MICROLEARNING FOR HOUSEHOLD FINANCIAL LITERACY: A COMMUNITY ENGAGEMENT PROGRAM IN PURWAKARTA

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ABSTRACT

This community engagement program aimed to strengthen household financial literacy among housewives in Ciseureuh, Purwakarta, Indonesia, through a five-day learning intervention combining face-to-face instruction and WhatsApp-based microlearning. The program initially involved 20 participants. The offline session was conducted on 24 October 2026 and included a pre-test, distribution of household financial record books and savings wallets, practical guidance on using these tools, and an introduction to the subsequent learning activities. From 25 to 28 October 2026, short learning materials and guidance were delivered through an existing neighborhood WhatsApp group. The evaluation used a financial knowledge questionnaire administered before and after the program. The recorded mean pre-test score was 67 among 20 participants, while the mean post-test score was 88 among 10 participants who completed the final assessment. Participant engagement gradually declined during the online sessions, with the number of participants recorded decreasing from 18 on the first day of WhatsApp-based learning to 10 on the final day. Although the post-test group recorded a higher mean score than the initial pre-test group, the difference should be interpreted descriptively because the number of respondents differed and individual scores could not be matched. The findings highlight the potential of combining practical face-to-face activities with short digital learning materials, while also demonstrating the challenge of maintaining participant engagement throughout a community-based microlearning program.

Keywords: *household financial literacy; microlearning; housewives; community engagement*

1. INTRODUCTION

Household financial management is an everyday activity that requires families to make decisions about income allocation, routine expenditure, saving, borrowing, and preparation for unexpected needs. These decisions can become particularly challenging when household income is limited or irregular and when family members have different financial priorities. Financial literacy is therefore important not only as a form of financial knowledge but also as the capacity to apply that knowledge when making day-to-day financial decisions. Individuals with stronger financial literacy are generally better equipped to evaluate financial choices, plan for the future, and manage financial risks (Lusardi & Mitchell, 2014). Evidence from randomized evaluations also indicates that financial education can improve financial knowledge and influence subsequent financial behaviors (Kaiser & Menkhoff, 2020).

In the household context, practical financial literacy includes the ability to record income and expenditure, prepare a realistic budget, distinguish needs from wants, set aside savings or emergency funds, and evaluate the costs and risks of borrowing. These capabilities are increasingly relevant as households encounter a wider range of formal and digital financial services. Digital financial literacy complements conventional financial knowledge by helping individuals understand and use digital financial products while recognizing related risks, including misleading offers, excessive borrowing, and the misuse of personal information (Kass-Hanna et al., 2022). Thus, household financial education needs to connect basic financial concepts with practical decisions that families encounter in their daily lives.

Women, including housewives who are involved in managing household expenditure and financial priorities, are an important audience for accessible financial education. Nevertheless, research continues to identify differences between women and men in economic and financial literacy, suggesting that financial education should consider the circumstances and learning needs of different groups (Haag & Brahm, 2025). In Indonesia, the 2025 National Survey of Financial Literacy and Financial Inclusion (SNLIK), using the continuity method, reported a national financial literacy index of 66.46% and a financial inclusion index of 80.51%. Among housewives, the financial literacy index was 62.67%, lower than the national average (OJK, 2025). This finding highlights the importance of providing financial education that is accessible and relevant to the everyday financial responsibilities of housewives. Previous research involving housewives in Indonesia has also examined the relationship between financial literacy, self-control, and consumptive behavior in the context of Paylater use (Fauziah et al., 2023)

Although financial education can support better financial knowledge and behavior, conventional training formats may be difficult for community participants to attend repeatedly because of domestic responsibilities, informal work, and other daily commitments. Community-based learning activities therefore need to be practical, concise, and compatible with participants' routines. Microlearning offers one possible approach by presenting content in short, focused units with specific learning objectives (Monib et al., 2025). Reviews have associated microlearning with positive learning outcomes, including knowledge retention, while also noting that its effectiveness depends on the design and delivery of learning materials (Shail, 2019). The use of short learning units is also consistent with cognitive load theory, which emphasizes the limited capacity of working memory during learning (Sweller, 1988).

Mobile devices provide a convenient channel for delivering microlearning because learners can access brief materials in settings beyond a conventional classroom. A systematic review of mobile microlearning discusses its instructional applications and implications for learning design (Lee, 2023). In addition, research on the integration of microlearning and social media identifies opportunities to broaden access to learning materials and support learner engagement (Denojean-Mairet et al., 2024). WhatsApp, which is commonly used for everyday communication in many Indonesian communities, can facilitate the distribution of short texts, images, and reminders through an existing group. However, the availability of learning materials on a mobile platform does not automatically ensure sustained participation. Distraction, multitasking, and competing daily activities may affect learners' engagement with mobile learning (Shail, 2019). These considerations make it important to examine not only the delivery of digital learning materials but also participation patterns during implementation.

In response to these considerations, a community engagement program was implemented with housewives in Ciseureuh, Purwakarta, Indonesia. The program combined an initial face-to-face session with the distribution and practical introduction of household financial record books and savings wallets, followed by four days of WhatsApp-based microlearning through an existing neighborhood WhatsApp group. The learning activities addressed household financial planning, recording income and expenditure, budgeting and spending control, and awareness of the risks associated with online lending and Paylater services. This approach was intended to connect financial literacy concepts with practical tools and short learning activities that participants could access through a familiar communication channel. Despite the growing discussion of microlearning and social media in education, practical accounts of their implementation in community-based household financial literacy programs remain useful, particularly for understanding both participant engagement and implementation constraints. Accordingly, this article describes the program, presents the available descriptive evaluation results, and discusses participation patterns and practical lessons for future community-based financial education. Because the pre-test involved 20 participants while the post-test involved 10, the score results are interpreted descriptively rather than as a paired estimate of individual learning gains.

2. METHOD

2.1 Research Design, Setting, and Participants

This program employed a community engagement approach accompanied by a descriptive evaluation to document the implementation of a household financial literacy initiative. The program was conducted in Ciseureuh, Purwakarta, Indonesia, from 24 to 28 October 2026. It adopted a hybrid learning approach that combined an initial face-to-face session with four subsequent days of WhatsApp-based microlearning. The evaluation was intended to describe program implementation, participant engagement, and financial knowledge assessment results before and after the learning activities. The program did not involve random assignment, a control group, or a comparison condition; therefore, the evaluation was not designed to establish a causal effect of the program.

The target participants were housewives living in the local community who were members of an existing neighborhood WhatsApp group. The program team coordinated with local community representatives to identify prospective participants and arrange the initial session at a time considered suitable for their daily routines. Participants were recruited based on their availability and willingness to take part in the activity. Accordingly, a community-based convenience sampling approach was used rather than probability sampling. Participation in the subsequent WhatsApp-based activities was voluntary.

The program was implemented by the authors, who are lecturers in the Actuarial Science Study Program at Trisakti School of Insurance, and was supported through the institution's internal community service grant scheme.

2.2 Program Components and Implementation Procedures

The program consisted of two main components: an initial face-to-face learning session supported by practical financial tools and four subsequent days of WhatsApp-based microlearning. The face-to-face component introduced basic household financial management and familiarized participants with the practical tools provided. The online component was designed to reinforce the initial learning through short educational materials and practical activities distributed via an existing neighborhood WhatsApp group.

The face-to-face component was designed as an introductory session on household financial management and was conducted on 24 October 2026 for approximately two hours. The session covered basic financial management practices, particularly recording household income and expenditure and setting aside savings. Participants were provided with a household financial record book and a savings wallet, accompanied by guidance on how to use these tools to record household transactions and organize savings. A pre-test was administered before the learning activities, followed by an introduction to the schedule and format of the subsequent WhatsApp-based sessions.

The WhatsApp-based microlearning component was delivered from 25 to 28 October 2026 through the existing neighborhood WhatsApp group. The learning sequence comprised four topics: household financial record-keeping, household budget allocation, smart spending and responsible PayLater use, and awareness of online lending risks. Each topic was supported by illustrated learning materials and a practical task or challenge designed to connect the concepts with everyday household financial decisions. Participants were encouraged to share their task completion or relevant experiences through the WhatsApp group.

A post-test was administered after the final learning activity. It used the same financial knowledge questions as the pre-test. The distribution of learning topics and their delivery methods is summarized in Table 1.

Day	Date	Delivery Method	Learning Topic	Learning Focus
1	24 October 2026	Face-to-face session	Introduction to Household Financial Management	Understanding the importance of managing household finances, keeping financial records, and setting aside savings
2	25 October 2026	WhatsApp-based microlearning	Household Financial Record-Keeping	Learning to record household income and expenses, calculate remaining balances, and use a financial record book consistently
3	26 October 2026	WhatsApp-based microlearning	Household Budget Allocation	Learning to allocate household funds into four categories: daily needs, savings, emergency funds, and other needs
4	27 October 2026	WhatsApp-based microlearning	Smart Spending and Responsible PayLater Use	Distinguishing needs from wants, avoiding impulsive purchases, and using PayLater services responsibly
5	28 October 2026	WhatsApp-based microlearning	Awareness of Online Lending Risks	Understanding online lending, identifying its risks, distinguishing legal and illegal providers, and checking provider legality through OJK

Table 1. Distribution of Learning Topics and Activities

2.3 Instruments, Data Collection, and Analysis

The evaluation instrument was a questionnaire titled “Household Financial Habits Survey” which was designed to obtain information on participants’ backgrounds, financial knowledge, household financial management practices, difficulties in managing household finances, and preferred learning topics. The financial knowledge section consisted of 10 questions addressing practical aspects of household financial management, including budgeting, prioritizing household needs, preparing emergency funds, managing irregular income, responding to situations in which expenditure exceeds income, assessing borrowing costs and repayment capacity, checking the legality of online lending providers, evaluating installment purchases, protecting personal identification numbers (PINs) and one-time passwords (OTPs), and allocating remaining household funds.

Data collection was carried out at several stages of the program. Participant background information and pre-test responses were obtained through the questionnaire administered during the initial face-to-face session on 24 October 2026. Participant engagement in the subsequent WhatsApp-based activities was documented daily throughout the four online learning days, while post-test responses were collected after the final learning activity. The post-test retained the same 10 financial knowledge questions used in the pre-test to maintain consistency in the assessment.

Financial knowledge scores were calculated by dividing the number of correct answers by the total number of questions (10) and multiplying the result by 100. Thus, each correct answer contributed 10 points to the total score, with possible scores ranging from 0 to 100. The mean score for each assessment

was calculated by averaging the individual scores of the respondents. These scores, together with the corresponding number of respondents, were then used to describe the financial knowledge results before and after the learning activities.

All collected data were analyzed descriptively. Participant characteristics were summarized using frequencies and percentages based on the available background information, while engagement in the online activities was described by the number of participants recorded on each day. Financial knowledge results were presented using the pre-test and post-test mean scores and their respective respondent counts. Since individual pre-test and post-test scores could not be matched, the two sets of results were analyzed separately. Consequently, no paired statistical tests, inferential analyses, confidence intervals, or effect-size calculations were performed. The difference between the assessment averages was interpreted descriptively and was not treated as an estimate of individual learning gains or as evidence of a causal program effect. In addition, no separate expert validation, construct validation, or reliability testing was conducted for the questionnaire. It was therefore treated as a program evaluation instrument rather than a formally validated measurement scale.

2.4 Ethical Considerations

The implementation of the community engagement program was coordinated with local community representatives. A letter of commitment signed by the neighborhood (RT) head documented the community's support for the activity. Before participating, participants were informed about the purpose and activities of the program, as well as the intended use of questionnaire responses and activity photographs for reporting and publication purposes. Participants expressed their willingness to participate and agreed to the use of the collected questionnaire data and photographs for these purposes. Questionnaire results were presented in aggregate form to maintain participants' privacy.

3. RESULTS

3.1 Participant Characteristics

The community engagement program initially involved 20 housewives from Ciseureuh, Purwakarta. Based on the background information collected during the initial face-to-face session, participants had different levels of formal education, ranging from no formal schooling to senior high school. As presented in Table 2, the largest proportion of participants had completed elementary school (10 participants; 50%), followed by those with no formal schooling (6 participants; 30%). Meanwhile, two participants (10%) had completed junior high school, and another two (10%) had completed senior high school. These characteristics provide an overview of the educational backgrounds of the participants involved in the program.

Educational attainment	Number	Percentage
No formal schooling	6	30%
Elementary school	10	50%
Junior high school	2	10%
Senior high school	2	10%
Total	20	100%

Table 2. Educational Characteristics of the Participants (N = 20)

3.2 Implementation of the Hybrid Financial Literacy Program

The program was implemented through an initial face-to-face session followed by four days of WhatsApp-based microlearning. The face-to-face session took place on 24 October 2026 and introduced participants to basic household financial management practices, particularly recording income and expenditure and setting aside savings. During this session, participants received household financial record books and savings wallets as practical tools to support the application of the learning materials in their daily lives. The facilitators also provided guidance on using these tools to record household transactions and organize savings. Documentation of the face-to-face learning session and the distribution of the learning tools is presented in Figure 1.



Figure 1. Documentation of the face-to-face session and distribution of financial record books and savings wallets

Following the face-to-face session, the learning activities continued through the existing neighborhood WhatsApp group from 25 to 28 October 2026. Illustrated infographics were shared daily to present the learning materials in a concise and accessible format. The four topics covered household financial record-keeping, household budget allocation, smart spending and responsible PayLater use, and awareness of online lending risks. Each infographic was accompanied by a practical task or challenge that encouraged participants to apply the concepts to their household financial decisions. Participants were also invited to share their task completion or relevant experiences through the group. Examples of the infographics distributed during the four-day microlearning activities are presented in Figure 2. Participants' engagement in the WhatsApp-based activities was also documented through their responses and interactions in the group. Examples of these interactions, including participants' responses to the daily learning activities, are presented in Figure 3.

3.3 Participant Engagement in WhatsApp-Based Microlearning

Participant engagement during the online component was documented daily through the number of participants recorded in each learning activity. As shown in Table 3, the initial face-to-face session

involved 20 participants. During the subsequent WhatsApp-based activities, the recorded number of participants was 18 on the first day, 15 on the second day, 12 on the third day, and 10 on the fourth day. The records therefore show a gradual decline in daily participation throughout the online learning period. By the final day, the number of participants recorded was half of the initial face-to-face attendance. These figures describe participation in each daily activity and should not be interpreted as evidence that the same individuals participated consistently or completed every learning task.



Figure 2. Infographic Materials Distributed During WhatsApp-Based Microlearning



Figure 3. Documentation of Participants' Engagement in WhatsApp-Based Learning Activities

Day	Date	Delivery Method	Learning Topic	Number of Participants
1	24 October 2026	Face-to-face session	Introduction to Household Financial Management	20
2	25 October 2026	WhatsApp-based microlearning	Household Financial Record-Keeping	18
3	26 October 2026	WhatsApp-based microlearning	Household Budget Allocation	15
4	27 October 2026	WhatsApp-based microlearning	Smart Spending and Responsible PayLater Use	12
5	28 October 2026	WhatsApp-based microlearning	Awareness of Online Lending Risks	10

Table 3. Participant Engagement During the Program

3.4 Descriptive Evaluation of Financial Knowledge

The financial knowledge evaluation was conducted using the same 10 questions in the pre-test and post-test. The pre-test was administered during the initial face-to-face session and obtained responses from 20 participants, producing a mean score of 67. Following the completion of the four-day WhatsApp-based learning activities, 10 participants submitted the post-test, with a mean score of 88. The descriptive comparison of these results is presented in Table 4.

Assessment	Number of respondents	Mean score
Pre-test	20	67
Post-test	10	88
Descriptive difference		21 points

Table 4. Descriptive Comparison of Pre-Test and Post-Test Scores

The post-test mean was 21 points higher than the pre-test mean. This difference provides a descriptive overview of the scores obtained in the two assessments. However, the number of respondents differed between the pre-test and post-test, and individual scores could not be matched across the two assessments. Therefore, the observed difference cannot be interpreted as an individual-level improvement in financial knowledge or as a direct measure of the program's effectiveness. Instead, the results indicate that the participants who completed the post-test obtained a higher average score than the average recorded in the initial assessment, while the difference in respondent numbers and the absence of matched responses must be considered when interpreting the findings.

4. DISCUSSION

4.1 Practical Tools and Short Learning Units in Household Financial Education

The program combined a face-to-face introduction, practical financial tools, and short daily learning units delivered through a familiar communication channel. This combination reflects the view that financial literacy involves not only knowledge but also the ability to apply that knowledge in everyday financial decisions (Lusardi & Mitchell, 2014). Providing household financial record books and savings wallets during the initial session gave participants concrete tools for recording transactions and setting aside savings, so the subsequent WhatsApp-based materials could refer to activities that participants had already practiced. This link between concepts and practical tools is consistent with evidence that financial education can improve financial knowledge and support subsequent financial behaviors, although its effects depend on program design and context (Kaiser & Menkhoff, 2020).

The selection of topics also responded to the financial issues that households increasingly face. Alongside record-keeping and budgeting, the program addressed responsible PayLater use and the risks of online lending, which relate to digital financial literacy, including recognizing misleading offers, excessive borrowing, and the protection of personal information (Kass-Hanna et al., 2022). These topics are relevant because consumptive behavior among housewives has been associated with financial literacy and self-control in the context of PayLater use (Fauziah et al., 2023), and because the financial literacy index of housewives in Indonesia remains below the national average (OJK, 2025).

4.2 Engagement in WhatsApp-Based Microlearning

Delivering the materials as illustrated infographics with a single practical task each day was intended to keep each learning unit short and focused. Such a design aligns with the principle of microlearning, which organizes content into brief units with specific objectives (Monib et al., 2025), and with cognitive load theory, which emphasizes the limited capacity of working memory during learning (Sweller, 1988). Using an existing neighborhood WhatsApp group also allowed the materials to reach participants through a channel they already used daily, reflecting the potential of mobile devices and social media to broaden access to learning materials (Denojean-Mairet et al., 2024; Lee, 2023).

However, the recorded number of participants declined from 20 in the face-to-face session to 10 on the final day of online learning. This pattern indicates that the availability of materials on a familiar

platform did not by itself ensure sustained participation. Domestic responsibilities, competing daily activities, and the informal nature of a neighborhood group may have limited participants' attention to the daily materials, in line with the distraction and multitasking challenges identified in mobile learning (Shail, 2019). Future programs could therefore include more interactive activities, scheduled reminders, recognition of task completion, and follow-up with participants who stop responding, so that the convenience of mobile delivery is accompanied by mechanisms that sustain engagement.

4.3 Interpretation of the Evaluation Results and Limitations

The post-test mean score (88) was higher than the pre-test mean score (67). Nevertheless, this difference must be interpreted with caution. Only half of the initial participants completed the post-test, and individual responses could not be matched across the two assessments. It is possible that participants who remained engaged until the end of the program already had higher financial knowledge or stronger motivation than those who did not complete the post-test. Consequently, the results describe the scores of two different respondent groups rather than individual learning gains, and they cannot be treated as evidence of a causal program effect.

Several other limitations should also be acknowledged. The program involved a small group of participants from a single community, was implemented over a short period, and used a questionnaire that had not undergone formal validation or reliability testing. In addition, the evaluation focused on financial knowledge and did not observe whether participants continued to use the financial record books, savings wallets, or budgeting practices after the program ended. Future community-based financial literacy programs could address these limitations by recording participant identifiers for matched pre-test and post-test analysis, conducting follow-up assessments, and observing changes in household financial practices over a longer period.

5. CONCLUSION

This community engagement program introduced a hybrid financial literacy approach combining a face-to-face session with WhatsApp-based microlearning to support household financial management among housewives in Ciseureuh, Purwakarta. The activities addressed practical financial issues, including recording household income and expenditure, allocating budgets, managing spending, using PayLater responsibly, and recognizing the risks of illegal online lending. The provision of household financial record books and savings wallets, together with illustrated learning materials and practical daily tasks, was intended to help participants relate financial concepts to their everyday household decisions.

The descriptive evaluation showed a difference between the mean financial knowledge scores recorded before and after the program, from 67 in the pre-test to 88 in the post-test. This finding provides an initial indication of the participants' financial knowledge as reflected in the two assessments. However, the difference should be interpreted cautiously because the number of respondents decreased from 20 in the pre-test to 10 in the post-test, and individual responses could not be matched. Participant engagement also varied throughout the WhatsApp-based activities, indicating that maintaining participation in online learning remains an important consideration in community-based financial literacy programs.

Future programs could strengthen participant engagement through more interactive activities, regular follow-up, and learning materials adapted to participants' educational backgrounds and daily financial needs. A more structured evaluation design, including participant-level tracking and matched pre-test and post-test responses, would also provide a stronger basis for assessing changes in financial knowledge. Overall, this program demonstrates the practical potential of combining face-to-face financial education with accessible digital learning activities to introduce basic household financial management practices within local communities.

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AUTHOR CONTRIBUTIONS

Conceptualization: N.I. and F.N.; methodology: N.I. and F.N.; investigation: N.I. and F.N.; data analysis: N.I.; writing—original draft: N.I.; writing—review and editing: N.I. and F.N. All authors approved the final manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY

The data supporting the findings of this program are available from the corresponding author upon reasonable request, subject to ethical and privacy restrictions.

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