
**INTENSIVE ONLINE TRAINING DURING THE COVID-19 PANDEMIC FOR
INDONESIAN SCIENCE TEACHERS TO WRITE GOOD SCIENTIFIC ARTICLES****Sentot Kusairi, Nurul Hidayat*, Heriyanto, Atsnaita Yasrina**Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Negeri Malang, Jl. Semarang 5,
65145, IndonesiaCorresponding author's email: nurul.hidayat.fmipa@um.ac.id

Abstract

Writing works in the form of scientific articles is one of the skills that teachers must have. Not only for promotion needs, but mainly to contribute to academic society on research results in the realm of teaching. Scientific articles written by teachers will enrich an scientific documentations. Moreover when the topics raised in the scientific article are the actual representations of the conditions of teaching and learning in the classroom or school. If many teachers write their scientific works in the form of articles, the above goals will be maximally achieved. However, the counterproductive situation that is still observed today is that very few teachers submit their articles for publication in national journals or proceedings. It is because the lack of knowledge of how to publish their research work and writing skill, then the training for publication is needed for this gap. Therefore, intensive assistance needs to be done so that the gap can be covered. In this present paper, a description of the implementation of scientific article writing training for secondary school science and physics teachers is reported. The training was conducted online with participating teachers spread across various schools in Indonesia. The online training was held for three days and assistance in writing scientific articles for approximately one month, during the COVID-19 pandemic, until the participants succeeded in collecting the final product in the form of scientific articles.

Keywords: *Scientific Article Writing, Science Teachers Competency, National Training.*

Abstrak

Menulis karya dalam bentuk artikel ilmiah menjadi salah satu kemampuan yang wajib dimiliki oleh para guru. Bukan hanya untuk kebutuhan kenaikan pangkat, tetapi utamanya untuk memberikan sumbangsih pada khalayak akademik tentang hasil penelitian dalam ranah pengajaran. Artikel ilmiah yang ditulis oleh guru menjadi akan memperkaya pustaka yang memadai. Lebih-lebih ketika topik yang diangkat dalam artikel ilmiah tersebut merupakan representasi aktual dari kondisi belajar dan pembelajaran di dalam kelas atau sekolah. Jika banyak guru yang menuliskan karya ilmiahnya dalam bentuk artikel, maka tujuan di atas akan tercapai maksimal. Akan tetapi, situasi kontraproduktif yang masih teramati saat ini adalah bahwa minim sekali jumlah guru yang menerbitkan artikelnya ke jurnal nasional atau prosiding. Ini dikarenakan oleh minimnya pengetahuan para guru tentang bagaimana cara mempublikasikan hasil riset mereka dan skill menulis, sehingga pelatihan diperlukan untuk menutupi celah ini. Oleh karena itu, pendampingan intensif perlu dilakukan supaya celah tersebut dapat tertutupi. Dalam artikel ini, deskripsi keterlaksanaan pelatihan penulisan artikel ilmiah untuk guru-guru IPA dan fisika setingkat sekolah menengah dilaporkan. Pelatihan dilakukan secara daring dengan peserta guru yang tersebar di berbagai sekolah di Indonesia. Pelatihan dilaksanakan selama tiga hari dan pendampingan penulisan artikel ilmiah selama kurang lebih satu bulan, selama pandemi COVID-19, sampai peserta berhasil mengumpulkan produk akhir berupa artikel ilmiah.

Katakunci: *Penulisan Artikel Ilmiah, Kompetensi Guru Sains, Pelatihan Nasional.*

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INTRODUCTION

Many experts have agreed that education is an important pillar for the progress of a nation. Furthermore, a strong nation is initiated from the mastery of fundamental sciences, namely natural science, and more specifically physics. The younger generation certainly cannot not automatically understand the fundamental sciences by themselves. They must be properly taught, trained and educated. It is at this point that the teacher's role is very vital. The best way to continuously improve the quality of learning is to learn from experiences in the classroom and assess the global demands for the expected competencies of graduates (Laudonia et al., 2018; Vogelzang & Admiraal, 2017). Both of these breakthroughs can be maximized through authentic documentation in the form of scientific writing (Chi et al., 2018). This scientific document on learning becomes valuable asset for anyone who wants to contribute to the advancement of the national and

global education. Therefore, the quality and quantity of scientific articles published, especially by school teachers, determines the wealth of scientific knowledge in the field of education (Dihamri et al., 2019).

The real condition that is currently happening is that teachers conduct research in their respective schools, generally in the form of classroom action research. It is mainly because there is no explicit requirements for teacher to conduct experimental research that requires more time to do. However, the reporting was still limited to writing papers and stopped until the need for promotion. This pattern makes the work of teachers to be more valuable and more accessible to wider readers. As the matter of fact, the teachers' published works are very much needed by both students and lecturers, and even by other stakeholders. For example, if teachers transform their classroom action research into scientific articles, students can get real information in the classroom without coming to school. This information is very important for students who will conduct further studies for their thesis. The large number of scientific articles produced by teachers, in proceedings or journals, opens the widest possible access to portraits of learning in schools (Jan, 2017).

The most effective strategy for increasing the number and quality of scientific articles by teachers is through training (Hustarna et al., 2020). Training needs to be designed in such a way that teachers understand the practical side and nature of scientific publications. The targeted output is, of course, a draft scientific article that is ready to be submitted in a proceeding or journal at the national or even international level. This article contains a description of the implementation of scientific article writing training for science teachers (for junior high school teachers) and physics (for high school teachers). However, this year we are facing a very difficult situation due to the COVID-19 pandemic. As can be traced at <https://www.worldometers.info/coronavirus/>, by 29 November 2020, there are 62,661,627 confirmed cases worldwide with total death of 1,459,873 people. In Indonesia alone, the case is still exponentially increasing and is reaching of more than half of million people positively affected by the SARS-CoV-2 virus. Consequently, all the governments in this planet should take serious measures to face this COVID-19 severe crisis, including (1) limiting social gatherings and spending time in crowded places, (2) implementing social and physical distancing, and (3) avoiding close interaction with people who are sick. Therefore, the only possible way to get activities done during this pandemic is to move on from face-to-face meeting to online mode. This transformation is inevitable.

In the last few years, and more specifically in 2020, the video conferencing platforms, for example Zoom, Google Meet, and Cisco Webex, have become tremendously popular for their simple-to-use features. Amongst the various kinds of video conferencing platforms, we decided to use Zoom since many people in Indonesia have been familiar with this. It can be easily downloaded from its official website, <https://zoom.us/>. From this platform, meetings and chat, video webinar, and conference breakout room are possible to set-up. For the security purposes, the *wait room* option can be activated by the host so that only approved meeting participants are allowed to join the video webinar (Peters, 2020). When conducting online meetings, including for training or learning purposes, it should be kept in mind that it is not merely a single activity, but rather encompassing collection of technologies and modalities (Sandars et al., 2020). With that, optimizing the potential of synchronous and asynchronous online activities during the meetings, in our is the training, is very crucial. It includes providing online learning activities and resources (Yavner et al., 2015). In this online training, we have done the online training by taking into consideration the tips from the last two cited articles.

METHODS

The main activities during the online training were coaching the participants in writing scientific articles with independent assignments and intensive consultations. This training was attended by high school physics and science teachers in Indonesia. The video webinars were carried out on 18-20 August 2020. Furthermore, intensive guidance for the preparation of scientific articles was carried out until the participants submitted their final assignments on 15 September 2020. The training materials were divided into three sections, namely (1) Strategies for Getting the Articles Published in Journals, (2) Tips for Literature Management Using Zotero, and (3) Tips for Writing Scientific Articles. The important steps that should be taken were preparation, implementation, and evaluation. The preparation stage was carried out with good coordination by the team. The implementation was carried out in a flowchart that can be seen in Figure 1. It started from 3-day webinars, intensive discussion and individual worksm and finally the participants submitted their manuscripts. The evaluation was carried out by sharing online questionnaires to the participants. In addition, the main requirement for teachers to participate in this training is to have a prepared manuscript. The training participants were limited to only 90 teachers for effectivity perseverance.

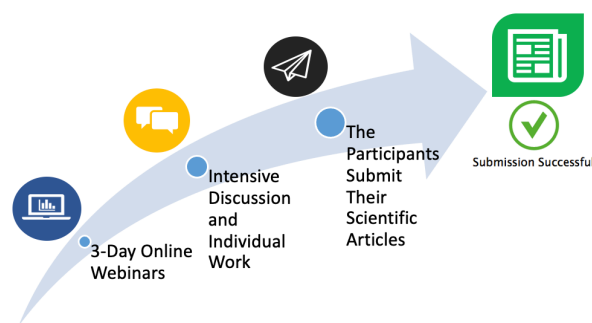


Figure 1. Schematic Diagram of The Online Training During COVID-19 Pandemic.

In more details, as depicted in Figure 1, the implementation started with webinars via Zoom. Each day of the webinars were conducted for 2 hours discussing important topics and interactive discussions. After 2 hours of meeting via Zoom, the participants worked on the tasks given that day and discussed via WhatsApp. After 3 days of completion of the webinar, the participants were given the opportunity for approximately one month to finish writing a scientific article as the outcome that must be achieved by the training participants. During that one month, the participants could consult via WhatsApp or email to the facilitators. At the end of the session, after the participants have submitted their final project, the training evaluation materials must be filled in by participants via Google Form.

RESULTS AND DISCUSSION

Figure 2 shows the distributed poster to attract participants (2a), the group photo samples during the webinar (2b), and the moment of material exposure through Zoom (2c). Poster was shared online via several social media, such as Facebook and WhatsApp groups. During the registration process, many teachers asked the contact person whether it was possible to attend this training while they did not have any draft for publication. Of course, the committee explicitly stated that prospective participants must have a draft of scientific paper to be able to join this workshop. The registration and selection process went very smoothly. The enthusiasm of science teacher to participate in this training was very high, as evidenced by the speed with which the Google Registration Form was filled up even training was very high, as evidenced by the fact that the Google registration form was filled up even within the first hour after the posters were distributed.

On the first day of training, 18 August 2020, 88 participants participated in the training enthusiastically. The participants were coming from various islands in the country, from SMP Negeri 19 Singkawang (Kalimantan Island) to SMA Negeri 4 Bangkalan (Madura Island). Furthermore, a total of 82 and 78 participants followed the webinar through Zoom meeting platform. Even though the number has decreased, the participation remained active both during the Zoom webinars and discussions via WhatsApp group. During the coronavirus disease (COVID-19) pandemic, the use of Zoom is very important at this time because it is very effective in meeting learning or training needs (Scanga et al., 2018). In line with that, the WhatsApp application is also very powerful for online discussions, not only in Indonesia, but also in various parts of the world (Gasaymeh, 2017; Madge et al., 2019).

On the first day, the presentation of tips for successfully publishing in reputable journals was delivered by Dr. Sentot Kusairi, M.Si. In addition to the presentation of the material through power points, the facilitator also distributed his own digital book (see Figure 3a) to all participants. The book was also sent to prospective participants who were not selected as the workshop participants. Another interesting and important topic on the second day was presented by Nurul Hidayat, S.Si., M.Si. on how to do references management using the Zotero software (<https://www.zotero.org/>) and the bonus was the creating Google Scholar account for all trainees. Zotero is a very effective software for managing citations (Ivey & Crum, 2018) and Google Scholar is useful for seeing the track record of scientific publications of scholars (Delgado López-Cózar et al., 2019). Furthermore, the topic on the third day was given by Heriyanto, S.Pd., M.Pd. about the rules of writing scientific articles. On that third day, the participants were also demonstrated how to use Mindmanager (<https://www.mindmanager.com/>) to create an appropriate research flow (see Figure 3c). During the three-day webinar series, the participants also got assignments for each session. The first day and the third day of their assignment were summarized in the final project. Meanwhile, the task on the second day was to create Google Scholar account and use Zotero to manage references and citations, the guidance of which was also made available on EN Science YouTube channel, as shown in Figure 3b. The completion of the tasks was accompanied directly by Atsnaita Yasrina, S.Si., M.Sc. In addition, students and alumni were also actively involved for helping the activities run well.



Figure 2. (a) Poster, (b) Photo Documentation, and (c) Zoom Screenshot during the Online Webinar.

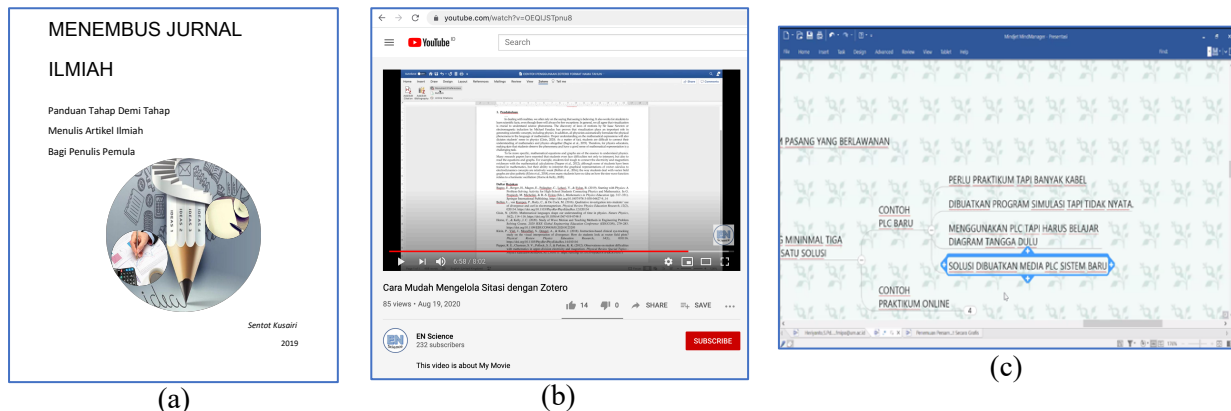


Figure 3. (a) Book Cover of Writing Scientific Articles, (b) One of The YouTube Video for Reference Management Tutorial, and (c) Mindmanager Display.

After the three-day of online training, the participants began to compile their scientific articles according to the provisions set by the committee, starting from the formatting style, content, and to the using of Zotero. Broadly speaking, this mentoring process run smoothly. In addition to discussing through the WhatsApp group, some participants also proactively contacted the relevant facilitators directly to consult their problems. The results of the mentoring had a significant impact in helping teachers to transform their writing into scientific articles, although there were still one or two participants who did not fulfill their final assignments well. The participants who did not fulfill the assignment asked the facilitator for permission with acceptable reasons, such as not allowing the writing of articles because of the urgent demands of school assignments. The participants showed great enthusiasm because many of them were new to scientific publication techniques, including feeling new to Zotero and Google Scholar. The knowledge received during the training is an important asset for the participants to improve their abilities. From our observation, this intensive online training is significantly facilitate Indonesian science teachers to prepare writing scientific manuscripts during thr COVID-19 pandemic.

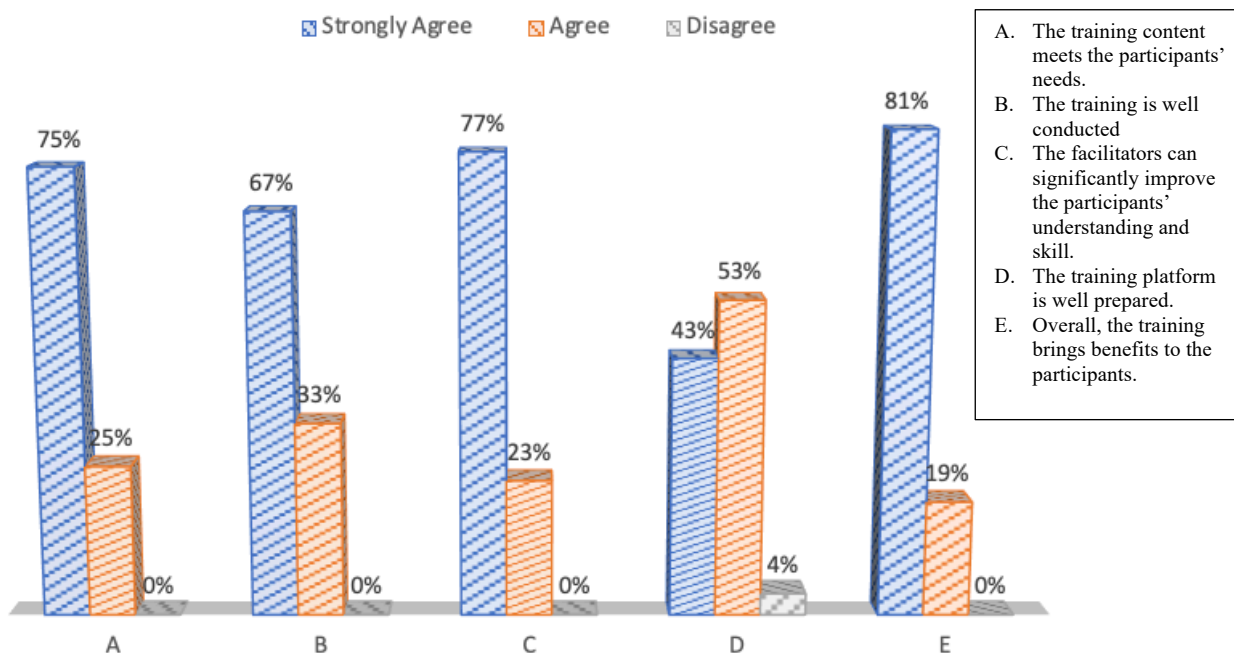


Figure 4. Evaluation Results of Training Implementation.

The online evaluation for the implementation of this training was provided to participants after the deadline for submitting the final project was complete. This evaluation is very crucial for capturing the success of a training (Phillips & Phillips, 2016). The results of the evaluation activities can be seen in Figure 4. There were 83 participants who filled out the evaluation form. Based on Figure 4, it appears that the majority of participants (above 65%) strongly agreed with all given evaluation questions. In fact, it was noted that 81% of participants strongly agreed that this training was beneficial for them, the remaining 9% answered “agree”. The aspect of suitability of the training to the needs of the teachers and the quality of the facilitators received a “strongly agree” response which was almost the same at around 75%. As for the training management, 67% received a response “strongly agree” and 33% “agree”. The lowest “strongly agree” response was on the comfort side of the place. Broadly speaking, the majority of participants were satisfied with the whole series of scientific article writing training events. As the follow-up, the draft articles that have been sent by participants as final assignments are processed to be sent to several national journals that are accredited by SINTA. In addition, during the reviewing process of article in submission to the journal, the participants still have opportunity to consult with the facilitators. Such consultations can be carried out not only until their article is officially published in the targetted journal, but whenever it is needed. This is the facilitator’s commitment to open scientific community networks with science and physics teachers in Indonesia.

CONCLUSION

The intensive national online scientific article writing training for science and physics teachers has been successfully implemented. The training was conducted via Zoom in 3-day webinar series and one month of assistance (via WhatsApp group) for the preparation of the final project. Broadly speaking, the training went smoothly and was in accordance with the initial plan. 88 participants were recorded who attended this training, after being selected from 215 prospective applicants who filled out the Google registration form. The evaluation responses, ranging from the aspect of the suitability of the training to the needs of teachers to the capability of the facilitators, were given by 83 participants with very satisfying results. This intensive online training of writing articles for scientific publications, especially in national journals, is considered very important by teachers who have been doing research so far its documentation is only a report. We do hope that this activity will provide an important contribution to the development of science education in Indonesia.

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