



Teachers' Attitudes towards Webinars in Professional Development: A Case Study at Secondary School in Indonesia

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Abstract: The pandemic has prompted the proliferation of webinars for professional development in the teaching profession. This case study investigates the teachers' attitudes toward the webinars as professional development. The participants were the teachers from a junior high school in one public school in Indonesia. The researchers selected three participants based on the questionnaire by considering the frequencies following the webinars. The researchers conducted semi-structured interviews by adapting the three components of an attitude referring to behaviour, cognition, and affective. The study is significant to investigate how teachers perceive webinars as a tool for their professional development, describe the impacts, and as input for the educational organisation in conducting teachers' training. The results revealed the teachers' positive attitudes regarding behaviours, beliefs, and feelings towards the webinar as professional development. A webinar has eliminated the time and geographical boundaries in conducting professional development. Moreover, more professional networking and opportunities are additional advantages that bring more engagement and exposure to continuing their professional development. This research advocates that more webinars be held to develop the teachers' professionalism by related institutions and to open more access to growing teachers' careers by considering appropriate material and time based on the teachers' needs.

Keywords: behaviours, beliefs, feelings, professional development, teacher, webinar

Recommended citation: Perkasa, A. B., & Surono. (2023). Teachers' Attitudes towards Webinars in Professional Development: A Case Study at Secondary School in Indonesia. *Journal of Innovation in Educational and Cultural Research*, 4(2), 200-208.

INTRODUCTION

Professional development (PD) for a teacher is critical for education in all aspects. Therefore, the Indonesian government has set the foundation for PD for teachers as professionals. The Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers article 14 states the right and obligation of the teacher to engage in PD (Komara, 2016). The law also states development of the teaching profession must include the development of pedagogical, personality, social and professional competence. The law indicates that the government set the foundation as the manifestation of how vital qualified teachers are in fulfilling the goal of Indonesian education. Professional development is a tool for the teacher to reach the qualification settled by the government or educational institution as the teacher's livelihood.

Professional development (PD) generally refers to a person's professional growth. In the context of the teacher, PD is the activity or the process of improving student outcomes through improving teacher learning and altering teacher-classroom behaviours (Coldwell, 2017; Fischer et al., 2018). PD is the only solution for school systems to encourage teachers' performance levels. By PD, educators learn by improving their competencies, improving their performance, and raising student achievement. PD led to successful changes in teachers' practice, school improvement, and improvements in pupils' achievement (Balta & Eryilmaz, 2019). PD helps teachers gain more information and improve their professional abilities and academic achievement. It will also positively impact pupil learning, better understand national curriculum requirements, work with colleagues, and address primary school and classroom needs.

The ability to be flexible and adapt to an environment that is changing rapidly is, without a doubt, how ICTs contribute to education and society as a whole. ICTs, as technological tools, have expanded the scope and idea of education, developed new communication models, as well as created spaces for learning, information, debate, and reflection, among other things, as well as dismantled traditionalist obstacles in the classroom (Hernandez, 2017). The rapid growth of ICT encourages a new type of effective classroom that does well in attaining knowledge and skill in up-to-date communities (Hamilton et al., 2016). The case also occurs in learning as PD. The internet has changed seminars from the conventional mode of PD into seminars on web 2.0, namely webinars (Hockly, 2012; Mai & Ocriciano, 2017). The early pandemic setting, which requires social distancing, has encouraged using practical and needed webinars in teachers' training globally (Shin et al., 2022) and in Indonesia (Khairi, 2021). In addition, a survey conducted by Trust and Whalen (2020) among 325 teachers revealed that almost 40% of them followed webinars for remote teaching preparation.

Hockly (2012), as cited by Mai and Ocriciano (2017), defined webinars as seminars on the internet,

while a complete definition comes from [Zoumenou et al. \(2015\)](#), which stated webinars as a presentation, seminars, lectures, or workshops through internet networks. Moreover, [Durahman and Noer \(2019\)](#) noted that the seminar on the website (Webinar) merely consists of audio, video, and image data transmitted via webcam and computer or laptop devices. Webinars offer real-time interaction and synchronous communication between speakers and listeners and allow the usage of web-based archived information. The characteristics of the method have facilitated people from different places to conduct and follow knowledge transfer, whether it is synchronous or asynchronous, especially in a pandemic situation. Furthermore, Webinars are a solution for teaching in an online classroom that employs images and text for communication among the participants and presenters, which depends on the quality of the internet connection ([Gogali et al., 2020](#)).

This present case study investigated the attitude of three teachers in SMPN 1 Sukahening Tasikmalaya district West Java province towards webinars as professional development. In conducting research, the researchers used the framework of the three components of attitude ([Jain, 2014](#)). According to psychologists, attitudes are learned tendencies to view the world in particular ways. This can involve assessments of individuals, problems, things, or even occurrences. These assessments are frequently positive or negative, but they can also occasionally be ambiguous ([Cherry, 2021](#)). To make attitudes able to produce responses to be analysed, the researchers categorised three components of an attitude. They are behaviour, cognitive, and affective, referring to an individual's actions, beliefs, and feelings ([Fabrigar et al., 2014](#); [Jain, 2014](#); [Cherry, 2021](#)).

First, according to [Kaiser and Wilson \(2019\)](#), behaviour is the manifestation of attitudes such as verbal responses, facial expressions, and actual behaviour that is observable. In comparison, [Fabrigar et al. \(2014\)](#) defined behaviours as an image of actions and responses toward an object. The observable actions stand as a symbol for the character and the thought of the person toward any object. Second, [Wyer and Albarracin \(2014\)](#) defined belief as the likelihood that something is true or will happen related to the knowledge that has been attained. Moreover, a person's cognition which refers to a belief, is the notion of one towards the attitude object refers to cognition ([Fabrigar et al., 2014](#)). Cognition or belief is one holds adverse and favourable judgments. Third, according to [Schimmack and Crites \(2014\)](#), affect is the evaluation of one towards an object which can be positive or negative. While [Fabrigar et al. \(2014\)](#) defined affect as a person's positive and negative feelings towards an attitude object. Positive affect makes the actor pleasant to do engagement with a thing, while negative affect encourages unpleasantness.

A study by [Kouteh \(2021\)](#) compared the attitude of Jordan female English teachers to international English teachers in a foreign language context. It revealed positive attitudes among them due to the use of webinars in conducting PD. Both teachers believed that training on webinars has a positive impact on their autonomous learning and their teaching practices. On the effects of the webinars on student classrooms, Jordanian teachers showed moderate attitudes, while international teachers showed positive attitudes. The Jordanian teachers stated that they only attended webinars during the holiday. In order to encourage teachers to attend webinars for professional development, this study suggests rewarding teachers who participate in webinars, creating supportive environments and conducting continuous research to gather diverse experiences to support the findings of subsequent studies.

Another qualitative study that employed a case study by [Mai and Ocriciano \(2017\)](#) exploring the teachers' beliefs and practices of digital professional development in different schools across Vietnam revealed that the webinars had improved their motivation to select teaching methods in that they have learned in the webinar on their daily teaching practice. Observations and interviews showed that the teachers had improved their pedagogical and social competence, positively impacting their teaching practices. The teachers have been able to test out new methods in their own educational situations thanks to the digital involvement, however, with various degrees of success. The webinars have also given the teachers time to expose themselves to a virtual learning environment. The research encourages teachers working in rural regions, especially those who are equipped with basic technology gadgets, to use webinars as an appropriate substitute for expensive traditional face-to-face conferences.

A study conducted by [Tardini et al. \(2020\)](#) revealed that implementing the webinar as professional development with the topic of learning evaluation during the pandemic has increased teachers' understanding of the topic. Moreover, training on using digital applications for student assessment has significantly increased the utilisation of these applications. Furthermore, training activities for the preparation of evaluation instruments through the Quizizz media, which was held online (webinar), could improve teachers' professional competence in compiling and carrying out evaluations of learning outcomes. The teachers are able to do immediate follow-up regarding the achievement of the student assessment. The research promotes similar webinars to be conducted more often, especially in the pandemic teaching and learning situation.

There needs to be more research on teachers' attitudes towards webinars as professional development, especially in Indonesia's primary and secondary teacher school context. Therefore, the study is significant to investigate how teachers perceive webinars as a tool for their professional development, describe the impacts, and as input for the educational organisation in conducting teachers' training. The researcher defined the

examined objectives as the teachers' impressions and descriptions of the impacts of webinars as a professional development tool. The research questions emphasise that teachers' attitudes refer to teachers' behaviours as actions, beliefs as judgment preferences, and feelings as positive or negative emotions toward the webinar in promoting their professional development.

METHODS

The researchers employed a case study design in this research. According to [Sugiyono \(2015\)](#), the case study is qualitative research that explores a program, event, activity, process, or person or more persons in gathering specific information using various techniques continuously and bounded by the time and the action. The definition is quite similar to that mentioned by [Thomas \(2016\)](#), he stated that a case study is the analysis of people, places, things, decisions, times, initiatives, policies, institutions, or other systems explored holistically using one or more approaches. As the subject of the research, the case under investigation will clarify and shed light on some analytical theme or object. To look more at the purpose of the inquiry, [Odell \(2001\)](#) stated that the objective of a case study is to establish a holistic and specific capture of some phenomenon.

Purposive sampling is used in choosing the participant to obtain rich data and appropriate sample utilisation ([Etikan et al., 2016](#)). Furthermore, a relatively small and purposefully selected sample may increase the depth of understanding in a qualitative investigation. Purposive sampling is used to select respondents most likely to produce appropriate and meaningful data and is a technique for identifying and selecting circumstances that make the most use of limited research resources. ([Campbell et al., 2020](#)). The research participants are teachers from SMPN 1 Sukahening Kabupaten Tasikmalaya West Java Province. The researchers assigned questionnaires to the teachers to determine the frequency of participating in webinars for PD. Three teachers with the highest frequency were selected to participate in the following research stage, the interview.

In collecting the data, the researchers employed semi-structured interview instruments consisting of closed and open-ended questions followed by how and why ([Adams, 2015](#)) using Bahasa Indonesia. The instruments investigate teachers' attitudes toward webinars in PD divided into three categories referring to the three components of attitude ([Fabrigar et al., 2014](#); [Jain, 2014](#); [Cherry, 2021](#)). Furthermore, the categories of attitude in the research questions are divided into several sub-categories: 1) The instruments investigate the teachers' behaviour before, during, and after the webinars as PD. 2) The instruments investigate teacher views about the weaknesses and the strength of webinars as PD. 3) The instruments explore teachers' feelings towards webinars as PD. The interview was recorded in digital audio format, transcribed, translated, and coded. Before the interview data was translated into English, the researchers conducted triangulation by member checking to support the validity of the data ([Candela, 2019](#)).

The researchers employed thematic analysis to analyse the result of the semi-structured interview. As part of the qualitative descriptive method, thematic analysis is a systematic technique for identifying themes from the data in hand through coding, construing the meaning of certain phenomena by constructing themes ([Vaismoradi et al., 2016](#)). The data includes interview transcripts, participant observation field notes, notebooks, papers, literature, artefacts, photographs, video, websites, e-mail correspondence, and so on. The study applies four phases of theme development which are initialisation, construction, rectification, and finalisation. After the data were collected, the researchers coded the participants' answers and then conducted the identifying and differentiating process toward the themes emerging from the data.

RESULT AND DISCUSSION

The questionnaire revealed three teachers with the highest frequency of following self-professional development using webinars. The researcher recruited three educators as case study participants. The researcher also asked about the teaching experience of each of the teachers as socio-demographic data. The following table (table 1) presents the teachers' teaching experience and their participation frequencies in participating in webinars.

Table 1. Teachers' working experience & participation in the webinar

Participant	Teaching Experience	Webinar Participation
Teacher 1	> 20 years	6 times
Teacher 2	> 30 years	> 10 times
Teacher 3	>10 years	> 10 times

The next stage was the semi-structured interview to investigate further their attitudes toward webinars as PD in their teaching professions. The semi-structured interviews employed by the researchers have revealed more than 2000 words to be processed into categories and themes. Presenting the teachers' interview transcriptions will carry too much space and distract the presentation's important points. Therefore, the researchers will present most of the findings using the researchers' point of view, whether in words or graphics.

The researchers will divide the results into three sections based on the three components of attitudes (Fabrigar et al., 2014; Jain, 2014; Cherry, 2021): teachers' behaviours, beliefs, and feelings. In investigating teachers' behaviors towards webinars in PD, the researchers employed some research questions that examined the participants' behaviors before, during, and after the webinar. By analyzing the results, some themes emerged from the data as shown in Figure 1. The issues are the aspects that are internalized in the teachers' behaviors.

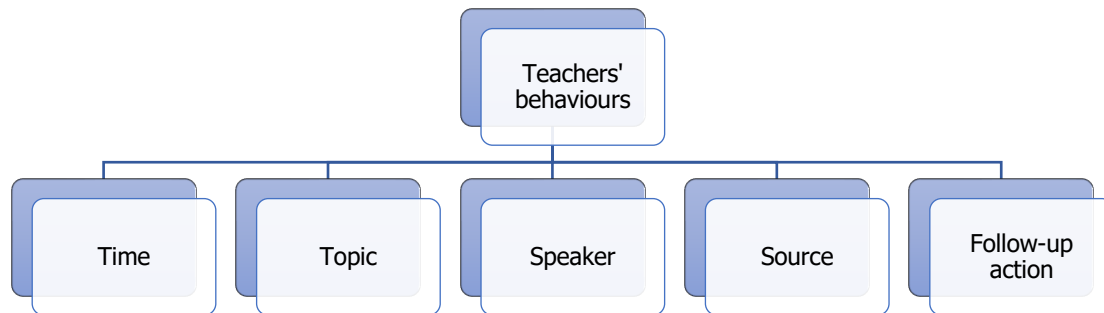


Figure 1. Aspects that internalized teachers' behaviors regarding the webinar

The time in graphic 1 refers to the participants' considerations, practices, and views regarding time events they had followed. The interview revealed that Teacher 1 stated that the time of the event is the most important thing to consider than the topic. Unlike Teacher 1, although Teacher 2 and Teacher 3 noted that time is not the main thing to consider in a webinar, they expressed that time is the second priority in following a webinar. Moreover, the participants stated they followed webinars during the workday outside work hours in the late afternoon and the evening after finishing their job at school or on the weekend when they could participate in the event from the morning. Additionally, Teacher 3 stated that more than the time conducted for the webinar she had followed was needed. She felt that extra time is needed to comprehend the material well.

The interview also revealed that Teacher 2 and Teacher 3 main priorities in considering the webinar they will follow based on its topic or the material is given. They choose topics that they have an interest in and are appropriate for their duty in teaching. The topic of webinars that gain teachers' interest from the interview can be divided into professional and practical knowledge. Teacher 1 stated that most webinar topics she had followed were about material depth in his field of mathematics. It is because of her duty to train her students to participate in the OSN, which is the national science Olympics.

Moreover, teacher 2 indicated her interest in the new Merdeka Belajar curriculum. Another topic that interested the teachers is new ICT technology that can be used in their practice as teachers. They participated in the webinar about how to use a computer or mobile applications, such as to make teaching media and teaching e-module that is applicable and can be applied directly in their classroom. Regarding the speaker provided in the webinar, Teacher 2 stated that the speaker or the expert credibility presented is also one to consider in deciding the webinar to be followed, although it is insignificant. She said, "... Next is usually the speakers. ...Yes, but that's not really significant". It indicates that Teacher 2 wants to ensure that the expert expertise is appropriate with the knowledge to be transferred to strengthen the validity and access deeper understanding.

The webinar topic is the most important thing for the teacher in considering attending the event. The finding revealed that the teachers prefer professional knowledge, which refers to knowledge deepening their teaching subject in the classroom or knowledge that existed in the curriculum. Topics about the subject to teach and curriculum are engaging topics for the webinars to be followed, as they can provide more understanding regarding their teaching material, as mentioned by one of the participants. To conclude, the interest in professional knowledge in the curriculum is the effect of the curriculum changes that have been undergone in Indonesian education. According to Patekur et al. (2022), Indonesian teachers have experienced thirteen curriculum changes which are 1947, 1952, 1964, 1968, 1973, 1975, 1984, 1994, 1999, 2004, 2006, 2013, and 2013 revision. More recently, the newest curriculum change was in 2020, when the Ministry of Education, Culture, Research, and Technology introduced Merdeka Belajar as the new curriculum (Yusuf & Arfiansyah, 2021). The change has caused fluctuation regarding teachers' understanding of the curriculum. A new curriculum means the teacher has to learn it again from the beginning. This issue influences teachers' preferences toward curriculum knowledge.

Other teachers' preferences for the webinar topic are practical knowledge which refers to material they can learn while practising it directly. According to Aspbury-Miyaniishi (2022), practical knowledge refers to the expert instructors' intuitive, generally tacit, positioned professional knowledge or expertise that informs their practise. Topics related to using digital technology in the classroom or creating electronic modules to help the teaching and learning process are examples of practical knowledge that is interesting for teachers. The rapid

development of internet-based technology that significantly influences the practice of teaching and learning has encouraged teachers to learn new technology for their classes. It is in line with [Nurhas et al. \(2021\)](#) that rapid and constant development in information technology and new infrastructure to the internet is changing educational institutions. The word *kekinian* refers to up-to-date and has become the motivation tagline for teachers conducting their teaching and learning process. According to [Maulina et al. \(2022\)](#), multimedia technology in teaching and learning encourages students to learn and practice their higher-order thinking skills. Digital technology brings more engagement for the digital native students, a term coined by Prensky in the learning process ([Prensky, 2001](#); [Evans & Robertson, 2020](#)).

In accessing the material, the teachers followed three stages. The stages refer to the time sequences: before, during, and after the events. The internet was the teachers' ultimate tool to find the material regarding the webinar topic they followed. All the teachers stated that WhatsApp and Telegram are multimedia chatting applications as the primary source for them to get information about webinar events that will be conducted. Their involvement as members of certain professional groups or webinar groups they had followed, which WhatsApp and Telegram accommodated, has given much information about webinars. The teachers also mention other social media such as Instagram and Facebook. In addition, information from colleagues is also one of the sources. Furthermore, the interview shows that the teachers look for the material autonomously besides the materials given in the webinar. In contrast, only Teacher 2 stated that usually, the material from the organiser was usually enough. She only looked for additional material, which she considered very interesting.

The development of social media and social networking on the internet has influenced teachers in developing their professional community practices. The practicality of the media for communication enhances the teacher's spread of information related to PD in their profession and fields. Regarding the platforms, [Luo et al. \(2020\)](#) stated are commonly used to describe the online social media space where professional development takes place. In the Indonesian context, the teacher Whatsapp group is expected, whether in the school context, subject, or other group types. Research conducted by [Habibi et al. \(2018\)](#) revealed that Social Networking Services (SNS) such as Whatsapp, Telegram, Email, and Google Form encourage interaction with experts, promoting learning motivation and exposure to autonomous learning, critical thinking, and material engagement.

Follow-up actions refer to the behaviour of the teachers after the webinars, which means learning further, application and reflection. Besides doing the assignments after the webinar, Teacher 1 stated that she usually does further reading related to the material given in the webinar. In contrast, teacher 2 believes that reading more about the material is insignificant, but practising and applying it will bring more understanding. All the teachers said they used to practice and apply the material they got in the webinar. Moreover, the teachers' excerpts indicate their preferences to reflect on the knowledge regarding their teaching practice in the classroom. Whether it is after the webinar refers to reflection on the daily teaching practice with the material they had learned before or reflection after they applied knowledge in the classroom.

In following up on the knowledge teachers got from the webinar, the findings show that the three teachers further learn, reflect, and apply the material they have learned. Further learning, reflection, and application of knowledge provide teachers with a deeper, comprehensive, and long-lasting understanding and improve their actual practices as professional teachers. Teachers' reflection also indicates their active learning, questioning their teaching practices, and construing new pedagogical competence if they have to ([Kayapinar, 2018](#)). The finding also emerges the importance of learning methods that can stimulate teachers' long-term memories to be employed in the webinar. More practising and experience are some methods to improve the teachers' knowledge retention of the material, such as experiential learning. The statement is in line with what has been stated by [Leal-Rodríguez and Albort-Morant \(2019\)](#), that experiential learning promotes more knowledge retention for students and makes it easier to be absorbed, in this case, the teachers as the adult learners.

The interview revealed the negative and positive cognitions of the teacher towards the webinar. The research questions assessed the negative and positive beliefs of the teacher regarding the webinar practice. It refers to the weaknesses and strengths of webinars as professional development for teachers. The researchers differentiated webinars' weaknesses and strengths into some categories, as shown in graphic 2.

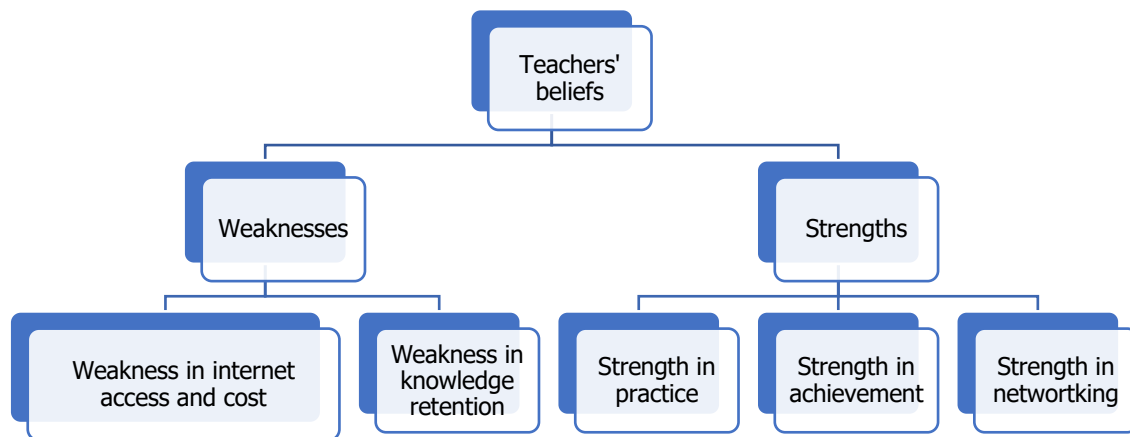


Figure 2. Teachers' beliefs regarding webinars as professional development

The interview revealed that the teachers identified the webinar's weaknesses into three factors. They are weaknesses in internet infrastructure and expensive cost, and weakness in knowledge retention factors. It clearly stated that all the participants expressed their problems with unstable internet access following the events, or it can be concluded as infrastructural problems that occur in online learning. The teachers also stated their issues with the internet balance to be spent in following webinars. Moreover, Teacher 2 also expressed her problem with her learning achievement. It is hard for teacher 2 to maintain knowledge retention.

The dependency of online learning on internet connection and networks brings technical problems often. This issue is also the case in research conducted by [Giatman et al. \(2020\)](#); the questionnaires revealed that 80% of 40.000 Universitas Negeri Padang students experienced difficulties in accessing the internet. The difficulties define as the technological challenge refers to inadequate access to infrastructure, including technology equipment and the Internet ([Fernando et al., 2020](#)). The most important thing is managing these difficulties in the training process. An unstable internet signal can cause problems such as broken audio, freezing video, screen sharing failure, and delays in a video conference event which also occur during the webinar. The problems of unstable connections to internet signals make the teachers unable to attain the complete knowledge given. Worst, the issues can frustrate the learner and discourage learning attempts. Disparities in telecommunications infrastructures in each district caused some areas to have lousy quality internet connections ([Laksana et al., 2022](#)), which encouraged the internet divide.

Despite the weaknesses discussed in the previous section, the participants expressed more advantages and strengths that they have experienced in participating in the webinar to develop their profession. The researchers classify the strengths into Strengths in practice, Strengths in achievement, and Strengths in networking. Teacher 1 and Teacher 2 stated that a webinar is convenient. They can participate at home and do not have to go anywhere. It is also economical because the cost of transportation can be eliminated. Furthermore, teacher 1 expressed more exposure to the knowledge. She can record the events and watch them many times. All the teachers believe that the webinars they follow can improve their skills and competence related to their professions as teachers. Teacher 3 emphasised improving the information and communications technology that can be applied in their job.

The teachers also believe webinars can enhance their practice in the classroom setting. However, it is insignificant because adaptation has to be done based on the resources available in their school. Teachers 2 and 3 also stated that the webinar cycles made them understand the components and applications of online teaching and learning processes. The teachers also stated another strength of the event. Teacher 1 stated that webinars could improve her performance to do all the activities on time. Moreover, Teacher 1 and Teacher 3 stated that webinars could improve their interactions in professional communities and expand their networks to further opportunities for other professional development.

Despite its minor disadvantages related to infrastructure, the findings highlight the advantages of the teachers in following the webinar. All the teachers expressed their positive beliefs toward the webinar as PD. From the result, we can conclude that the PD webinar has successfully improved the teachers' competence and professionalism and even brought external advantages that were not set as the goals, such as social engagement among the participant that encourage collaborative group work among them and eliminated the geographical boundaries. It is in line with what was stated by [Timonen and Ruokamo \(2021\)](#) that webinar pedagogy facilitates and improves group-based active collaborative learning and knowledge building. Webinar also encourages the teacher's competence in conducting online classes. They can apply their experience in the webinar to practising online courses for their students.

In assessing the teachers' feelings toward the webinar, the researchers examined the teachers' feelings,

whether it is before, during or after following the webinar and asked whether there was any pressure that they felt in following the webinar. All the respondents mostly stated their positive feelings towards webinars as professional development. Teacher 1 and teacher 2 felt eager, curious, and hopeful towards the material they were going to achieve and expected that the contents would solve their problem in classroom activities. Teacher 1 said she was an enthusiast and pleased to get many new knowledge and experiences to improve her professionalism and followed the events seriously. While Teacher 2 believed that the material available is significantly needed to enhance her teaching practice and make her an enthusiast. Moreover, Teacher 3 enjoys her participation in questioning and discussing the materials.

The positive feeling experienced by the teachers in participating in the webinar as PD indicates that the whole aspect of the webinar as PD for the teacher is significantly engaging. It is also a sign of the teachers' awareness of the importance of PD and indicates the teachers' attitude toward their professions. Therefore, teachers self-initiated participation in the webinar as an indication of their professionalism and that the teachers are aware of the importance of PD in improving their professionalism. They have conducted the self-initiated PD, which is known as professional development that arises from a teacher's initiative to grow their knowledge, experience, and attitude; it is self-directed and intrinsically driven (Karaaslan, 2003; Rahman et al., 2020), as part of their rights and duties. Furthermore, the findings indicate that the teachers limit their time following the PD only after working hours. It is also related to the functions of webinars in professional development that they followed as self-initiated professional development. The teachers' statements also indicate that the time for following the independent PD at school is unavailable. Although it is vital for the school's needs, providing a regular time for teachers to conduct their self-development during school hours is challenging. Regarding the negative feeling, Teachers 1 and 2 felt downhearted only if they failed to comprehend the knowledge. It indicates the teachers' strong self-determination in improving their competence. On the contrary, all the respondents stated there was no pressure to follow the events. They felt motivated and inspired because they followed the events as self-initiated related to developing their professions as teachers.

CONCLUSION

The results revealed positive attitudes of the three teachers following the PD event using the webinar method. Those teachers can choose a particular topic that is appropriate for their field, manages their time well, trust the validity of sources, and conduct follows up actions related to the knowledge they learned in the webinars. They also believe that webinars can improve their skills and competencies as teachers, whether at the knowledge or practical level. Moreover, a webinar has eliminated the time and geographical boundaries in conducting professional development. More professional networking and opportunities are additional advantages that bring more engagement and exposure to continuing their professional development. Although the teachers expressed some weaknesses webinar in PD, it is minor. Therefore, it can be concluded that PD teachers have successfully obtained three of the goals of PD, which are changes in teacher practices, attitudes, and beliefs. Moreover, despite the time limitation and the limited participants to further investigate the impacts on students' achievement and provide a more comprehensive analysis, the researchers suggest more webinars be conducted by considering the appropriate material and time of the webinar based on the teacher's needs. The researchers encourage further research on this topic, especially in the Indonesian context.

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