The Musyawarah Guru Mata Pelajaran Forum and Its Roles in Improving the Professionalism of High School English Teachers

AMBO DALLE¹* AND DARMAWATI²

Abstract

This study aimed to examine the roles of The Musyawarah Guru Mata Pelajaran (MGMP) in improving the professionalism of high school English teachers in South Sulawesi, Indonesia. The MGMP Forum has been established and operated in nearly every district in South Sulawesi. It was to improve the quality of education in schools, and a means of fostering teacher professionalism is frequently insufficient. This study used a generic qualitative approach. It was selected based on the objectives, which was a description of the reactions of each participant and administrator to the English MGMP Forum with a focus on their knowledge and abilities regarding the theoretical and philosophical foundations of English subjects after participating in the program. According to the findings of our research, the MGMP of English instructors in Parepare City, South Sulawesi, has been able to take positive action. It might be witnessed in at least three ways: boosting the efficacy of English teacher learning, their creativity and talents, and their knowledge and understanding.

Keywords

creativity, English teacher, professionalism, skill, teaching

Article History

Received 20 July 2022 Accepted 10 December 2022

How to Cite

Dalle, A., & Darmawati. (2022). The *musyawarah guru mata pelajaran* forum and its roles in improving the professionalism of high school English teachers. *Indonesian Research Journal in Education* |*IRJE*|, 6(2), 341– 351.<u>https://doi.org/10.22437</u> /irje.v6i2.20636

^{*1} Lecturer, Institut Agama Islam Negeri Parepare, Indonesia; Corresponding author: <u>hambodalle@iainpare.ac.id</u> ² Associate Professor, Institut Agama Islam Negeri Parepare, Indonesia

Introduction

The development of human resources for educators, particularly the professional development of teachers, is an endeavor to equip teachers with a variety of perspectives, abilities, and confidence to fulfill their duties and responsibilities as professional officers (Ertmer & Ottenbreit-Leftwich, 2010; Little, 1993; Richards et al., 2005; Van Driel et al., 2001). The development or advancement of teachers' professional skills must be based on their actual requirements or challenges to be beneficial. The profession of teaching is held to a high standard by society. Teachers must continue to grow, sharpen their insights, and seek the most effective teaching strategies to equip their students with keen vision and knowledge, to ensure a bright future for students (Hargreaves, 2003; Sahlberg, 2010).

The Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers Article 20 paragraph (b) mandates that to carry out their professional duties, teachers are obliged to improve and develop academic qualifications and competencies on an ongoing basis in line with the development of science, technology, and the arts. The statement above basically requires teachers to have: (i) a minimum academic qualification of S1 or D-IV; (ii) competencies as learning agents, namely pedagogic, personality, social, and professional competencies; and (iii) teacher certificates (RI, 2019). Based on the Minister of National Education of the Republic of Indonesia's Regulation No. 16 of 2007 on the standard of academic qualifications and teacher competency, each teacher is supposed to develop professionalism, i.e., their pedagogical, personality, social, and professional abilities. Teachers with this ability are expected to effectively organize and implement learning, serve as role models for students, and improve their professionalism (Habibi et al., 2019).

In this regard, this law is expected will offer teachers the ability to continuously develop their skills through training, research, scientific paper writing, and other professional activities. The Musyawarah Guru Mata Pelajaran (MGMP) is used as a gathering place for classroom teachers and teachers of similar subjects. It is possible to conduct this activity there (Husna, 2016; Nurlaeli & Saryono, 2018). Thus, the socio-cultural philosophy of education in Indonesia has positioned the teacher's function and role in such a way that the teacher's role in Indonesia is frequently viewed as having dual or even many functions. Teachers are required not only as science educators who must alter scientific values but also as moral guards for their students. Even instructors are considered the second most important person in the global education process behind the parents (Saragih & Dewi, 2018). Furthermore, there are no instructions that can be used as a reference for teachers and MGMP administrators when carrying out work group activities or work deliberation and intensive mentoring programs conducted by instructors for teachers as a follow-up to the implementation of MGMP activities. With the MGMP's more organized teacher activities, it is planned that the equivalent of semester credit units for instructors who will continue to the graduate level or the giving of credit points for teachers seeking promotions may be determined. On this basis, the execution of the MGMP must be revived so that activities are implemented in a more systematic manner (Hidayat, 2017).

In this regard, the education office of Parepare intends to renew the function of all MGMPs at all levels of education so that the activities conducted may be more targeted and

serve as a vehicle for the development of quality, autonomous, and sustainable teacher professionalism (Anwar, 2011; Muhajirin et al., 2017).

The MGMP forum is one of the media intended to be utilized to nurture and improve teacher professionalism (Subject Teacher Conference). The MGMP Forum is a forum for teachers in one district or city to share information and experiences, identify learning difficulties, discover solutions, and try out and develop new strategies for enhancing the quality of teaching and learning activities (KBM). This forum is one of the most successful ways to promote teacher professionalism within the context of with, from, and for the teachers (Jalal, 2005).

Concerning the role of the teacher meeting forum in MGMP, which is crucial for enhancing teacher competency and performance, the empowerment of MGMP is an urgent concern that must be addressed promptly. Different attempts have been undertaken to improve teacher effectiveness, including numerous instructor training, the improvement of facilities and infrastructure, and the enhancement of MGMP administration. According to the assessment report on the implementation of MGMP activities, many MGMPs have yet to demonstrate significant performance gains (Emaliana, 2019; Sueb et al., 2020; Sujana et al., 2021). In the definite area, the MGMP's performance improvement is highly encouraging, but in most other areas, it remains a cause for worry. Based on this situation, the authors believe that it is essential to examine the role of the MGMP forum concerning to the professional development of teachers, particularly English teachers.

Methodology

Design and participants

The generic qualitative method was used for this study. It was selected based on the desired outcomes, namely a description of each participant's reaction to the English MGMP Forum revitalization program. After completing the program, participants will gain knowledge and abilities related to the theoretical and philosophical underpinnings of English courses. Based on the research type that has been determined above, the variables of this research are key informants and informants. The key informants are the MGMP forum for English teachers and the head of the MGMP, while the informants are high school/vocational high school teachers and the working group of the school principal in South Sulawesi. Especially in this study, there were seven participants consisting of the head of the MGMP and its members. Each participant was interviewed twice and each interview lasted between 30 and 60 minutes.

Data collection and analysis

In this study, interviews and documents were the data collection methods. Interview was done with seven participants of the MGMP forum for English teachers and the head of the MGMP while the documents were related to syllabus, semester plans, and teaching and learning plans. All the transcripts among the 7 participants were analyzed and associated to discover similarities and differences and to organize the important statements among the

participants into themes and to lessen the monotonous data. After we examined the transcripts to find categories or themes, we classified and reduced them into a small manageable set of themes consisting of a brief or few statements, which are significant for our final account. To confirm our explanations, we verified them with our participants.

Additionally, the research data analysis was conducted qualitatively and descriptively, for example, the data obtained were collected and analyzed under the actual situation and situation and the benchmark provisions or regulations and applicable laws, i.e., by gathering in-depth information about the actual conditions and situations. The MGMP is then synced with standards or laws, such as MGMP management and operational standards, to construct the necessary challenges and solutions.

Trustworthiness

Numerous viewpoints have been projected concerning the need of verification or trustworthiness in qualitative research. The terms "credibility," "transferability," dependability," and "conformability" have been suggested in qualitative research to substitute for the terms "internal validity," "external validity," "reliability," and "objectivity". To verify the accuracy of data and interpretation, the data, interpretations, and conclusions were shared with our participants to get their feedback on our interpretations and conclusions.

Findings and Discussion

The Subject Teacher Consultation (MGMP) is a forum or professional forum for subject teachers located in a district/city/sub-district/studio/school cluster. The scope includes subject teachers at MTs/SMP (junior high school) and MA/SMA (senior high school), both public and private, civil servants and non-civil servant teachers, and non-permanent teachers. Its working principle reflects the activities "of, by, and for the teacher" of all schools. On this basis, the MGMP is a non-structural organization that is independent and based on kinship (Nasional, 2010).

The purpose of the MGMP is to encourage teachers in improving their abilities and skills in planning, implementing, and evaluating learning programs to increase their self-confidence as professionals and to identify teachers' abilities and skills in carrying out learning to support efforts to improve and equalize the quality of education. A further objective of the MGMP is to discuss the problems encountered and experienced by teachers in carrying out their daily responsibilities, to find alternative solutions to these problems based on the characteristics of each teacher's subject matter, school conditions, and the surrounding environment, and to assist teachers in acquiring educative technical information related to scientific and technology curricular activities, techniques, and assessment systems in line with the subjects involved (Nasional, 2010).

In this regard, the goal of the MGMP forum is to share knowledge and experiences gained via workshops, symposia, seminars, training, classroom action research, and other professional activities addressed collectively. To make the process of reorienting learning to be effective, teachers must be able to define and construct a school reform agenda with an emphasis on the classroom because of these activities.

Overview of the MGMP forum for high school English teachers

The education paradigm in this age of globalization demands a mindset change based on education. Teachers must be able to plan and administer the curriculum, redirect learning from teaching to learning, and cultivate a positive classroom atmosphere. To increase the quality of educational services, particularly the service of the learning process, instructors must have a more creative and innovative approach to classroom management and learning process implementation.

The MGMP is an association or association for subject teachers in the district or city that facilitates communication, learning, and the exchange of ideas and experiences to enhance teacher performance as practitioners or actors in altering learning orientation in schools. In general, each member of the MGMP is obliged to know and follow the appropriate guidelines.

According to an interview with Martan (interviewed, December 10, 2020), the coordinator of the planning, implementation, program, and development of high school English MGMP in Parepare, there was a high school / MA English MGMP in Parepare, through instructions from the Education Office to the school principal (MKKS), then high school English teachers are required to take part in the English MGMP activities. English Teachers MGMP Forum is a place of professional activity for English subject teachers who have a strategic vision and mission to develop the professionalism of teachers, develop insight and knowledge, innovative activities towards the development of quality education, and provide quality educational services for people. Based on the interview before, the purposes of MGMP are to:

- Develop knowledge and mastery of the material substance of teaching, syllabus, teaching materials, teaching models, maximizing the use of facilities/infrastructure in teaching, and taking advantage of ICT-based learning resources in the development of the profession.
- Develop the quality of teacher professionalism as a key pillar in classroom management.
- Realize effective teaching so students can master the teaching material (mastery learning).
- Discuss the problems faced and experienced in performing everyday tasks and inquiring about alternative solutions in accordance with the conditions of the school, the characteristics of learners, and the environment.
- Facilitate teachers to reach educational technical information relating to the development of science and technology, curriculum activities, methodology, and evaluation systems.
- Share information and experiences through workshops, teacher forums, symposiums, seminars, training, etc.

• Facilitate teachers to obtain technical information relating to class actions research and development professionals for functional improvement and certification of teachers.

The urgency of English teacher professionalism

A teacher is one of the primary aspects that define the quality of schooling. Teachers are at the forefront of human resource development. A teacher is primarily responsible for the execution of education and instruction and plays a crucial role in Islamic religious education implementation and innovation. A teacher is a primary individual in the classroom who leads and directs teaching and students' learning activities. In the view of students, a teacher has power in both the academic and non-academic realms. Even inside society, teachers are individuals who must be copied. The impact of teachers on their students is substantial. In social contact, variables such as imitation, suggestion, identification, and sympathy play a crucial role.

In the hands of the teacher, quality students will be developed academically and in terms of skill, emotional maturity, and moral and spiritual development. Thus, future generations will be generated who are equipped to meet the challenges of their time. To fulfill his professional responsibilities, a teacher must have good credentials, competence, and commitment (Marzuki, 2019). Especially in the period of globalization characterized by the fast advancement of science and technology and the prevalence of moral deterioration, a rise in the quality of instructors, particularly English teachers, is essential.

In the implementation of English language education, the success of English teachers might be evaluated based on the learning process that has been carried out and the conduct of the students (Chamot, 2005; Guilloteaux & Dörnyei, 2008). A professional language teacher is an educator with specialized knowledge and skill in the field of linguistic education, allowing him to carry out his responsibilities, tasks, and functions as an educator to the fullest extent possible. Teachers of foreign languages must be alert and receptive to changes, renewal, and science and technology that continue to evolve based on societal and temporal needs. As competent educators, English teachers should be able to overcome these obstacles so that the information presented to students is constantly appealing and current. Regarding the issue of English teachers' competency and professionalism in carrying out the education and instruction process in educational institutions, they continue to confront issues and criticism from various parties.

The evolution of education requires the professionalism of teachers, for example English teachers, to respond to globalization. Ultimately, Islamic education must be able to compete in the globalized world by emphasizing vision, efficiency, creativity, and critical thinking (Alba et al., 2002; Dearden, 2014). Therefore, all of this necessitates human resources who must be taught and trained to produce quality and resilient individuals. Thus, it can be asserted unequivocally that English educators must pursue their responsibilities, tasks, and professional competencies to their fullest extent to carry out a successful language learning process.

The roles of MGMP in improving the professionalism of high school English teachers

The presence of an organization will be acknowledged if it has effectively fulfilled its function. It then has beneficial repercussions for the organization's members as well as other institutions and society. To enhance the professionalism of high school English teachers, the MGMP has fulfilled the following responsibilities:

Improving the effectiveness of English teachers learning, in this practice, English teachers typically begin by discussing their daily teaching and learning experiences. From this, it was determined that the strategy was less effective and efficient for English acquisition. Some English teachers, for instance, believe that the lecture technique has less impact on the emotive and psychomotor elements of students. Thus, it must be complemented with other methods such as question-and-answer sessions, demonstrations, or the use of multimedia to help the learning process. This exercise will aid English teachers in school-based learning implementation (Interview with Martan, December 07, 2020).

According to English teachers who are members of the MGMP, the national education office-recommended English resources for high school are not broad and in-depth, so, through MGMP, English teachers may debate the material's growth and expansion (Belcher, 2006). Previously, the board separated its members into numerous groups based on the grade level they teach. Furthermore, each group reviewed the content and its growth while still referring to the existing syllabus so that it would not deviate from curricular requirements in the future (Alba et al., 2002).

Evaluation is a method for measuring the consequences of student learning. This English MGMP exercise, besides addressing resources and techniques, it is customarily addressing how to evaluate and begins with assessing the efficiency of each English teacher's use of assessment instruments in the classroom. If some teachers find it hard to evaluate student learning results, then English teachers select the most appropriate method to evaluate students' English proficiency (Interview with Herlina, November 25, 2020). Each MGMP member is also required to create and submit their learning resources, such as a syllabus, yearly program, semester program, teaching implementation plan, and minimal completeness criterion (KKM).

Increasing creativity and skills of English teachers, MGMP has conducted training on the utilization of learning methods or instruments. The training was conducted because English teachers tend to employ boring or less diverse learning approaches. The extent to which it will ultimately affect students' knowledge and comprehension is restricted. The student worksheet created by the English MGMP of SMA in South Sulawesi includes an overview of the curriculum, assignments, assessments, and activities which students must complete. Each group of teachers from class X to English XII is tasked with generating worksheets that correspond to the curriculum or teaching guides. After completion, the LKS teaching materials are produced by the publisher, for instance, the three major printing presses, and then given to students (Interview with Umar, December 4, 2020).

The teachers then create a grid of test and semester questions. Initially, all professors were tasked with creating questions for the question grid development. Following the

collection of all questions, the MGMP administration picked questions judged suitable and correct for the semester test. Before semester tests, each English teacher who is a member of the MGMP is responsible for creating a grid of exam questions (Interview with Kamisna, December 14, 2020).

Alternatively, teachers also discussed English novels (main books, supplementary books, manuals, and reading books). The evolution of the times and the educational curriculum necessitates the creation and modification of instructional materials for students. It is to ensure that the content taught by the English teacher is constantly current. Therefore, on one occasion, MGMP always discusses and reviews English literature (Interview with Fatmawati, December 6, 2020).

Increasing knowledge and insight of English teachers, MGMP generally holds In House Training (IHT) for the socialization of the new curriculum, curriculum development, methods, and others. Mr. Hadi Subhan, as chairman of the English MGMP at senior high school in Parepare, South Sulawesi, which had been carried out during his management regarding the socialization of KBK and KTSP as well as learning tools.

The events include teacher's book reviews and seminars. This kind of activity is carried out in collaboration with the education office, the ministry of religion, or NGOs in the field of education. The aim is to increase the knowledge and insight of English teachers (Interview Hadi Subhan, December 10, 2020). This activity is usually carried out incidentally, for example, in commemoration of national holidays and so on. This activity can identify and solve problems encountered in the teaching and learning process.

The administration of the English MGMP also had a conference to identify the technique of guiding and counseling after examining the challenges in teaching and learning activities. Previously, one of the administrators was selected to serve as conversation leader. The participants then express their ideas and arguments on how a teacher conducts effective counseling. The conversation revealed an alternate path for a teacher to become a counselor with the responsibility of advising and counseling his students regarding the English language (Interview with Subhan scheduled for December 17, 2020).

It is envisaged that all English teachers who are members of the MGMP forum would raise their level of professionalism because of the many events offered by the MGMP because it is a supporter of teachers' proficiency in carrying out their responsibilities. Furthermore, it is strongly influenced by two main factors. They are internal factors, such as interests and talents, and external factors, such as the surrounding environment, facilities, infrastructure, and teacher training. Members of the MGMP have all earned a bachelor's degree in English from a college or university. It demonstrates that English teachers are already considered professionals. There are three types of professional hierarchies for education staff or teachers: professional staff, semi-professional staff, and professional staff. Professional personnel refer to education workers with a bachelor's degree or above with complete power over planning, administering, assessing, and managing education or teaching. Regarding professional instructors, the Law on Teachers and Lecturers no. 14 of 2005 stipulates that they must possess the appropriate academic credentials and educational background for their field of activity. Consequently, the need for teacher professionalism is no longer negotiable, and as one of the professional organizations for English teachers, MGMP plays a crucial part in creating and enhancing the teacher professionalism process.

However, this organization will undoubtedly carry out its mission effectively if all MGMP members who are English instructors unite in their efforts to enhance their performance as English teachers continually.

Conclusions

This research was to analyze the role of MGMP in improving the professionalism of English teachers in high schools in South Sulawesi, Indonesia. Improvements were in the aspects of learning effectiveness, creativity and skills of English teachers, and knowledge and insight into English teaching. According to the findings of our study, the MGMP of English teachers in Parepare, South Sulawesi, had been able to take positive action. It might be witnessed in at least three ways: boosting the efficacy of English teacher learning, their creativity and talents, and their knowledge and understanding.

The research is constrained by the fact that researchers have limited access to the number of teachers who are less involved in MGMP activities. Therefore, future research necessitates that researchers investigate instructors' participation in more depth. The contribution of this research can be viewed from two perspectives: theoretical and practical. Therefore, it is hoped that this research will provide opportunities for the expansion of academic studies and research material related to the role of the English High School MGMP in enhancing the professional competence of teachers. Furthermore. In addition, it is virtually a reference that may be utilized to build future MGMP development programs, regardless of whether they are conducted by the education office, LPMP, P4TK, or other organizations.

Funding

This research received no external funding

Conflicts of Interest

The authors declare no conflict of interest.

Publisher's Note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers.

References

Alba, R., Logan, J., Lutz, A., & Stults, B. (2002). Only English by the third generation? Loss and preservation of the mother tongue among the grandchildren of contemporary immigrants. *Demography*, 39(3), 467–484.

- Anwar, R. (2011). Pengaruh musyawarah guru mata pelajaran (MGMP) terhadap peningkatan profesionalisme dan kinerja mengajar guru sma negeri kota tasikmalaya. *Jurnal Administrasi Pendidikan*, *13*(1).
- Belcher, D. D. (2006). English for specific purposes: Teaching to perceived needs and imagined futures in worlds of work, study, and everyday life. TESOL Quarterly, 40(1), 133–156.
- Chamot, A. U. (2005). Language learning strategy instruction: Current issues and research. Annual Review of Applied Linguistics, 25, 112–130.
- Dearden, J. (2014). English as a medium of instruction-a growing global phenomenon. British Council.
- Emaliana, I. (2019). Pelatihan penulisan karya ilmiah bagi guru MGMP bahasa Inggris SMA/MA se-Malang Raya. *Dinamisia: Jurnal Pengabdian Kepada Masyarakat*, *3*(2), 273– 279.
- Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, 42(3), 255–284.
- Guilloteaux, M. J., & Dörnyei, Z. (2008). Motivating language learners: A classroom-oriented investigation of the effects of motivational strategies on student motivation. TESOL Quarterly, 42(1), 55–77.
- Habibi, B., Hartinah, S., Umam, R., Syazali, M., Lestari, F., Abdurrahman, A., & Jauhariyah,
 D. (2019). Factor determinants of teacher professionalism as development of student learning education at school of SMK PGRI in Tegal City, Indonesia. *Journal of Gifted Education and Creativity*, 6(2), 123-132
- Hargreaves, A. (2003). Teaching in the knowledge society: Education in the age of insecurity. Teachers College Press.
- Hidayat, Y. (2017). Pengaruh Pelaksanaan Kebijakan Musyawarah Guru Mata Pelajaran Bahasa Inggris terhadap Manajemen Pembelajaran dalam Mewujudkan Kinerja Guru. *Jurnal Publik: Jurnal Ilmiah Bidang Ilmu Administrasi Negara*, 11(2), 279–290.
- Husna, F. (2016). Peran musyawarah guru mata pelajaran (MGMP) untuk meningkatkan kompetensi profesional guru PAI: studi kasus MGMP PAI SMP Negeri Kabupaten Kediri. *Didaktika* Religia, 4(2), 205–224.
- Indonesia, p. m. a. r. (2010). U ndang-undang nomor 16 tahun 2010. tentang pengeloaan pendidikan agama pada sekolah.
- Jalal, F. (2005). Teachers' quality improvement in Indonesia: New paradigm and milestones. Jakarta: Departemen Pendidikan Nasional.
- Little, J. W. (1993). Teachers' professional development in a climate of educational reform. Educational Evaluation and Policy Analysis, 15(2), 129–151.
- Marzuki, A. G. (2019). Utilizing recorded English dialogues in teaching English word stress to islamic higher education students in Indonesia. *Jurnal Pendidikan Islam*, *5*(1), 53–64.
- Muhajirin, M., Prihatin, T., & Yusuf, A. (2017). Pengaruh supervisi akademik dan partisipasi guru pada mgmp melalui motivasi kerja terhadap profesionalisme guru SMA/MA. *Educational Management*, 6(2), 170–177.
- Nasional, K. P. (2010). *Pedoman Pengelolaan Pengembangan Keprofesian Berkelanjutan (PKB)*. Jakarta: Kementrian Pendidikan Nasional.

- Nurlaeli, Y., & Saryono, O. (2018). Efektivitas musyawarah guru mata pelajaran (mgmp) dalam meningkatkan kinerja mengajar guru bahasa Inggris. *Indonesian Journal of Education Management & Administration Review*, 2(2), 309–318.
- RI, K. P. N. (2019). Undang-Undang RI No. 14 Tahun 2005 Tentang Guru dan Dosen.
- Richards, J. C., Richards, J. C., & Farrell, T. S. C. (2005). Professional development for language teachers: Strategies for teacher learning. Cambridge University Press.
- Sahlberg, P. (2010). Rethinking accountability in a knowledge society. *Journal of Educational Change*, *11*(1), 45–61.
- Saragih, M., & Dewi, R. S. (2018). Efektifitas musyawarah guru mata pelajaran untuk meningkatkan kompetensi guru bahasa inggris di kota binjai. *Kumpulan Penelitian Dan Pengabdian Dosen, 1*(1).
- Sueb, S., Setiawan, S., & Mustofa, A. (2020). Pengembangan profesi guru anggota mgmp bahasa inggris di bidang penelitian dan publikasi karya ilmiah. *Jurnal Pengabdian Masyarakat Borneo*, 4(1), 43–49.
- Sujana, I. M., Waluyo, U., & Soepriyanti, H. (2021). Pengembangan keprofesian berkelanjutan (pkb) melalui pendampingan penyusunan publikasi ilmiah untuk mgmp bahasa inggris smk kota mataram.
- Darma Diksani: Jurnal Pengabdian Ilmu Pendidikan, Sosial, Dan Humaniora, 1(2), 11–22.
- Van Driel, J. H., Beijaard, D., & Verloop, N. (2001). Professional development and reform in science education: The role of teachers' practical knowledge. *Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching*, 38(2), 137–158.

Biographical Notes

Dr. AMBO DALLE is a lecturer, Institut Agama Islam Negeri Parepare, Indonesia; Corresponding author: <u>hambodalle@iainpare.ac.id</u>

Dr. DARMAWATI is an associate professor, Institut Agama Islam Negeri Parepare, Indonesia