

Managing Sustainable Professional Development for Madrasah Teachers: Enhancing Scientific Publications

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Abstract:

Scientific publication activities are generally not the primary assessment of teacher performance in madrasahs, but scientific publications can impact teacher professionalism and the madrasah's reputation. This study aims to analyse the strategic management of sustainable professional development (SPD) among madrasah teachers in Islamic boarding schools (*pesantren*) as a solution to improving their scientific publication capacity. This study employed a qualitative approach, utilising a case study design. Data were collected through observations and semi-structured interviews with 20 madrasah teachers. Data were analysed using the Miles & Huberman interactive data analysis model. The findings suggest that a structured managerial approach, combined with capacity-building interventions and suitable institutional support, can substantially enhance teachers' productivity in scientific publications. This research has implications for improving teacher pedagogical quality, particularly in terms of delivering learning materials that align with scientific developments. It also serves as a consideration for cross-sector collaboration between Islamic boarding schools, madrasahs, and educational institutions to contribute to overcoming structural challenges and encouraging teachers' continuous professional development.

Keywords: *Teacher Professionalism, Madrasah Reputation, Strategic Management*

Abstrak:

Kegiatan publikasi ilmiah pada umumnya tidak menjadi penilaian utama kinerja guru di madrasah, namun publikasi ilmiah dapat berdampak terhadap profesionalisme guru dan reputasi madrasah. Penelitian ini bertujuan untuk menganalisis manajemen strategis Pengembangan Keprofesional Berkelanjutan guru madrasah di pesantren sebagai solusi untuk peningkatan kapasitas publikasi ilmiah mereka. Penelitian ini menggunakan pendekatan kualitatif dengan jenis studi kasus. Data dikumpulkan melalui observasi dan wawancara semi-terstruktur kepada 20 guru madrasah. Data dianalisis menggunakan model analisis data interaktif Miles & Huberman. Temuan penelitian menunjukkan bahwa pendekatan manajerial yang terstruktur, dikombinasikan dengan intervensi penguatan kapasitas dan dukungan kelembagaan yang tepat, dapat secara signifikan meningkatkan produktivitas publikasi ilmiah guru. Penelitian ini berimplikasi terhadap perbaikan kualitas pedagogik guru, khususnya dalam hal penyampaian materi pembelajaran yang sesuai dengan perkembangan ilmu

pengetahuan, serta menjadi pertimbangan untuk kolaborasi lintas sektor antara pesantren, madrasah, dan lembaga pendidikan guna berkontribusi dalam mengatasi tantangan struktural dan mendorong pengembangan keprofesian berkelanjutan guru.

Kata Kunci: *Profesionalisme Guru, Reputasi Madrasah, Manajemen Strategis*

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INTRODUCTION

In Indonesia, Islamic education plays a crucial role in shaping the character and competence of the younger generation, and its management significantly affects the overall development of the community. One of the critical institutions within the Islamic education system is madrasah, often integrated with *pesantren* (Islamic boarding schools), which plays a fundamental role in nurturing future generations. Madrasah teachers are essential as they directly implement the educational process and are responsible for improving the quality of learning and scholarship (Meng, 2023). However, the overall effectiveness of madrasah education is influenced by how well teacher development programs are implemented. The focus of this research is on Sustainable Professional Development (SPD) for madrasah teachers, which is crucial for enhancing both their pedagogical skills and their capacity for scientific publication.

Evidence suggests that teacher quality is directly correlated with their professional development (Mutohar & Trisnantari, 2020). Madrasah teachers need more structured support in advancing their professional competence, which includes the ability to produce scholarly work that can contribute to educational development. Scientific publications from teachers can elevate not only their professionalism but also the reputation of their institutions. A well-structured SPD program, which emphasizes both pedagogy and research, could address the existing gaps in madrasah teachers' capabilities, thereby improving the overall quality of education. Therefore, this study is essential to understand how SPD management can be optimized to support madrasah teachers in improving their scientific publication capacities.

Despite the significant role of madrasah teachers in shaping educational outcomes, there are considerable challenges in the management of SPD programs in pesantren-based madrasahs. These challenges include limited access to resources and training opportunities for teachers, as well as a general lack of emphasis on scientific publications. This lack of focus on research hinders teachers' ability to contribute to educational knowledge and share best practices, thereby limiting the potential for institutional improvement and the advancement of educational quality. Without a structured SPD program that integrates research and publication training, madrasah teachers struggle to meet professional standards and contribute to the broader educational discourse.

The key issue driving this study is the need for a more comprehensive and structured SPD program that addresses the dual goals of improving teachers' pedagogical skills and enhancing their ability to produce scientific publications. Without this, madrasah teachers may continue to face difficulties in advancing their careers and contributing to the development of educational science.

Previous studies have explored the impact of professional development programs on teacher competence and the barriers that pesantren-based madrasah teachers face. Komarudin et al. (2022) found that professional training can improve teachers' competencies, although not all teachers have access to such training. Similarly, Humaisi et al. (2024) highlighted that unsupportive managerial structures in pesantren hinder effective professional development. Furthermore, research by Thao et al. (2022) and Toquero (2021) emphasized the importance of continuous training to improve teachers' pedagogical skills, although these studies did not adequately address the lack of training related to scientific writing and publication.

The research gap lies in the limited exploration of how SPD management can be integrated with training on research and scientific publications. While existing studies focus on improving pedagogical skills, they neglect the critical need to incorporate research training as part of teacher professional development. Therefore, this study contributes by addressing this gap, highlighting how a structured SPD program that includes scientific writing and publication can significantly enhance the professional development of madrasah teachers.

The novelty of this research lies in its integration of SPD management with scientific publication training, a critical area that has been underexplored in previous studies. This research aims to develop a comprehensive SPD model that not only enhances the pedagogical skills of madrasah teachers but also equips them with the necessary skills for conducting and publishing research. Given the growing importance of scientific contributions in improving educational systems, this research is crucial for advancing both teacher professionalism and institutional reputation.

Addressing the gap between teacher pedagogical development and scientific publication is vital, as it enables madrasah teachers to contribute to educational knowledge while improving their career prospects. The ability to publish research also strengthens the role of madrasah in the national and international educational discourse. Therefore, the development of such an SPD program is timely and critical for enhancing the quality of education in pesantren-based madrasahs.

This study seeks to answer the central question: How can SPD management in pesantren-based madrasahs be optimized to improve the scientific publication capacity of madrasah teachers? The research argues that a more structured and integrated SPD management model that includes both pedagogical training and research publication training can substantially improve the professional development of madrasah teachers. This model can address the current gaps by equipping teachers with the necessary tools to engage in research and produce scientific publications, thereby contributing to the overall improvement of the educational system in pesantren-based madrasahs.

By providing madrasah teachers with both the skills to improve their teaching and the tools to share their research, this study offers practical recommendations for enhancing teacher quality and supporting the broader goal of improving educational outcomes in Indonesia.

RESEARCH METHOD

This research employs a qualitative approach, utilizing a case study design. The choice of case study is based on the consideration that the case resolved in the research is single and focuses on the scientific publication ability of madrasah teachers integrated with pesantren (Gioia, 2020). Research data were collected using interviews and observations (Urcia, 2021). Semi-structured interviews were conducted with informants who are madrasah teachers in boarding schools in Pinrang Regency. The selection of informants was conducted using purposive sampling, and the snowball technique was employed to determine the number of informants. A total of 20 madrasah teachers from nine Islamic boarding schools in Pinrang Regency served as informants. Data collection using observation techniques was conducted using observation guidelines that focused on the informants' level of activeness when participating in scientific publication training.

The research data that has been collected is then analyzed using the interactive data analysis model developed by Miles and Huberman, which consists of data reduction, data presentation, and data verification (Renjith et al., 2021). During the data verification stage, triangulation techniques were used to determine the degree of data validity, which was found to be in the good category (Kazu & Kuvvetli, 2023). Member checks were also conducted at this stage to ensure the accuracy of the interpretation of the information provided by the informants. The final stage of data verification involves expert opinion to reconfirm the interpretation of the research results, utilizing lecturers from IAIN Parepare who are competent in the field of scientific publication. This aims to ensure that the research results presented are in accordance with scientific principles.

RESULT AND DISCUSSION

Result

Limited Access to Resources in Professional Development

One of the main findings in this study is that there are significant limitations in accessing resources to support Sustainable Professional Development (SPD) activities for pesantren-based madrasah teachers. These barriers include a lack of access to scientific publication platforms, inadequate technical training, limited institutional support, and infrastructure constraints such as the availability of technological devices and internet networks. These limitations have a direct impact on the low productivity of teachers in writing and publishing scientific papers. To provide a more systematic overview, the following is a visualization of the findings in table form:

Table 1. Limited Access to Resources

No	Aspect	Type of Limitations	Impact	Solution	Data Source
1	Limited access to Journals & Training	Information & training	Unpublished articles	Publication training & online journal access	Interview & observation
2	Lack of institutional support	Institutional	Low motivation to write	Incentives, monitoring, and facilities from madrasah	Interview & observation
3	Low specification	Hardware	Technical	Device assistance/loan	Observation

	laptop	technology	difficulties of training	during training	
4	Unstable internet	Digital infrastructure	Difficult to access references & OJS	Provision of internet at the training/madrasah location	Observation

The findings show that one of the most dominant barriers faced by pesantren-based madrasah teachers in the professional development process is limited access to supporting resources. Although these teachers have potential and have even produced some research work, barriers such as inadequate technological devices (e.g., low-specification laptops), unstable internet access, and lack of access to scientific journals have become major obstacles. Additionally, the lack of technical training in academic writing and scientific publications results in a low level of involvement in publication activities. This situation demonstrates that enhancing teachers' capacity requires not only training, but also systemic support in the form of facilitating facilities, infrastructure, and policies.

Based on the results of interviews and observations during the research activities, the resource barriers faced by madrasah teachers can be classified into four main aspects: limited access to publication information, lack of technical training, weaknesses in hardware facilities, and internet network constraints. Although some teachers have taken the initiative to conduct research, technical limitations make it difficult for them to convert research results into publishable articles. This shows that the challenge is not only in the individual ability of teachers, but also in the supporting environment that has not been optimized. Therefore, improving the professionalism of pesantren-based teachers requires a comprehensive intervention that involves the provision of technology, continuous training, and the strengthening of institutional policies.

Lack of Focus on Research and Scientific Publications

The lack of focus on research activities and scientific publications is a significant challenge in developing the academic capacity of pesantren-based madrasah teachers. Based on the findings in the field, the research culture has not been deeply rooted in the madrasah environment, either due to limited experience in writing or the absence of an ecosystem that supports scientific activities. Although some teachers possess the potential and enthusiasm, the lack of familiarity with research and publications has led to their limited contribution in the academic world. The following visualization summarizes the aspects that reflect this condition before and after the service program intervention.

Table 2. Visualization of the Lack of Focus on Scientific Research and Publication

No	Aspect	Condition Before Intervention	Condition After Intervention
1	Writing Culture	Low and no structured writing activities	Early establishment of a writing community
2	Focus on Classroom Action Research	Not commonly practiced and even unfamiliar to most teachers	Beginning to understand and design simple PTK
3	Knowledge of Scientific Journals	Minimal and unaware of access and publication mechanisms	Increased, began to understand the flow of publications through OJS

4	Scientific Article Products	Almost none	Some articles are ready to be submitted to journals
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The focus on research and scientific publications among pesantren-based madrasah teachers is still relatively low. This condition is not solely due to a lack of interest, but also due to limited technical knowledge, writing experience, and the absence of institutional encouragement that encourages sustainable scientific activity. From the results of interviews and observations, it is evident that most teachers have never formally published their writings, are unfamiliar with publication platforms such as OJS, and lack adequate access to scientific journals. This finding indicates that the lack of focus on research and publication is structural and requires special attention in efforts to strengthen teacher capacity.

The training and mentoring program implemented was successful in bringing about initial changes in the mindset and academic habits of the teachers. Through this activity, participants not only gained technical knowledge related to scientific writing but also gained hands-on experience in preparing articles, using citation and plagiarism applications, and understanding the journal submission process. Some teachers have successfully prepared articles ready for publication and formed writing study groups as a continuation of this activity. This demonstrates that, with the proper methods, a culture of writing and a spirit of scientific publication can be fostered within an environment.

Challenges in Implementing Sustainable Professional Development

The implementation of Sustainable Professional Development (SPD) for pesantren-based madrasah teachers presents several managerial challenges that need to be addressed to enhance the program's effectiveness. The training planning, academy material management, training infrastructure, and coaching system are highly influential aspects during and after the activities. The following table illustrates the main findings related to the managerial challenges faced, as well as the implications that can be taken to improve the successful implementation of ESC in the future.

Table 3. Management Challenges in ESC Implementation

No	Managerial aspects	Key Findings	Implications
1	Training Planning	A structured ESC strategy through workshops has been designed	Requires evaluation of content and duration to suit teachers' needs
2	Academy Material Management	Materials on scientific writing, Mendeley, and Turnitin have been systematically organized.	Must be adapted to the diverse backgrounds of participants
3	Training infrastructure	Limited devices and connections hamper training and practice	Need to support adequate technology and network facilities
4	Coaching System	The coach ratio of 1:4-5 makes mentoring less optimal in some groups	Additional mentors or further coaching sessions are needed

The main challenge in implementing the Sustainable Professional Development (SPD) program lies in the managerial aspect, particularly in training planning, academic material management, training infrastructure, and coaching system. This is due to the mismatch between the program design and the real needs of teachers in the field, as well as technical limitations that hamper the effectiveness of the training. Based on the data, although the training materials have been systematically prepared, implementation is hampered by device constraints, internet connectivity issues, and a high mentoring ratio of one coach for four to five participants. This condition prevented some teachers from receiving optimal guidance. Therefore, a thorough evaluation of program implementation management is needed, including adjustments to training content, strengthening technological facilities, and increasing the number of mentors to ensure the achievement of SPD goals more evenly and sustainably.

Discussion

The management of SPD implementation indicates that although the training strategy has been designed in a structured manner, its implementation has not been fully optimized. The duration of the training is disproportionate to the complexity of the material, and inadequate technological facilities, including devices and internet networks, also limit it. Additionally, the ratio of mentoring is not ideal. This imbalance suggests the need for an in-depth evaluation of training content and methods to better respond to teachers' needs. Thus, supporting digital facilities and increasing the capacity of mentors should be a priority, so that the SPD program is not just a formality but is genuinely able to strengthen teacher competencies sustainably and comprehensively (Jensen & Dikilitas, 2025).

Based on the description of the three research findings in Table 3, the summary of this study reveals that limited access to resources is the primary obstacle to implementing Sustainable Professional Development (SPD) for pesantren-based madrasah teachers. The main findings encompass four crucial aspects: a lack of access to scientific journals and technical training, inadequate institutional support, insufficient technological tools, and a weak internet infrastructure. The direct impact of these conditions is the low productivity of teachers in writing and publishing scientific papers. Although some teachers demonstrate initiative and enthusiasm in scientific activities, limited facilities and systemic support hinder their efforts from being optimal (Maqbool & Humayun, 2023). This problem can be overcome by providing continuous scientific publication training to madrasah teachers and coordinating with the Pinrang District Ministry of Religious Affairs to make it a priority program. Additionally, this can be achieved through a cooperation mechanism with universities to provide scientific publication assistance to madrasah teachers. The intervention program, conducted through training and mentoring, shows positive changes, although they are not yet comprehensive.

To clarify, these limitations do not arise randomly. However, they are the result of an accumulation of policies that are less responsive to the needs of teachers in pesantren-based madrasahs. The education system that fails to

provide structural support, such as access to digital devices, regular training, and resources like scientific journals, hinders professional development from running smoothly (Murphy et al., 2021). In addition, the role of madrasah institutional management, which has not been proactive in encouraging a research culture, exacerbates the situation (Bragg et al., 2021). These barriers are systemic and inherent in the institutional structure of education, which has not fully integrated the principles of professional development as an institutional priority.

This finding can be compared and aligned with the results of previous studies, which state that technological limitations and lack of digital literacy are inhibiting factors in the implementation of SPD (Kasperski et al., 2022; Marín & Castañeda, 2022; Tomczyk, 2020). However, this study adds a specific dimension, namely in the context of pesantren-based madrasah, which has its own characteristics in institutional management and teacher background. A significant difference from previous studies lies in the intervention approach: this study not only analyzes the barriers, but also designs solutions through training and the establishment of writing communities. This shows an element of novelty in the form of a contextual approach and direct action to the problems faced by teachers.

The interpretation of the results of this study not only illustrates the technical conditions under which madrasah teachers access resources, but also reflects social inequality in the educational world. In the social context, pesantren-based madrasah teachers are often outside the reach of mainstream policies, leaving them at a disadvantage in accessing professional development opportunities. In the historical context, the madrasah, as a traditional Islamic educational institution, has not been fully integrated into the modern, research-based national education development system (Haddade et al., 2024). While in the ideological context, there is a shift in the education paradigm that demands teachers to be academically productive, it has not been accompanied by a fair and inclusive support system for all types of educational institutions, including madrasahs.

As a reflection, when access to professional development resources is not fulfilled, the function of SPD as an instrument to improve the quality of education is not optimal. In this context, teachers lose their strategic role as agents of learning change, driving innovation and improving the quality of education. This condition creates a double dysfunction: first, stagnation in the development of teachers' professionalism capacity; second, the obstruction of achieving the goal of quality madrasah education. Implementation programs in collaboration with motivational teachers or literacy teacher groups engaged in publishing can also help madrasah teachers improve their research and scientific publishing skills. Islamic boarding schools and madrasahs should coordinate with each other to develop policies that facilitate madrasah teachers' participation in research and scientific publishing activities, either independently or through established institutions. Nevertheless, the positive results of the mentoring program, which was able to ignite the spirit of writing and build an academic community, show that if given the proper support, madrasah teachers can develop and contribute significantly to the advancement of science and educational practices. This

reflection suggests that with the right interventions, the potential for madrasah teachers to make significant academic and professional contributions is substantial, despite the structural challenges that need to be addressed.

CONCLUSION

These findings necessitate a comprehensive and contextualized policy response. The government and related institutions need to develop affirmative programs that provide basic technological facilities, such as laptops and internet access, for madrasah teachers, especially in the pesantren environment. Additionally, institutional policies that foster a culture of research, including publication incentives, ongoing writing training, and partnerships with OJS-based scientific journals, should be established. These interventions should not be momentary, but instead be built into a sustainable and collaborative system among madrasahs, ministries of religion, and educational development institutions. Only in this way can teacher professional development function effectively and encourage the transformation of madrasah education in a more advanced direction. This study is still limited to recommendations for increasing scientific publications by madrasah teachers based on Islamic boarding schools through SPD management activities, thus providing opportunities for further research on these recommendations.

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