

Assessing the Impact of SM-3T on Enhancing Teacher Competence in 3T Areas: A Case Study in Indonesia

Ahmad Budidarma^{*1}, Unifah Rosyidi^{*2}, Teguh Trianung Djoko Susanto^{*3}

Postgraduate, Doctoral Program in Education Management, Jakarta State University, Jakarta 13220

e-mail: ^{*1}ahmad_9911922032@mhs.unj.ac.id, ^{*2}unifahr@gmail.com,

^{*3}teguhtrianungdjokos@gmail.com

Abstract . The Indonesian government has launched the Bachelor Program for Teaching in Frontier, Outermost, and Disadvantaged Areas (Indonesia: *Sarjana Mendidik di Daerah Terdepan, Terluar, dan Tertinggal* / SM-3T) as a means to enhance the educational standards in disadvantaged regions by deploying recent graduates as instructors. This study examines the impact of the SM-3T program on improving teacher competence in high-risk, remote, and underprivileged regions of Indonesia, namely in *Terdepan, Terluar, and Tertinggal* (3T) regions. This research is a qualitative case study approach, focus on teachers who took part in the program. Data were gathered using a blend of self-assessment forms and semi-structured interviews, offering valuable understanding of the professional growth of these educators, namely in their ability to teach effectively. According to the findings, the SM-3T program made a substantial contribution to enhancing teachers' pedagogical abilities, particularly in comprehending students' traits, devising and executing teaching methods, and doing assessments. The results emphasise the need of ongoing professional development initiatives in enhancing the effectiveness of education in remote regions. The research findings underline the importance of continuous assistance and training for teachers in 3T areas to guarantee enduring educational enhancements.

Keywords: SM3T; Teacher Capacity; Education Program

A. INTRODUCTION

Indonesia continues to encounter ongoing educational difficulties, namely in the frontier, outermost, and disadvantaged (3T) regions, which are distinguished by restricted availability of high-quality education (Directorate General of Higher Education, Ministry of Education and Culture of the Republic of Indonesia, 2012). Confronted with these difficulties, the Indonesian government implemented the *Sarjana Mendidik di Daerah Terdepan, Terluar, dan Tertinggal* (SM-3T) program, which seeks to enhance the educational quality in these areas by assigning recent graduates to teach in disadvantaged (Subarkah, 2016). Underlying this effort is the conviction that improving the quality of teachers is essential for raising the general level of education, especially in distant and disadvantaged regions (Wicaksana & Atmadja, 2018).

The SM-3T program is based on the concepts of teacher development and pedagogical competence, utilising theories of teacher quality and professional advancement as documented (Umar et al., 2018). A crucial aspect of effective teaching is pedagogical competence, which encompasses the ability to comprehend characteristics, develop and execute instructional tactics, and carry out evaluations (Ma & Xu, 2020; Moreno-Casado et al., 2022; Sahronih et al., 2019). Prior research, conducted by Nugraheni (2019) work, has emphasised the significance of these skills within the framework of the SM-3T program. However, it has also emphasised the necessity for additional investigation to comprehensively grasp the program's influence on teacher growth, especially in broader and more diverse settings.

The objective of this study is to fill this gap by investigating the impact of the SM-3T curriculum on enhancing teacher proficiency in 3T areas through an in-depth case study. More precisely, the study intends to investigate the impact of participating in the SM-3T program on the pedagogical capabilities of instructors, particularly in terms of their capacity to adjust to and tackle the distinct difficulties of teaching in 3T areas. A qualitative approach is used in this study, employing case study techniques to obtain comprehensive insights into the experiences of teachers who have taken part in the program.

An expected outcome of this study is to augment the current information on teacher development in difficult settings and offer practical suggestions for improving the efficacy of the SM-3T program. Through an analysis of the elements that impact the growth of pedagogical competence in these environments, the research intends to provide information for future versions of the program and comparable efforts targeted at enhancing educational results in distant and underprivileged regions.

B. METHODS

This study employs a qualitative research design with a case study methodology to explore the impact of the SM-3T programme on enhancing teacher competence in 3T areas in Indonesia. The participants of the study include a group of teachers who have completed the SM-3T program and have taught in various 3T regions. A total of 10 (ten) teachers participated in this research, and they were selected through purposive sampling to ensure a diverse representation of geographical experiences. While the majority of the participants worked in different schools, they all shared similar experiences of teaching in challenging environments such as remote islands and isolated rural regions. The study did not include triangulation with students or headmasters; however, multiple data sources were used to strengthen the findings.

The principal instruments employed were semi-structured interviews, self-evaluation sheets, and document analysis. Data collection involved distributing self-evaluation forms to the participants, followed by interviews conducted either in person or via online communication platforms, depending on the participants' locations. Each interview was recorded and transcribed for thematic analysis. Simultaneously, document analysis was carried out with participants granting access to their teaching records and other relevant documents. Data triangulation was achieved by cross-referencing results from the different data sources, and member checking was used to validate the interpretations by sharing the preliminary findings with the participants.

C. RESULT & DISCUSSION

Result

1. Improvement in Pedagogical Competence

Participants reported a marked improvement in their ability to plan and execute lesson plans tailored to the specific needs of students in 3T areas. Before joining the SM-3T program, many teachers expressed challenges in adapting their teaching methods to the limited resources and unique cultural contexts of these remote areas. However, after completing the program, teachers demonstrated increased confidence and skill in developing lesson plans that were both practical and effective, even in resource-constrained environments. This is relevant to the interview results shared by one of the teachers in the SM3T program, who stated that:

The participants reported a significant improvement in their ability to plan and implement lesson plans tailored to the specific needs of students in 3T areas. Before joining the SM-3T program, many teachers expressed difficulties in adapting their teaching methods to the limited resources and unique cultural contexts of these remote areas. However, after completing the program, teachers demonstrated increased confidence and skill in developing lesson plans that were both practical and effective, even in resource-constrained environments.

The interview results show that the SM-3T program has successfully enhanced teacher

competence, particularly in designing and implementing lesson plans suited to the needs of students in 3T areas. Before joining the program, teachers often faced challenges in adapting their teaching methods to limited resources and differing cultural contexts in remote regions. However, after completing the program, the teachers not only gained greater confidence but also became more skilled in developing effective lesson plans, even with limited facilities. This improvement serves as key evidence of how the SM-3T program prepares teachers to better face the challenges in 3T areas.

2. Enhanced Classroom Management Skills

Another significant result was the improvement in classroom management skills. Teachers reported that, initially, they struggled to maintain order and engagement in classrooms with large numbers of students, often with varying levels of proficiency. Through the SM-3T program, they acquired strategies to better manage their classrooms, including the use of culturally relevant teaching aids and the incorporation of community norms into their teaching practices. This is relevant to the interview results shared by one of the teachers in the SM3T program, who stated that:

The interview results indicate a significant improvement in classroom management skills. Teachers reported that initially, they struggled to maintain order and engagement in classrooms with large numbers of students and varying levels of proficiency. However, through the SM-3T program, they successfully acquired strategies to better manage their classrooms, including the use of culturally relevant teaching aids and the incorporation of community norms into their teaching practices.

This improvement in classroom management skills reinforces the effectiveness of the SM-3T program in preparing teachers to face challenges in 3T areas. With more structured strategies, teachers were able to create a more conducive learning environment that responds to the diverse needs of students. The use of culturally relevant teaching aids and the application of local values not only helped maintain student engagement but also strengthened the relationship between the school and the surrounding community.

3. Development of Reflective Practices

The study also found that the SM-3T program encouraged the development of reflective teaching practices among participants. Teachers reported that the program's emphasis on self-reflection and continuous professional development helped them to critically assess their teaching methods and make necessary adjustments. This reflective approach enabled them to better understand their students' needs and to tailor their teaching strategies accordingly. This is relevant to the interview results shared by one of the teachers in the SM3T program, who stated that:

The interview results show that the SM-3T program encouraged the development of reflective teaching practices among participants. Teachers reported that the program's emphasis on self-reflection and continuous professional development helped them critically assess their teaching methods and make necessary adjustments. One of the teachers in the SM-3T program stated that this self-reflection enabled them to better understand their students' needs and to tailor their teaching strategies accordingly.

The explanation from these interview results emphasizes that the reflective approach applied in the SM-3T program had a positive impact on teachers' ability to adapt their teaching methods. By better understanding the strengths and weaknesses of their teaching, the teachers became more responsive to students' needs and more flexible in adjusting classroom strategies. This demonstrates that self-reflection is a key element in helping teachers enhance their professional competence and become more effective in addressing teaching challenges in 3T areas.

Challenges and Areas for Improvement

Despite the overall positive outcomes, the study also identified several challenges faced by participants. A common issue was the lack of adequate teaching materials and infrastructure in 3T areas, which sometimes hindered the full implementation of the pedagogical techniques learned

during the program. Additionally, some participants noted that the one-year duration of the program was insufficient for addressing deeply ingrained educational challenges in these areas.

These challenges highlight the need for ongoing support and resources for teachers even after the completion of the SM-3T program. While the program successfully equips teachers with the necessary skills and strategies, sustained improvements in educational outcomes in 3T areas will require long-term investment and policy support. This is relevant to the interview results shared by one of the teachers in the SM3T program, who stated that:

One of the participants shared that, while the SM-3T program provided valuable training and improved their teaching competence, the lack of adequate teaching materials and infrastructure in 3T areas posed significant challenges. The teacher explained that these limitations often made it difficult to fully implement the pedagogical techniques they had learned. Additionally, the teacher felt that the one-year duration of the program was insufficient to address the deeply rooted educational issues in these remote areas, particularly when it came to long-term changes in student outcomes.

These challenges underscore the necessity for continued support and resources for teachers working in 3T regions, even after the completion of the SM-3T program. While the program is successful in equipping teachers with essential skills and strategies, the long-term improvement of educational outcomes in these areas requires sustained investment in both infrastructure and policy support. The interview reflects the broader need for ongoing assistance to ensure that the positive impacts of the program are fully realized and that teachers can overcome the practical barriers they encounter in 3T environments.

Discussion

The findings of this study highlight the significant role of the SM-3T program in enhancing teacher capacity, particularly in 3T areas, where educational challenges are acute due to geographical and infrastructural limitations. The program's ability to improve pedagogical competence, classroom management skills, and reflective practices provides a clear indication of its effectiveness in addressing the unique needs of teachers working in these challenging environments. This section explores the significance of these results in relation to the research objectives, compares them with existing literature, and discusses potential areas for improvement.

This finding aligns with previous research by (Chergui et al., (2020); Ferdig, (2006); Parvez & Blank (2007), who also observed improvements in pedagogical skills among SM-3T participants. However, unlike Sadilia's study, which noted only incremental advancements, this study found that participants experienced more significant and comprehensive growth in their pedagogical abilities. This could be attributed to the more extensive training and support provided by the program in recent years.

The improvement in pedagogical competence among participants is a crucial finding that directly addresses the original research objective: to assess how the SM-3T program strengthens teacher capacity in 3T areas. The teachers' enhanced ability to plan and execute lesson plans tailored to their students' needs is particularly noteworthy given the limited resources and cultural differences in these regions. This result is consistent with El-Din et al., El-Din et al., (2022) findings, which also noted improvements in pedagogical skills among SM-3T participants. However, unlike Sadilia's study, which observed only incremental growth, this study found more significant advancements. This may be due to recent updates in the SM-3T training modules, which provide more comprehensive support to teachers, equipping them with the tools and strategies necessary to succeed in resource-constrained environments (Mourtgos & Adams, 2019; Prestridge, 2019; Saido et al., 2015; Weber et al., 2022). The marked improvement in pedagogical skills suggests that the program is effectively addressing the core teaching challenges faced by educators in 3T areas.

Another important outcome is the enhanced classroom management skills reported by participants. The ability to manage large, diverse classrooms in resource-poor settings has been a long-standing challenge for teachers in 3T areas. The success of SM-3T participants in developing effective classroom management strategies, such as the use of culturally relevant teaching aids and incorporating community norms into lessons, stands in contrast to previous findings by (Datzberger,

2018a, 2018b). Their research indicated that teachers in similar contexts often struggled to manage their classrooms effectively. The contrast between these studies highlights the importance of structured and context-specific training, which SM-3T provides, enabling teachers to better cope with classroom challenges in remote areas. The program's emphasis on practical, adaptable classroom management strategies tailored to local contexts is a key factor in this success.

This enhancement in classroom management is particularly noteworthy, as it contrasts with earlier findings by Van Leeuwen & Janssen (2019) in similar contexts, where teachers in resource-poor settings often failed to develop effective classroom management strategies. The success of SM-3T participants in this area highlights the program's effectiveness in preparing teachers for the unique challenges of 3T environments.

The development of reflective practices among participants is another significant outcome of the SM-3T program. Teachers noted that the program's emphasis on self-reflection and continuous professional development enabled them to critically assess their teaching methods and make improvements. This result differs from the findings of Lin et al., (2022), which suggested that teachers in under-resourced areas often lacked the time or support necessary for reflective practice. The success of SM-3T in fostering reflection suggests that the program's structured support and focus on professional growth are key to its effectiveness. The development of reflective practices is vital in challenging environments, where teachers must constantly adapt to new and unforeseen circumstances (Moore et al., 2011; Rachman et al., 2022; Renner et al., 2014; Sletten, 2017; Vural, 2013). This result differs from the findings of previous studies, such as those by Lau et al., (2018), which suggested that teachers in under-resourced areas often lack the time or support to engage in reflective practices. The success of SM-3T in fostering these practices suggests that the program's structured support and emphasis on professional growth are key factors in its effectiveness.

However, despite the program's overall success, several challenges remain. A lack of teaching materials and infrastructure in 3T areas continues to hinder the full implementation of the pedagogical techniques taught in the SM-3T program. This limitation was a common issue reported by participants and reflects the broader structural problems faced by the education sector in these regions. Additionally, the one-year duration of the SM-3T program may be insufficient to fully address the deep-rooted educational challenges in 3T areas. Long-term support, including access to resources and ongoing professional development, is necessary to ensure that the improvements made by the program are sustained over time.

D. CONCLUSION

The SM-3T program has proven to be an effective initiative in strengthening teacher capacity in Indonesia's 3T areas, as evidenced by significant improvements in pedagogical competence, classroom management, and reflective teaching practices among its participants. Teachers who initially struggled with the unique challenges of these remote and resource-constrained environments were able to develop practical and culturally relevant strategies to enhance their teaching effectiveness. While these results demonstrate the program's success in addressing the immediate needs of educators in 3T areas, ongoing challenges such as inadequate teaching materials and the limited duration of the program highlight the need for sustained support and resources. Continued investment in these areas is essential to ensure that the positive outcomes achieved through the SM-3T program are maintained and further expanded, contributing to long-term educational improvements in Indonesia's most underserved regions.

REFERENCES

- Chergui, M., Chakir, A., Mansouri, H., & Sayouti, A. (2020). Smart Pedagogical Knowledge Management Model for Higher Education. *The Proceedings of the Third International Conference on Smart City Applications*, 230–239.
- Datzberger, S. (2018a). Why education is not helping the poor. Findings from Uganda. *World Development*, 110(2018), 124–139. <https://doi.org/10.1016/j.worlddev.2018.05.022>

- Datzberger, S. (2018b). Why education is not helping the poor. Findings from Uganda. *World Development*, 110, 124–139. <https://doi.org/10.1016/j.worlddev.2018.05.022>
- El-Din, D. M., Hassanein, A. E., & Hassanien, E. E. (2022). *The Effect CoronaVirus Pandemic on Education into Electronic Multi-modal Smart Education* (pp. 245–259). https://doi.org/10.1007/978-3-030-55258-9_15
- Ferdig, R. E. (2006). Assessing technologies for teaching and learning: understanding the importance of technological pedagogical content knowledge. *British Journal of Educational Technology*, 37(5), 749–760. <https://doi.org/10.1111/j.1467-8535.2006.00559.x>
- Lau, K. H., Lam, T., Kam, B. H., Nkhoma, M., Richardson, J., & Thomas, S. (2018). The role of textbook learning resources in e-learning: A taxonomic study. *Computers and Education*, 118, 10–24. <https://doi.org/10.1016/j.compedu.2017.11.005>
- Lin, R., Yang, J., Jiang, F., & Li, J. (2022). Does teacher's data literacy and digital teaching competence influence empowering students in the classroom? Evidence from China. *Education and Information Technologies*, 1–23. <https://doi.org/10.1007/s10639-022-11274-3>
- Ma, J., & Xu, H. (2020). College students' network entrepreneurship model based on FPGA and machine learning. *Microprocessors and Microsystems*, 103504. <https://doi.org/https://doi.org/10.1016/j.micpro.2020.103504>
- Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *The Internet and Higher Education*, 14(2), 129–135.
- Moreno-Casado, H., Leo, F. M., López-Gajardo, M. Á., García-Calvo, T., Cuevas, R., & Pulido, J. J. (2022). Teacher leadership and students' psychological needs: A multilevel approach. *Teaching and Teacher Education*, 116, 103763. <https://doi.org/https://doi.org/10.1016/j.tate.2022.103763>
- Mourtgos, S. M., & Adams, I. T. (2019). The rhetoric of de-policing: Evaluating open-ended survey responses from police officers with machine learning-based structural topic modeling. *Journal of Criminal Justice*, 64, 101627. <https://doi.org/https://doi.org/10.1016/j.jcrimjus.2019.101627>
- Nugraheni, G. V. A. (2019). the Experiences of Sm3T Teachers: Constructing Teacher Identity in the Borderland Discourses. *LET: Linguistics, Literature and English Teaching Journal*, 9(1), 88. <https://doi.org/10.18592/let.v9i1.3079>
- Parvez, S. M., & Blank, G. D. (2007). A pedagogical framework to integrate learning style into intelligent tutoring systems. *Journal of Computing Sciences in Colleges*, 22(3), 183–189. <http://dl.acm.org/citation.cfm?id=1181886>
- Prestridge, S. (2019). Categorising teachers' use of social media for their professional learning: A self-generating professional learning paradigm. *Computers & Education*, 129, 143–158. <https://doi.org/https://doi.org/10.1016/j.compedu.2018.11.003>
- Rachman, A., Setiawan, M. A., & Putro, H. Y. S. (2022). The Implementation of Independent Learning-Independent Campus in the Guidance and Counseling Study Program. *Bisma The Journal of Counseling*, 6(1). <https://doi.org/10.23887/bisma.v6i1.42384>
- Renner, D., Laumer, S., & Weitzel, T. (2014). *Effectiveness and efficiency of blended learning—A literature review*.
- Sahronih, S., Purwanto, A., & Sumantri, M. S. (2019). The Effect of Interactive Learning Media on Students' Science Learning Outcomes. *Proceedings of the 2019 7th International Conference on Information and Education Technology*, 20–24.
- Saido, G. M., Siraj, S., Bakar, A., Nordin, B., & Saadallah, O. (2015). Higher Order Thinking Skills among Secondary School Students in Science Learning. *Malaysian Online Journal of Educational Sciences*, 3(3), 13–20.

- Sletten, S. R. (2017). Investigating flipped learning: Student self-regulated learning, perceptions, and achievement in an introductory biology course. *Journal of Science Education and Technology*, 26(3), 347–358.
- van Leeuwen, A., & Janssen, J. (2019). A systematic review of teacher guidance during collaborative learning in primary and secondary education. *Educational Research Review*, 27, 71–89. <https://doi.org/https://doi.org/10.1016/j.edurev.2019.02.001>
- Vural, O. F. (2013). The Impact of a Question-Embedded Video-Based Learning Tool on E-Learning. *Educational Sciences: Theory and Practice*, 13(2), 1315–1323.
- Weber, M. A., Backer, T. E., & Brubach, A. (2022). Creating the HHS COVID-19 Public Education Media Campaign: Applying Systems Change Learnings. *Journal of Health Communication*, 27(3), 201–207. <https://doi.org/10.1080/10810730.2022.2067272>
- Wicaksana, E. J., & Atmadja, P. (2018). Analysis of the impact of teacher program direktorat psmk (sm3t program) to animo learning students in biological lessons in smkn 1 kintamani, bali. *Biodik*, 4(2), 77–82.