financial illiteracy, early financial education can contribute to household resilience and macroeconomic stability (3, 23).

The findings also resonate with global discussions on financial inclusion and inequality. By leveraging FinTech to deliver accessible and engaging financial education, there is potential to reduce disparities in financial capability across socioeconomic groups (10, 19). However, the results caution that digital solutions alone are insufficient; without cultural sensitivity, ethical safeguards, and supportive family and institutional contexts, FinTech-based education may exacerbate existing inequalities. This nuanced understanding aligns with international evidence highlighting the moderating role of digital literacy, trust, and social context in financial inclusion outcomes (25, 29).

Overall, the results of this study contribute to the literature by offering an integrative framework that bridges learning theories, international standards, and localized cultural considerations. By empirically demonstrating how FinTech, pedagogy, family involvement, and cultural values intersect in children's financial education, the study advances current knowledge beyond fragmented or purely technical approaches. The alignment of the findings with prior empirical and theoretical work strengthens the validity of the proposed framework and underscores its relevance for both academic inquiry and practical implementation (5, 11, 30).

Despite its contributions, this study has several limitations that should be acknowledged. First, the qualitative design, while enabling in-depth exploration of experiences and perceptions, limits the generalizability of the findings to broader populations. Second, the study relied on adult stakeholders' perspectives rather than direct participation by children, which may have constrained insight into children's subjective experiences. Third, contextual factors specific to the study setting may influence the transferability of the findings to other cultural or institutional contexts. Finally, the rapidly evolving nature of FinTech means that technological developments may outpace the empirical insights captured at the time of the study.

Future research should consider employing mixed-methods or longitudinal designs to examine the long-term effects of FinTech-based financial education on children's financial behaviors and outcomes. Comparative studies across different cultural, socioeconomic, and regulatory contexts would further enhance understanding of contextual moderators. In addition, incorporating children's voices directly through age-appropriate research methods could provide richer insights into learning processes and user experiences. Future studies may also explore the role of emerging technologies, such as artificial intelligence and adaptive learning systems, in personalizing financial education for children.

From a practical standpoint, educators and policymakers should prioritize culturally grounded and developmentally appropriate financial education when integrating FinTech tools into learning environments. FinTech developers are encouraged to adopt ethical-by-design principles, ensuring data security, transparency, and parental control features. Schools and families should collaborate to create supportive learning ecosystems that reinforce financial learning across digital and real-life contexts. Finally, educational authorities should develop clear guidelines and quality standards to ensure that FinTech-based financial education initiatives promote not only technical skills but also responsible financial attitudes and behaviors.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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