Analysis of Experience and Knowledge Competencies of Teacher Scientific Performance in Batu City Middle Schools

Eko Susetyarini*[1], Ainur Rofieq[1], Roimil Latifa[1], Supiana Dian Nurtjahyani[2], Endrik Nurrohman[1]

[1] Biology Education, Faculty of Teacher Training and Education, University of Muhammadiyah Malang, Indonesia.
[2] Biology Education, Faculty of Teacher Training and Education, Ronggolawe University Tuban, Indonesia.

Abstract: One of the efforts that teachers can undertake to strengthen their professionalism as educators is writing scientific papers and teaching materials. This study aims to analyze knowledge and scientific performance competency in designing and carrying out Classroom Action Research of the teachers in SMP Muhammadiyah 8, Batu City. This study was descriptive study. This study was conducted from July to November 2022. The population and samples of this study were the teachers of Batu City Middle Schools. The procedures of this study encompassed preparation and research implementation. The number of respondents was 30 teachers. Interviews and questionnaires were used as the data collection procedures of this study. The knowledge aspects studied from the teacher's scientific performance competence were formulating appropriate research problems, developing a literature study framework, compiling a conceptual framework, and analyzing research results data. The data analysis technique used in this study was a descriptive-analytic by describing the findings of the study. The results of this study indicate that: that experience in the form of undergraduate education background is higher (66.76%) than master (33.38%); being a teacher for less than 15 years or less (33.00%), over 15 years is 67.00%; experience doing research is 83.00% and performance competency knowledge in the field of scientific work of Batu City Middle School teachers is in the sufficient and good categories. This study recommends that correlation analysis (correlation regression) is required between the professionalism aspect, particularly in terms of teacher scientific field performance, and assistance is needed to improve teachers' competencies thru collaborative academic activities between lecturers and teachers in schools; one of the activities is thru a Lecturer Partnership Program.

Keywords: Competency; Experience; Knowledge; Scientific performance; Teachers

Introduction

The ability to communicate effectively, having a strong work ethic and commitment to the profession, and possessing a creative and productive spirit are all prerequisites for being a professional teacher (Kunandar, 2011). A professional teacher must be able to improve the quality of pedagogical competence, personality, and social and professional competence (Jana et al., 2018). Teachers must be able to plan, carry out, and compile scientific work in the form of research results or scientific ideas in the field of formal education in order to engage in continuous professional development. Research reports, scientific papers, popular scientific writings, scientific articles, textbooks, modules or dictates, books, and other works are all examples of scientific writing (DBPMP, 2012). One of the efforts undertaken by teachers to strengthen their professionalism as educator is writing scientific papers (Izazi, 2009). In addition to the interests of work administration, this serves as a way of sharing ideas in an attempt to improve professionalism and pedagogical skill. It is also closely related to students and fellow teachers (Jailani, 2014).

How to Cite:

Susetyarini, E., Rofieq, A., Latifa, R., Nurtjahyani, S. D., & Nurrohman, E. (2023). Analysis of Experience and Knowledge Competencies of Teacher Scientific Performance in Batu City Middle Schools. *Jurnal Penelitian Pendidikan IPA*, *9*(10), 9006–9012. https://doi.org/10.29303/jppipa.v9i10.2983

Continuous professional development for professional teachers must be improved; yet, in the implementation, the teachers encounter various problems in writing scientific papers. One of the issues is the teacher's lack of writing motivation (Sodiq et al., 2013). Lack of writing motivation must be addressed immediately in order to improve educational quality. Lack of teachers' motivation in writing can be seen from several indicators of weakness, including: the first writing teaching materials, furthermore carrying out education administration, and writing scientific papers or other articles (Anugraheni, 2021). Another issue is that many teachers in schools "stutter" and struggle when asked to create their teaching materials, and more use teaching materials created by others or manufactured in factories in the learning activities they conduct (Hamid, 2011).

Several published research results have revealed teachers' shortcomings in planning, conducting, and compiling scientific research results, including (Zetriuslita et al., 2021) the first, most teachers have difficulty in developing theory review in accordance with the existing problems; the second, teachers do not understand in choosing research methods that are in accordance with PTK (Classroom Action Research); and in general, teachers experience difficulties in developing the results of research and discussion. 52,63% of teachers encounter difficulties in writing scientific articles and 54,39% of the teachers get difficulties in publishing their scientific articles (Anugraheni, 2021). There are 67% of the teachers who have obstacles in writing scientific papers type diktat modules, 58% of teachers have problems writing textbooks, 56% of teachers have problems writing scientific articles and 50% of teachers have problems writing popular scientific writings (Sodiq et al., 2013).

Information collection (survey) about the knowledge and competence of teachers in writing and realizing a scientific paper in schools of Batu City is important to do. This is intended so that problems do not occur in the field or it can minimize the view that "not a few teachers as educators who still have difficulty in compiling and realizing a scientific paper". Departing from the above explanation, it is important to conduct a study that aims to identify the teachers' experience and knowledge of scientific performance competencies, including the first experience: educational background, length of time working as a teacher, and conducting classroom action research; he second is scientific performance competency knowledge: formulating appropriate research problems, developing a literature study framework, compiling a conceptual framework, and analyzing research data of Middle School teachers in planning and generating scientific papers.

Method

This study aimed at analyzing the teachers' experience and knowledge of scientific performance competence (Classroom Action Research) at Middle Schools (SMP) in Batu City. This study was a descriptive study. This study would describe the result data of research findings. This study was carried out from July to November 2022. This study was conducted at Middle Schools of Batu City. The sampling technique used in this study was random sampling. Middle School teachers of Batu city were used as the population of this study. Samples of this study were the Middle School teachers of Batu City.

The procedures of this study comprised of, the first formulating and compiling the instrument of data collection for this study, in which it was in the form of a list of questions for the interview and questionnaires; the second is research implementation encompassed data collection with research data collection procedures using: Interview, it was conducted by sampling at Muhammadiyah schools which organized the national seminars for teachers. Questionnaires, it contained statements and questions related to the teachers' experiences and knowledge about scientific work. The questionnaires were distributed to each teacher as the samples of study.

The interview questions and questionnaires contained discussions about a brief review of the teaching profession as an educator, the importance of teacher knowledge about scientific publications, the obligations of professional teachers, scientific work and its benefits for teachers as educators, benefits of compiling scientific work for teachers, and different types of scientific work that teachers could compose.

The aspects of experience and knowledge examined from teacher competence were: the first is experience: educational background, length of time working as a teacher, and conducting classroom action research; the second is knowledge which contain about formulating appropriate research problems, developing a literature study framework, c) compiling a conceptual framework, and d) analyzing research data. Research data analysis techniques were descriptive qualitative and quantitative by describing the findings of the research data.

Results and Discussion

Results of an Interview about the Scientific Work Competence of Muhammadiyah Middle School Teachers in Batu City

This study is conducted in accordance with the planned schedule, the findings of interviews with the principals and teachers at middle schools in Batu City are elucidated as the following: Teachers in

Muhammadiyah Middle Schools (*SMPM)* of Batu City recognize and are familiar the scientific papers form, in which it is dominated with a Classroom Action Research type. For the teachers, scientific papers are useful administratively; for Civil Servant Teachers, scientific papers are one of the requirements for career advancement; whereas for the foundation teachers, it is a method of increasing teacher innovative work (can be used for competitions representing institutions), furthermore the teachers in Middle Schools of Batu have implemented Classroom Action Research activities; however, still tend to be "less productive" in compiling scientific work in the form of articles/journals, since the claim required for teachers is a class action research report not an article.

Additional information from the principals is that there are teachers who are not finished completing their Classroom Action Research reports; most of them are only getting the research data and do not discuss the results of action research; one of the inhibiting factors is due to other academic activities that must be carried out. Institutions for teachers make regular efforts to improve and rectify the quality by supervising each semester.

Special mark is required or "reward" for the teachers who are involved or even teachers who are composing scientific papers are differentiated with the ordinary teachers. The institution adheres to government regulations in order to start teacher activities with the ministry's *"best practice"* program, which can be followed by Principals, Teachers, and others by adhering to the *PMM* (Independence Teaching Platform) policy.

The interview results with the principals obtain the information needs by the school parties based on the current situation and condition, namely: Improving the competence of teachers, one of which is by following and including or involving teachers in collaborative research programs with universities. Improving scientific work performance as a form of professional responsibility.

Teacher Knowledge and Competence

The study's teacher response percentage is 63.33%, with 19 female respondents and 36.77 % is male respondents with a total of 11 respondents. Undergraduate education level gets a percentage of 66.77% with 19 respondents and for the master level is 33.33% with 11 respondents. The percentage of teachers with a doctorate degree is 0 %, or 0 respondents.

The percentage of time spent as a teacher in less than 3 years is 13.00% or 3 respondents; there are 13.00% or 4 respondents who have time spent as a teacher for 3 to 6 years; during 7 to 10 years, there are 7.00% or 2 respondents; 3.00% or 1 respondent in 11 to 14 years; and there are 67.00% or 20 respondents in a period of more

than 15 years. The percentage of teachers who are respondents with experience having done CAR (Classroom Action Research) while being teachers is 83.33% or 25 respondents, while the percentage with experience who has never done CAR while being teachers is 16.77% or 5 respondents.

Formulating Research Problems

Figure 1 depicts the findings of a study on teacher competence in formulating research problems.
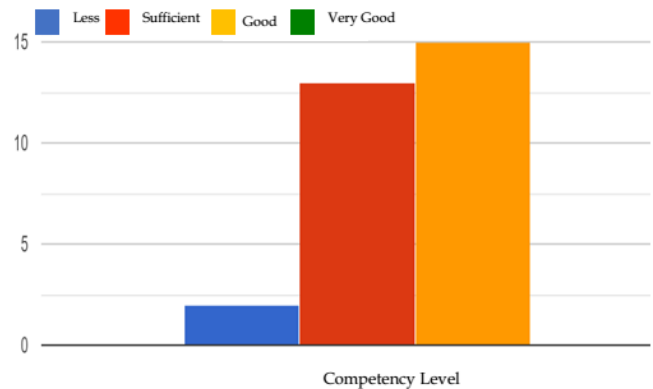

Figure 1. Teacher competency results on the aspect of discovering and formulating research problems

The number of teachers who are respondents with a level of competence in finding problems correctly is categorized as good as many as 15 respondents. The number of teachers who are respondents with a competency level in finding problems correctly is categorized as sufficient by 13 respondents, while the number of teachers who are respondents with a competency level in finding problems correctly is categorized as lacking by 2 respondents. According to these results, the teachers can determine the problems that will be raised in the study properly. In this case, the teachers can read and reflect the problems that occur in the class during the learning processes, in which it will be the emphasis or the repair focus; moreover, those will be put in the scientific writing (Figure 1).

Lack of scientific writing training and knowledge about CAR are factors that can influence the teacher's lack of understanding in finding the right problems. According to the results of interviews and questionnaires administered to 30 teachers who are respondents, a total of 23 respondents participate in the CAR activities for 1-3 times while teaching, 2 respondents participate in CAR activities for 4-7 times, and 5 respondents have never participated in CAR activities. To improve professional teacher competence, introduction, training, and CAR activities must be introduced to a teacher from the beginning. The CAR is important for teachers to overcome difficulties that arise during the learning process at school.

The CAR does not leave the main task of a teacher because its implementation is carried out during the learning process (Mujiwati, 2017). The CAR is expected to foster teacher collaboration and innovation in order to produce professional teachers. According to Azizah (2021), the CAR is one of the scientific activity forms, which covers up the way of thinking, objective, rational, systematic based on facts to find, prove, develop, and evaluate continuously which is an important activity for teachers to improve professionalism (quality and quantity).

Developing Literature Study Framework

There are 13 teachers who have demonstrated competence in developing the framework/systematics of literature study into a good research literature review. The number of teachers with competency levels in developing the framework/systematics of literature study into a research literature review is categorized as sufficient for 11 respondents, while the number of teachers with competency levels in developing the framework/systematics of literature study into a research literature review is categorized as less for 6 respondents (Figure 2).

The activity of writing scientific papers in the teacher's environment is still minimal, a writing culture has not yet been built, and knowledge and experience in terms of publications are all factors that influence the teacher's lack of understanding in developing the framework/systematics of literature study into a literature review. This is supported by data from teachers who perform scientific writing activities while still being teachers. According to Ritonga et al. (2018) competent teachers are those who can carry out professional activities in accordance with the elements of teacher professionalism on an ongoing basis.
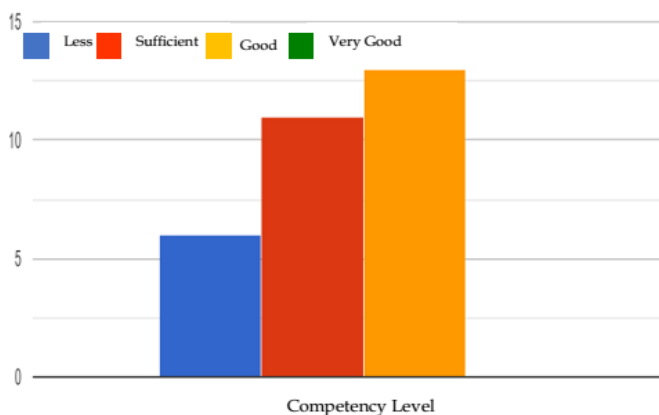
Figure 2. Teacher competency results on the aspect of developing a literature study framework

According to Satyarini et al. (2015), there are three elements of a teacher's professional development,

including: 1) self-development, 2) scientific publication, and 3) innovative works. A teacher's habit of writing scientifically is less of an impediment to compiling written works. According to Budhyani et al. (2021), writing activities can explore thoughts and feelings about objects, choose topics to write about so that readers can easily understand what they are reading, and not only bring forth to thoughts and feelings but also express ideas, knowledge, and experience through written language. The ability to write corresponds to the teacher's ability to carry out literacy activities.

Compiling Conceptual Framework

There are 13 respondents who are categorized as god with the competency level in compiling conceptual framework. The number of teachers who becomes respondents with competency level in compiling conceptual framework is 11 respondents, in which it is in a sufficient category. Meanwhile, the number of teachers who are respondents with a level of competency in compiling a conceptual framework is categorized as lacking by 6 respondents (Figure 3).
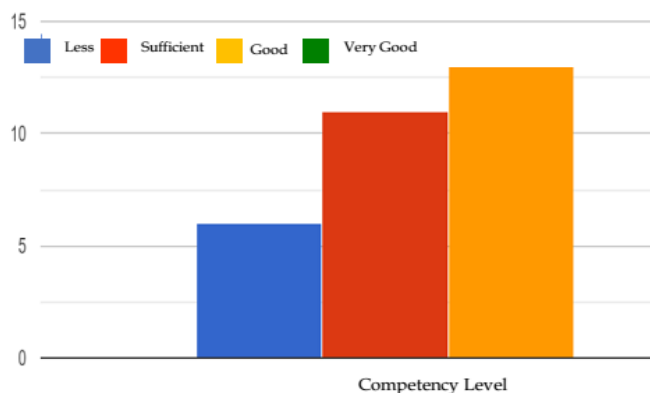
Figure 3. Teacher competency results on the aspect of developing a conceptual framework

The conceptual framework is compiled based on the theory that leads to hypotheses, of which hypotheses are generated by the researchers to explain theoretically the relation between the variables studied (Sutoyo, 2020). Another statement claims that conceptual framework consists of theoretical explanation used to diagnose a problem or issue; thus, it can be used as an instruction for using variables and indicators of research instruments to be used (Slameto, 2015).

The activity in compiling conceptual framework can improve the teacher's competencies in understanding and diagnosing the problems raised in the research. The diagnosis carried out by the teachers will produce follow-up in solving research problems conducted. Teachers as the researchers have to be able to think critically and being innovative in diagnosing the problems so that a new concept can be produced as a

step towards solving problems in accordance with the actual conditions (experienced by the teacher) in the classroom. Based on Ridwan et al. (2021), a researcher should be able to comprehend and master logical scientific theories as a basic argumentation in compiling conceptual framework to produce hypotheses. Scientific thoughts performed by the teachers as a researcher indicate the teachers' competency level in the term of pedagogical competencies and professionalism (Hatta, 2018).

Analyzing Research Results Data

There are as many as 11 teachers who are respondents with competency levels in conducting standardization tests (validity and reliability tests) of data collection instruments. The number of teachers with competency levels in conducting standardization tests (validity and reliability tests) of data collection instruments is categorized as sufficient by 13 respondents, while the number of teachers with competency levels in conducting standardized tests of data collection instruments is categorized as lacking by 6 respondents (Figure 4).
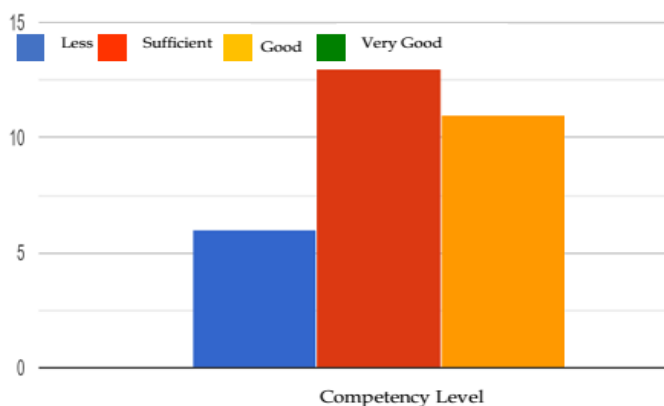

Figure 4. Teacher competency results on the aspect of analyzing research results data

Based on the above data, there are factors which affects the teacher's lack of understanding in carrying out standardization tests for data collection instruments, the results of the interviews are the teacher's motivation or reasons for studying (participating in workshops/seminar activities) and conducting CAR, including: 1) promotions, 2) requirements for occupying certain positions, 3) learning management, 4) learning innovations, and 5) collaboration in learning. According to those reasons, there are reasons that cause the teacher not to seriously study and implement CAR. This is in line with a statement postulated by Supriyanto (2017), the CAR plays a crucial role in both internal professional development and future career development. The teachers conduct a CAR to develop their careers and promotions; hence, the main goal of CAR activities is to

make a professional teacher hampered. A professional teacher is a good reader to improve comprehensive insight. Teachers in today's modern era must be well-versed in a variety of learning resources and have easy access to them. Teachers must have ideals, a strong will, and goals to constantly explore science and technology in order to be ideal role models for future generations of education.

The number of teachers who are respondents with a level of competence in determining and conducting data analysis is categorized as good as many as 12 respondents. The number of teachers who are respondents with competency levels in determining and conducting data analysis is categorized as sufficient by 13 respondents, while the number of teachers who are respondents with competency levels in determining and conducting data analysis are categorized as lacking by 5 respondents (Figure 6).
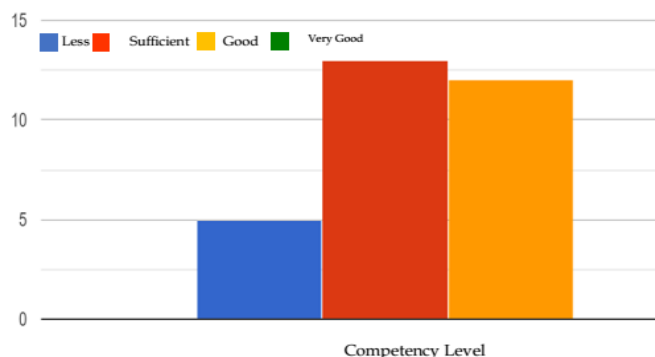

Figure 5. Teacher competency results on the aspect of determining and performing data analysis

Data analysis activities in CAR writing are important as a determinant of the success of the CAR that has been carried out. According to Helsa (2021), data analysis is needed to see the results of research by summarizing in general the data that has been obtained. Data analysis that is done correctly will provide an objective picture of the condition or situation under study so that the teacher as a researcher can assume that the actions taken can influence the steps to solving the problem or not. Imprecise data analysis will affect research results that become less meaningful.

Writing scientific papers of CAR conducted by the teachers can improve the teachers' competencies. This is in line with the statement of Sukanti (2014), the CAR aims to rectify and improve teacher professional services in providing action in the learning process that can be seen and reflected from the class situation that occurs and is set forth in a scientific paper. The Classroom Action Research is conducted to improve and rectify continuous learning activities that become one with the implementation of the professional mission of education by teachers in accordance with Law Number 14 of 2005

concerning teachers and lecturers article 1 paragraph 10, which states that competence is a set of knowledge, skills, and behaviors that must be owned, internalized, and mastered by the teacher or lecturers in carrying out professional duties (Ibda, 2017).

Professional teachers' quality is demonstrated by five attitudes: 1) a desire to always display behavior that is close to ideal standards, 2) enhancing and maintaining a professional image, 3) developing professionals who can increase and improve the quality of knowledge and skills, 4) improving quality and aspirations ideals in the profession, and 5) pride in the profession carried out (Sagala, 2009). A professional teacher must have several skills, including mastering the characteristics of students in depth with a variety of different characters and approaches, mastering the field of knowledge or sources in terms of disciplinary content and pedagogical content, mastering educational approaches, and continuously developing professionalism (Caswita, 2020). Writing a scientific paper based on the results of CAR is one form of continuous professional development that teachers engage in (Noorjannah, 2014).

Important stages or systematics in writing scientific papers according to Brotowidjoyo (2022), Turabian (1996), and Arifin (2004) are, 1) identifying the appropriate problem, 2) formulating research problems, 3) gathering background information, 4) developing research objectives, and 5) developing research scope 6) compiling framework/systematics of literature review, 7) Finding relevant library sources in order to create a framework/systematics of literature study, 8) Incorporating a framework/systematics of literature study into a research literature review; 9) Techniques for quoting or citing research literature sources; 10) Compiling a conceptual framework, 11) Explaining procedures and stages or research cycles, 12) Determining the research population, 13) Determining the sampling technique, 14) Determining the types of research variables, 15) Defining research variables operationally, 16) Determining data collection methods, 17) Compiling data collection instruments, 18) Performing standardization tests (validity and reliability tests) data collection instruments, 19) Determining and performing data analysis, 20) Performing or presenting research data, 21) Analyzing research data, 22) Interpreting the results of data analysis, 23) Preparing discussions, 24) Drawing conclusions, 25) Preparing recommendations or suggestions, 26) Compiling bibliography/references, and 27) Compiling attachments.

The understanding of the teacher in writing scientific papers using appropriate stages can improve the teacher's competencies (Hasan et al., 2021). The teacher competencies determine the quality of graduates of an education. Low teacher competencies indicate that learning is not working effectively; as a result, students have difficulty receiving and understanding the learning provided by the teacher. A high cognitive level indicates high teacher competence, which means the teacher can think abstractly, imaginatively, creatively, and democratically, allowing him to be flexible in carrying out learning and establish good relationships with friends or students (Caswita, 2020).

Conclusion

Conclusion of this study are: that experience in the form of undergraduate education background is higher (66.77%) than masters (33.33%); being a teacher for less than 15 years or less (33.00%), over than 15 years is 67.00%; experience doing research is 83.00%; performance competency knowledge in the field of scientific work (Classroom Action Research) of Batu City Middle School teachers is in the sufficient and good categories. Recommendation from the result of this study is that correlation analysis (correlation regression) is required between the professionalism aspect, particularly in terms of teacher scientific field performance, and assistance is needed to improve teachers' competencies thru collaborative academic activities between lecturers and teachers in schools; one of the activities is thru a Lecturer Partnership Program.

Author Contributions
E. Susetyarini: Data analysis; Writing-original draft; Writing - review and editing. A. Rofieq: Writing-original draft; Writing. R. Latifa: Writing-original draft; Writing. S. Dian Nurtjahyani: Writing - review and editing. E. Nurrohman: Writing - original draf, review and editing.

Conflicts of Interest
The authors declare that there is no conflict of interest regarding the publication of this paper.

References

Anugraheni, I. (2021). Faktor-faktor Kesulitan Guru Sekolah Dasar dalam Penulisan Karya Ilmiah.

JP2SD (Jurnal Pemikiran Dan Pengembangan Sekolah Dasar), *9*(1), 59–65. https://doi.org/10.22219/jp2sd.v9i1.12457

Arifin, E. Z. (2004). *Dasar-Dasar Penulisan Karangan Ilmiah*. Grasindo.

Azizah, A. (2021). Pentingnya Penelitian Tindakan Kelas Bagi Guru dalam Pembelajaran. *Auladuna: Jurnal Prodi Pendidikan Guru Madrasah Ibtidaiyah*, *3*(1), 15–22. https://doi.org/10.36835/au.v3i1.475

Brotowidjoyo, M. D. (2022). *Penulisan Karangan Ilmiah* (E. Ke-2) (ed.)). Akademika Pressindo.

Budhyani, I. D. A. M., & Angendari, M. D. (2021). Kesulitan dalam Menulis Karya Ilmiah. *Mimbar Ilmu*, *26*(3), 400. https://doi.org/10.23887/mi.v26i3.40678

Caswita. (2020). Forum Gumeulis: Upaya Peningkatan Kompetensi Guru dalam Menulis Karya Ilmiah di Kota Tasikmalaya. *Andragogi: Jurnal Diklat Teknis Pendidikan Dan Keagamaan*, *8*(1), 418–429. https://doi.org/10.36052/andragogi.v8i1.122

Hamid, M. S. (2011). *Metode Edutainment: Menjadikan Siswa Kreatif dan Nyaman di Kelas*. Diva Press.

Hasan, & Rahmani, D. R. (2021). Pentingnya Publikasi Ilmiah Bagi Guru. *Publishing Letters*, *1*(1), 16–19. https://doi.org/10.48078/publetters.v1i1.3

Hatta, M. (2018). *Empat Kompetensi Untuk Membangun Profesionalisme Guru*. Nizamia Learning Center.

Helsa, Y. (2021). *Penelitian Tindakan Kelas Bagi Peneliti Pemula dan Guru*. Eureka Media Aksara.

Ibda, H. (2017). Peningkatan Kompetensi professional Guru SD/MI Melalui Menulis di Media. *Jurnal Tarbawi*, *14*(1), 45–62. https://doi.org/10.34001/tarbawi.v14i1.610

Izazi, U. C. (2009). *Karya Tulis Ilmiah Sebagai Salah Satu Karya Pengembangan Profesi Guru*. Retrieved from https://rb.gy/ckjgv6

Jailani, M. S. (2014). Guru Profesional dan Tantangan Dunia Pendidikan. *Al-Ta Lim Journal*, *21*(1), 1–9. https://doi.org/10.15548/jt.v21i1.66

Jana, P., & Pamungkas, B. (2018). Pelatihan penelitian tindakan kelas bagi guru SD Negeri Guwosari. *Abdimas Dewantara*, *1*(1), 39–46. https://doi.org/10.34001/.v14i1.610

Kunandar, G. P. (2011). *Implementasi Kurikulum Tingkat Satuan Pendidikan (KTSP*. Rajawali Press.

Mujiwati, E. S. (2017). Pelatihan Penulisan Karya Ilmiah untuk Guru Sekolah Dasar pada Anggota Gugus 1 Kecamatan Ringinrejo Kabupaten Kediri. *Jurnal Pengabdian Nusantara*, *1*(1), 53–68. https://doi.org/10.29407/ja.v1i1.11729

Noorjannah, L. (2014). Pengembangan Profesionalisme Guru Melalui Penulisan Karya Tulis Ilmiah Bagi Guru Profesional di SMA Negeri 1 Kauman Kabupaten Tulungagung. *Jurnal Humanity*, *10*(1),

97–114. Retrieved from https://ejournal.umm.ac.id/index.php/humanity/article/view/2459

Ridwan, & Bangsawan, I. (2021). *Konsep Metodologi Penelitian Bagi Pemula*. Anugrah Pratama Press.

Ritonga, R., & Iskandar, R. (2018). Penulisan Karya Tulis Ilmiah Bagi Guru Sekolah Dasar di Karawang. *Jurnal Pengabdian Masyarakat (JPM-IKP)*, *1*(01), 31–38. https://doi.org/10.31326/jmp-ikp.v1i01.75

Sagala, H. S. (2009). *Kemampuan Profesional Guru dan Tenaga Kependidikan*. Alfabeta.

Satyarini, M. D., Widiastudi, E. H., & Suharso, Y. (2015). Pengembangan model pelatihan publikasi ilmiah berbasis Permeneg PAN dan RB. no. 16 tahun 2009 pada guru IPS Kota Semarang. *Prosiding Seminar Nasional*, *16*, 490–508. Retrieved from https://eprints.uny.ac.id/21939/1/45 Marhaeni Dwi Satyarini, Eko Heri Widiastudi, & Y. Suharso.pdf

Slameto, S. (2015). Penyusunan Proposal Penelitian Tindakan Kelas. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *5*(2), 60. https://doi.org/10.24246/j.scholaria.2015.v5.i2.p60-69

Sodiq, I., Suryadi, A., & Ahmad, T. A. (2013). Program Guru Menulis: Upaya Peningkatan Kompetensi Profesional Guru Sejarah Dalam Penulisan Karya Ilmiah Di Kabupaten Semarang. In *Kumpulan Ringkasan Hasil Pengabdian Kepada Masyarakat 2013, Pengabdian Kepada Masyarakat Sumber Dana DIPA PNBP Unnes Tahun 2013*. Universitas Negeri Semarang.

Sukanti, S. (2014). Meningkatkan Kompetensi Guru Melalui Pelaksanaan Penelitian Tindakan Kelas. *Jurnal Pendidikan Akuntansi Indonesia*, *6*(1), 1–11. https://doi.org/10.21831/jpai.v6i1.1786

Supriyanto, A. (2017). Peningkatan Kemampuan Guru dalam Penulisan Karya Ilmiah Melalui Pelatihan Penelitian Tindakan Kelas. *Jurnal ABDIMAS PEDAGOGI*, *1*(1), 1–7. Retrieved from https://journal2.um.ac.id/index.php/pedagogi/article/view/1944

Sutoyo. (2020). *Teknik Penyusunan Penelitian Tindakan Kelas (PTK)*. UNISRI PRESS.

Turabian, K. L. (1996). *A Manual for Wrting of Term Papers, Theses, and Disertation* (Ed. (ed.)). The University of Chicago Press.

Zetriuslita, Z., & Ariawan, R. (2021). Analisis Permasalahan Guru Dalam Menghasilkan Karya Tulis Ilmiah Penelitian Tindakan Kelas. *Community Education Engagement Journal*, *3*(1), 17–29. https://doi.org/10.25299/ceej.v3i01.7967