

Strengthening Family Digital Literacy as a Strategy to Empower Mothers in Parenting and Household Economy

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ABSTRACT

This community service article aims to strengthen family digital literacy as a strategy for empowering mothers in parenting and household economy in Tegalharjo, Surakarta. The main concepts are family digital literacy, mothers' empowerment, digital parenting, and the use of technology for household economic activities. The program involved 25 PKK mothers through needs assessment, digital literacy training, hands-on practice, and short-term mentoring, with data collected using pre-test and post-test within the activity period. The results show an increase in digital literacy scores and more conscious digital parenting practices, as well as initial use of digital media to support household economic activities, indicating that family digital literacy programs can enhance mothers' roles in both caregiving and economic contributions.

INTRODUCTION

The development of digital technology has changed the way families interact, raise children, and manage household finances. Digital literacy is no longer just the ability to use gadgets, but includes the ability to access, analyze, evaluate, and utilize digital information critically, ethically, and productively in everyday life (Buchori, 2018; Ginting et al., 2021). In many communities, the use of social media and digital platforms has been shown to encourage community participation in development and open up new opportunities for empowerment, both socially and economically (Astuti, 2019; Galib et al., 2024; Genik Puji Yuhanda & Muhibudin Wijaya Laksana, 2024). However, these opportunities have not been fully optimized by families, especially by mothers who play a strategic role in childcare and household economic management.

In the context of parenting, digital transformation presents new challenges for parents, especially mothers, in guiding their children's interaction with gadgets and the internet. Various studies show the emergence of parenting problems in the digital age, ranging from gadget addiction, exposure to age-inappropriate content, to the weakening of face-to-face interactions within families (Atmojo et al., 2021; Prasetya, 2022; Samho, 2024). Parents limited digital literacy makes their guidance on children's use of technology less than optimal, leaving children vulnerable to online risks such as cyberbullying, violent content, and personal data exploitation (Rachmat & Hartati, 2020; Sembiring, 2024; Tomczyk & Potyrała, 2021). Other studies confirm that family digital literacy practices how parents mediate and regulate the use of digital devices influence children's gadget usage patterns and the quality of their digital experiences (Lindriany et al., 2022; Sabrina et al., 2025; Terras & Ramsay, 2016). This situation highlights the importance of strengthening family digital literacy as the foundation for adaptive parenting in the technological era.

On the other hand, digitization also opens up opportunities for mothers to contribute more to the household economy. The use of e-commerce platforms, social media, and digital financial services can be a strategy for family economic empowerment, especially for housewives with limited mobility (Galib et al., 2024; Setiawan et al., 2020; Windari Politeknik Pembangunan Pertanian Malang & Timur, 2021). Various community service programs show that increasing people's digital literacy can encourage participation in local economic activities, expand market access, and strengthen household-based entrepreneurial capacity (Alwasili et al., 2025; Genik Puji Yuhanda & Muhibudin Wijaya Laksana, 2024; Ginting et al., 2021). However, many mothers still use social media only for information consumption and entertainment, not yet for productive use to strengthen the family economy (Khoerunnisa & Anwar, 2019).

A number of community service activities show that digital literacy training and mentoring for mothers and families can improve their understanding of the wise, safe, and productive use of digital media. Digital literacy programs specifically designed for parents have been proven to help them manage online risks for their children while optimizing the use of technology for family resilience (Limilia & Pratamawaty, 2018; Tulaseket, 2024; Yanto et al., 2025). A similar approach is also evident in programs that emphasize the importance of parents becoming "smart parents" in the digital age, by combining parenting education and digital literacy (Maulana Ahmad et al., 2024; Shofiah et al., 2024). Although these initiatives are already underway, the context and needs of each community especially mothers in families with specific socioeconomic characteristics still require more specific and sustainable interventions.

Based on this description, strengthening family digital literacy as a strategy for empowering mothers in childcare and household economics is very important and relevant. Mothers not only play a role as primary caregivers, but also as information managers, guardians of their children's digital security, and potential actors in strengthening the family economy through the use of technology (Alwasili et al., 2025; Ginting et al., 2021; Indriani & Yemmardotillah, 2021). Community service activities focused on improving mothers' digital literacy are expected to have a double impact: first, improving the quality of child care in the digital age; second, strengthening household independence and economic resilience through the wise and productive use of technology.

IMPLEMENTATION AND METHODS

Objectives and Location of Activities

This community service activity was carried out in Tegalharjo Village, Jebres District, Surakarta City, with the main target being women who are members of the local Family Welfare Development (PKK) organization. There were 25 PKK women participating in the activity, who serve as primary caregivers for their children and manage various aspects of household economics on a daily basis. This target group was chosen based on the consideration that PKK women play a strategic role as agents of change at the family and community levels, but still need to strengthen their digital literacy skills to support parenting in the digital age and utilize technology for the economic welfare of their families.

Service Design and Approach

This community service program uses a community empowerment approach based on digital literacy by combining education, practical training, and ongoing mentoring. The activities are designed in several stages, namely: (1) initial assessment of the needs and digital literacy levels of PKK mothers, (2) preparation of training materials and modules on family digital literacy, parenting in the digital age, and the use of technology for household economics, (3) implementation of training and hands-on practice, and (4) post-training mentoring. A participatory approach is used so that participants actively share their experiences of parenting and the use of digital media, so that the material can be adapted to the daily context of families in Tegalharjo Village.

Procedures for Implementing Activities

In the first stage, a needs assessment was conducted using a pre-test questionnaire completed by all 25 participants before the training began. This pre-test was used to map the initial level of digital literacy related to: understanding of digital literacy concepts, awareness of the risks of the digital world for children, basic skills in managing children's devices, and the use of technology for the household economy. The results of the assessment formed the basis for adjusting the focus of the training material, for example, emphasizing the management of security features, managing children's screen time, or introducing simple business opportunities based on social media.

The next stage is the implementation of core training sessions conducted face to face in the Tegalharjo sub district, involving all 25 PKK mothers. The training sessions cover: an introduction to the concept of family digital literacy; parenting and child protection in the digital age; and an introduction to the use of digital platforms to support household economies. Each session is combined with hands on practice using the participants devices so that they can directly try out parental controls, filter content, and simulate the use of social media or messaging applications for communication and small family businesses.

Mentoring Methods and Techniques

The methods used include interactive lectures, group discussions, case studies, demonstrations, and hands on practice. Facilitators guide participants in analyzing examples of parenting in the digital age, discussing the risks and opportunities of technology in the family, and practicing technical steps on their own devices. Follow-up assistance is provided through brief meetings and/or online communication groups to address any obstacles that arise after the training, as well as to monitor the extent to which participants apply digital literacy skills in parenting and household economic activities.

Instruments, Documentation, and Evaluation

To measure the effectiveness of the program, pre-test and post-test instruments were used, which were filled out by all 25 PKK mothers before and after the training. The pre-test provided an initial overview of digital literacy, while the post-test was used to assess improvements in knowledge, attitudes, and skills after the intervention. In addition, observation sheets were used to record participant activity, along with brief reflections on changes in parenting practices and the use of technology at home. The activities were documented in the form of photographs taken during the material delivery sessions, discussions, gadget usage practice, and mentoring moments, which were then presented as part of the program's visual report.



Figure 1. Group Photo with Participants



Figure 2. Photo of Material Delivery

The quantitative and qualitative evaluation results of these instruments were used to assess the effectiveness of the program in improving family digital literacy, strengthening the role of mothers in parenting in the digital age, and encouraging the use of technology to support the household economy.

RESULTS AND DISCUSSION

General Description of Results

The family digital literacy training was attended by 25 PKK mothers who had previously taken an initial assessment in the form of a pre-test of their knowledge and attitudes regarding digital literacy in parenting and household economics. In general, the results showed an increase in digital literacy scores after a series of training and mentoring sessions, both in terms of understanding digital literacy concepts, awareness of online risks to children, and the use of technology to support family economic activities. These findings are in line with various digital literacy programs that report improvements in the capacity of parents and communities after educational interventions and structured mentoring (Indriani & Yemardotillah, 2021; Limilia & Pratamawaty, 2018; Tulaseket, 2024).

Presentation of Pre-Test and Post-Test Data

To measure changes in digital literacy levels, a questionnaire instrument was used to generate composite scores ranging from 0 to 100. The average pre-test scores of PKK mothers were in the moderate to low category, indicating limited understanding of digital literacy concepts, safe parenting practices in the digital space, and the use of technology for household economic activities. After training and hands-on practice sessions, the average post-test score increased to the medium-high category, indicating a significant improvement in knowledge and attitudes towards family digital literacy. The following table presents a visualization of the pre-test and post-test data:

Table 1. Pre-Test and Post-Test Results of Participants

Indicator	Average Pre-test	Post-test Average	Initial Category	Final Category
Digital literacy concept knowledge	60	82	Moderate	High
Digital risk awareness for children	58	80	Moderate	High
Basic device management skills for children	55	78	Moderate-Low	Medium-High
Use of technology for family finances	50	76	Low	Moderate-High
Composite digital literacy score	56	79	Medium-Low	Moderate-High

The table shows an average increase in scores across all indicators, with the most notable improvement in the use of technology for family economics, which was initially in the low category and rose to the medium-high category after training. A similar pattern of improvement has also been reported in various community empowerment programs based on digital literacy and the use of digital platforms for local economic activities (Galib et al., 2024; Genik Puji Yuhanda & Muhibudin Wijaya Laksana, 2024; Ginting et al., 2021).

Discussion of Digital Literacy Improvement

The increase in scores on the indicators of digital literacy concept knowledge and digital risk awareness shows that the material on the rights and obligations of digital users, media ethics, and the dangers of negative content was successfully understood by the participants. This is important considering that many studies confirm that low digital literacy among parents is a factor that hinders their ability to guide their children in the digital space and manage risks such as gadget addiction, exposure to violence, and misuse of personal data (Prasetya, 2022; Rachmat & Hartati, 2020; Sembiring, 2024). The increase in scores on the risk awareness aspect can be interpreted as an indication that mothers are beginning to develop a more critical and vigilant mindset toward their children's online activities, while also understanding their role as the primary "filter" of digital information and experiences at home.

The improvement in basic skills in managing children's devices is reflected in the participants' ability to manage screen time, activate parental control features, filter content, and monitor children's online activities in a more structured manner. This change is in line with literature that emphasizes the importance of parental mediation in children's use of digital devices, as reviewed in studies on family digital literacy and digital parenting practices (Lindriany et al., 2022; Sabrina et al., 2025; Terras & Ramsay, 2016). With the addition of these technical skills, mothers have a stronger position to implement adaptive parenting patterns in the digital age, not just through prohibitions, but through active guidance and higher-quality dialogue with their children.

Impact on Household Economic Aspects

A significant improvement in indicators of technology utilization for family economics shows that the training has successfully broadened the horizons of PKK mothers regarding digital based economic opportunities that can be pursued from home. Several participants began to understand how to utilize social media to promote homemade products, use instant messaging applications as an ordering channel, and learn the basics of using digital wallets or secure cashless transfers. These findings are in line with the results of community service programs that show that digital literacy can encourage community participation in local economic activities and strengthen small businesses through wider market access (Galib et al., 2024; Setiawan et al., 2020; Windari Politeknik Pembangunan Pertanian Malang & Timur, 2021). For housewives, this skill has the potential not only to increase income but also to boost self-confidence and economic independence.

Conceptually, these results confirm the view that digital literacy can be an instrument of community empowerment, especially for women and mothers, as it opens up new opportunities for participation in the public and economic spheres without having to completely abandon their domestic roles (Alwasili et al., 2025; Buchori, 2018; Ginting et al., 2021). With better digital literacy, PKK mothers are expected to be able to balance their roles in parenting and household economic management more effectively, thereby making their contribution to family welfare more tangible.

Implications for Childcare in the Digital Era

From a parenting perspective, the increase in digital literacy scores and changes in participants' practices were reflected in discussions and reflections that showed a shift in attitudes toward technology. Before the training, some mothers tended to view gadgets only as a source of entertainment and distraction for children. After the training, there was an awareness that gadgets can also be a means of learning and character building if used with guidance and clear rules (Atmojo et al., 2021; Samho, 2024; Shofiah et al., 2024). Participants began to establish family agreements regarding the duration of gadget use, the types of content that could be accessed, and new habits such as watching or playing educational applications with their children while engaging in dialogue.

This change is in line with literature that places parents, especially mothers, as key actors in building a healthy digital environment for children through a combination of control, communication, and role modeling (Indriani & Yemmarotillah, 2021; Maulana Ahmad et al., 2024; Yanto et al., 2025). Thus, improving digital literacy not only impacts technical knowledge but also the quality of parenting relationships, where mothers become more confident and reflective in utilizing technology as part of a parenting strategy that supports children's growth and development in the digital age.

CONCLUSIONS AND RECOMMENDATIONS

The family digital literacy strengthening program for 25 PKK mothers shows that structured interventions through training and mentoring can improve their knowledge, awareness, and skills in utilizing technology for parenting and household economics. The increase in pre-test to post-test scores on indicators of digital literacy concept knowledge, awareness of online risks for children, device management skills, and the use of technology for economic activities shows that the participating mothers moved from the low-to-moderate category to the moderate to high category in family digital literacy. These findings reinforce the view that digital literacy is one of the important keys in building families that are adaptive to technological developments and resilient to the various risks that accompany them, in line with various studies and practices on parental digital literacy, parenting in the digital age, and technology based economic empowerment.

Based on these results, several recommendations can be made. First, the family digital literacy program for PKK mothers needs to be continued and expanded in scope, both in terms of the number of participants and the depth of the material, by including advanced topics such as personal data security, digital footprints, and managing household businesses based on digital platforms. Second, closer partnerships are needed between universities, village/sub district governments, and community organizations (such as PKK or religious communities) to make digital literacy training a regular agenda for family empowerment, rather than a one-off activity. Third, it is necessary to develop materials and modules that are more contextual to the local characteristics of the participants, including realistic examples of parenting and home business models, so that mothers can more easily adapt the knowledge they have gained in their daily lives. Fourth, further research and community service are recommended to integrate medium- and long-term evaluations to assess the sustainability of changes in digital parenting behaviors and the tangible contributions of technology utilization to improving household economic well-being.

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