

# A Mobile Technology-Based Empowerment Model for Arabic Language Teachers in Developing Animated Learning Videos at Rural Islamic Boarding School

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Received: October 17, 2025  
Revised: December 11, 2025  
Accepted: December 25, 2025  
Published: December 31, 2025

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DOI: [10.29303/jppipa.v11i12.12113](https://doi.org/10.29303/jppipa.v11i12.12113)

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**Abstract:** Teachers in rural Islamic boarding schools (pesantren) often have limited access to digital training and few opportunities to develop innovative instructional media for Arabic language instruction. This study investigates how mobile-based training can empower Arabic language teachers to create animated learning videos and examines the types of mentoring that facilitate this process. Using a qualitative Participatory Action Research (PAR) design, the study engaged 16 teachers from three rural pesantren in iterative cycles of training, hands-on practice, reflection, and guided mentoring. Data were collected through in-depth interviews, observations, documentation of teacher-produced videos, and continuous digital communication. The findings reveal a six-phase empowerment process: initial digital literacy gaps, emerging awareness of the pedagogical potential of mobile technology, step-by-step skill acquisition through experiential practice, negotiation of technical and contextual challenges, internalization of digital competence accompanied by increased self-efficacy, and early instructional implementation of animated videos. Mentoring, characterized by personalized guidance, responsive troubleshooting, modeling of complex procedures, and sustained online support, was essential in maintaining engagement and overcoming technological barriers. Teachers reported greater confidence, stronger professional agency, and improved capacity to design context-appropriate digital media. The study accomplishes that mobile-based training supported by intensive mentoring can effectively empower teachers in resource-limited Islamic educational settings. The proposed six-phase empowerment model offers a scalable and contextually adaptable framework for teacher development initiatives in rural and underserved environments.

**Keywords:** Animated learning videos; Arabic language; Empowerment; Mobile technology; Pesantren

## Introduction

Islamic boarding schools (pesantren) have historically played a pivotal role in Indonesia's educational ecosystem, particularly within rural areas where they function not only as centers for religious learning but also as institutions for moral and socio-cultural formation. Despite their deep-rooted pedagogical traditions, pesantren today face a fundamental challenge: adapting their instructional approaches to the learning orientations of a generation born and raised in the digital era. The emergence of

mobile technology has profoundly transformed the cognitive and behavioral patterns of contemporary learners, fostering expectations for learning environments that are interactive, visual, and accessible at any time. Consequently, the persistence of text-heavy and teacher-centered pedagogies within pesantren has become increasingly misaligned with students' evolving cognitive preferences. This mismatch calls for a paradigm shift in instructional design, where mobile-based technologies can serve as mediating tools to integrate modern learning strategies without compromising the religious and moral ethos of

### How to Cite:

Al Idrus, S. A. J., Syarifuddin, M., Cahyani, L., & Raharja, R. P. (2025). A Mobile Technology-Based Empowerment Model for Arabic Language Teachers in Developing Animated Learning Videos at Rural Islamic Boarding School. *Jurnal Penelitian Pendidikan IPA*, 11(12), 561-569. <https://doi.org/10.29303/jppipa.v11i12.12113>

pesantren education (Ngwenya et al., 2015; Power et al., 2011).

Empirical evidence indicates that while the majority of teachers in rural Islamic boarding schools possess smartphones or other mobile devices, their pedagogical utilization remains minimal. In many cases, these devices are confined to administrative or personal communication rather than functioning as instruments for instructional innovation. This underutilization reflects a broader digital literacy gap that constrains teachers' ability to exploit mobile technology as a pedagogical and creative resource. In the context of Arabic language education, such a gap becomes even more pronounced due to the abstract nature of linguistic concepts, including syntax (*qawā'id*) and vocabulary (*mufradāt*), which demand concrete visualization to facilitate comprehension. The inability of teachers to design visual or animated media consequently restricts the cognitive engagement of students and reinforces a passive learning culture. Comparable studies in other rural educational settings have similarly reported that technology access does not automatically translate into pedagogical transformation without targeted skill development and empowerment frameworks for teachers (Ayinselya, 2021; Bawal & Cuenca, 2023; Botha & Herselman, 2015).

The limitations observed among pesantren teachers are not merely technological but structural and systemic. Professional development initiatives available to educators in these contexts are typically generic, short-duration, and detached from the socio-cultural and infrastructural realities of rural Islamic education. Furthermore, training models that depend on computer-based delivery often fail to reach teachers in remote settings due to the scarcity of ICT facilities and limited internet bandwidth. Conversely, mobile learning platforms present a more accessible and contextually adaptive alternative, as they capitalize on technologies already owned and familiar to teachers. Studies have emphasized that localized, practice-oriented, and mentor-supported mobile training programs can substantially enhance teachers' technological proficiency, pedagogical adaptability, and self-efficacy (Cahyana et al., 2020). Nonetheless, such targeted and context-specific empowerment initiatives remain largely absent from the pesantren ecosystem, underscoring the necessity for tailored models that align with its pedagogical and cultural dynamics.

From a theoretical standpoint, animated video constitutes a pedagogically potent medium capable of fostering higher levels of cognitive engagement, retention, and motivation. The integration of auditory, visual, and kinesthetic elements within animation facilitates dual coding processes, enabling learners to construct more robust mental representations of abstract concepts. In Arabic language education, animation

holds particular promise for transforming abstract linguistic forms into contextualized and experiential learning episodes. Prior research confirms that animation-based media enhance learners' understanding, sustain attention, and improve conceptual transfer, particularly when teachers themselves are involved in designing such materials. The process of animation creation not only strengthens teachers' content mastery but also nurtures their creativity and digital confidence (Almisfalah & Yuliana, 2023; Kleftodimos, 2024; Putri & Munawarah, 2024). Thus, developing the capability of Arabic language teachers to independently produce animated instructional media represents a strategic entry point for elevating both pedagogical quality and learner engagement within rural pesantren.

A substantial body of literature on mobile learning and teacher empowerment has demonstrated the transformative potential of mobile-based pedagogical interventions, particularly within under-resourced educational environments. The *Teacher Education through School Support in India* (TESS-India) project, for example, showcased how mobile-accessible Open Educational Resources (OERs) can democratize access to teacher professional development and stimulate participatory pedagogy in low-connectivity contexts (Koomar et al., 2020; Wolfenden, 2015). Similarly, Botha (2015) conceptualized the *Teacher Tablet Toolkit*, an integrative framework designed to enhance rural teachers' technological competence through gamification, mobile learning, and scaffolded professional practice. Other studies have explored the effectiveness of mobile-assisted learning in diverse subject areas, confirming its potential to enhance learner motivation, engagement, and academic performance when coupled with video or animation-based content (Cahyana et al., 2020; Kleftodimos, 2024; Talan, 2020; Zhan et al., 2022).

Despite these advancements, the existing literature reveals several critical limitations. First, most prior studies are situated within formal educational institutions with adequate ICT infrastructure, which starkly contrasts with the conditions of pesantren in rural Indonesia. Second, the majority of research has focused on student-centered outcomes rather than the empowerment and professional growth of teachers. Third, there remains a paucity of research exploring mobile-based empowerment models that integrate training, production practice, and sustained mentoring for teachers—particularly within the domain of Arabic language education and Islamic schooling. These gaps collectively underscore the need for a novel framework that not only addresses the technical dimension of mobile learning but also embeds empowerment principles tailored to the socio-religious and infrastructural realities of pesantren education.

Responding to this lacuna, the present study aims to develop a mobile technology-based empowerment model specifically designed to enhance the capacity of Arabic language teachers in rural pesantren to create animated instructional videos. This model is envisioned as a holistic intervention that synthesizes three essential components: mobile-based training, practice-oriented animation development, and continuous mentoring. Through this framework, the study seeks to foster sustainable digital competence, pedagogical innovation, and professional autonomy among teachers. Furthermore, by embedding the empowerment process within the existing cultural and institutional structures of pesantren, the model aspires to harmonize technological modernization with traditional educational values (Bawal & Cuenca, 2023; Botha & Herselman, 2015; Ngwenya et al., 2015).

Ultimately, this study contributes to the expanding discourse on digital transformation in Islamic education by offering both theoretical and practical insights into teacher empowerment in low-resource contexts. Theoretically, it extends the application of mobile learning frameworks to a culturally distinctive educational domain that remains underexplored in global scholarship. Practically, it provides a replicable and adaptable model capable of guiding rural Islamic boarding schools in bridging the digital divide and enhancing the pedagogical quality of Arabic language instruction. By situating the empowerment process within a mobile technology framework, this research not only supports the professional development of teachers but also repositions pesantren as dynamic agents of educational innovation in the digital age (Bawal & Cuenca, 2023; Klefodimos, 2024; Power et al., 2011).

## Method

This study employed a qualitative research design using a Participatory Action Research (PAR) approach to empower Arabic language teachers through training and mentorship in mobile-based animated video production. Purposive sampling was used to select 16 Arabic teachers from three rural pesantren (Islamic boarding schools) who met the following criteria: having teaching responsibilities, using an Android smartphone, and demonstrating motivation to improve their digital skills. Data were collected between October and November 2025 through in-depth interviews, direct observations, activity documentation, and analyses of digital artifacts in the form of participant-produced animated videos. All procedures adhered to research ethics protocols, including written informed consent, confidentiality of participant identities, and secure data storage. The instruments included interview guides, observation sheets, field notes, an audio recorder, and smartphone cameras. All recorded data were

transcribed verbatim and securely managed within a protected storage system.

Data analysis was conducted using a qualitative thematic approach involving iterative processes of reduction, categorization, and inductive pattern identification. The validity of the findings was strengthened through source and methodological triangulation, member checking, and inter-researcher verification. The PAR cycles enabled data collection and analysis to occur iteratively, whereby preliminary findings were used to refine subsequent training and mentoring strategies until sampling saturation was reached. The study sample consisted of six male and four female teachers aged 23–45, most of whom had more than five years of teaching experience but limited exposure to digital training. The final analysis informed the development of a mobile-technology-based empowerment model tailored to the needs of rural pesantren.

## Result and Discussion

RQ1: How does the empowerment process of Arabic language teachers in rural pesantren occur through mobile-based animated video development training?

### *Initial Conditions: Digital Literacy Gaps and Pedagogical Limitations*

In the initial phase, teachers exhibited low levels of digital literacy and had minimal experience in producing animated instructional media. Many reported having no technical background in digital media creation. As AS noted, prior to the training, “creating animation for teaching, especially Arabic, had never crossed my mind,” and he typically “relied on existing animations and videos (Interview, 2025).” Similarly, SPD stated that she had “never tried it before” and often felt “confused... not knowing where to start” when attempting to design digital materials. Even at the level of device use, YA identified his main challenge as “a lack of mastery in technology (Interview, 2025).” These data indicate that teachers entered the program as passive technology users, revealing substantial gaps between device availability and pedagogically grounded digital competencies.

### *Awareness Phase: Training Sparks New Understanding of Smartphone Potential*

The training functioned as a catalyst, reshaping teachers’ perceptions of smartphones as viable tools for instructional media production. AS stated that the training equipped him with new abilities that enabled him to “create Arabic animations, even if still at a basic level (Interview, 2025).” YA reported that the training provided “learning materials that make it easier for teachers to deliver lessons and make them more

engaging for students (Interview, 2025).” Likewise, SPD emphasized that “everything [in the training] was useful and very helpful,” leading her to realize that media creation could be executed through her personal smartphone (Interview, 2025). At this stage, teachers began shifting from viewing technology as complex and intimidating to understanding mobile devices as pedagogical resources that align with the realities of rural pesantren.

#### *Practice Phase: Learning-by-Doing with Gradual, Guided Support*

Empowerment took shape most clearly when teachers engaged in hands-on practice. Facilitators provided step-by-step instructions and individualized mentoring. SPD described this process: “The trainer directly guided participants using their own phones, practicing step-by-step from installation to the final stage (Interview, 2025).” YA reinforced this by stating that the most helpful aspect was learning “how to use the mobile application,” which he could apply immediately. Teachers also reported that hands-on practice was more effective than theoretical explanations. As SPD noted, “practicing directly” enabled faster comprehension (Interview, 2025). This phase underscores the central role of experiential learning in building teachers’ technical competencies.

#### *Negotiating Challenges: Technical, Temporal, and Access Constraints*

Throughout the practice phase, teachers encountered a range of technical and contextual barriers. Yahya expressed that the “limited training time” hindered his full understanding. SPD noted “internet access difficulties” and experiences of “getting stuck at certain points” when navigating app features. Several teachers were unsure how to begin the animation process, as SPD admitted: “I didn’t know where to start.” In response, facilitators provided active troubleshooting. YA explained that the trainers “checked participants’ work step-by-step” and “guided [him] directly on what should be done” whenever confusion arose (Interview, 2025). This phase illustrates a trial-and-error dynamic supported by responsive guidance and adaptation to field constraints.

#### *Internalization Phase: Growing Self-Efficacy and Transforming Teacher Mindsets*

After successfully creating their first animated videos, teachers experienced significant gains in confidence and shifts in professional identity. AS now felt he “could create Arabic animations” and aspired to produce “more diverse animations (Interview, 2025).” SPD expressed strong optimism, stating that with mentoring she “felt certain [she] would be able to create animated videos independently (Interview, 2025).” YA

described a transformation in how he viewed technology – now perceiving it as “very important” and feeling that his skills had “improved compared to before the training (Interview, 2025).” These findings demonstrate a deep internalization of competencies: teachers evolved from passive consumers to emerging creators of digital media.

#### *Initial Implementation Phase: Integrating Animated Videos into Classroom Practice*

After achieving technical competence and renewed confidence, teachers began applying their videos in real instructional settings. YA explained that he could “immediately apply [the videos] in [his] own teaching context (Interview, 2025).” Others observed that animated media enhanced engagement, visual clarity, and student comprehension. S reported that her new skills helped her “teach more effectively” after understanding how the application worked (Interview, 2025). Observations also showed that teachers integrated animation into lesson plans, making learning more “contextual, visual, and engaging” for students. This phase marks a shift from technical mastery to pedagogical transformation.

The six thematic phases illustrate that teacher empowerment unfolded as a gradual transformational journey, from digital limitations to awareness, experiential practice, negotiated challenges, competency internalization, and pedagogical application. This transformation produced not only technical skills but also shifts in mindset, strengthened self-efficacy, and reconstructed professional identities as creators of mobile-based instructional media.

RQ2: What forms of mentoring support teachers in developing animated instructional videos?

#### *Direct Mentoring: Step-by-Step Hands-On Guidance*

Early mentoring was characterized by hands-on, procedural guidance in which trainers supervised teachers through every stage of video production. Teachers not only received instructions but practiced each step using their own smartphones. SPD described this clearly: “The trainer directly guided us... practicing step-by-step from installation to the final stage (Interview, 2025).” MUS echoed this: “Direct practice from installation to the final stage (Interview, 2025).” AS added that facilitators also “checked participants’ work directly.” This procedural-demonstrative mentoring reduced initial anxiety by enabling teachers to “learn by doing.”

#### *Personalized and Responsive Support*

Teachers highly valued mentoring that was personal, close, and responsive. LF shared that he felt greatly supported when the trainer “came to each

participant to ensure we could operate the application," emphasizing that "we felt cared for and truly guided (Interview, 2025)." IS confirmed this personal approach: "The mentor demonstrated directly on our phones (Interview, 2025)." WW appreciated that the mentor "explained again when I didn't understand (Interview, 2025)." Such individualized engagement built psychological safety and encouraged teachers to ask questions, experiment, and learn without fear of making mistakes.

#### *Focus on Critical Technical Points*

Mentoring was concentrated on the most challenging technical steps, acknowledging that animation production is non-linear and requires targeted intervention. AS highlighted his greatest need for support: "When adding animation effects—sound effects, background music, visual effects (Interview, 2025)." IS faced difficulties with "adjusting facial expressions and saving the final animation (Interview, 2025)." NH struggled even earlier: "Downloading the application, because two different versions appeared (Interview, 2025)." These examples show that digital competence development required highly specific, problem-centered mentoring.

#### *Varied Mentoring Strategies: Direct Guidance, Repetition, and Modeling*

Mentors employed multiple strategies tailored to teachers' varying comprehension levels. YA described direct guidance: "Directing exactly what should be done (Interview, 2025)." AS emphasized structured explanations: "Step-by-step with simple, easy-to-understand instructions; not moving on until we understood (Interview, 2025)." WW appreciated repeated explanations, while Ismail highlighted modeling: "Demonstrating directly on our phones (Interview, 2025)." These adaptive strategies ensured accurate understanding and built procedural fluency.

#### *Continuous Support Through Online Communication (WhatsApp, Phone, Zoom)*

Mentoring extended beyond in-person sessions, providing ongoing support through digital communication—especially valuable in rural areas with geographic and time constraints. SB described this support: "A WhatsApp group was created... very helpful because even from afar, the trainer continued to assist us (Interview, 2025)." NH received telephone guidance when struggling to download the app (Interview, 2025). SU expressed hope for Zoom-based mentoring due to distance challenges (Interview, 2025). This category highlights the sustainability of mentoring beyond the formal training period.

#### *Strengthening Self-Efficacy and Independence*

The effects of mentoring extended to emotional and professional dimensions. SAS stated confidently: "I feel that I will definitely be able to create animated videos independently (Interview, 2025)." Yahya shared similar confidence: "I feel capable of making them independently, even if not perfectly (Interview, 2025)." LF experienced increased confidence, while Sultan noted spillover benefits for students, who "enjoy making animated videos (Interview, 2025)." This theme emphasizes mentoring as a mechanism for identity development—empowering teachers not only to perform tasks but to see themselves as capable innovators.

The findings of RQ1 in this study indicate that the empowerment of Arabic language teachers in rural pesantren (Islamic boarding schools) through mobile-based animated instructional video development training unfolds as a gradual transformational process. This process moves from an initial stage marked by digital literacy gaps and pedagogical limitations toward a phase of awareness of the smartphone's potential as a pedagogical tool. It then proceeds through hands-on practice (learning by doing), negotiation of technical and contextual constraints, internalization of competence and self-efficacy, and finally to the initial implementation of animated videos in classroom practice.

In parallel, the analysis of RQ2 shows that the mentoring provided was highly intensive and multilayered: step-by-step direct guidance using teachers' own smartphones; a personal and responsive approach; focused support on critical technical points (installation, advanced features, design, exporting); varied mentoring strategies (direct instruction, repetition/clarification, and modeling); ongoing support through online media (WhatsApp, phone calls, and the expectation of Zoom meetings); and the strengthening of teachers' sense of capability and autonomy. In combination, these elements created a learning ecosystem that enabled teachers to move from the position of passive technology users to reflective and contextually responsive creators of instructional media.

Overall, these findings align with recent scholarship on teacher professional development (TPD) for technology integration, which emphasizes that effective training must be hands-on, contextualized, continuous, and oriented toward real classroom practice. A recent systematic review of TPD for digital instructional integration highlights that successful programs are characterized by practical experiences, sustained mentoring, and opportunities for reflection, rather than one-way lecture-based training (Amemasor et al., 2025; Liu et al., 2015; Núñez, 2023). The present study confirms this pattern: teachers repeatedly noted that the most impactful sessions were those involving

direct practice on their own smartphones with close guidance from mentors, rather than theoretical presentations about applications.

From the perspective of teacher digital competence (TDC), the finding that teachers progressed from technical unfamiliarity to being able to design and produce animated media is consistent with various systematic reviews on TDC. These reviews show that training programs combining technical and pedagogical components can significantly enhance teachers' competences, including in media design and the management of digital learning environments (Edvard et al., 2023; Joya, 2025; Revuelta-Domínguez et al., 2022). However, the literature also criticizes the tendency to position teachers primarily as functional users of technology rather than as designers of digital learning (Edvard et al., 2023; Revuelta-Domínguez et al., 2022). In this context, the present study demonstrates that, with appropriate mentoring support, pesantren teachers can move beyond this functional role and assume the role of media creators. This adds a corrective nuance to the portrayal of teachers as mere "operators" of devices.

In the realm of mobile learning, several studies show that m-learning has considerable potential for teacher professional development, particularly in rural areas and low-income countries, because it leverages existing devices (smartphones) and enables flexible learning (Eluemuno et al., 2025; López et al., 2026; Mukta, 2022). These studies find that mobile-based training can improve teachers' access to materials, support communication with trainers, and expand opportunities for self-directed learning. At the same time, other research on technology integration in rural schools highlights a spectrum of structural challenges, including limited infrastructure, unstable internet access, heavy teacher workloads, and weak institutional support (Motene, 2022; Mustafa et al., 2024). The findings of this study sit between these two poles: on the one hand, they show that a mobile-first approach makes empowerment programs feasible even under minimal facility conditions; on the other hand, teachers still reported network problems, time constraints, and the need for intensive mentoring. Thus, the study does not merely affirm optimism about m-learning but underscores that the success of m-learning depends heavily on the quality of pedagogical design and social support, not merely on device availability.

In terms of technological self-efficacy, the observed increase in teachers' confidence and autonomy following training and mentoring is consistent with studies showing that self-efficacy is a key predictor of both the intensity and quality of classroom technology integration (Barton & Dexter, 2020; Pan et al., 2011; Williams et al., 2023). These studies emphasize that TPD programs which provide mastery experiences, social support, and positive feedback can strengthen teachers'

beliefs that they are able to integrate technology effectively, thereby fostering pedagogical innovation.

In this study, the shift from statements such as "not knowing where to start" to the conviction that they "will definitely be able to create animated videos independently" reflects the pattern of mastery experiences described in social cognitive theory. The mentors' role in "caring for" teachers, "responding quickly," and "demonstrating directly on teachers' phones" served as forms of social persuasion and vicarious experience that reinforced self-efficacy. Consequently, this study not only confirms the relationship between Teacher Professional Development (TPD) and self-efficacy but also offers a detailed illustration of the mechanisms through which self-efficacy is built in rural pesantren settings.

A number of systematic reviews on teacher digital competence also point out that conceptualizations of digital competence are often narrow, emphasizing technical aspects over pedagogical design and critical reflection (Edvard et al., 2023; Revuelta-Domínguez et al., 2022; Salehi et al., 2025). In many contexts, teachers are positioned as users of pre-existing tools rather than as designers of digital learning experiences. The findings of this study extend this view critically: teachers who initially described themselves as technologically "illiterate" and passive users were able to develop into designers of animated videos tailored to students' needs and the specific characteristics of Arabic language content. However, it must be noted that this transformation did not occur automatically; it depended heavily on the intensity and quality of mentoring. Here a tension emerges: while parts of the literature emphasize "strengthening digital competence" in general terms, this study shows that without detailed and responsive mentoring, calls for teachers to "become digital media creators" risk remaining rhetorical and difficult to enact in practice.

Within Islamic education, several studies have highlighted the importance of using information and communication technologies to enrich Islamic Religious Education and Islamic studies more broadly. Qualitative studies on ICT-based religious instruction report that digital media can increase student engagement and understanding, but that implementation is often hindered by inadequate infrastructure and limited teacher digital competence (Hanif et al., 2025; Sain et al., 2025). Other work on technology integration in Islamic education emphasizes the need for policy frameworks, the development of Islamic digital content, and systematic teacher training to ensure that technology functions pedagogically rather than merely as a symbol of modernity (Abdullahi et al., 2024; Sholeh, 2023).

This study contributes specifically to that discourse by shifting the focus from "ICT use in Islamic education" to the "process of teacher empowerment" as the key

driver of content development. Rather than simply measuring the extent to which technology enters the classroom, the study unpacks how teachers in rural pesantren experience shifts in mindset, learn to operate animation applications, and build confidence to integrate animated media into Arabic lesson plans. In doing so, it fills an important gap in the literature: how digital empowerment processes unfold for teachers in traditional Islamic educational institutions, not merely how technology is “introduced” into such settings.

Conceptually, the six-phase empowerment model and identified forms of mentoring have the potential to be adapted to other comparable contexts: pesantren or madrasah in rural areas, schools with low teacher digital literacy, or teacher training programs in other subjects where visual media are relevant. Studies on m-learning and teacher professional development in rural areas suggest that leveraging personal devices can be a realistic strategy in developing countries, provided it is accompanied by context-sensitive pedagogical design and sustained support (Mukta, 2022). However, generalizing the findings of this study requires caution. First, the model’s success depends strongly on the minimal availability of Android smartphones, teacher motivation, and access to competent mentors—variables that may vary considerably across institutions. Second, the socio-cultural context of pesantren (leadership structures, scholarly traditions, student learning culture) is distinctive and not always analogous to that of general schools; adaptation to other settings must take these factors into account. In other words, the model is best understood as a conceptual framework for adaptation rather than a ready-made intervention package that can be transplanted without modification.

#### *Limitation*

This study has several limitations that shape how its findings should be interpreted. First, the number of informants was relatively small (16 teachers) and concentrated in a single geographic area, limiting statistical generalizability. Second, the duration of training and mentoring was relatively short; although there are indications of initial implementation of animated videos in classrooms, the study did not evaluate the sustainability of these practices in the medium or long term, nor their impact on student learning outcomes. Third, the data were primarily qualitative (interviews and teacher reflections) and were not systematically combined with quantitative indicators such as self-efficacy scores, media use frequencies, or learning outcome assessments. Fourth, the program’s success depended heavily on the intensity and quality of mentoring. Scaling this model may be challenging without commensurate resource planning (time, personnel, funding). In the broader literature, this aligns with findings that many

technology-based TPD programs achieve positive effects at the pilot-project level but are difficult to sustain when scaled up without strong structural support (Amemasor et al., 2025). These limitations suggest that the study’s main contribution is descriptive-exploratory and conceptual rather than definitive causal evidence of the model’s effectiveness across contexts.

#### *Implication*

Practically, the study suggests that professional development programs for teachers in pesantren should: (1) adopt mobile-based, hands-on approaches grounded in intensive mentoring; (2) explicitly integrate the strengthening of teachers’ self-efficacy and professional identity into training design; and (3) build communities of practice and sustained support systems—such as WhatsApp groups, local mentors, or peer coaching—to reduce dependence on external training teams. For future research, mixed-methods studies with longer time frames are needed to examine the relationship between this empowerment process and quantitative indicators (e.g., improvements in student learning outcomes, levels of animated media use, or shifts in learning culture within pesantren). In addition, testing this model in pesantren with different characteristics (urban, semi-urban, or with more diverse scholarly traditions) would enrich understanding of the factors that mediate or moderate the success of mobile-based teacher empowerment.

#### **Conclusion**

This study demonstrates that empowering Arabic language teachers in rural Islamic boarding schools through mobile-based animated video training is both feasible and pedagogically transformative. The empowerment process unfolds through a sequence of developmental phases—beginning with substantial digital literacy gaps, followed by the emergence of technological awareness, hands-on skill acquisition, negotiation of contextual constraints, internalization of digital competence, and early instructional implementation. These phases reveal that meaningful teacher transformation requires more than technical exposure; it depends on sustained, responsive, and context-sensitive mentoring that enables teachers to build operational mastery, confidence, and creative agency.

The findings affirm that mobile technology, when paired with structured and personalized support, can bridge long-standing pedagogical and technological divides in resource-limited Islamic educational settings. Teachers not only acquired the ability to design and produce animated instructional videos but also reconstructed their professional identities as creators rather than passive users of digital tools. The initial

classroom integration of teacher-produced videos shows promising pedagogical value, indicating that mobile-based media can enrich student engagement and support more accessible and contextualized Arabic language learning.

Theoretically, this study contributes a six-phase model of mobile-assisted teacher empowerment that expands existing scholarship on digital competence, teacher agency, and mobile learning—particularly within underexplored Islamic boarding school contexts. Practically, the findings highlight that leveraging teachers' personal devices, combined with intensive mentoring and iterative practice, offers a realistic strategy for professional development in rural and low-resource environments. Nevertheless, the study is limited by its small sample size, single geographical setting, and short intervention period, restricting the generalizability and long-term claims. Future research should adopt mixed-methods designs with larger populations, longitudinal observations, and comparative studies across diverse Islamic education ecosystems to further validate the model and examine its sustained impact on teaching quality and student learning outcomes

#### Acknowledgments

We extend our sincere appreciation to Pondok Pesantren Nujumul Huda NU Batu Samban, Pondok Pesantren Ahlussunnah Waljama'ah (Aswaja) NW Brambang, and Pondok Pesantren Darul Musthofa NW Repok Atas for their cooperation and support throughout this study. We also thank the participating Arabic language teachers whose engagement, openness, and commitment greatly contributed to the success of the training and mentoring activities. Their willingness to collaborate enabled us to complete this research effectively. We further acknowledge the support of Lembaga Penelitian dan Pengabdian kepada Masyarakat (LP2M), Universitas Islam Negeri Mataram, whose facilitation and institutional assistance strengthened the implementation of this research.

#### Author Contributions

S. Ali Jadid Al Idrus developed the research proposal, led the field implementation of the study, drafted the initial manuscript, conducted data analysis, and refined the final version of the article. M. Syarifuddin designed the interview, observation, and documentation instruments, collected the field data, and contributed to the editing of the manuscript. Leny Cahyani and Radin Paras Raharja assisted in the data collection process and supported field coordination.

#### Funding

The Universitas Islam Negeri Mataram through Lembaga Penelitian dan Pengabdian kepada Masyarakat (LP2M) funded this research and its publication.

#### Conflicts of Interest

The authors declare no conflict of interest.

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