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Shared Voices of Indonesian Teacher-Educators from Virtual Research-Workshop-Series: Reflections on Covid-19 Pandemic Driven Professional Development

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Abstract

This study aims to explore the perceptions and experiences of Teacher-Educators (TEs) who participated in virtual research-workshop-series as professional development programs. Six TEs, three from natural science and three from social science, participated in a nine-month virtual research workshop series organized by the faculty. In the frame of a case study, the data were gathered from in-depth interviews and a set of questions. The findings revealed that TEs had sufficient research knowledge as they were able to identify good quality of research, read relevant reading research, and signified the importance of research as part of their professional identity. Completion of other tasks, lack of research motivation and collegiality, shortage of research skills and competencies including how to read academic articles due to vocabulary and sentence construction hindered them from conducting research. The workshop has facilitated the TEs autonomy, research skills and competencies, research collaboration, and goal-orientation. The PD program strengthened their research motivation and engagement that scaffold positive insights into their self-research awareness. Moreover, all TEs were able to complete their papers and submit them to reputable journals.

Keywords

case study, professional development, research and publication, research workshop, research awareness

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Acknowledgements

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This study aims to explore the perceptions and experiences of Teacher-Educators (TEs) who participated in virtual research-workshop-series as professional development programs. Six TEs, three from natural science and three from social science, participated in a nine-month virtual research workshop series organized by the faculty. In the frame of a case study, the data were gathered from in-depth interviews and a set of questions. The findings revealed that TEs had sufficient research knowledge as they were able to identify good quality of research, read relevant reading research, and signified the importance of research as part of their professional identity. Completion of other tasks, lack of research motivation and collegiality, shortage of research skills and competencies including how to read academic articles due to vocabulary and sentence construction hindered them from conducting research. The workshop has facilitated the TEs autonomy, research skills and competencies, research collaboration, and goal-orientation. The PD program strengthened their research motivation and engagement that scaffold positive insights into their self-research awareness. Moreover, all TEs were able to complete their papers and submit them to reputable journals.

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Introduction

Research and publication in higher education are significant for recognition as an effort to gain prestige. Academics are forced to conduct research and publish it in reputable journals. Peat et al. (2001) emphasized that disseminating of research findings is critical for career promotion and survival of research departments. Successful publications are often used as a measurement of research productivity, which is important for institutions. However, conducting research, doing academic writing, and publication in higher education is challenging. Research has indicated obstacles for Teacher Educators (TEs) to become active in research activities such as lack of time, opportunity for collaboration, research mentors, inflexibility of university research procedures (Nicholson & Lander, 2020), absence of resources and limited access of literature and the Internet (Kataeva & DeYoung, 2018), research misbehavior conduct (Olesen et al., 2018), and lack of engagement of research skills (Heikkilä et al., 2020).

Studies show that writing research for publication is challenging for TEs (Arsyad & Adila, 2018; Gaus et al., 2020; Getahun et al., 2021; Guberman & Mcdossi, 2019; Hartono et al., 2019; Nicholson & Lander, 2020; Olesen et al., 2018). The challenges can be classified into two types: internal and external factors. Internal or personal factors include lack of time that inhibited TEs from research writing and focus on teaching, English proficiency, logical content development, discourse organization, vocabulary, and diction, and writing sections of research papers. External or institutional factors cover lack of support from their supervisors or departments (Davis, 2019), reviewers' feedback, and funding policies from universities (Jiang et al., 2017).

Recently, to respond to personal and professional needs, institutions and communities manage to hold professional development programs (PD) for teachers. However, due to the COVID-19 pandemic, schools and universities are compelled to migrate from face-to face meeting to online platforms. As a result, many PD programs such as workshops and webinars are organized virtually. Investigations of TEs in higher education have indicated that research-related professional development is required. De Sousa et al.'s (2019) inquiry has indicated that TEs view research as a significant dimension of practice and of PD. A study by Ping et al. (2020) suggested a similar study in different context about what constitutes TE's profession for learning in terms of content, learning activities, and reasons for learning. A study by Nicholson and Lander (2020) has shown that although the TEs recognized their lack of research skills and experience as an inhibiting factor, they did not seem to want specific research training per se. Despite the increasing interest in the PD program as a setting for professional learning, little is known about how TEs view and interpret their PD experience and how the PD program has impacted their engagement in research publications during the COVID-19 pandemic. Research exploring these issues could provide insight into and advice on delivering PD during the pandemic, important given the virtual learning climate for TEs in higher education. This study aims to investigate the TEs perceptions and experiences in the virtual research-workshop-series as one of the PD programs. To be more specific, the following research questions are used to guide this study:

1. What are the TEs perceptions and experiences of writing for research publication?
2. What have they learned from the virtual research-workshop-series as a PD program?

Literature Review

Demand of Research Publication and its Challenges

Research plays a critical role in the development of new knowledge and the effectiveness of higher education. Regarding career promotion and tenure for teachers, including TEs, the larger context of higher education typically values research performance and publications more than teaching (Van Lankveld et al., 2017). Ping et al. (2020), a survey study with 583 Dutch and Chinese, demonstrated that TEs viewed research as one element of their professional identity. Van der Klink et al.'s (2017) investigation revealed that TEs perceived their research engagement as essential for PD. They had plans for their further PD, but also had a lack of resources and time that could hinder realizing those plans. Further, disseminating research into publication is emphasized in the context of performativity in higher education (Chubb et al., 2017). Rahimi et al. (2021) explored conceptions of 30 research students and TEs in an Iranian context and found that TEs perceived that conducting research improved their research skills and knowledge, and the research should be published in a

reputable journal. They believed that reading and doing research based on their interest could keep their knowledge updated.

Although the TEs perceived that they needed to do research activities as their professional identities, research engagement was challenging. Nicholson and Lander' study (2020) with 16 TEs in the UK context found that TEs exhibited strong beliefs regarding factors that prevented them from engaging in research. The factors were a lack of time due to teaching, lack of opportunities for collaboration, negative feelings about engaging in research, insufficient mentoring, and inflexibility of university research procedures. Investigation by Kataeva and DeYoung (2018) with 29 faculty members in Tajikistan showed that there was a lack of financial support for research, a lack of resources and limited opportunities for access to literature and the Internet, and a lack of infrastructure for offices and classrooms. Olesen et al. (2018) reported research misconduct of academics in the Malaysian context such as plagiarism, data manipulation, findings misrepresentation, authorship disputes, ethical issues, and breaching of research protocols occurred.

Conducting research and publication also brings tension for TEs. Barkhuizen (2020) investigated the researcher identity of one language teacher educator in a narrative interview study focusing on research experiences and researcher identity development in her early professional career as a researcher after doing a doctoral degree. It was found that she had research experience and extensive teaching experience. Still, these were considered to be "not enough," where the performance of researchers was regularly monitored and measured against institutional and sometimes even national standards. Heron et al.'s (2021) research findings from seven TEs in the UK indicated tension between required writing and writing for their own professional identity, as well as tensions between TEs' own areas of interest and institutional expectations, pressure for publication, and making an impact. They have also identified that writing for publication is a process and an opportunity for TEs to develop genuine collegiality, to understand their arguments, and to discuss and learn from each other.

Studies on Research Publication

Studies have indicated that writing research for publication is challenging for TEs. Davis (2019) examined the opportunities and difficulties of English for academic purposes (EAP) practitioners at UK universities to publish their research in journals. Using interviews and surveys, the results revealed that publishing their research had offered them opportunities for development as teachers, career development, development as EAP professionals, and networking development. Challenges were a lack of time that inhibited them from research writing as they focused on teaching only, a lack of support from their supervisors or departments, a lack of publishing culture, and a fear of failure due to rejection.

Additionally, writing research for publication is more complex for TEs for whom English is not their first language and personal factors are more dominant over institutional factors. Smirnova et al. (2021) conducted research with 16 Russian scholars at one research-intensive university focusing on their publication changes in three majors of economics, sociology, and philosophy. Using interviews, the findings indicated that all scholars had limited time for their research and to publish it because of teaching and being in administration management. Limited resources, including proficiency in English, obstructed publication. The study emphasized the necessity to offer strategies for writing to be published in English.

In the Taiwanese context, Chien (2019) examined 21 researchers' perceptions, challenges and strategies to cope with publication using interviews. The author found that language proficiency that met readers and reviewers' expectations, convincing and logical content development, and discourse organization including how to write acceptable article sections were challenging. The participants acknowledged the importance of reading to allow

them to acquire discourse organization skill and word diction. Jiang et al.'s (2017) study suggests that young Chinese scholars face a number of challenges and difficulties related to both personal and external factors. Personal factors are linked with time constraints between teaching and conducting research, and language problems due to insufficient English language proficiency. External factors deal with stereotyping views of anonymous reviewers and university funding policy.

Getahun et al. (2021) investigated how academics in Ethiopia and Oman engaged in writing for publication and found that language barriers were the profound factor hindering the scholars to publish in international journals. The quality of articles that met readers' expectations at international standards was also challenging and promotion was the motive for publication. A survey study by Burgess et al. (2014) with 1454 respondents at Spanish universities examined motivations and attitudes towards publishing research in Spanish and English. The findings demonstrated that language, including discourse norms and when a paper should be published in English, was problematic. Writing the discussion section, theoretical framework, introduction, and the conclusions of the paper was challenging. Doing translation, reading, and concentrating on the features of a successful academic to develop academic writing skills were the strategies to cope with the difficulties.

In Indonesian context, investigations on research for publication have also revealed that personal factors contribute to institutional factors. Gaus et al. (2020) investigated factors influencing the productivity in research and publication between science and social science with 40 scholars at four public universities in Indonesia using interviews. The findings showed that individual academic capacities for searching research collaboration, for doing publication during doctoral studies, for collaboration with supervisors for publication, and for integration of concepts into analysis and data interpretation were perplexing. A study by Hartono et al. (2019) explored the quality of a research paper owned by 66 non-English lecturers at one private university in Central Java. Using the criteria of quality in terms of topic, language, and paper format, they found that the problems were language use, vocabulary and word choice, and content development. Additionally, citations to support an argument about the research topic tend to be positive, as shown by Arsyad and Adila' study (2018), which examined the rhetoric of relevant literature review of 40 research articles written by Indonesian scholars published in international natural sciences and ICT journals. They found that the used citations offered positive justification rather than to argue with or criticize other scholars' work for the research gap and the importance of the topic.

The Need for a Professional Development (PD) Program

PD is a significant element in improving teachers' and leaders' skills and abilities that will affect student's academic achievement (Koonce et al., 2019; Reeves, 2010). Speck and Knipe (2005, p. 4) define PD as "a lifelong collaborative learning process that nourishes the growth of educators both as individuals and as team members to improve their skills and abilities." Tack and Vanderlinde (2014) conceptualize the PD of TEs in their role as researchers as the development of a "researcherly disposition." Such a researcherly disposition is defined as the tendency to engage in research and involves an inclination towards research (affective aspect), an ability to engage in research (cognitive aspect), and a sensitivity to research opportunities (behavioral aspect).

Speck and Knipe (2005) underlined five elements of high-quality PD: preservation of collaborative learning, improvement of skills and abilities, generation of educators or leaders, adult learner-centered, research-based, and best practice. Paesani (2020) underlines that effective PD should have at least five principles; namely, goal directed, collaborative, experiential, scaffolded and sustainable. According to these PD principles, the discussion of

professional development (PD) in the field of education generally links with continuous professional development (CPD) as it is emphasized that CPD refers to "the process whereby people's professionality and/or professionalism may be considered to be enhanced" (Evans, 2008, p. 29) and as taking place throughout a career (Wermke, 2011). Research has indicated the CPD program is beneficial. Shen and Bai's study (2019) investigated TEs in their training involvement in an embedded writing project to improve students' writing performance in a southeast China college. The findings showed that changes occurred steadily as a result of their teamwork and the team's research sharing and discussion impacted their attitude change. Van Veldhuizen et al. (2020) conducted a study with twelve TEs from exact science and 21 from social studies. They were involved in the intervention training course focusing on positioning, directing, and supervising student research. The findings indicated that the training encouraged the TEs, reflected their roles as research supervisors, acknowledged their research knowledge and skills, and improved their research awareness. This study highlights that the participants become worried about their research ability and the change of beliefs might not change their practice. In addition, they needed support from a learning community in which they could translate skills and knowledge into practice. Guberman and Mcdossi's study (2019) with sixteen research-experienced TEs in the Israeli context found that TEs' motives for research engagement were from a combination of internal and external motivations such as personal interest, contribution to practice, academic recognition, and career promotion.

Self-Determination Theory (SDT): A Constructivist Approach to PD

This study examined TEs who attended a research-related workshop as part of their professional development. We derive Self-Determination Theory (SDT) as one of the most frequently cited motivational theories. The seminal theorists of the SDT, Richard Ryan, and Edward Deci, have established theoretical lens for fostering optimal human efficiency, imagination, and motivation in order to meet three fundamental psychological human needs: autonomy, competence, and relatedness (Deci & Ryan, 1985; Ryan & Deci, 2000). Autonomy captures the extent to which one feels agency to exert influence on their own volition (Ryan & Deci, 2000). Competence refers to the degree to which one feels progress towards achieving new knowledge, skills, and mastery. Relatedness reflects one's mutual connection with others in a social context. Through the theoretical lens of SDT, one's self-determination will flourish when one's needs for autonomy, competence, and relatedness are satisfied.

The degree to which one is driven by internal and external forces is conceptualized as a continuum of self-determination emphasizing on internal motivation to follow goals that represent one's own ideals, rather than external motivation or incentives to pursue goals determined by an external authority (Ryan & Deci, 2000). Since the TEs in this study participated in the workshop as their PD, social constructivism emphasizes the collaborative nature of learning and rejects the notion that learning occurs divorced from a social context (Vygotsky, 1978). In other words, individual learning is inextricably rooted in the meanings, dominant metaphors, and implicit understandings of one's social environment (Mitchell & Sackney, 2011). Another key feature of social constructivism is that while learning is first co-constructed socially, it is still fundamentally viewed as a change that takes place within the individual (Duit & Treagust, 1998; Hodson & Hodson, 1998). The collaboration of TEs, which involved sharing and collaboration among themselves, made a social constructivist framework an ideal choice to acknowledge the importance of group dynamics in a professional learning community.

The Study Context

Prior to the COVID-19 pandemic, the research-workshop-series was initially organized into two full days for face-to-face guidance/consultation. Each participant received a consultation for 60-90 minutes. Face-to-face consultations were continued after significant improvements had been made to certain parts of research writing. However, in this current situation, due to the COVID-19 pandemic, the virtual workshop is one of the initiated programs by the Faculty of Teacher Training and Education at a public university in East Kalimantan (well-known as East Borneo). The goal of the workshop was for scientific writing activities to quantify and accelerate international publication; guided and accompanied by the main resource person as a facilitator/mentor who directed publication in reputable target journals. We were particularly interested in this research because we were curious as to whether the virtual workshop, as a PD program, would be beneficial to fulfil the TEs' personal and professional needs. Additionally, this study was expected to provide information to be considered to organize similar programs that could improve research publications for the TEs.

All researchers had participated sufficiently in this study. To be more specific, the first researcher conceived and designed of the work. Data collection was completed by the second and third researchers. All researchers contributed to data analysis and interpretation. Peer debriefing and discussion among the authors was undertaken to ensure coding at the initial analysis and was managed to guarantee the interpretation and presentation during the analysis stage. The first researcher wrote the draft of the manuscript, and the rest reviewed the final manuscript. Critical revision and approval of the version to be published were performed by the first and fourth researchers. This study was intended to investigate the TEs' perceptions and experiences from the workshop as part of the evaluation of the program effectiveness, since the faculty had put a lot of money into it. Three of four researchers in this study teach at the faculty and also attended the workshop. Therefore, the researchers were the "insiders" and the participant group under investigation.

Methods

Design

This investigation is framed as a case study (Cohen et al., 2011; Duff, 2020) given the focus on a small number of TEs , all teaching at the Faculty of Teacher Training and Education at our university, joining virtual research-related professional development a workshop initiated by the faculty at our university. An explanatory case study with the focus of "how" and "why" questions focusing on the process over time was employed in this study (Yin, 2018). This study aimed to have in-depth investigation within the real context with a view to comprehending the issues of the participants' perceptions and experiences in the workshop. The data were gathered from a set of questions and interviews of the participants who were involved in the research-related workshop as their PD program from March to November 2020 held by the faculty during the COVID-19 pandemic.

Participants

The participants were six TEs: three from exact science and three from social science. They, two males and four females, aged 38-60, were mostly senior lecturers with more than 15 years of teaching experience who taught different majors at the Faculty of Teacher Training and Education.

A purposive sampling strategy was employed to include the participants from the exact and social sciences. The participation was voluntary. Initially, 45 TEs with doctoral degrees were selected in the research-related workshop series as a professional development program. The selection was based on their outline of the proposed paper in a group of three submitted before the program. Only 42 of those fully engaged in the workshop from the beginning to the accomplished program. This study was conducted after the workshop was completed, and six of the 42 volunteered to participate in this study. The profile of the six participants is presented in Table 1.

Table 1
Participant's profile

No	Participants (pseudonyms)	Gender	Major	Teacher-educator
1	Santi	F	Social science –English Education	Since 2003
2	Fanny	F	Social science- early childhood education	Since 2016
3	Wawan	M	Social science- management education	Since 1981
4	Lely	F	Natural science-physical education	Since 1999
5	Hana	F	Natural science-biology education	Since 1992
6	Zidan	M	Natural science-physical education	Since 1994

Research-Related Workshop Series

The research-related workshop series outlined three major agendas, namely: coaching, document translation and proofreading, and editing. This study focused on the coaching stage since this was the period in which the participants fully participated and engaged in the workshop for nine months (March to November 2020). They were required to develop research topics/drafts during the workshop including references, research data, or research instruments if research had not been implemented before the workshop. In addition, they had to commit to the completion of the targeted publication. The workshop required the participants to comply to the timeline of the paper section, such as the introductory/rationale of the study, literature review, methodology, data presentation and analysis, discussion, and conclusion section. They needed to write a particular section and get feedback. Additionally, issues about research such as ethical clearance, plagiarism, reliable sources for research articles, and prospective journals for publication were also discussed. The mentor provided guided information and discussions in each section during the Zoom meeting. The outcome of the workshop was a published article. The mentor guided the participants to submit their articles with the help of their colleagues after they completed and proofread their articles.

Research Procedure

After the completion of the workshop, the participants were involved in responding to a set of structured questions and an in-depth-interview focusing on their perceptions of the research-related virtual workshop and how it affected their research engagement. A set of structured questions regarding research conceptions, adapted from Borg (2009), were given to the participants to gather the data of the TEs' research conceptions. The first section of the set of questions was general background information of the participants regarding their age, years of experience as teacher educators, teaching tasks, courses taught, and schools/majors. The next section consisted of structured questions requesting responses about characteristics of

good quality research, research culture, reading research, and conducting research including the TEs' publications. The third section asked the responses about the impression of the workshop that had been conducted. The questions were distributed in the second week of December 2020 and were completed within a week.

After the responses of the questions were gathered, the interviews were performed in the second and third week of January 2021. The interviews focused on the PD opportunities the participants had previously and recently participated in, teacher education and research, and drivers and barriers impacting their PD and research. The interview protocols were adapted from Van der Klink et al. (2017). Each participant was interviewed virtually, with interviews conducted via Zoom and on call, for about 25-30 minutes at their convenience times. The interviews were recorded, and key information was noted. The interviews were conducted in Indonesian.

Ethical Considerations

Four researchers were involved in this study. After the ethics approval had been obtained from the Research Ethic Committee from the university, one of the researchers contacted the participants and explained the purpose of the study and research procedures. They were given a consent form for their participation and were informed that their participation was voluntary and that they had the right to withdraw from the study. Their confidentiality and anonymity would be respected and their participation in the study would not bear their employment position. Pseudonyms were used to name the participants.

Analysis

We employed thematic analysis as analytical method (Braun & Clarke, 2006; Nowell et al., 2017). The interview data were all transcribed. The researchers read and reread the transcriptions to familiarize themselves with the data. In this stage, highlighting keywords such as motivation to conduct research, difficulties in conducting research, and experiences during the PD, was conducted. Next, generating initial codes for the keywords was carried out. In addition to this, peer debriefing and discussion among the authors was completed with the intention of ensuring the keywords were developed into initial coding. During the discussion, it was found that some transcriptions needed further clarification; therefore, the researchers gathered further information from the participants via Zoom and over the phone. Following this, the additional data was transcribed for the analysis. Following this, the data were completed for initial codes in the form of a chunk of sub-themes, the researchers discussed and reviewed the subthemes, including checking for referential adequacy by returning to raw data. Next, the researchers looked for similar sub-themes, which were then combined and collapsed into additional themes. Finally, defining and naming themes as the major themes that emerged from the data was accomplished. Three main themes found were research knowledge and motivation prior to the workshop, challenges and experiences on the section of research paper and research-related competency during the PD program, and development of research construction and what has been learned from the workshop.

Rigor and Trustworthiness

After the interviews were transcribed, the transcriptions were sent back to the participants for a review of accuracy and completeness. They were given opportunities to provide feedback on the manuscripts. Once they had indicated that the transcripts captured what they wanted to say about their perceptions and experiences, the content analysis was

commenced. Discussion among the researchers during the analysis stage was managed to ensure the interpretation and presentation. Furthermore, the participants were also forwarded our interpretation of the analysis and offered them chances if they would like to discuss it.

Results

This section presents the findings of the study. Three major themes emerged in this study: research knowledge and motivation prior to the workshop; challenges and experiences on the section of research paper and research-related competency during the PD program; and development of research construction and what has been learned from the workshop.

Research Knowledge and Motivation Prior to the Workshop

Research knowledge discusses previous research knowledge and research features. The features are collection of information or data, tested hypotheses, objectivity, published results, and controlled variables. Research motivation is an intrinsic and extrinsic motive to engage in research. All TEs generally perceived that research features are important, as one explained:

> I think research is a way that we do scientifically to find an answer about what teaching methods are right for students, what are their views on learning carried out in class, and other questions related to learning our major. The research focus should be clear and unambiguous. There is novelty and using the right coding system (Santi-19/01/21-10:31).

TEs define research as scientific procedures to solve problems occurring in the teaching and learning process for the benefit of their students; therefore, it should be focused on and updated. They believed that research should answer questions they wondered about, and the research brought novelty with appropriate analysis, such as using a coding system. They signified the importance of research characteristics, and this implied they had comprehended knowledge of research as they could underline the components of good research. Next, they were asked about the research culture that links with encouragement to do research, opportunities to learn about current research, doing research as part of their job, and reading published research. When asked how often they dealt with the research, four said they often researched with limited publication in reputable journals, while two reported they seldom did it. One reported:

> I am very little involved in research, so sometimes only once a year. I have too many other tasks that I don't have time to do in-depth research. I prioritize research in the field of physics education because it fits with my interest and my research roadmap (Zidan-17/01/21-11:10).

Although the TEs reported that they often conducted research, the data from the set of questions revealed that conducting research or dealing with research activities was seldom completed due to teaching and other tasks. Once the TEs did research, it was based on their interest and research roadmap but less disseminating of their research. However, they often read research-related texts, as one mentioned:

> The readings I often read are related to my major and interest, such as professional journals, professional magazines, and web-based sources of research (Fanny-14/01/21-3:11).

The TEs could define good research, its importance, and often-read academic texts, and further, they reported that research had impacted their teaching and has a strong influence on what they did in the classroom. This shows that the TEs realized the importance of research for themselves and their students, which is part of their professionalism. Moreover, all the TEs reported that doing research is vital and compulsory for them as well as part of their careers and professional identities.

> It is very important because it can train critical thinking skills and scientific writing skills which are indispensable for the lecturers' PD (Hana-20/01/21-4:10).

The TEs viewed the values of research for the improvement of their skills, competences, and professionalism. In addition to this, their research motivation links with internal and external factors. The data have shown that internal motivation includes curiosity and promotion as part of their PD, while the external one is a benefit for students and institutions. Regarding their research motivation, however, their responses were slightly in contrast to what they perceived as the importance of research for TEs.

> Curiosity about a phenomenon or problem as well as academic factors such as the need for promotion make me do research, but lack of self-motivation discourages me and support from others is necessary. Expressing ideas in standardized English writing is a bit difficult. Sometimes boredom also comes when I have no more ideas to write about (Santi-19/01/21-10:10).

The script indicates that Santi experienced such a dilemma in herself. Her curiosity about the phenomenon or problem, promotion, and colleagues were the external factors to motivate her to do research. However, lack of self-motivation to conduct research with additional difficulties in academic writing and lack of research ideas increased the challenges of writing a research report. This could happen because the internal motivation in terms of competence is less than the influence of external motivation. Next, when they were asked about the support from the university and faculty for their PD activities, four reported that they were happy with existing PD programs while the rest felt unsatisfied.

> I have been teaching since 1992 and I am a senior TE. I am confused about the answer, how satisfied I am, of course I am not happy yet. Currently, I am associate professor and trying to become professor by fulfilling several requirements particularly in publication (Hana-20/01/21- 4:25).

Hana has been a TE for more than 20 years and worked hard to fulfil the requirement to be a professor that was a research publication. She perceived that she got support from the institution, but she was unhappy with her research and publication. This condition occurred because of her limited research and publication.

Challenges and Experiences on Sections of the Research Paper and Research-Related Competency During the PD Program

The TEs experienced and encountered some challenges during the PD program. These challenges and experiences were varied. Some of them emphasized particular sections of the

research, while others focused on research-related competencies. Two of them identified that writing the introduction section was uneasy.

> The introduction was a bit complex because it introduced research to be carried out. At first, I was wrong in determining the main umbrella or global issue in my research. But after receiving feedback, little by little, I found directions for my introduction. The introduction is also a little confusing because it is a bit difficult to distinguish it from the literature review section. Because I had just tried to write a research article "seriously" for the first time, I was indeed somewhat constrained in writing, not only in the introduction but also at all (Santi-19/01/21-10:21).

Santi reported her difficulties in writing the introduction section as she was misled by general issues of her research interests. The feedback from the mentor provided her with some guidance to make a better research introduction. The content of the introduction and literature review was somewhat confusing. She indicated that the writing research article done in the PD program was the first time she wrote it seriously as she struggled to complete all sections, particularly the introduction section.

> Writing the research results was the most difficult stage in writing a scientific article because I had to find words that fitted the results of my research. Usually, an article to be published is limited by the number of words and that was also an obstacle. It was because we had many research results. I thought everything was important and relevant (Lely-16/01/21-1:25).

Lely encountered difficulty in writing the research results due to appropriate vocabulary to represent the results and fulfilment of word numbers. She faced difficulties selecting which results should be written, as she perceived all results as necessary. The TEs also underlined their skills in reading the research article as two reported:

> The obstacle is how some reference articles must support the one sentence/one paragraph articles that we make. Reading introduction of the reference article was also challenging (Fanny-14/01/21-3:17).

> My barrier was interpreting the language of the articles and the titles, which were different from my experience (Wawan-22/01/21-8:42).

Reading the introduction section of the article was complex, as an argument needed support from some references. Further, the articles' language was dissimilar to the one that the TEs were familiar with. This situation might have happened because they did not read articles from reputable journals that required them to familiarize themselves with the language employed in the articles as suggested in the workshop.

Development of Research Construction and What Has Been Learned From the Workshop

TEs viewed that the research-related workshop was a program to construct their research engagement.

Joining the workshop made me know and understand more about research techniques and how to put them into proper academic writing. It taught me to dare to be tired and dare to admit that work was worthy of being internationally published (Fanny-14/01/21-3:32).

The workshop was beneficial and provided TEs with better knowledge and understanding of research methods and how to write it academically. The program also offered them more confidence that their hard work and effort would be worthy of being published. This indicates that the TEs reflect their value of being engaged in the PD program, which is essential as part of internal motivation.

Before I was in the workshop, I thought it was the best when I wrote the introduction section. However, it turned out to be contrary to what was expected in a research article. Then, the methodology was also simple, meaning not much, but very solid. So far, we have been copying and pasting, blaming students if they quoted and made incomplete citations. We had to read and summarize the essence of the topic, then we wrote (Wawan-22/01/21-9:14).

The workshop had shifted TE's prior conceptions of research as they realized the importance of their introduction section and the process of how to write the literature review from reading to summarizing previous research. It has provided new insights and experiences. This allowed the TEs to reflect on what they had done to their students and find out the way to deal with the challenges they encountered.

I get a lot of new information about writing articles in international journals, both directly from mentors and discussions with fellow program participants. I gained new knowledge about research and article writing. As I was familiar with the quantitative approach, learning the qualitative one gave me new methodologies in research. And at the end of the program, I could submit articles of my research results (Zidan-17/01/21-11:22).

The workshop provided experience for Zidan, who was familiar with the quantitative approach to gaining new knowledge and improving his research abilities and skills of a qualitative one. In addition, the workshop allowed him to discuss and get feedback and help with his writing both from his peers and mentor.

In writing a research article in the workshop, there were about 6 or 7 drafts before they were finally submitted. So, it was true that writing just one article required an iterative process of choosing words to write and adjusting to the specified number of words. It was very difficult for me to write with guidance for the first time. Even though the mentor was helpful in providing feedback, the end result was still my efforts to put the ideas in my brain into writing (Santi-19/01/21-10:36).

Santi discerned that writing an article was an iterative process as they had to have many drafts before submission. It was still challenging for her even with the mentor's help, as the most vital one was the efforts of the writers to put their ideas into writing. The TEs had learned more about themselves from their self-reflection, as one reported.

> What was clear for me was the feeling of tension when I would get feedback on
> our writing. I got scribbled even though it was valuable. The program was like
> learning to read Qurán (a Muslim's holy book); we had to understand the first
> letter to find out the following ones. I didn't discourage but made me always
> pray and pray as I faced a high level of difficulty. That's where our spiritual
> intelligence developed (Wawan-22/01/21-9:18).

Wawan perceived the feedback from the mentor as valuable; however, he felt tension
and was excited about it. He realized that writing an article for publication took time and was
a gradual process in which each stage had to be learned and completed before the following
phase. He was able to value the activity that allowed him to internalize and integrate it that
evoked spiritual awareness.

> The theory rotated, and it did not last forever; it adapted to conditions so that
> the practice was different too. Sometimes theory supported practice, and in fact,
> the practice supported the theory. We, as TEs, needed to understand this. This
> is why we needed to research to reflect our knowledge of the current issue
> regarding our major (Hana-20/01/21-4:21).

From the workshop, Hana understood that the theory evolves and the practice adopts
and adapts based on the context. The link between theories and practices was interconnected
and complementary, and this fostered her conduction of research. She emphasized this issue as
part of TE's professional identity. The PD program has sharpened her research awareness.

> The workshop was perfect for me, as I had previously told you, that this
> program had raised the spirit of self-confidence and enthusiasm as a lecturer.
> Whether it failed or not, it's a process, and if my article was rejected, I thought
> I had to improve it (Zidan-17/01/21-11:31).

The workshop facilitated the TEs' learning to improve their research engagement and
allowed them to enhance their confidence in conducting research and develop their
professionalism. In this case, the workshop empowered him to have research competence and
became autonomous as he disregarded whether his article would be rejected and would improve
it. Further, one suggested a better future PD program:

> The workshop should be based on the participants' interests; therefore, it would
> be more beneficial to proceed with writing the articles. It would help the
> participants to improve themselves and know the path to go. I was interested in
> the quantitative approach, so I would like to learn more about it (Lely-16/01/21-
> 1:43).

Lely was familiar with the quantitative approach, so when she was in the workshop that
emphasized qualitative research, she preferred to learn more about quantitative design. She
suggested that the PD program needed to suit the research interests of the participants to
facilitate their motivation in conducting research.

Discussion

This section discusses the TEs' perceptions and experiences in the virtual research-
workshop-series as one of the PD programs. To be specific, the discussion focuses on TEs'

perceptions and experiences of writing for research publication and what they have learned from the virtual research-workshop-series as a PD program. Prior to the workshop, the TEs in this study had comprehended sufficient research knowledge, as they were able to identify the importance of research elements such as population, experiments, tested hypothesis, and statistical analysis, objectivity, controlled variables, and published research results, to achieve good quality of research. Most of them were active in conducting research but not publishing it, and once they did research, the topic focused on their interest (Barkhuizen, 2020; Heron et al., 2021). Although they indicated they often conducted research, they emphasized that they had less time to do it because they do other activities such as teaching. This condition supports previous research that teaching and involvement in administrative roles deterred the TEs from spending more time on research and publication (Davis, 2019; Nicholson & Lander, 2020; Smirnova et al., 2021; Van der Klink et al., 2017).

The TEs denoted the importance of conducting and publishing research as part of their professionalism. This aligns with Ping et al.'s (2020) and de Sousa et al.'s (2019) investigations which found that research was a significant dimension of practice and of professional development for teachers. Moreover, they were content with the university and faculty supporting them for their PD activities, but they were unsatisfied with their research due to their limited research and publication. This context is contrary to some previous research that a lack of institutional support hinders the TEs' abilities to conduct research and do publication (Davis, 2019; Jiang et al., 2017; Kataeva & DeYoung, 2018).

The TEs encountered various challenges and experiences during the PD program. Some highlighted particular sections of the paper while others underlined research-related competencies. The content of the introduction and literature review was somewhat confusing, and the methodology and results/findings sections were tough. Moreover, they needed to learn how to write effectively and efficiently to meet the required numbers of article words. Updating current research issues was demanding for the TEs since they had difficulties in reading articles. This situation could happen because they were not used to reading research articles from reputable journals which might have different rhetoric from the articles they usually read (Chien, 2019). Additionally, they reflected that they blamed their students for incomplete citations, but then they envisaged that they would "copy and paste" rather than "read and summarize" for the references they cited.

The TEs indicated that writing a research article done on the PD program was the first time they wrote it seriously and they struggled to complete all the paper sections. They conceived that writing was a continuing and painful process, as they had to write many paper drafts prior to submission. It was still difficult, even with the help of the mentor. They had to do the writing step by step. This finding is relevant to some results of the previous study by Heron et al. (2021) in which the TEs perceived writing for research publication is a process that requires thinking and acting.

The language impedes the TEs to comprehend the articles and to write research for publication. Many studies have supported that language was the prominent problem (Burgess et al., 2014; Getahun et al., 2021; Hartono et al., 2019; Jiang et al., 2017; Smirnova et al., 2021). This might happen due to the discourse norms used in published research papers (Burgess et al., 2014). In more detail, it links to Chien's study (2019) that the language problem is the language proficiency that meets readers' and reviewers' expectations, convincing and logical content development, and discourse organization. Moreover, lack of vocabulary intensified the intricacy of reading and writing research for publication (Chien, 2019; Hartono et al., 2019).

The TEs perceived that the workshop was beneficial and provided them with better knowledge and understanding of research and how to write it academically, to gain new knowledge, and improve their research abilities and skills. This links with a previous investigation by Van der Klink et al. (2017) which found that research-related activities are

importance for TEs as part of their PD, and PD provides an enhancement in research skills and abilities and best practice (Speck & Knipe, 2005). The workshop offered them more confidence that their hard work and effort would be worthy of being published, and enhanced confidence to conduct research and develop their professionalism (Heron et al., 2021). This indicates that the TE reflected their values of being engaged in the PD program, which is essential as part of internal motivation (Ryan & Deci, 2000).

The findings have shown motivation to conduct research and write it for publication come from internal and external factors. The internal factors include curiosity about the phenomenon or problem, promotion, colleagues, and part of the TEs PD, while external ones are benefits for students and institution. This situation supports a study by Guberman and Mcdossi (2019) in the Israeli context that TEs' motives for research engagement were from a combination of internal and external motivations such as personal interest, contribution to practice, academic recognition, and career promotion. The findings have also indicated that the assistance of the mentor and teamwork allowed the TEs to have a sense of belonging to the group, relatedness, and being connected with others as they gained supportive relationships from others (Deci & Ryan, 1985; Ryan & Deci, 2000), and this learning occurred in the social context (Vygotsky, 1978). This implies that the change in one's conception was done with assistance from others, but more importantly, the change should come from the individual first (Duit & Treagust, 1998; Hodson & Hodson, 1998).

This study has enriched our understanding of the barriers for TEs to conduct and publish their research. The TEs in this study comprehend sufficient research knowledge, as they are able to identify good quality of research, read relevant reading research, and signify the importance of research as part of their professional identities. They lack self-motivation, time, research skills and competencies, and collegiality to conduct research. Insufficient language proficiency, limited vocabulary, inadequate knowledge of article sections, and difficulties in reading and writing research articles burden their challenges in writing and publishing their research.

The TEs' research skills and competencies improve after they have been involved in the workshop. It has facilitated the TEs autonomy, research collaboration, goal-oriented, and experience to write research for publication. The workshop has awakened their research motivation and engagement that scaffold positive insights of their self-research awareness. This is pivotal to encouraging individual motivation as it is a key to engaging in research. Although writing for research publication is demanding, the workshop has empowered them to be more confident to write research for publication. Moreover, all TEs in this study were able to complete their papers and submit them to the reputable journals.

This study is not without limitations. The study cannot provide vision of the long-term impact of the research-workshop-series as a PD program. Although the TEs indicated that the workshop was beneficial for their research skills and competencies and they intended to continue writing research for publication, it is impossible to say if these improvements will remain when the workshop is no longer available. It is recommended that future research be undertaken to examine the long-term effects of similar PD programs. The study only focused on six TEs in the Faculty of Education and Teacher Training in one of the public universities in East Borneo. Therefore, the findings cannot be generalized to other geographical settings.

The findings bring implications for the institution and the TEs. The institutions, faculty, and university need to maintain and support the TEs by organizing such PD program to nurture their professionalism and as a continuing PD program for sustainability. Conducting more PD programs related to writing for research publication will provide more opportunities for research engagement. The programs can be broken down into different topics such as PD on how to read and summarize research articles, academic writing to improve language proficiency, and PD for vocabulary and research phrases. This can be done among colleagues

by sharing expertise in research-based writing. In addition, the TEs are encouraged to work with colleagues within or across the disciplines to have research collaboration to gain collegial support and maintain the motivation to publish their research. It is expected that with TEs' self-motivation complemented with the colleagues' and faculty's support will facilitate research engagement that provide more opportunities for TE's to achieve publication.

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