



TRAINING IN WRITING OF SCIENTIFIC ARTICLES BASED ON ITEM ANALYSIS RESEARCH

¹Teguh Hardi Raharjo, ²Marimin, ³Naimatul Azizah

^{1,2,3}Fakultas Ekonomi; Universitas Negeri Semarang

ARTICLE INFO

Article History:

Received September 13,
2021

Accepted June 01, 2022

Available June 30, 2022

Keywords:

Training,
Scientific Articles,
Item Analysis

ABSTRACT

Writing scientific articles is one of the activities a teacher must carry out in the context of Continuous Professional Development and promotion. The purpose of this Community Service activity is to provide training on writing scientific articles based on item analysis research for teachers at Madrasah Tsanawiyah Tarbiyatul Banin. The main priority of the needs of partners in the school is to provide knowledge and skills to teachers in converting the results of item analysis research that teachers have carried out into scientific articles. The agreement between MTs Tarbiyatul Banin partners and the service team is to conduct training in the writing of scientific articles. The training was conducted using a workshop approach consisting of the lecture method to teach teachers about the types of scientific publications for promotion, complete scientific article frameworks, and applicable methods. It improves teacher skills in compiling scientific articles based on item analysis research and assignments and assists in preparing scientific articles worthy of publication in national scientific journals. The results of this community service show that teachers who participate in the training are satisfied and motivated to compile scientific articles.

Penyusunan artikel ilmiah merupakan salah satu kegiatan yang wajib dilakukan oleh seorang guru dalam rangka Pengembangan Keprofesian Berkelanjutan dan untuk kenaikan pangkat. Tujuan kegiatan Pengabdian kepada Masyarakat ini adalah memberikan pelatihan tentang penyusunan artikel ilmiah berbasis penelitian analisis butir soal pada guru di Madrasah Tsanawiyah Tarbiyatul Banin. Prioritas utama dari kebutuhan mitra di sekolah tersebut adalah memberikan pengetahuan dan keterampilan kepada guru dalam mengubah hasil penelitian analisis butir soal yang sudah dilakukan oleh guru ke dalam bentuk artikel ilmiah. Kesepakatan antara mitra MTs Tarbiyatul Banin dan tim pengabdian adalah melakukan pelatihan penyusunan artikel ilmiah. Pelatihan dilakukan menggunakan pendekatan workshop yang terdiri dari metode ceramah untuk memberikan pengetahuan kepada guru mengenai jenis-jenis publikasi ilmiah untuk kenaikan pangkat, kerangka artikel ilmiah secara lengkap, metode aplikatif untuk meningkatkan keterampilan guru dalam menyusun artikel ilmiah berbasis penelitian analisis butir soal, serta penugasan dan pendampingan penyusunan artikel ilmiah yang layak publikasi di jurnal ilmiah nasional. Hasil dari pengabdian masyarakat ini menunjukkan bahwa guru yang mengikuti pelatihan merasa puas dan termotivasi dalam menyusun artikel ilmiah.

Address: Gedung L, Kampus Sekaran, Gunungpati, Semarang,
Indonesia, 50229

Correspondent Address:
Faculty of Economic, Universitas Negeri Semarang
Email: teguh.hardi@mail.unnes.ac.id

INTRODUCTION

Continuous Professional Development (PKB) for teachers is crucial in determining the success of any educational reform and indirectly in people's lives (Rahyasih et al., 2020). It is evidenced by testing the effectiveness of teacher PKB by taking a sample of 8 teachers in every 24 schools. This results in a positive and significant impact on teaching quality, regardless of school level (elementary/ secondary), school location (city/ village), and length of time teachers (Gore et al., 2017).

Through the Regulation of the Minister of State for Administrative Reform and Bureaucratic Reform Number 16 of 2009, the government has determined PKB as one of the elements of activities that teachers must carry out in assessing credit scores for promotion. It is intended to stimulate teachers to continue to carry out PKB (Daryanto & Tasriyal, 2015). One of the activities teachers must do in PKB activities is to conduct scientific publications on research results or innovative ideas in the field of education, which are packaged in scientific articles. By writing scientific articles, teachers can continue to develop their ability to understand, synthesize, evaluate, and create conditions to improve professionalism (Gilinsky, Forbes, & Reed, 2016).

The teacher's ability to express research results in a scientific article is the primary indicator of teacher professionalism in the present and the future (Rahyasih et al., 2020). However, the reality shows that there is still a low number of teachers who can compile scientific articles from the research results (Dewi et al., 2017). Teachers still make many mistakes in compiling articles. Closely related to the teacher's understanding of the practice of compiling scientific articles related to writing and the rules of the environment.

Based on the initial interview results with Mr Yusuf Hasyim, the Principal of MTs. Tarbiyatul Banin Winong concluded that the main obstacle for teachers not being promoted is the low number of publications of scientific articles. The higher the promotion, the more the number of publications of scientific articles that the teacher must carry out, so the ability and skills of teachers in compiling scientific articles based on research results are indispensable for teachers in MTs. Tarbiyatul Banin Winong.

The Regulation of the Minister of State for Empowerment of State Apparatus and Bureaucratic Reform Number 16 of 2009 states that teachers are required to write scientific articles in formal education and learning in their education units, which are published in scientific journals for promotion requirements starting from III/b to III/c and so on. It causes many young teachers in MTs. Tarbiyatul Banin Winong (40% or 12 teachers) held at the rank of First

Teacher for Groups III/a and III/b. Meanwhile, 15 senior teachers (50%) were detained in Junior Teachers Group III/d after the enactment of the regulation, which caused these 15 teachers to be unable to be promoted automatically. Only two teachers have reached the Middle Teacher Class IVa and one with the rank of Middle Teacher Class IVb.

Most teachers have attended training and workshops on writing scientific articles conducted by the Pati District Education Office and in the MGMP forum. However, teachers are still confused and not confident in writing scientific articles based on research that has been done so that they can be accepted in national scientific journals, even though the teachers have conducted research assisted by the ITEMAN software. Teachers face several common problems in writing scientific articles, including (1) the low culture and motivation of teachers in writing scientific articles (Gunawan et al., 2018); (2) lack of access to information and mentoring in writing activities and difficulties in finding references for writing scientific articles (Rahman et al., 2019); and (3) difficulties in developing the theme of scientific articles, understanding related to scientific article writing techniques are still low, and the lack of information related to national journals used as media for publishing scientific articles (Salehudin, 2022).

Based on these problems, the main priority of the needs of partners in MTs. Tarbiyatul Banin Winong is to provide training to increase knowledge and deeper understanding to teachers about preparing articles on item analysis research with the classical test theory approach assisted by ITEMAN. This socialization relates to teachers' knowledge, understanding, and skills in compiling scientific articles based on item analysis research. Then continued with assistance to improve their skills and confidence in compiling scientific articles based on item analysis research until publication in national scientific journals

METHOD

Participants in this community service are teachers of MTs Tarbiyatul Banin Winong, Pati Regency, which consists of 50 people. The method of implementing the activities is planned using a workshop approach in the form of seminars, training, and mentoring related to preparing scientific articles based on item analysis research. This activity is carried out in a blinded manner using lecture, applicative, assignment, and mentoring methods. The work procedure for this service includes the following:

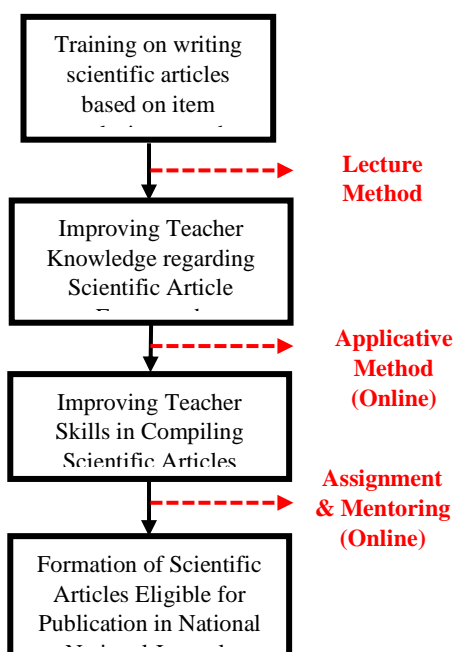
1. Seminars on writing scientific articles and scientific publications using the lecture method, covering the delivery of general knowledge to participants regarding the framework of scientific articles consisting of article titles, author names,

abstracts, keywords, introductions, research methods, research results and discussions, conclusions and recommendations, and bibliography. This activity is carried out offline in the MTs Hall. Tarbiyatul Banin Winong on August 18, 2022.

2. Scientific article writing application includes assisting scientific article writing techniques (covering the beginning, core, and end), ethics of writing scientific articles, registering the Open Journal System (OJS), and training on using Mendeley as a referencing tool. This activity was carried out online using the zoom meeting platform on August 22, 2022.
3. Assignment and evaluation, at this stage, the training participants (teachers) are divided into small groups consisting of 2-3 people and then given the task of converting the report on the results of the item analysis research that has been carried out into the form of scientific articles. The results of each group's articles were then reviewed for comments and suggestions for improvement by the service team until the articles made by each group were deemed worthy of publication in national scientific journals. This activity was carried out online using the zoom meeting platform and via google docs on 23 – 27 August 2022.

The stages of training in this program can be described as follows:

Figure 1.
The Flow of Devotion



Based on these work procedures, the planned activities in this devotion are as follows:

1. Stage 1: The output of this stage is the increase in teacher knowledge in compiling scientific articles based on item analysis research.

2. Stage 2: The expected output in this stage is the formation of scientific articles worthy of publication in national scientific journals from the results of item analysis research that the teacher has carried out.

RESULTS AND DISCUSSIONS

The results of the implementation of Community Service activities that have been carried out show that teachers as training participants are enthusiastic about participating in these activities. As many as 50 teachers actively participate in a series of training carried out offline and online. The teacher is also active in participating in discussions related to the problems faced in writing scientific articles. Some teachers have completed the draft of their articles in google docs so that they get input from the service team.

The discussion will be divided into two main parts: online and online training. The following is an explanation of this community service activity.

1. Seminar on Scientific Article Writing and Scientific Publications

This seminar is held offline in the MTs Hall. Tarbiyatul Banin Winong Pati Regency on August 18, 2022. The number of teachers who attended this seminar was 50 participants. The materials presented in this activity include (1) Knowing various kinds of scientific publications for the promotion of teachers; (2) Getting to know scientific articles for promotion; (3) Writing scientific articles based on research results; and (4) Tips for publishing scientific articles to national journals.

The purpose of the service team in delivering the material was to increase teachers' knowledge of scientific articles as well as to motivate teachers to be willing to write scientific articles, which is an obligation that must be fulfilled in order to be promoted. Through increasing knowledge and motivation in writing scientific articles, it is hoped that it can stimulate the willingness of teachers to write scientific articles from the results of research that has been done.

This seminar activity was opened directly by the Principal of MTs. Tarbiyatul Banin Winong, Mr. Yusuf Hasyim. He said that teachers still do not have the knowledge and skills in writing scientific articles, even though the teachers have been able to conduct research related to classroom learning, one of which is item analysis. He really hopes that after participating in this training activity, teachers can have skills in writing scientific articles and publishing them in national journals.

Figure 2.

Welcome and Opening from the Principal of MTs. Tarbiyatul Banin Winong



This seminar activity was then continued with the presentation of material from the service team. Starting from various types of scientific publications that teachers could do, the importance of teachers writing scientific articles, to tips and tricks on writing scientific articles from research results and publishing them in national journals. The teachers are very interactive in the discussion by conveying the research results and the various obstacles faced in converting them into scientific articles. Various obstacles expressed by the teachers include:

- 1) Not too familiar with the systematics of scientific research articles;
- 2) Many school administrative activities make teachers feel that they lack time to write scientific articles;
- 3) I have not received intensive assistance in writing scientific articles worthy of publication in national journals.

At the end of this seminar, the service team invites teachers to return to training activities in the form of technical assistance in writing scientific articles from research results on August 22, 2022, online through a zoom meeting.

2. Assistance in Scientific Article Writing Techniques

This activity was carried out online using the zoom meeting platform on August 22, 2022. The participants were divided into three zoom rooms. So that mentoring activities could run more effectively and efficiently. The first room consisted of 18 participants accompanied by Teguh Hardi Raharjo. The second room consisted of 15 participants whom Marimin accompanied. Meanwhile, Zoom Room 3 consisted of 17 participants accompanied by Naimatul Azizah.

Each facilitator provides the same material to the participants, namely: (1) Finding and

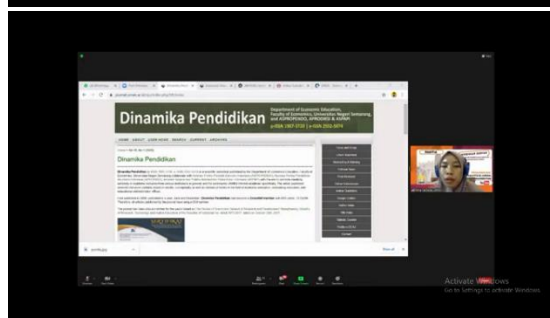
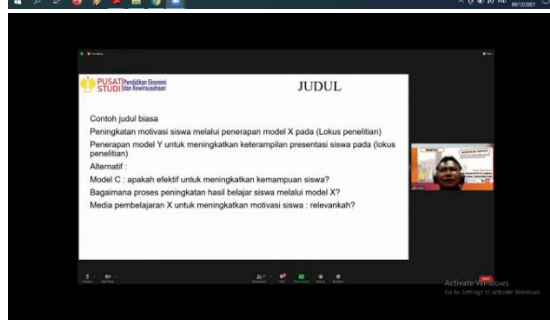
selecting national journals that can be used as places for publication of scientific articles; (2) Registering OJS; (3) Downloading a template for one of the national journals used for the practice of writing articles from the results of research that participants have carried out; (4) How to find the references needed to write scientific articles using publish or perish and google scholar; and (5) How to do citations using Mendeley.

Figure 3.

Submission of Material by The Devotion Team

**Figure 4.**

Technical Assistance in Writing Scientific Articles



At the end of this mentoring activity, the participants were given practical assignments to directly write scientific articles from research

results that had been made according to the intended national journal template. Participants will continue to receive guidance from the service team while writing the scientific article. The goal is that there are scientific articles for teachers who are successful in publication in scientific journals after participating in this training activity.

3. Assignment and Evaluation

This activity is a series of activities for the guidance of the service team to the participants in writing scientific articles through Google Docs and Zoom Meetings. All of these mentoring activities are carried out online. Teachers are guided on tricks and tips on writing drafts of scientific articles, submitting and revising articles based on the results of reviews requested by journals, and procedures for revising and sending articles back to journals. Guidance is carried out individually and in groups through the Zoom meeting application and WA Group so that mentoring activities can be more effective and efficient in terms of cost and time (Erni et al., 2020; Zulherman et al., 2021).

Based on the results of interviews conducted by the teacher service team, it is known that teachers can write scientific articles and submit them to national journals. Some teacher trainees have even succeeded in publishing their articles in national journals. These results indicate that intensive and periodic mentoring activities are needed for teachers to overcome various obstacles that hinder the writing of scientific articles (Maftuh et al., 2019; Emaliana, 2019).

Figure 7.

One Participant's Publication Result

Measurement in Educational Research
Volume 1, Issue 2, 2022, 64-75
Available online: <https://ejournal.resi.id/index.php/meter>

Analisis Butir Soal Pilihan Ganda Ulangan Akhir Semester Genap Mata Pelajaran Ekonomi

Yulia Fitri Ambarwali*, Teguh Hardi Raharjo
Mts. Tarbiyatul Banin Winong, Jl. Desa No.1, Pekalongan, Kabupaten Pati, 59181, Indonesia
* Corresponding Author: E-mail: yulianisfaw@gmail.com; teguh.hardi@gmail.com

Received: 21 Agustus 2022; Revised: 25 Agustus 2022; Accepted: 30 Agustus 2022

Abstrak: Tujuan dalam penelitian ini yaitu untuk mengetahui kualitas butir soal ulangan akhir semester genap mata pelajaran ekonomi yang digunakan. Metode yang digunakan dalam penelitian ini yaitu kuantitatif, dan subjek yang digunakan sebanyak 105 siswa. Hasil penelitian menunjukkan bahwa validitas soal mayoritas berada pada kategori valid yaitu 70% atau sebanyak 28 butir soal dan soal yang tidak valid yaitu 30% atau sebanyak 12 butir soal. Nilai reliabilitas menunjukkan Alpha=0,81 yang artinya reliabel. Berdasarkan yang dilihat dari tingkat kesukaran sebanyak 1 (2,5%) butir soal kategori sukar, 19 (47,5%) butir soal kategori sedang, dan sebanyak 20 (50%) butir soal kategori mudah. Daya pembeda terdapat 7 (17,5%) butir soal kategori jelek, 15 (37,5%) butir soal kategori cukup, dan 18 (45%) butir soal kategori baik. Keefektifan fungsi distractor, secara keseluruhan terdapat 59 (36,88%) fungsi pengecoh berfungsi dengan baik dan sebanyak 101 (63,13%) tidak berfungsi.
Kata Kunci: analisis butir soal, kualitas butir soal, ekonomi

The analysis of multiple choice questions of final exam on economic subject

Abstract: The purpose of this study was to determine the quality of the end semester exam items in archiving subjects used. This research uses quantitative research methods and subjects in the study were 105 question sheets. The results showed that the validity of the majority of the questions was in the valid category, namely 70% or 28 items and 30% or 12 invalid items. The reliability value shows Alpha = 0.81 which means the question is reliable. Based on the difficulty level of the questions, there were 1 (2.5%) item in the difficult category, 19 (47.5%) items in the medium category and as many as 20 (50%) items in the easy category. Based on the discrimination power, there are 7 (17.5%) bad items, 15 (37.5%) enough items, and 18 (45%) good category items. Based on the effectiveness of the distractor function, overall there are 59 (36.88%) distractor functions functioning properly and 101 (63.13%) are not functioning.
Keywords: item-analysis, questions item quality, archive

How to Cite: Ambarwali, Y., & Raharjo, T. H. (2022). Analisis butir soal pilihan ganda ulangan akhir semester genap mata pelajaran ekonomi. *Measurement in Educational Research (Meter)*, 1(2), 64-75. doi:<https://doi.org/10.33292/meter.v1i2.144>

This devotion activity ended with giving participants an evaluation of a series of training activities that the service team had carried out. The evaluation was given through a google form

containing open questions related to the messages and impressions of the teachers during the training activities. The following are some of the messages and impressions conveyed by the participants.

"I feel grateful to be able to participate in this training activity. The UNNES Service Team has taught me how to turn research results into scientific articles and publish them in national journals. Hopefully, there will be another training like this in the future" (Teacher 7).

"It is amazing, and I just found out that looking for references using the publish or perish application and Google Scholar, it turns out that it can make it easier for me to find the references needed to write articles. I also learned to cite using the Mendeley application, which was easier for me when writing a bibliography" (Teacher 30).

"Thank God, thanks to the training from the UNNES service team, I published my scientific articles in national journals. If there is another training like this, I will follow it again" (Teacher 46).

Based on the description of the results of the devotion activities, it can be said that the training and mentoring that the service team has carried out has increased knowledge and skills, as well as motivated teachers to write scientific articles and publish them in national journals. Motivation is the dominant internal teacher factor in continuous professional development activities (Novitasari, 2019; Solikhah et al., 2021; Budi et al., 2021). The motivation of teachers who are already good must be maintained and continuously improved so that teachers can continue to produce scientific articles published in national journals to continue to improve their profession and be used for promotion on an ongoing basis.

CONCLUSION

Based on the results of the implementation of community service activities that have been carried out, it can be concluded that this activity is successful in increasing the knowledge and skills of teachers in writing scientific articles from the results of research that has been carried out properly and correctly. The teachers are very enthusiastic and motivated to be able to produce scientific articles and publish them in national journals. The participation of teachers evidences this during the training series carried out, the publication of teacher scientific articles in national journals, and the feedback teachers provided on this training activity.

Promising results from these training activities need to be maintained. So that teachers can continue to

be productive in producing scientific articles published in national journals through various efforts that can maintain teacher motivation in writing scientific articles. So, the continuous professional development of teachers can continue to be carried out for career advancement and to improve classroom learning quality.

REFERENCES

- Budi, D. R., Melasarianti, L., Listiandi, A. D., Mariasari, S., & Widyaningsih, R. (2021). Pelatihan prosedur publikasi artikel hasil penelitian pada jurnal nasional bagi guru SMKN 1 Purwokerto. *Solidaritas: Jurnal Pengabdian*, 1(1), 11-20. <https://doi.org/10.24090/sjp.v1i1.4931>
- Daryanto & Tasrial. (2015). *Pengembangan Karir Profesi Guru*. Yogyakarta: Penerbit Gava Media.
- Dewi, P. K., et al. (2017). Pelatihan penulisan artikel ilmiah berbasis penelitian tindakan kelas pada guru SMP. *Jurnal ABDI: Media Pengabdian Kepada Masyarakat*, 2(2), 7-17. <https://doi.org/10.26740/ja.v2n2.p7-17>.
- 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. <https://doi.org/10.31849/dinamisia.v3i2.3380>.
- Erni, S., Vebrianto, R., Miski, C. ut R., Z, Z. A. M., Martinus, & Thahir, M. (2020). Refleksi proses pembelajaran dimasa pandemi Covid 19 di Pekanbaru: Dampak dan solusi. *Bedelau: Journal of Education and Learning*, 1(1), 1-10. <https://ejournal.anotero.org/index.php/bedelau/article/view/1>.
- Gilinsky, A., Forbes, S. L., and Reed, M. M. (2016). Writing Cases to Advance Wine Business Research and Pedagogy. *Wine Economics and Policy* 5:60-67. <http://dx.doi.org/10.1016/j.wep.2016.04.001>.
- Gore, J., Lloyd, A., Smith, M., Bowe, J., Ellis, H., & Lubans, D. (2017). Effects of professional development on the quality of teaching: Results from a randomized controlled trial of Quality Teaching Rounds. *Teaching and Teacher Education*, 68, 99-113. <https://doi.org/10.1016/j.tate.2017.08.007>
- Gunawan, I., Triwiyanto, T., & Kusumaningrum, D. E. (2018). Pendampingan Penulisan Artikel Ilmiah bagi Para Guru Sekolah Menengah Pertama. *Abdimas Pedagogi: Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 1(2), 128-135. <http://dx.doi.org/10.17977/um050v1i2p128-135>.
- Maftuh, M. S., Fathonah, N., Fitriatien, S. R., Putri, R. K., & Susilohadi. (2022). Pelatihan Publikasi Artikel Ilmiah Pada Jurnal Terindeks Bagi Guru SMK Negeri 1 Jetis Mojokerto. *Manggali*, 2(1), 85-96. <https://doi.org/10.31331/manggali.v2i1.1967>.
- Novitasari, N. F. (2019). Program pelatihan penulisan artikel ilmiah: Menuju guru berkualitas. *Jurnal Pengabdian Pada Masyarakat*, 4(3), 255-266. <https://doi.org/10.30653/002.201943.152>.
- Rahman, A., Warta, I. K., Jupri, Haerazi, & Irawan, L. A. (2019). Penulisan Artikel Ilmiah Berbasis Jurnal Ilmiah Bagi Guru SMP-SMA Kabupaten Lombok Tengah. *Abdi Masyarakat*, 1(1), 19-24. <http://dx.doi.org/10.36312/abdi.v1i1.911>.
- Rahyasih, Y., Hartini, N., & Syarifah, L. S. (2020). Pengembangan Keprofesian Berkelanjutan: Sebuah Analisis Kebutuhan Pelatihan Karya Tulis Ilmiah Bagi Guru. *Jurnal Penelitian Pendidikan LPPM Universitas Pendidikan Indonesia*, 20(1), 136-144. <https://doi.org/10.17509/jpp.v20i1.24565>.
- Salehudin, M. (2022). Guru Menulis Artikel Ilmiah untuk Meningkatkan Karya dan Kinerja Guru Sekolah Dasar. *Jurnal Inovasi Penelitian dan Pengabdian Masyarakat*, 2(1), 57-68. <https://doi.org/10.53621/jippmas.v2i1.80>.
- Solikhah, N., Soejoto, A., Ghofur, M. A., Dewi, R. M., & Fitrayati, D. (2021). Upaya peningkatan keterampilan penulisan dan publikasi artikel ilmiah melalui pelatihan bagi guru MGMP ekonomi SMA se-Gerbangkertosusilo. *E-Dimas: Jurnal Pengabdian kepada Masyarakat*, 12(3), 382-387. <https://doi.org/10.26877/e-dimas.v12i3.3394>
- Zulherman, Nuryana, Z., Pangarso, A., & Zain, F. M. (2021). Factor of zoom cloud meetings: Technology adoption in the pandemic of COVID-19. *International Journal of Evaluation and Research in Education*, 10(3), 816-825. <https://doi.org/10.11591/ijere.v10i3.21726>.