ENGLISH TEACHER PROFESSIONAL DEVELOPMENT TO EDUCATION 4.0 DURING THE COVID-19 PANDEMIC

Muhammad Anjar Nugraha
English Education Study Program
Faculty of Teachers Training and Education, Subang University, Indonesia
E-mail: anjarnugraha@ymail.com

Ida Maulida
English Education Study Program
Faculty of Teachers Training and Education, Subang University, Indonesia
E-mail: izdamaulida@gmail.com

Abstract: Teachers' Professional Development (PD) is one of the solutions to make the teachers always improve their skills and adapt to current issues. One of the challenges that teachers have to face nowadays is Industrial Revolution 4.0 (IR 4.0). Furthermore, skills development in the time pandemic is required. This study aims at investigating English teachers' professional development to the 4.0 education era during the covid 19 pandemic. This research was conducted on a member of the English Teachers Support Group (MGMP) in Subang, West Java. To collect the data of the research, the questionnaire and semi-structured interview have administered to the participants. The data analysis found that the participants have a positive perspective towards PD to 4.0 Education Era with five factors (Time, Funding, time, School Principal, Colleague Influence, and School Culture); courses or workshop is the most helpful in PD activity; last, availability of facilities is the most challenge in using technology in the classroom. Furthermore, it is known that young teacher from public school has a wide chance to join PD activities; age, colleague and school principal influence the participation of MGMP event; determining teaching content is a the most challenge in implement the education 4.0 during the covid-19 pandemic.
Keywords: *professional development; education 4.0; teacher support group (MGMP)*

INTRODUCTION

The pandemic of Coronavirus Disease 2019 (COVID 19) has impacted all aspects of human existence. One of the areas affected by the Covid-19 epidemic is education. Closing schools and moving to online learning is one of the government's policies. Many educators working with in-service and pre-service teachers are having trouble planning for online or blended learning (Hartshorne, Baumgartner, Rakowski, & Ferdig, 2020; Muhayimana, 2020). Despite the fact that this condition is in line with the vision and mission of future learning in the Industrial Revolution (IR) 4.0 era, it nevertheless has advantages and disadvantages (Abidah, Hidaayatullaah, Simamora, Fehabutar, & Mutakinati, 2020).

Professional development (PD) acts as a fundamental and crucial to guarantee or real contribution to students learning (Marcelo, 2009; Mizell, 2010). PD can be defined as the educators' effort to strengthen their practices and experiences throughout their careers. They assume that teacher professional development refers to a variety of both formal and informal experiences of an individual or collective process that should be accomplished by the teachers. Professional development is not only referred to as a formal process such as a conference, seminar, workshop, course, college, but it also occurs in informal contexts such as independent reading, peer discussion, or group discussion (Mizell, 2010). Tanang & Abu (2014) claim that a real contribution to students' learning is a commitment to do the self-improvement. Policymakers, scholars, and educators around the world agree that promoting the PD of teachers is one of the keys to success in the globalized world changes (Bautista & Oretga-Ruiz, 2015). Lisnawati (2019) argues that the professional development of Indonesian teachers consists of three demands: (1) having pedagogic, personality, personality, and social competence, (2) Implementing a current curriculum for language teaching and learning, (3) Producing graduates with 21st-century skills.

Many programs have been implemented by the government to professionalize more than 2.7 million Indonesian teachers such as conducting teacher certification programs, facilitating their undergraduate's degrees, conducting Teacher Competency Test (UKG), providing kinds of training and workshops, and conducting Teacher Education Program (PPG) (Afrianto, 2018). He claims that the challenges of becoming a professional teacher are not easier. One of the challenges that teachers have to face nowadays is Industrial Revolution 4.0 (IR 4.0).

Industrial revolution 4.0 seems a current issue to be discussed among practitioners and academics in many countries including Indonesia. Technologies and broad-based innovation emerge much faster and more widely in IR 4.0 that has impacted society, economy, business, and also education (Schwab, 2016; Fisk, 2017). Historically, industrial 1.0 was indicated at the end of the 18th century by the influence of production mechanization to the effectiveness and efficiency of human activities; industry 2.0 is started in the early 20th century indicated by mass production and quality standardization; robot-based manufacturing was characterized as industry 3.0; however, industry 4.0 goes beyond manufacturing collaboration that caused by the information technology revolution (Hermann, Otto, & Pentek, 2015).

There are nine trends of Education 4.0: (1) learning can be taken anytime and anywhere, (2) learning refers to student-centered, (3) students can determine what and how they learn, (4) Project-based will enhance students learning, (5) exposing students to more hands-on learning, (6) exposing students in data interpretation, (7) students' factual knowledge can be assessed during the learning process, (8) students opinion plays as the input to the curriculum designers-update and usefulness, and (9) students will learn independently (Fisk, 2017).

English teachers should adapt to education 4.0. It means they have to develop their professionalism. Learners' achievement depends on the readiness of the teacher's skill itself. The teacher must make the graduates have the skills that IR 4.0 needed. Teachers Professionalism Development (PD) is one of the solutions to make the teachers always improve their skills and adapt to current issues. (Lokita, Utami, & Prestridge, 2018) researched how English teachers learn in Indonesia. They focused on the tension between policy-driven and self-driven professional development. The findings show that the participants learn through PD events such as attending the seminar, workshop, and training. Besides, these teachers as well do online Professional Learning (PL) which was self-directed such as web-browsing, reading articles, and downloading. Besides, they mentioned that they preferred to share with their colleagues at their school site. A variety of online platforms are used to aid in the teaching and learning process. As a result, technological skills are essential for both teachers and students since it has become an important role in the online learning implementation during covid-19 pandemic (Al Kodri, 2020; Nugraha & Yulianto, 2020).

Reimers, Schleicher, Saavedra, & Tuominen (2020) have identified the efforts or alternative methods for students and teachers to continue with their lessons during this pandemic. They investigate online educational resources that 333 participants from 99 countries had found helpful in supporting education continuity. The resources are divided into three categories based on their intended use, they are curriculum resources, professional development resources, and tools resources. It can be concluded that the teachers or the educators realized the common curriculum should be transformed to covid-19 curriculum. That is why the minister of education in several countries design the emergency curriculum under pandemic circumstances, including Indonesia. The Ministry of Education, Culture, Research, and Technology provides the courses, online workshops, webinars to participate. That played as the aid for Indonesian teachers to develop teaching and learning skills. Moreover, the government also cooperates with some learning management systems to enrich the use of digitalization in the online learning process.

Hence, this study aims at answering three research questions: First, what are the teachers' perspectives towards Professional Development in education 4.0 during covid-19 pandemic? Second, what are the activities of PD that have been enrolled to improve the skill of education 4.0 during covid-19 pandemic? Last, what are the challenges to involve education 4.0 during covid-19 pandemic?

METHOD

This research was conducted on a member of the Teacher Support Group (MGMP) in Subang, West Java. Subang decided to be the place for this research was because the researcher is one of the lecturers of Universitas Subang which is located in the same town. Even though Subang is

near Bandung, most academicians are rarely given attention. The participants of this research are the member of Teacher Support Group (MGMP) of English subject. The reason why the researcher only took MGMP of high school because most of the graduates of high schools refer to apply for the job rather than continue their study to the university. High school teachers must prepare graduates for a future life with any unpredictable situation. They have to face Education 4.0 and 21st-century abilities.

To collect the data of the research, the researcher administered both close-ended and open-ended questionnaires to the participants. The questionnaire is adapted from (Bayar, 2013). The questionnaires cover internal (personal) factors and external (environmental) factors. The former consists of teachers' attitudes toward professional development and teachers' self-efficacy. The latter consists of time, funding, principal influence, colleagues' influence, and school culture. Malik, R.S. & Hamied, F. A (2014) state that the questionnaire helps the researcher to get and collect large data relatively for a short time. Semi-interviewed data was taken as secondary data to support the data from the questionnaire. Three participants were chosen to be interviewed. The collected valid qualitative and quantitative data were systematically transcribed, organized, coded, looked for patterns, thematically categorized, synthesized, interpreted, and concluded to answer the research questions (Gay et al., 2009; Fraenkel et al., 2012).

RESULTS AND DISCUSSION
This part is started by establishing Participants' Demographics. Seventy-Eight English teachers participated in distributing the questionnaire. The data can be shown in the table below:

Table 1. *Participants' demographics*

Gender	Male: 56 participants
	Female: 22 participants
Age	Under 25: 0
	25-29: 12 participants
	30-39: 11 participants

	40-59: 55 participants
	60 more: 0
Teaching Experience	Under 25: 61 participants
	25-29: 5 participants
	30-39: 11 participants
	40-59: 1 participant
	60 more: 0
Level of formal education	D3: 0
	S1: 54 participants
	S2: 24 participants
	S3: 0

Regarding the table 1, it is known that: most of the participants is male; most of the participants are male between 40-59 years old; most of the participants have a teaching experience under 25 years; and most of them got a bachelor degree of level of formal education.

After delivering the questionnaire, the researcher interviewed three participants to enrich the primary data. The researcher selected participants with various backgrounds. The information can be seen as follow.

Table 2. *Participants in the Interview*

	T#1	**T#2**	**T#3**
Age	40-59	30-39	30-39
Teaching Experinece	30-39	Under 25	Under 25
School	Public	Private	Public

RQ#1 What is the teachers' perspective on professional development?
To answer the first question, this study divides the questionnaire data into two factors: internal and external factors. The internal factor refers to the participants' attitudes of self-efficacy. It means how their attitude, behavior, and cognitive view towards PD in education 4.0 during the covid-19 pandemic. Meanwhile, the external factor refers to how the environment affects them in conducting professional development. The external factor includes time, funding, principal influence, colleague, and school culture. Hence, this study will not only find either a positive or negative perspective but also investigate to what extent the teachers claim it. The findings of internal factors can be seen from the table below.

Internal factor

Table 3. *Internal factors*

No.	Statements	Neg.		N.	Pos.	
		SD	D	N	A	SA
1.	Professional development activities are necessary for teachers.	2			30	46
2.	Professional development activities help teachers to develop their instructional skills	2		1	38	37
3.	Professional development activities are valuable enough to justify the time spent.	2	1	7	56	12

4.	Participating in professional development activities makes me feel better about myself.	1	46	31
5.	The best way for teachers to learn more is to participate in professional development activities	9	47	24
6.	I enjoy participating in professional development activities.	3	54	21

Neg: negative, N: neutral, Pos: Positive
SD: strongly disagree, D: disagree, N: neutral, A: agree, SA: strongly agree

The data from table 3 shows that almost all the participants agreed with the six statements above. They agree that PD is necessary, helps them to develop the instructional skills, is valuable enough to justify the time spent, makes them feel better about themselves, the best way for them to learn more enjoys in participating in it. Thus, the teachers have a positive attitude towards professional development. However, how effective their belief, as the internal factor, influences the consistency in continuing PD. In contrast, the study from Hürsen (2012) found that PD activities are unstable. It is influenced by age, gender, and teaching experience. Women teachers, younger teachers, and less experience have positive attitudes towards PD. However, teachers' motivation and commitment play key factors for professional development to deal with a high-demand workload condition (Kusmaryani, Siregar, Widjaja, & Jatnika, 2016). It is in line with teachers' challenges in the new normal. Teachers have to adapt to the Internet of Things (IoT). We can conclude that even though the participants claim that PD activities are demanded for them, they have to show their commitment to developing their skills. This study will find out as well how the external factors influence their commitment. The data will be explained in the following sub-topics.

External factors
Time

12) I have time to regularly attend offered professional development activities.
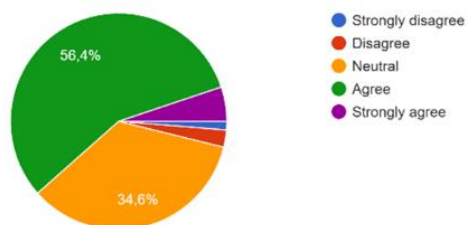78 tanggapan

Figure 1. *Time*

The findings show that 61.5% agreed that they have time to regularly attend offered PD activities. In contrast, 3.9% disagreed about it and 34.6% is neutral. It can be concluded that almost half of the participants are having doubt either they can attend professional development activities or not. The research from (Mascher, 2016) found that time was the biggest factor impacting the decision whether or not to participate in PD activities, followed by a lack of incentives and scheduling. Besides, the data demonstrate that the main reason why the participants want to spend time on PD is for improving their skills followed by getting their knowledge. The findings can be seen in the chart below.
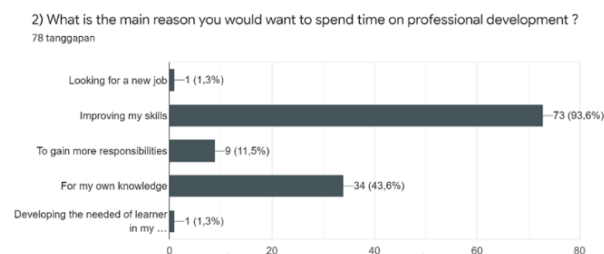

2) What is the main reason you would want to spend time on professional development ?
78 tanggapan

Chart 1. *The reason to spend on PD*

It can be inferred that the participants are willing to spend their time developing their skills. Webinars and online workshop are the examples of PD common activities during the pandemic. The teachers can choose and attend the webinar with any topic they want. Spending time to participate in those activities will be very possible since it has conducted online. In another word, the teacher can attend the event at any time from almost anywhere via the internet. However, not all Indonesian areas are covered with stable internet connection. Some major regions facing slow internet connections, some other regions have no internet.

Funding

Funding, in this case, is divided into two parts: first, funding to pay the additional teacher to cover the classes; second, funding to support the salary supplements during PD activities. The data can be seen in the table below.

Table 4. *Funding*

Statements	Pos.	Neut.	Neg.
Lack of funding for an additional person to cover classes prevents me from participating in	48.7%	25.6%	5.7%

professional development activities.			
Salary supplements would encourage me to participate in professional development activities.	66.6%	23.1%	0.3%

Pos: positive, Neut: neutral, Neg: negative

Regarding the first statement, almost half of the participants agreed that they have to find an extended person to be in charge of school activities. The school has to prepare for an extra teacher to replace the teacher who attends PD activities. Meanwhile, due to the pandemic situation, most courses, workshops, seminars, group discussions are conducted online. So, the teachers do not need to leave the school to attend those events.

Furthermore, teachers will have extra motivation or willingness if they get salary supplements to encourage them in participating PD activities. Hence, school principals should be able not only to encourage but also to fund support the teachers. It conforms to the first statement, even though the teachers do not need to come to the event venue, they need to pay a registration fee (if it is not free) and for internet data.

School principal influence

9) My principal encourage me to participate in professional development activities.
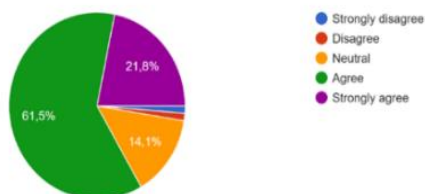78 tanggapan

Figure 2. *Principle influence*

The data in the figure 2 shows that 83.3% of participants claimed that their school principal boost them to participate in PD activities. It is known that the principal of each school gives a huge chance for his/her staff or teacher to improve skills in PD activities. It is because the school principal gives a significant influence and a substantial impact on teacher professional development. These roles are: first, as the instructional leader and teacher; second, as the learning environment creation; third, as the direct involvement of design, delivery, and content; last, the assessment of professional development (Bredeson & Johansson, 2000). It is supported by the research findings from (Hilton, Hilton, Dole, & Goos, 2015) that the impact of the school

principals' participation in teacher professional development give a positive influence on the capacity for teacher to enact and reflect on new knowledge and practices, and the professional growth of the principals themselves.

Colleague influence

Several studies have identified the importance of the influence of colleagues in teachers' participation in PD activities. (Drossel & Eickelmann (2017) discovered in their study that the teacher systematically collaborates with colleagues to develop Information and Communication Technology (ICT). Teachers who participate in professional development are more likely to utilize computers, place a greater focus on teaching ICT skills, and have a stronger sense of ICT. Horn, Garner, Chen, & Frank (2020) found that teachers' participation in learning-rich, in-depth sessions was revealed to be a strong predictor of the creation of new advice-seeking ties.

The table below shows the participants' responses to three statements of colleague influence on PD activities.

Table 5. *Colleague influence*

Statements	P	Neutral	N
My colleagues encourage me to participate in professional development activities.	84.6%	14.1%	.3%
My colleagues and I share common values related to professional development activities.	92.3%	7.7%	-
My colleagues and I participate in professional development activities together.	85.9%	14.1%	-

It can be seen from table 5 that almost all the participants have a positive response towards the three statements above. They get encouragement in PD activities (84.6%); they do sharing, and they do PD together. Therefore, colleague influence is one of the external factors that affect to increase in the participants of PD activities. The research from (Park, Steve Oliver, Star Johnson, Graham, & Oppong, 2007) found that the nature of interaction among teachers in National Board Certification can be described in several ways: (a) enhancing reflection on teaching practice; (b) establishing a professional discourse community; (c) raising the standard for teaching performance, and (d) facilitating collaboration.

School culture

School culture is one of the factors affecting teachers' participation in professional development. Professional school culture refers to a school environment that has learning communities among all the stakeholders through training, mentoring, research, and communication (Khalil & Abiodullah, 2013). The socio-demographic situation is strongly linked to the teaching site. Parental engagement, working environment, income, personal growth, and family environment are all five problems mentioned by rural school instructors (Ling, Na, Yan-Li, & Sriyanto, 2020). Further, they suggested educational beliefs, cooperation relationships, and teacher self-training as the three primary techniques utilized for PD. The figure below will establish the availability of PD activities in the participants' workplaces.
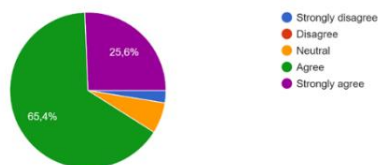

Figure 3. *School culture*

Figure 3 above stated 90.4 of participants agreed that their school environment has a good school culture.

RQ#2 What are the activities of PD that have been enrolled to improve the skill of education 4.0 during pandemic?

The second question is to investigate PD activities that have been attended by the participants. The findings showed that courses and workshops are the most helpful in PD (76.9%). Courses here refer to continuing study. Meanwhile, a workshop refers to a small activity rather than a conference to discuss a specific theme. It complies with Continuing Professional Development (CPD) program that has a purpose to develop and enhance teachers' abilities. They need a workshop certificate that has a credit score. In other words, they will select which PD activities that can give a credit score as much as they can. Most workshop events offer a course with a minimum of 32 hours. Because the teachers will get a credit when score when an event offers at least 30 hours. The findings can be seen in chart 2 below.
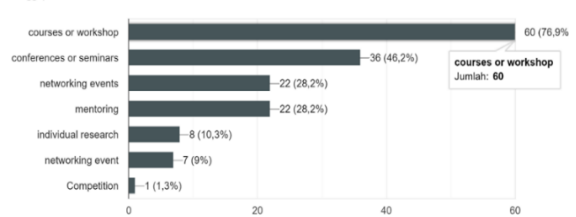

Chart 2. *PD activities*

However, there was a surprising finding of PD activities that have attended by the participants a year back. The data can be seen as follows.
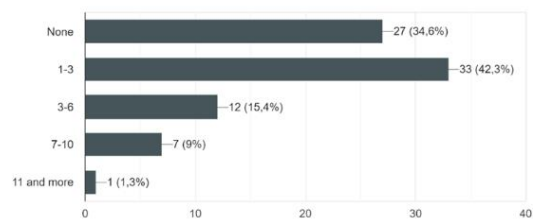

Chart 3. *PD Courses that have attended*

Regarding the data in chart 3, it is known that 27 teachers did not attend any PD activities a year back. Most of them were able to attend 1 until 3 times PD activities. Then, only 20 teachers attended PD activities more than 3 times in a year back. From the data as well, it is known that the participants are keeping up with PD activities during the pandemic by (a) joining the webinar or workshop; (b) individual research from google and books; (c) learning and discussing with colleagues; (d) WhatsApp group.

The questionnaire data is supported by the interview data. This study has interviewed three teachers who have different teaching experiences and school statuses. The teachers were asked about their experience in attending a seminar, course, or webinar about education 4.0. It is known that T#3 got the skill to improve education 4.0 during participation in the Teacher Professionalism Training Program (PPG). Meanwhile, T#1 and T#2 said that they have never participated in any PD focusing on Education 4.0. It can be seen from the excerpt below.

> T#3: I have ever learned about education in the Industrial Revolution Era 4.0 during MGMP and PPG *Daljab* 2020.
> T#1: Never followed
> Q#2: So far I have never attended which is focused on education 4.0

The expert above shows that the teacher who is 30-39 years old and in public school seems to have an easy access to get current information. It is proven by the participants who claimed that

most of young teachers from public schools have a big chance to join the *MGMP* event. However, the private teacher has a tight schedule to join the event.

> Q#1 I've ever heard, but I didn't attend this activity. I've another business. The young teachers who were usually attended.
>
> Q#2 Maybe there were other events that I couldn't attend because it coincided with my teaching schedule.

RQ#3 What are the challenges to involve education 4.0 during covid-19 pandemic?

Education 4.0 demands teachers to adapt to technology. Due to this pandemic, teachers must conduct e-learning. The data found that the availability of facilities is the most chosen by the participants, followed by students' involvement, and self-readiness. The facilities here are not only the devices that belong to teacher but also students. Not all students have their gadget as their learning tools. It influences their involvement in the teaching and learning process. Particularly, both teachers and students are struggling with online learning. The table below will demonstrate the challenges to involve in education 4.0

4) What are the challenges when using technology in your classroom? (you may choose more than one or add another answer)
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Self-readiness — 31 (39,7%)
Availability of facilities — 56 (71,8%)
Institutional support — 24 (30,8%)
Students involvement — 48 (61,5%)
Time allocation — 23 (29,5%)
Bad political intervention — 1 (1,3%)
Dukungan nyata semua pihak: masyarakat,... — 1 (1,3%)
Technical Error — 1 (1,3%)
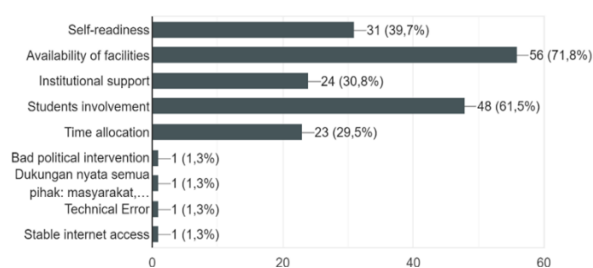Stable internet access — 1 (1,3%)

Chart 4. *The challenges to involve education 4.0*

The data from the questionnaire is in line with the interview data. The participants claimed that sometimes they need more time to prepare the material to be implemented during the pandemic, less institutional support and colleague, and the content to support education 4.0 as can be seen in the excerpt below:

> T#1: The difficulty is when I have to prepare contextual material, especially during this pandemic. Because the school is in the rural area, we face lack of school facilities.
>
> T#2: It will be very difficult when there is no support from the school and there is no cooperation with colleagues.
>
> T#3: Maybe it's more about what content should be taught to answer the challenges in education 4.0

The findings above conform with Tafazoli (2021) who claims that teachers' expectation of PD activities during the covid-19 pandemic can be divided into six categories, they are technological knowledge, pedagogical knowledge, content knowledge, technological pedagogical knowledge, technological content knowledge, and pedagogical content knowledge.

CONCLUSION

This study investigates Teachers Professional Development (PD) to 4.0 Education Era during covid-19 pandemic. It can be concluded into three main points regarding research questions. First, the participants have a positive perspective towards PD to 4.0 Education Era during covid-19 pandemic with five factors (time, funding, school principal, colleague influence, and school culture). Second, courses or workshop is the most helpful in PD activity. Most of the participants attend once to three times of PD activities this year. Last, the availability of facilities is the most challenge in using technology in the classroom. Furthermore, it is known that young teacher from public school has a wide chance to join PD activities; age, colleague and school principal influence the participation of *MGMP* event; determining teaching content is a challenge to implement education 4.0.

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