Nurturing Learning Culture among Teachers: Demand-Driven Teacher Professional Development and the Development of Teacher Learning Culture in Jakarta, Indonesia

Sirojuddin Arif, Rezanti Putri Pramana, Niken Rarasati, Destina Wahyu Winarti

Abstract

Despite the growing attention to the importance of learning culture among teachers in enhancing teaching quality, we lack systematic knowledge about how to build such a culture. Can demand-driven teacher professional development (TPD) enhance learning culture among teachers? To answer the question, we assess the implementation of the TPD reform in Jakarta, Indonesia. The province has a prolonged history of a top-down TPD system. The top-down system, where teachers can only participate in training based on assignment, has detached TPD activities from school ecosystems. Principals and teachers have no autonomy to initiate TPD activities based on the need to improve learning outcomes in their schools. This study observes changes in individual teachers related to TPD activities triggered by the reform. However, the magnitude of the changes varies depending on teachers' skills, motivation, and leadership style. The study suggests that shifting a TPD system from top-down to bottom-up requires differentiated assistance catered to the school leaders' and teachers' capabilities.

Keywords: teacher professional development, teacher learning culture, teacher motivation, school leadership

Nurturing Learning Culture among Teachers:
Demand-Driven Teacher Professional Development and
the Development of Teacher Learning Culture in Jakarta, Indonesia

Sirojuddin Arif
Universitas Islam Internasional Indonesia (UIII); the SMERU Research Institute

Rezanti Putri Pramana
The SMERU Research Institute

Niken Rarasati
The SMERU Research Institute

Destina Wahyu Winarti
Universitas Islam Internasional Indonesia (UIII); the SMERU Research Institute

Please cite this paper as:
Arif, S., Pramana, R. P., Rarasati N., Winarti, D.W. 2022. Nurturing Learning Culture among Teachers: Demand-Driven Teacher Professional Development and the Development of Teacher Learning Culture in Jakarta, Indonesia. RISE Working Paper Series. 22/117. https://doi.org/10.35489/BSG-RISEWP_2022/117

Research on Improving Systems of Education (RISE)

www.riseprogramme.org

information@riseprogramme.org

Contents

Figures

Table

i

1. Introduction

Improving teacher professional development (TPD) is necessary for governments and schools to enhance learning cultures among teachers. Professional development of teachers will affect the quality of teaching in schools (Thair and Treagust, 2003). Yet, studies have documented that many TPD programs are ineffective or have little or even no impact on the teachers' knowledge improvement and instructional practices (Garet et al., 2011; O'Dwyer et al., 2010; Powell et al., 2010; Garet et al., 2008). TPD programs do not always address teachers' specific professional development needs (Dymoke and Harrison, 2006). The lack of relevancy of teacher training for teaching practices might lead to teachers' low ownership of the learning process within the TPD (Bergmark, 2020). Subsequently, improvement in teaching quality at schools is less likely to happen (Hargreaves, 2000). Efforts are needed to enhance TPD's relevance and positive impacts on the development of learning cultures among teachers.

Teacher learning culture exists in schools where teachers continuously seek and share learning and act on what they learn (Hord, 1997). These practices allow teachers to critically interrogate their acts in an ongoing, reflective, collaborative, inclusive, growth-promoting way (Toole and Louis, 2002; Mitchell and Sackney, 2000). Research by Haiyan et al. (2017) showed that teachers grow and develop in a positive learning culture as they find their efforts affect students positively. On the contrary, the absence of a learning environment may cause a lack of coherence between teachers' knowledge and how they work. Every teacher needs to have the mindset and develop habits as a learner because teaching is not a static profession. Teachers need to continuously challenge themselves and be willing to collaborate with their colleagues to improve their professional knowledge, which then leads to improved school learning outcomes. Therefore, schools and governments should prioritize improving teacher learning culture to improve the quality of teachers.

Like many other countries, Indonesia is also struggling to improve its TPD system. The country began developing its TPD system in the 1970s when it introduced in-service training for primary school teachers. The training provided three-week workshops that covered, among others, the use of new books being implemented in the primary system. To support the program, the central government established in-service teacher professional development centers (*Pusat Pengembangan Pendidikan Guru* or PPPG) across the country. The government used a cascade system to reach as many teachers as possible. Teachers invited to participate in the workshop were trained to be instructors and had to cascade what they had learned to other teachers in their schools or regions who did not attend the in-service training (Thair and Treagust, 2003).

The government further improved the TPD to accommodate new developments or needs in education. In the early 1980s, they introduced the *Pemantapan Kerja Guru* (PKG or Strengthening the Work of Teachers) approach to the in-training service to promote active learning and student-centered learning. In 1993, the government replaced PKG with the *Kelompok Kerja Guru* (KKG or Teacher Working Group) and *Musyawarah Guru Mata Pelajaran* (MGMP or Subject Teacher Working Group) for primary and secondary school teachers, respectively (Rahman, 2016, p.42). In 2007, the government introduced the *Pendidikan dan Pelatihan Profesi Guru* (PLPG or Education and Training for Teaching Profession). The program consisted of 90 hours of in-service training to support the teacher certification program (Rahman, 2016, p.44). More recently, the

Ministry of Education and Culture introduced the *Pengembangan Keprofesian Berkelanjutan* (PKB or Continuing Professional Development) in 2013, which offered a wide range of activities for teachers' professional development (Revina et al., 2020).

Despite the reforms, however, the country's TPD system appeared to have little impacts on improving the quality of teachers. Teachers in Indonesia continued to show limited knowledge on the subjects they taught and inadequate pedagogical skills (Revina et al., 2020). Rahman (2021, p.63) noted that many teachers did not meet the minimum level of competence required by the national standard. Measured by the teacher competency test (*Uji Kompetensi Guru* or UKG), the average score or proportion of correct answers was only 38% for primary school teachers and 45% for secondary school teachers.

The current TPD system suffers from several problems. Other than unequal access to the system (the cascade model implies that only those invited can attend the training), the materials delivered in the training are repetitive and do not really address the day-to-day problems faced by teachers in the classroom. One teacher suggested that "[TPD] programs provided by externals are for the sake of [TPD providers] … The goal is not clear, and I do not know what it is for" (cited in Rahman, 2019, p.681). According to Rahman (2016), Indonesia's TPD system was initially developed under the spirit of "maintaining national security and stability" cultivated by the New Order government. The main goal was to nurture teachers to be disciplined subjects that abide by the instruction of the state. Despite the political changes in the country after the fall of the New Order in 1998, many of these elements remained in place. The TPD did not promote learning among teachers as its focus was on the imposed changes intended by the state. It is only under certain circumstances, namely collegial and professional relationship among teachers and supportive principals, can the TPD facilitate learning among teachers (Rahman, 2016, p.207). According to Revina et al. (2020), improving the current TPD system requires significant changes beyond the technical aspects of teacher training. Rather, the TPD needs a systemic re-orientation to focus on producing quality teachers.

This paper documents the effect of an effort to reform the TPD and enhance learning cultures among teachers in one of Indonesia's province, Jakarta. Not many schools in the province had a good teacher learning culture. Only a few teachers sought professional development opportunities constantly, and they were often pressured to conform to the common tendency to put aside teacher professional development. Some professional development-oriented teachers admitted that they had felt excluded by their colleagues. Unfortunately, principals rarely support teachers to be actively involved in professional development activities. Some principals realized that their role was instrumental in creating a conducive learning atmosphere for teachers. Principals can be facilitators for collaborative reflection and problem-solving processes on everyday learning issues. By going through this process, teachers will realize the skills they need to solve their problems. However, such practice is not supported by the current mandatory teaching observation tool for principals. The collaborative reflection instrument was designed as an evaluation tool rather than a reflection tool. Most principals also found the reflection tool too difficult to comprehend because the form lacked a clear description of the concepts and performance rubric. The government did not provide proper training to help principals understand the expected teaching practice for each evaluation point. Principal training materials also did not cover skills on being a supervisor who facilitates.

Before the Provincial Government of Jakarta initiated the TPD reform, we had conducted a diagnostic study on TPD and surveyed teachers of both private and public primary and junior secondary schools in the province. The survey was carried out in October and November 2020 (during the COVID-19 pandemic). To sample schools, we used the mean score of the national examination as the cutting point to categorize schools into high-performing and low-performing groups. We sampled 1,360 primary and junior secondary schools from a total of 3,433 primary and junior secondary schools in Jakarta (Unit Pengelola Statistik DKI Jakarta, 2021). From the total sample, we collected teacher responses from 917 schools (67.42%). A closer look at the sample school indicates that 72.5% of public junior secondary schools were categorized as high-performing, while only 39.6% of private junior secondary schools belonged to the same category. For primary schools, 44.6% of public primary schools were categorized as high-performing, while 65.3% of private primary schools were under the same category. The survey collected responses from 12,713 teachers consisting of 7,600 primary school teachers and 5,113 junior secondary teachers. Among the junior secondary school teachers, 3,886 (76%) worked in public schools. The proportion of respondents representing the public schools was lower for the primary school (63% or 4,792 teachers).

The survey shows that 40% of teachers in Jakarta had difficulty handling students with diverse needs and learning progress. It also shows that 17% of teachers had difficulty assessing student ability, and 22% of teachers struggled to choose which learning strategy was appropriate for which context. We found no significant differences between junior and senior teachers in dealing with these issues. Many teachers, especially from low-performing schools, had difficulty keeping the classroom quiet and getting students to do what the teacher told them to do. Public school teachers were primarily concerned with how to use learning media and apply various sophisticated teaching strategies in the actual classroom situation. Meanwhile, teachers from high-performing private schools stated that they had difficulty stimulating students to think deeply and have critical discussions. Regarding student assessment, many teachers perceived assessment as merely a tool for obtaining students' grades for the school report. Some teachers, mainly from high-performing schools, tended to put more effort into calculating students' grades based on assignments, quizzes, and class presentations. In high-performing schools, teachers were also aware of the differences between formative and summative assessments, but many of them had difficulties implementing the two.

In 2021, the Provincial Government of Jakarta implemented a new TPD designed to stimulate the development of continuous learning culture among teachers. The reform brought several changes not only in the content of teacher training but also in the way the training was conducted and how teachers participated in the training. Unlike in the previous system, in which participation in teacher training, as well as the content of the training, was determined by the Jakarta Education Agency, the decision to participate in the training program is now in the hands of teachers themselves. They can decide whether they will take a training program and which program they will take. They can also recommend new training programs that can better serve their needs if such a program has yet to be provided by the Jakarta Education Agency. To stimulate teachers' interest in upgrading their knowledge and skills, the Jakarta Education Agency requires every teacher to self-reflect on their teaching practices. As principals can facilitate the reflection, the new TPD also involves principals to stimulate improvements in school learning culture.

We use qualitative interviews with selected teachers and principals to assess the extent to which the implementation of the new TPD can promote the development of learning cultures among teachers by asking the following research question: What changes in teacher learning culture did the demand-driven TPD program bring to the participating schools? We explore two types of changes: (1) changes in teachers' attitude and behavior toward TPD and (2) changes brought by different types of school leadership to teachers' learning behavior. To answer the research question, we trace the processes linking the new TPD and the change in teachers' learning perspective, the supportive learning environment, and the changes caused by the new program initiative. We carefully selected four schools that represent the heterogeneity of schools in Jakarta and assessed how teachers in these schools responded to the new TPD.

This research demonstrated several key points. First, teachers' responses were quite heterogenous, depending on their self-motivation. The positive effect of the demand-driven TPD was most clearly seen among teachers with high intrinsic motivation. These teachers were eager to use the new TPD to enhance their teaching skills. Among those with low intrinsic motivation, the effect of the new TPD was low to moderate, depending on how the principal motivated the teachers. Second, school leadership (i.e., principals), depending on their relationship with teachers, may facilitate or may not have had a role in supporting a demand-driven TPD. The critical role of principals in amplifying the positive impacts of the demand-driven TPD on the development of learning behaviors among teachers was also seen among those with high self-motivation. These findings provide insight into the implementation of the demand-driven TPD that needs to be considered accordingly.

This article will be organized as follows. The first section introduces the background to the issues raised, the research questions, and the significance of this study. Section 2 discusses the theoretical framework that underlines the research. Drawing on the self-determination theory, we discuss how self-autonomy stimulated by the demand-driven TPD can encourage the development of learning behaviors among teachers, and how principals can play a role in the process. The third and fourth sections describe the implementation of TPD reforms in Jakarta and the research method, respectively. In Section 5, we describe the research findings on the changes brought by the demand-driven TPD program by elaborating on the changes in teachers' attitudes and behavior toward the TPD program. We also describe the school leadership and the development of teachers' learning culture. Finally, we close the paper with a discussion and conclusion in Section 6.

2. Teacher Learning Culture, Teachers' Autonomy, and Demand-Driven TPD: Theoretical Framework

Teachers play an important role in the development of schools as a learning organization or professional culture. Teachers are required to be involved in continuous professional growth to improve student learning quality (Schoen and Teddlie, 2008). This expectation implies that a good learning culture should be established among teachers. Education researchers argued that teacher learning culture exists when teachers are willing to take an inquiry stance in their teaching practices; consequently, the culture of exchanging knowledge and collaboratively developing classroom material is common (Schipper et al., 2020). Thus, to a large extent, teacher learning culture is constructed socially. It can be developed through collaboration with other teachers as

well as other related actors like school principals (Haiyan et al., 2017; Postholm and Wæge, 2016). Nevertheless, teachers' motivation can also play an important role in developing a learning culture among teachers.

Like all human beings, teachers have the potential or capacity to be curious, vital, and self-motivated. Thus, teachers can be active, willing to learn and master new skills, and eager to implement what they have learned responsibly (Teixeira et al., 2020, p.104). Previous studies have shown that providing teachers with autonomy can help them to determine personal and professional development goals or activities. According to Cheon et al. (2018), autonomy gives teachers the freedom to learn things that they are interested in or need. This condition will provide teachers with an experience of need satisfaction in the first place. Subsequently, as teachers focus on solving specific issues related to their needs, they will be more likely to learn new things based on their needs to competence. Cheon et al. (2018) further suggested that the need for competence is instrumental in building intrinsic motivation to slowly build up expertise. This activity will later boost teachers' self-perception of their competence or self-efficacy (Cheon et al., 2018; Tschannen-Moran et al., 1998).

We hypothesize that a demand-driven TPD can promote the development of learning cultures among teachers. As will be discussed later, one of the key components of the demand-driven TPD reform implemented by the Government of Jakarta is to stimulate teachers' self-motivation for learning. This promotion of autonomy in undertaking teacher professional development can be an important factor in driving behavioral changes among teachers. As argued by the proponents of the self-determination theory, motivation has an important role in driving behavioral changes (Teixeira et al., 2020; Ryan and Deci, 2000). By providing freedom for teachers to select the type of training they need for their professional development, a demand-driven TPD can help internalize motivation in teachers to not only participate in the training programs provided by the government but also to improve their teaching skills. As argued by many researchers, teachers' engagement in professional development activities should be driven mostly by their determination rather than extrinsic sources of motivation (Hyslop-Margison and Sears, 2010).

The internalization of motivation may result from self-reflection or social processes in the school driven by school principals or other teachers participating in the training program. According to Bergmark (2020), allowing teachers to identify areas of improvement based on their past teaching experiences expanded the ways they think and understand themselves as teachers and how they could improve their teaching. Teachers who planned their improvement also showed a higher level of curiosity in learning and trying new things. Bergmark (2020) also showed that a continuous cycle of reflection and teaching improvement gives the realization to teachers that the perfect lesson does not exist. Hence, continuous reflection and improvement are needed to cater the lesson to meet various classroom contexts.

Demand-driven TPD can also shape the learning environment of schools through the social environment it helps create in schools. As many researchers have also argued, social context can also matter for people's personal development. The internalization of autonomy or motivation may result not only from innate psychological needs but also from social environments. According to Hagger et al. (2020, p.107), "Internalization can be influenced by the interpersonal context or by social agents operating in the interpersonal sphere, like teachers in the classroom …" In developed countries, teacher autonomy is highly respected and a part of teachers' professional life and school

5

development plans. In Finland, for example, the governments are responsible for providing resources and services that schools request, while school development and teachers' professional learning are integrated into a day-to-day "experiment" performed collaboratively by teachers and principals (Niemi, 2015). This kind of experience gave teachers a sense of mastery and boosted their determination to learn continuously (Ryan and Deci, 2000).

Thus, other teachers or principals may also contribute to cultivating autonomous motivation, especially those with low intrinsic motivation. Accordingly, previous studies have shown that principals' leadership is crucial for the development of schools' professional cultures (Carpenter, 2015; Eilers and Camacho, 2007; Stolp and Smith, 1995). Research on the process of school culture change (Eilers and Camacho, 2007) found that one of the success stories of the development of school professional culture started with the principal's initiative to create a learning environment among the teachers. Yet, among schools with weak leadership and low resources, teacher individual factors and the human resource situation may play a bigger role in creating the school's professional culture (Wang and Hwang, 2009). We expect that the demand-driven TPD can have positive impacts on the development of teacher learning cultures but the program may work differently across different teachers and schools.


3. TPD Reforms in Jakarta

Jakarta's previous TPD system had at least two barriers that prevented many teachers from accessing trainings that could help them improve their teaching skills. First was the top-down assignment mechanism that precluded teachers from accessing relevant trainings. To be able to attend a training, Jakarta's teachers had to get an assignment letter from the government training center for a specific topic. The lack of assessment of teachers' pedagogical competencies and needs formed more problems for this model. All novice and experienced teachers had to attend the same training topics at the same level because there was no differentiation in the training modules. Our initial mapping also identified that teachers often received training irrelevant to their needs. The mismatch between mandatory training topics to teachers' needs often leads teachers to perceive training as a burden rather than support (Gathumbi et al., 2013). This will disincentive teachers to learn continuously.

The second was the cascade model that discouraged teachers from receiving high-quality training content. Before the TPD reform, Jakarta employed a cascade TPD system where the training material was delivered through layers of trainers until it reached teachers as the end target of the cascade pyramid. The Education Agency argued that the system allowed quick dissemination of the best teaching practices among teachers. They also believed that a large-scale change at the classroom level would eventuate from this model. However, numerous studies have shown that the cascade TPD system was ineffective. Other than the dilution of the messages conveyed through the trickle-down effect mechanism of the cascade model, the fact that not all trained teachers were confident in teaching their fellow teachers contributes to the ineffectiveness of the model in improving the teaching skills of all teachers in the system (Turner et al., 2017; Bett, 2016; Dichaba and Mokhele, 2012). There has been no evidence showing how the cascade system has effectively addressed teacher competency problems in Jakarta.

To address the problems associated with the current TPD system, the Jakarta Education Agency developed a new TPD program with four distinctive features. First, the new program has a holistic approach to TPD, incorporating reflections from past teaching practices into the system and putting the newly acquired knowledge into practice at school. This feature is designed to help teachers perceive the professional development process as a continuous problem-solving cycle from reflecting on problems in their teaching, seeking solutions and learning resources, and trying to implement the solution to solve problems. Second, the new TPD is demand-driven. Jakarta Education Agency publicizes all available training and lets teachers choose the ones they want to attend. Teachers and principals can also request certain topics that are not yet available. Third, the new TPD involves principals as facilitators and supervisors. Principals facilitate teachers to reflect on their competence and choose the most suitable training. Once teachers complete the training, principals are also expected to closely supervise how teachers apply their newly acquired knowledge into teaching practice. Fourth, the government collaborates with private training institutions to deliver the training and uses hybrid synchronous and asynchronous models to give teachers access to primary trainers or expert trainers. The four new features are combined in a three-phase integrated teacher professional development system, as illustrated in Figure 1.

Figure 1. Teacher Professional Development Mechanism
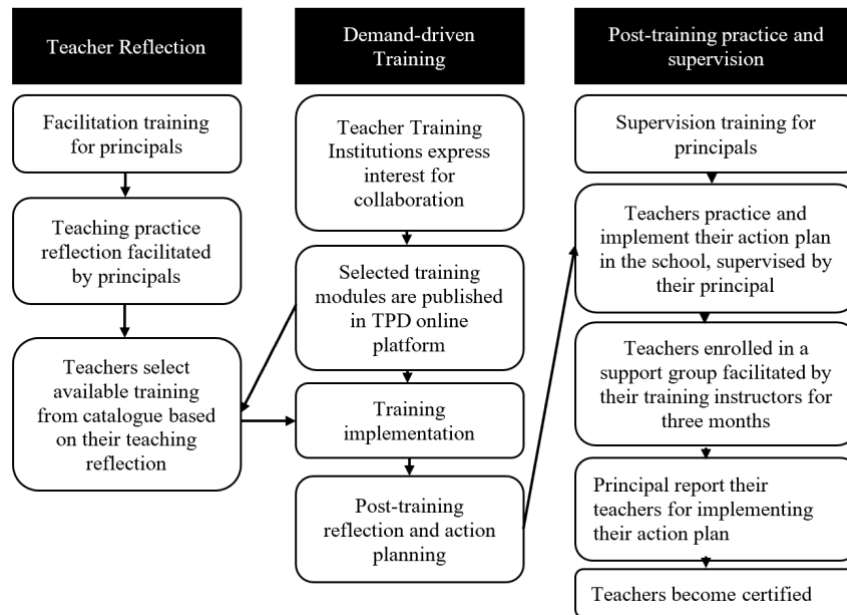
While providing teachers autonomy in making decisions regarding their professional development, the Jakarta Government realized that some teachers have low capability and motivation to undertake such self-directed learning. Therefore, they integrated several features to support and guide teachers in implementing this new system. They hope the features can scaffold teachers to exercise their autonomy given by the system gradually. The first support comes from principals

assigned to be facilitators for teachers. These principals receive four days of training on how to be a leader who can nurture professional culture at school and facilitate teachers to reflect on their competence. The teachers are also equipped with an online self-reflection platform that gives them a step-by-step guide to (1) understand the expected teaching behaviors, (2) reflect on their practice against the expected behaviors, (3) find the area of improvement, and (4) pick training programs to help improve their teaching skills. To hold the teachers accountable for their professional development activity, the government records teachers' performance during training and teacher activity while implementing the training materials in the classroom. These TPD activity data will contribute to teachers' annual performance evaluation.

The new TPD system has been piloted in seventy-six schools covering twenty-one primary schools, twenty-one junior secondary schools, twenty-one senior secondary schools, and thirteen vocational schools. For the first time, public school teachers have the opportunity to choose their professional development pathway based on their needs or teaching challenges. Private schools also have the opportunity to match government-organized training to the schools' professional development agenda. Our study only focuses on the implementation of the system at the primary school level.

4. Research Method

This research uses a qualitative research method to understand the development of teacher learning culture driven by the implementation of a demand-driven TPD system. Employing such a method allowed us to elucidate the mechanics of the change. We compared several schools purposively selected based on certain criteria that met the research objectives and took a closer look at social processes unfolding in schools after implementing the demand-driven TPD system. First, we focused on the changes among teachers. Second, we sought to understand the role of school leadership in facilitating the changes among teachers.

4.1. Sample Selection

Together with the Jakarta Education Agency, we carefully selected four schools—out of the twenty-one primary schools participating in the program—reflecting the heterogeneity of schools, teachers, as well as principals in Jakarta. In selecting these schools, we used three main criteria: principal leadership, school resources, and school institutional types. We identified two categories of principal leadership, strong and weak, while school resources include human resources, school facilities, school committees, and other school resources. Based on these elements, we further classified them into well-resourced and less-resourced schools. Lastly, we looked at the institutional type of the school, especially whether they are public or private. Information on these factors will be used to analyze the potential different mechanisms in which these different social environments may react to the implementation of the demand-driven TPD system and its role in developing learning culture among teachers. Among the twenty-one primary schools, we did not identify a cross combination of strong leadership and less resourced schools or vice versa. Instead, we only identified strong leadership and well-resourced and weak leadership and less-resourced. Schools with strong leadership and well resource are categorized as "higher quality" schools. Meanwhile, schools with weak leadership and less resource are categorized as "lower quality" schools (see Table 1 for the number of schools in each criterion). In consultation with the Jakarta

Education Agency, from the four groups of criteria shown in Table 1, one school from each group that was likely to represent was selected, resulting in four schools to be further analyzed.

Table 1. Number of Schools in Four Criteria

Classification	Public	Private
Higher quality	4 schools	6 schools
Lower quality	3 schools	8 schools

After selecting the schools, we then chose teachers from these schools. Initially, we requested all teachers from twenty-one primary schools to fill out an online questionnaire consisting of open-ended questions in relation to their characteristics. From the four selected schools, we selected four teachers based on the results of the online questionnaire, resulting in sixteen selected teachers in total.

Typologies of Sample School, School Leadership, and Teachers

School characteristics can distinguish schools from one another as well as influence the behavior of the school community (i.e., teachers, students, administration staff, and the principal). According to Sweetland and Hoy (2000), school characteristics, which are also known as school climate, can be identified from collegial leadership, teacher professionalism, academic emphasis (within school), and environmental emphasis (outside school). School characteristics may have an impact on the cognitive and socio-emotional development of the school community, which then has implications for students' academic achievement (Hoy, 2012).

Regarding school leadership, our study defines strong leadership as when the principal is viewed to be present, actively engages in two-way discussion and solution formulation with teachers regarding teaching and learning challenges, motivates teachers to participate in professional development, and actively monitors and reviews teacher participation in professional development. On the contrary, weak leadership is characterized by the principal being absent among teachers, a lack of explicit rules as the principal tends to cultivate more family-oriented culture within the school, and a lack of effective two-way communication. Weak leadership also tends to let teachers take the lead in all teaching and learning matters; therefore, the principal is less likely to be helpful with the challenges teachers encounter in the classroom.

Based on these school characteristics, four schools in Jakarta that were observed and further analyzed in this study can be grouped into three typologies: school with strong leadership (type A), school with weak leadership but has a knowledgeable principal (type B), and school with weak leadership and less knowledgeable principal (type C). The characteristics of each school are further described as follows:

- Type A school has strong leadership. The teaching quality assessment works well in this type of school. The principal has a structure for monitoring teaching quality, such as weekly meetings, unannounced observations, and one-to-one discussions. This type of school has a culture of openness and collaboration. Students in this type of school come from the upper middle class, and their parents are critical of the school and student learning.

- Type B school has somewhat strong leadership but is less active than the principal in type A school. The principal in this type of school has the knowledge to give advice, however, it is only given when the teachers ask for help and advice. This type of school has no collaborative culture, and its teachers rarely discuss teaching and learning matters with the principal or colleagues. The good news is that in this type of school, some teachers are highly motivated that can influence their fellow teachers. Students in this school come from middle socio-economic status (SES).

- Lastly, type C school has weak leadership. The principal in type C school has minimal knowledge about teaching or teacher professional development, and the teachers have low teaching quality. This type of school has no collaborative culture, and its teachers do not interfere with what others are doing. Students in this type of school mostly come from low SES.

In terms of teachers' characteristics, we categorized teachers based on their intrinsic motivation level and teaching skills shown in Figure 2. Teachers' intrinsic motivation was measured using an adapted version of the motivation-at-work scale constructed by Gagné et al. (2010). We changed the topic of the questionnaire from *motivation to perform well at work* to *motivation to continuously learn and improve teaching skills*. Teachers' teaching skills were assessed through observation of their video-recorded teaching activities. We asked experienced teachers to score the video based on an adapted version of the Teach Observer Manual (Molina et al., 2019). The observers assessed teachers' behaviors in creating a positive learning culture, facilitating learning, conducting assessments during the lesson, stimulating students' critical thinking, and nurturing students' autonomy. From the motivation and teaching skills assessment, we categorized our respondent teachers into four categories: (1) highly motivated and high-skilled, (2) highly motivated but low-skilled, (3) lowly motivated but high-skilled, and (4) lowly motivated and low-skilled.

Figure 2. Quadrant Diagram of Teachers' Typologies

Motivation

Highly motivated but low-skilled Type A school: 1 teacher Type B school: 1 teacher	**Highly motivated and high-skilled** Type A school: 2 teachers
Lowly motivated and low-skilled Type A school: 1 teacher Type B school: 2 teachers Type C school: 5 teachers	**Lowly motivated but high-skilled** Type B school: 1 teacher Type C school: 3 teachers
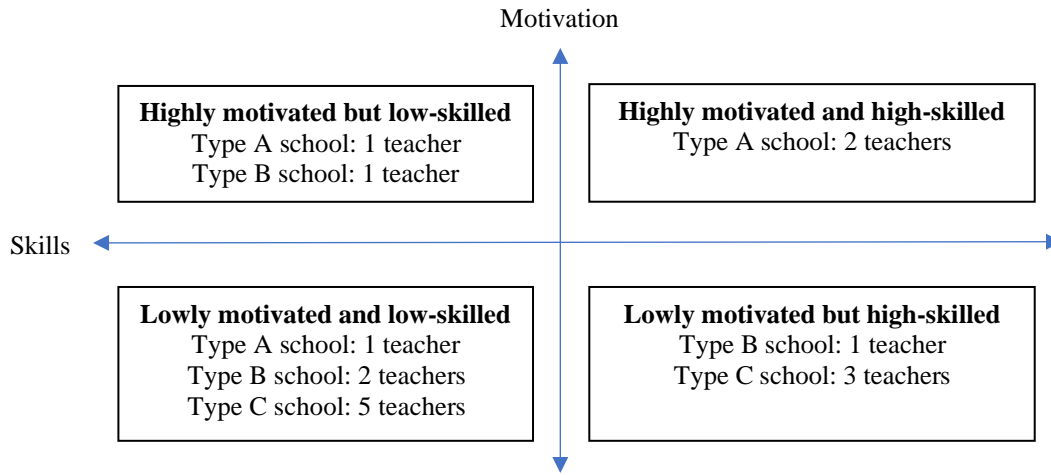
Skills

Sixteen teachers from four sample schools (four teachers from each school) were grouped into the four typologies above. Two type A school teachers were categorized as highly motivated and high-skilled. Meanwhile, in the lowly motivated but high-skilled typology, we identified one teacher from the type A school and one from the type B school. Four teachers (three from the type C school and one from the type B school) were categorized as highly motivated but low-skilled. Finally, most teachers belonged to the lowly motivated and low-skilled typology, with five teachers from the type C school and two from the type B school. Interestingly, one teacher from the type A school fell into this typology. Three teachers from type C school belonged to the lowly motivated and low-skilled typology.

4.2. Data Collection

To capture the mechanism of learning culture development among teachers, we interviewed various stakeholders in different timeframes: before the demand-driven TPD was implemented, while teachers were participating in the demand-driven TPD, and after teachers participated in the demand-driven TPD. Before teachers participated in the demand-driven TPD, we interviewed teachers and principals about their perceptions of the existing school environment. Specific attention was given to the previous TPD programs to identify the mismatch between teachers' needs and the training provided by the government. During their participation, we conducted in-depth interviews with teachers and principals to see how different types of schools and teachers responded to the new TPD. Finally, we conducted interviews to understand teachers' perceptions about the demand-driven TPD and the extent to which the new approach to teacher professional development can address the weaknesses of the teachers, as reflected in the results of their self-reflection. During each data collection point, we also interviewed school principals to synthesize their perceptions on how the new program can help their teachers to improve their mindset and teaching practices. Additionally, we collected complementary information in the first round of data collection by interviewing selected officials from the Jakarta Education Agency and other relevant

government officials to understand the development of the demand-driven TPD and its implementation.

4.3. Data Analysis

At the core of the analysis is the feedback effect of the changes in teachers' and principals' beliefs and behaviors promoted by the implementation of the new TPD system. The analysis consists of the following:

    (1) Differences in teacher reactions, namely their attitude and behavior, toward teachers' professional development.

    (2) Variations in school leadership and how the variations influenced teachers learning behavior.

We used a comparative method to strengthen data analysis and inferences. First, as indicated above, we constructed teacher, principal, and school typologies using key personal and professional characteristics of teachers, principals, and institutional characteristics of schools. Drawing on the constructed school, principal, and teacher typologies, we assessed the extent to which certain elements of school characteristics, such as school leadership, may play a role in the implementation of demand-driven TPD. The study also looked into whether the variation in teachers' responses to the new TPD system could be explained by the differences in their personal and professional characteristics. Besides, the analysis also looked at the extent to which certain elements of school characteristics contribute to shaping teachers' responses to the demand-driven TPD system.

5. Demand-Driven TPD Program and the Development of Teacher Learning Culture

5.1. Teachers' Attitude and Behavior Changes toward TPD

The new TPD system in Jakarta gives more autonomy to teachers who are used to attending training based on assignments to reflect on their teaching practice, identify areas of improvement, and decide their individual TPD pathways. The new system obliges teachers to undertake a reflection session on their teaching practice, allows them to sign up for the available training relevant to their reflection result, and requires them to implement the training in their day-to-day job before obtaining a training completion certificate. One aim of the reform is to nurture teachers' intrinsic motivation by allowing them to learn skills or knowledge that is more relevant to their needs and interests. Furthermore, the government expected the system to provide a more conducive environment for teachers to learn and improve their teaching skills continuously.

We analyzed changes among four types of teachers indicated above: (1) highly motivated and high-skilled, (2) highly motivated but low-skilled, (3) lowly motivated but high-skilled, and (4) lowly motivated and low-skilled. The changes were mainly triggered by the mandatory reflection session. All teachers stated that the reflection session had improved their awareness of their

12

strengths and weaknesses. This then gives them insights into the areas they needed to improve as a part of the teacher professional development process. However, differences in the magnitude of changes are observed across the four categories. Not all teachers have sufficient motivation to change their behavior in improving the frequency and quality of teacher professional development.

A Demand-Driven TPD System Works for Highly Motivated Teachers Aspiring to Upgrade their Skills

We observed a noteworthy change among highly motivated but low skilled. Before the new TPD system was implemented, these teachers had expressed interest in developing their teaching skills. They also stressed the importance of professional development in their career as a teacher. Under the previous TPD system, many teachers had difficulties accessing TPD programs. Teachers from a small private school said that she rarely got an opportunity to participate in training provided by the government or receive information on other training that she could attend. "I only attended training once in the last two years, and it was just about the announcement of the new curriculum. Our schools rarely got selected to participate in any training because we are just a small private school," female teacher, 3 July 2021.

Unlike private schools, public schools received frequent assignments to attend training from the government. However, the principals tend to send high-skilled teachers to attend the training. Furthermore, there is low variation in the training assigned to schools. Hence, teachers' needs for capacity development have not been addressed. "Usually, our school gets a letter from *Dinas* (the Education Agency), mostly on exam preparation. […] I am quite confused about the assignment. Only a few of the teachers are regularly assigned to the training. The others rarely got assigned. Since I rarely got assigned, I take the initiatives to learn from the Internet, books, or YouTube videos. But my knowledge is limited. I do not know the right website to visit or the right book to read," male teacher, 13 July 2021.

The introduction of the demand-driven TPD, where teachers are allowed to sign up for any available training in the province, was positively received by teachers in the highly motivated but low-skilled typology. However, since these teachers are low-skilled, they found it difficult to reflect on their teaching following the reflection instrument. Therefore, they asked for help from other teachers did the reflection collaboratively. We likely observed such a collaborative act in the type C school where teachers were highly motivated but could not get support from the principal. These teachers then turned to fellow or senior teachers to initiate discussion and solve their inquiries. Given the practice, the collaborative approach to reflection following the provided instrument increased teachers' awareness and understanding of their colleagues' strengths and weaknesses. They became aware of whom they should approach if they had questions or difficulties in topics related to teaching. "Everybody was looking at it (the reflection form) and realized that each of us needs enrichment in several aspects. If we know each other's needs (for teaching improvement), we can map them (teachers' strengths and weaknesses) so that we know, oh, our students still need teachers who can do this or that. Then, we solve it together," female teacher, 21 January 2022.

The collaborative reflection also paved the way for teachers to discuss teaching challenges. The active discussion among teachers motivated them to participate in professional development activities either by signing up for training on the government's platform or performing

collaborative sharing or learning at school. "Thanks to the reflection and discussion among teachers, 90% of my teaching problem has been solved. I can choose the training that addresses what I lack. […] I also feel less hesitant to ask other teachers for help. I also found that senior teachers started asking younger teachers to help them with gadgets and IT matters. They are not that shy anymore," male teacher, 20 January 2022.

The New TPD Content is Too Basic for Highly Motivated and High-Skilled Teachers

Teachers with high skills and high motivation have been used to perform self-directed learning even before the new TPD system was introduced. Reflecting on her experience, one informant stated, "In the school library, there is a Toto Chan book. I found my students liked the story of the book. I read the book and tried to copy some of it (the teaching style). However, the more I read, the more I became pessimistic that all schools in Indonesia can apply that," female teacher, 3 December 2021.

High-skilled and highly motivated teachers typically came from a well-resourced private school—type A school in our classifications. They had access to teaching resources, sufficient computer and software facilities, as well as access to a teacher working group for private schools. Additionally, the school's principal actively facilitated its teachers' continuous improvement. These highly motivated teachers utilized the available resources to improve their skills and the quality of learning processes. "When we need to create a new type of assessment, we have an item bank as a reference. So I can learn easily from it. I also attended a training on how to construct a good question. Even though the training seemed difficult, in practice, the item bank helped me," male teacher, 27 January 2022. Also, a part of their culture is teaching self-reflection, even though mostly in an unstructured way, as explained by one male teacher, "I used to do a quite detailed reflection (on my teaching practice). I reflected on my character and behavior in the classroom." (20 January 2022).

These highly motivated and high-skilled teachers were already familiar with the features of the reformed TPD. They have gotten used to reflecting on their teaching practice, identifying their area of improvement, and improving their teaching skills. Autonomous TPD activities, such as attending training, discussing with fellow teachers or principals, and searching for references for self-paced learning activities were nothing new to them. Given that the new TPD system is a common activity for these teachers, they did not feel the need to collaborate or discuss with other teachers when reflecting. The only difference brought by the system is that a form now guides the reflection, hence more structured and well-documented. Some teachers found the reflection form enables them to reflect on the area they rarely think about. "There is a new insight from the reflection. It is about how to communicate with parents. During the school-from-home period, not all students could sit still in front of the computer and follow the lesson. I realized I needed to communicate better with the parents," female teacher, 3 December 2021.

Even though the reflection process improves awareness of areas of improvement among high-skilled individuals, teachers perceived trainings provided by the government was too basic for their skills. "I understand that many public-school teachers need basic skills or knowledge training. If the training is focused on such subjects, (I) don't need (it)," male teacher, 20 January 2022. Hence, none of the high-skilled and highly motivated teachers signed up for the training offered by the government's TPD system. They preferred to learn autonomously or from private schools' teacher

working groups. "I attended a series of training provided by sekolah.mu (a private training platform) on blended learning, directing students with love, and communicating with parents. These trainings are helpful. Because it was asynchronous, I could skip materials that I had already known or were not relevant," female teacher, 3 December 2021.

A Demand-Driven TPD Releases Burden from Attending Too Many Mandatory Training for Lowly Motivated Teachers

Principals generally assign high-skilled teachers to attend training. Before the implementation of the new TPD system, these teachers reported frequent attendance at the Government Training Center office. "In two years, I obtained ten to twelve (training) certificates," female teacher, 29 November 2021. Despite attending many obligatory trainings, almost none of the knowledge and materials are ever applied in their daily teaching. They attributed this behavior to the lack of facilities provided by the school. They also stated that they need more teachers from their schools to join the same training so that they would have support whenever they encounter challenges when implementing the new skills.

The long experience under a top-down TPD system has made high-skilled and lowly motivated teachers perceive training attendance as a part of their duty rather than a way to solve their teaching problems. Hence, they prefer to only do something if there is an influence from their highly motivated fellow teachers or instruction from the principals. "I didn't get any assignment letter from the government office. So, it is not official, right? Besides, I have a lot of things to do. […] My principal only informed me about the program through the WhatsApp group. I don't think he was assigning me to the training," male teacher, 21 December 2021. In most cases, the influence came from the less capable teachers who asked for advice or help completing training assignments. "I joined the training where a lot of my friends were joining. I heard the training offered consultation and supervision through WhatsApp and Telegram. I am overloaded. As long as I read all of the instructions, I know (the materials)," female teacher, 12 January 2022.

Lowly Motivated and Low-Skilled Teachers are Not Ready for a Demand-Driven TPD System

The last change happened to the lowly motivated and low-skilled teachers typology. Before the implementation of the demand-driven TPD, these teachers rarely got assigned to training. "During my time as a teacher in this school (since 2016), I only attended training twice. One was about the new curriculum, and the other was an announcement event," female teacher, 25 January 2022. They also rarely heard about training information other than those organized by the government. Due to this limited information, these teachers had no benchmark for good teaching. Their awareness of their teaching skills was also very low. When we asked them about the issues encountered in teaching, they felt nothing was wrong with their teaching.

Nevertheless, as will be further discussed below, the quality of school leadership can make a difference in how the lowly motivated and low-skilled teachers respond to the new TPD. We found that the reflection session among these low-motivated teachers differed between type B and type C schools, albeit teachers at both schools acknowledged that the reflection session had opened their eyes to the benchmark of good teaching. The reflection session allowed them to receive feedback from their colleagues. "I am very motivated in doing reflection, knowing this is a rare opportunity for me," female teacher, 11 July 2022.

Nevertheless, lowly motivated teachers at type C school tended to do nothing to improve their skills as there were no resources they could easily access to facilitate or support them when they had inquiries. Even though they reported that the reflection session had given them insights into their weak points, they did nothing to improve their skills. Some of them had tried to learn something from the training sessions. But they easily dropped out of the training. They stopped learning whenever they encounter difficulties, albeit the problems reported were more technical rather than the training content or the difficulty level of assignments. "I had. I had already accessed the system. I accessed it together with my friends at school. Now I don't know how to access (the TPD and e-learning platforms for training activities) again. I will do it later if I am not busy," female teacher, 1 July 2022. Even though they appeared to need a lot of help even in operating the platform, none reported that they ever asked for help or advice from their colleagues. Some teachers said they had waited for instruction or help from their principals or senior teachers. Eventually, they gave up continuing their TPD journey due to the overwhelming challenges.

Unlike lowly motivated teachers in type C school, lowly motivated teachers from type B school would collaboratively perform their reflective session like the highly motivated teachers above. Despite the teachers' low motivation, their principal would assign a senior teacher to facilitate their reflection session. This made the teachers reflect with a partner or in a group, with the senior teacher facilitating and assisting when they encountered challenges upon completion. A positive benefit after the demand-driven TPD was the extended collaboration among teachers. Few teachers reported that now, as more communication occurs, there is less competition and more sharing among them, across or within their cohort. Informal communication among teachers, such as during break, now includes conversations about their teaching and classroom activities. One teacher happily reported on the sharing practice, "Now we are all about sharing. When someone does not understand something, they would openly ask, and someone would help them. 'What does this mean? I don't understand. Can someone explain to me?'" female teacher, 30 November 2020.

5.2. School Leadership and the Development of Learning Culture among Teachers

Not all teachers have the sufficient intrinsic motivation to nurture their continuous need to develop their professional skills and adapt to the current learning challenges. Some teachers require an external stimulus to continuously nurture their professional skills and bring them into the professional development track. As briefly mentioned in the section above, school leadership plays a significant role in directing and sustaining a conducive environment that would, implicitly or explicitly, push teachers to continuously develop their professional skills through various channels. Consequently, our study observed the development of teachers' learning culture in schools in some manner influenced by the capability of school leadership. Additionally, our findings also illustrated the dynamic relationship between teachers' motivation and principals' leadership which yields learning behavior to develop among teachers.

Strong Leadership can be a Catalyst for Changes for Both Highly and Lowly Motivated but Low-Skilled Teachers

Within different teacher categories, strong leadership influences changes in different manners. A school with strong leadership can accelerate change among highly intrinsically motivated teachers with low teaching capabilities. We also found that the element of the reflective session within the new TPD system shifted principal leadership practice. The principal, who initially prioritized administrative completeness, has now begun to communicate with teachers, albeit informally, in regard to teaching and learning, amplifying teachers' inquisitive and collaborative sense. As principals shifted their leadership practice into more substantial matters, they began to initiate a series of interactions that pushed these teachers to interact with the principal and each other more inquisitively and collaboratively.

Even when the school has a prolonged experience of high power distance between the principal and culture, which creates a communication brick between principal and teacher, strong leadership can initiate lowering that wall and thus starts to create a collaborative relationship with its teachers. Nevertheless, the process takes time, particularly for the teachers to adjust to the communication as well as the new power distance. In our sample school, the principal appointed a senior teacher as a supervisor for teachers participating in the new TPD system and was the mediator between the principal and teachers.

We found that communication between the principal and teachers is critical in introducing both the intervention and the designated behavioral changes, such as collaborative and inquisitive behaviors among teachers. As principals lowered the power distance with their teachers, teachers became more collaborative as they could seek advice for solutions. Lower power distance also encouraged higher accountability among teachers. Teachers explained that lower power distance, which leads to better communication with principals, leads to more thorough reviews and monitoring of their work, such as on their professional development pathway.

Strong leadership could also help lowly motivated teachers of either skill type. Our observation showed that strong leadership would pay more attention to the lowly motivated and low-skilled teachers. The extra attention would pressure these teachers to participate in professional development with their peers. Meanwhile, among high-skilled but lowly motivated teachers, such leadership could produce professional behavioral changes through instruction and direction by the principal. As the teachers were already capable, a nudge from the principal (e.g., motivating and directing the teachers to attend a TPD, monitoring their completion) would lead them to collaborate and participate in the necessary professional development program as needed. In such circumstances, teachers reported that the principal's responsibility would be to motivate, guide, and monitor their participation in the intervention.

Highly Motivated and High-Skilled Teachers Need More Relevant Training

The implementation of TPD reform in schools with even strong leadership did not produce any changes among their high-skilled and highly motivated teachers. These highly motivated teachers, identified in type A school, viewed the content and procedure of the demand-drive TPD as too basic. This is partly because high-skilled and highly motivated teachers tended to be overlooked

by the principal because they were perceived to be already self-sufficient. The common theme emerging among these teachers was the lack of novelty in the demand-driven TPD.

The school had already implemented a routine reflective session with teachers followed by collaborative solution formulation with peers and principals. Both principals and teachers of type A schools reported that the intervention had not introduced a new element into the school culture. In other words, the new TPD introduced by the intervention was not novel in form and did not provide additional value to the principals' and teachers' development, thus missing the intended effect. "We usually hold a biweekly meeting with teachers and the principal. We can also initiate a meeting during the week if teachers face an urgent case in the classroom. We can easily communicate with the principal about students and teaching. We already have that," female teacher, 3 December 2021.

Novelty seemed to be an important concept for the high-skilled and highly motivated teachers. Few teachers reported that while the principal had been supportive by guiding and ensuring the teachers' accountability, the principal needed to fill the content gap that their school did not provide for the program to interest them. For example, the context of the demand-driven TPD was reported to be very similar to the training provided by their school, as it focused largely on the technical aspect of teaching. A complementary topic in children's psychology or communication would attract more participation from these teachers.

Under Weak Leadership, Demand-Driven TPD Do Not Trigger Changes

Nevertheless, the study also observed that leadership plays no role among different types of teachers. The lack of strong leadership does not trigger change among teachers with low intrinsic motivation and skills. Teachers are left to perform the reflective session unassisted, so they must complete the activity individually. Albeit the positive uptake from teachers, principals still view the task as a mere administrative requirement of the intervention. Consequently, the principal continues to focus on completing administrative tasks and cannot view the inquisitive and collaborative practice from the reflective session. One teacher said, "After we did the reflection, we got stuck. No solution. Every time we reported our complaint to the principal, he would tell us that students at the school come from troubled backgrounds. […] So as a teacher, all we can do is just be patient".

But, among teachers with high skills yet low intrinsic motivation, the lack of leadership may allow them to collaborate with their colleagues to solve problems and in the process by-pass the principal entirely. Due to the lack of strong leadership, these teachers' principal never monitors or provides input during their reflective sessions or after they complete the training. It is observed that the principal's role is solely approving the teachers' reflections without further scrutiny. Teachers described their principal as absent-minded and continued the tendency to rely too much on the teachers. In one of the schools with such leadership, a teacher said, "The principal leaves everything to us. Our school has a very family-oriented culture. So, the principal does not establish a strict rule or instruction here. He just lets the teachers take the lead," female teacher, 25 January 2022.

In completing the reflective session in such a setting, teachers turn to collegiate collaboration and discuss with each other when inquiry arises, choosing the training, and throughout the actual

training session. The teachers claimed their collaborative practice continues even upon completion of the TPD. "Now, our conversations are not just about our personal life. In the teachers' room, we sometimes talk about what happened in the classroom. For example, when I encountered a problem with a child, I asked the teachers in the room, 'What do you think I should do?'" female teacher, 29 November 2021.

6. Discussion and Conclusion

The rapid and massive social changes in society highlight the necessity of building teacher learning culture more than ever. With 21st century demands, teachers' role is no longer just to educate students with a good amount of knowledge as traditional teaching approaches suggest, but to nurture students' critical thinking, creativity, and collaboration skills. Teachers are demanded to have sufficient skills to conduct constructivist learning. To equip teachers with those skills, traditional TPDs that rely only on one-shot training activities (be they long or short) and focus on introducing new techniques or instruction procedures are no longer suitable (Darling-Hammond and Richardson, 2009). To support teachers in implementing constructivist learning, TPD programs should shift from top-down, mechanistic, and procedure-oriented training into a more contextual, teacher-driven, collaborative process that is also integrated with their day-to-day teaching experience (Darling-Hammond et al., 2017; Rout and Kumar Behera, 2014; Svendsen, 2016).

The long-standing top-down TPD system in many low-performing countries, which did not give teachers the autonomy to design their TPD pathways according to their needs, has manufactured teachers' mindset to attribute all successes and failures in their teaching practice to the government (Fink, 2003). However, some researchers demonstrate that, in these countries, distributing autonomy of education quality improvement to schools and teachers may adversely affect the countries' education outcomes (Hanushek and Woessmann, 2011). Teachers tend to sign up for training to meet the performance evaluation administrative criteria rather than address specific professional development needs (Dymoke and Harrison, 2006). Fullan (1994) suggested some rules, control, and extrinsic reward should not be completely removed from the system during the shifting period. Our study gives insights into what level of control and assistance should be provided to different types of teachers and school leadership.

This study shows how the demand-driven TPD can contribute to improving learning culture among teachers, especially if the system is well aligned with the characteristics of schools and teachers. In Jakarta, schools and teachers are quite heterogenous, and teacher learning culture is still limited. Many teachers are oriented not to students' learning but rather to completing teaching materials in their teaching practices. As already mentioned, around 21% of teachers in the province reported difficulties choosing suitable teaching methods or strategies for their students. Yet, teachers' interests in upgrading their teaching skills through training or other professional development programs are also low.

This research suggests that giving autonomy to teachers in deciding their professional development pathways must be conducted at the right level of the teachers' capabilities. As discussed in Section 5, the right level of training difficulties, which is quite challenging but still manageable, can trigger teacher interest as well as drive teachers to pursue mastery without being overwhelmed. Training that are too easy or basic will not work, especially for highly motivated and high-skilled teachers.

Even though the reflection session increased their awareness of areas of improvement, the lack of relevant training modules that satisfy their interests and needs prevented them from participating in the new TPD. Changes in learning behavior among these teachers are less remarkable than the low-skilled and highly motivated teachers. The findings imply the importance of two drivers of teacher determination: autonomy and a sense of mastery (Stupnisky et al., 2018).

This study also confirms the important role of principals in guiding and encouraging teachers to keep developing their professional competency. Some schools in Jakarta do not have strong leadership. As described in Section 5.2, there are three typologies of schools in Jakarta based on our study context. There are schools with strong leadership, schools with somewhat strong leadership, and schools with weak leadership whose principals have minimal knowledge about teaching or teacher professional development. These differences in leadership quality significantly affected the implementation of the demand-driven TPD, particularly for schools with lowly motivated teachers, in developing their professional capacity. Although changes in leadership practices and individual practices have happened across the sample schools, our observations also revealed difficulties in transitioning from a top-down culture with high power distance between principals and teachers to a bottom-up culture with low power distance. We found that the high power distance was one of the inhibitors of openness among teachers during reflection sessions as well as other discussions related to challenges in teaching.

Thus, the implementation of demand-driven TPD needs to consider teachers' characteristics and the schools' condition, especially the principal's leadership quality. In a school with highly skilled and motivated teachers and strong leadership, demand-driven TPD might remain ineffective if the TPD content is too basic. The teachers might have already mastered the knowledge of all material offered by the TPD. However, this type of demand-driven TPD might be best suited for a school with strong leadership and highly motivated but low-skilled teachers. Principals with strong leadership skills in both school administration as well teaching and learning related activities are essential implementing demand-driven TPD.

Prior to the TPD reform, teacher professional development in Jakarta had long been a top-down process, with neither school, principal, nor teachers having a say in the type and form of the training. The new, demand-driven TPD system has potentials to address many problems posed by the previous top-down TPD. Nevertheless, this study also shows that transition to a demand-driven TPD must be pursued carefully. Trainings or intervention should be given at the right level. Prior to the introduction of a bottom-up system, there must be a transitory intervention to ensure that the relevant actors have all the supplementary elements in adequately exercising their autonomy for their professional development. Practice implemented by one of our sample schools gives an insight that a senior teacher or expert education facilitator can be the actor that guides low skilled teachers and principals to gradually shift the school culture to fit the autonomy-based interventions. Further research on the effectiveness of this actor is needed.

While the TPD reform appeared to work best for highly motivated but low-skilled teachers, it is important to note that every participating teacher, including lowly motivated ones, should sense the benefit from the demand-driven TPD. For lowly motivated teachers, the collegial interaction among teachers promoted by the reflection process can be a good catalyst for reaping the most benefit of the TPD. According to Park et al. (2007), the most noticeable interaction among teachers is support. Various means of communication among teachers, such as through conversation,

dialogue or discussion, are how teachers support each other (Park et al, 2007). As elaborated in Section 5.1, during the TPD, teachers communicated with each other during TPD. They collaboratively discussed the reflection form and built awareness of what they needed to learn. From this discussion, teachers also felt motivated to undertake professional development or perform collaborative sharing or learning from each other at school. This collaboration continued after the program ended; they communicated informally about classroom activities or their students. When this relationship and communication transpire among teachers, we can expect learning to occur and flourish at school (Rahman, 2016), both among highly motivated and lowly motivated teachers, due to the support they receive from their colleagues. Meanwhile, for highly motivated and high-skilled teachers, we need to provide more TPD content options that allow them to advance their knowledge.

Drawing on Jakarta's experience pursuing a demand-driven TPD reform in a previously top-down education system, this research highlights the importance of implementing a differentiated TPD system to better accommodate existing variations in school cultures and leadership practices across schools, as well as differences in teacher motivation and capabilities. The system must be adaptive in terms of varying degrees of training difficulty as well as tailored assistance for schools and teachers depending on the leadership capability of the school principal and the intrinsic motivation of teachers.

References

Bergmark, U. (2020). Teachers' Professional Learning when Building a Research-Based Education: Context-Specific, Collaborative and Teacher-Driven Professional Development. *Professional Development in Education*. https://doi.org/10.1080/19415257.2020.1827011

Bett, H.K. (2016). The Cascade Model of Teachers' Continuing Professional Development in Kenya: A Time for Change?. *Cogent Education*, 3(1), p.1139439. https://doi.org/10.1080/2331186X.2016.1139439

Carpenter, D. (2015). School Culture and Leadership of Professional Learning Communities. *International Journal of Educational Management*, 29(5), pp. 682–694. https://doi.org/10.1108/IJEM-04-2014-0046

Cheon, S.H., Reeve, J., Lee, Y. and Lee, J. (2018). Why Autonomy-Supportive Interventions Work: Explaining the Professional Development of Teachers' Motivating Style. *Teaching and Teacher Education*, 69, pp.43–51. https://doi.org/10.1016/j.tate.2017.09.022

Darling-Hammond, L. and Richardson, N. (2009). Research Review / Teacher Learning: What Matters?. *Educational Leadership*, 66(5), pp.46–53. Available at: https://www.ascd.org/el/articles/teacher-learning-what-matters

Darling-Hammond, L., Hyler, M.E. and Gardner, M. (2017). *Effective Teacher Professional Development*. [online] Palo Alto, CA: Learning Policy Institute. https://doi.org/10.54300/122.311

Dichaba, M.M. and Mokhele, M.L. (2012). Does the Cascade Model Work for Teacher Training? Analysis of Teachers' Experiences. *International Journal of Educational Sciences*, 4(3), pp.249–254. https://doi.org/10.1080/09751122.2012.11890049

Dymoke, S. and Harrison, J.K. (2006). Professional Development and the Beginning Teacher: Issues of Teacher Autonomy and Institutional Conformity in the Performance Review Process. *Journal of Education for Teaching*, 32(1), pp.71–92. https://doi.org/10.1080/02607470500511009

Eilers, A.M. and Camacho, A. (2007). School Culture Change in the Making: Leadership Factors That Matter. *Urban Education*, 42(6), pp.616–637. https://doi.org/10.1177/0042085907304906

Fink, D. (2003). The Law of Unintended Consequences: The 'Real' Cost of Top-Down Reform. *Journal of Educational Change*, 4, pp.105–128. https://doi.org/10.1023/A:1024783324566

Fullan, M. (1994). "Coordinating Top-Down and Bottom-Up Strategies for Educational Reform" in Anson, R.J. (ed.) *Systemic Reform: Perspectives on Personalizing Education*, Dept. of Education, Office of Educational Research and Improvement. pp.7–24.

Gagné, M., Forest, J., Gilbert, M.H., Aubé, C., Morin, E. and Malorni, A. (2010). The Motivation at Work Scale: Validation Evidence in Two Languages. *Educational and Psychological Measurement*, 70(4), pp.628–646. https://doi.org/10.1177/0013164409355698

Garet, M.S. et al. (2008). *The Impact of Two Professional Development Interventions on Early Reading Instruction and Achievement*. NCEE 2008-4030. [online] Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Available at: https://ies.ed.gov/pubsearch/pubsinfo.asp?pubid=NCEE20084030

Garet, M.S. et al. (2011). *Middle School Mathematics Professional Development Impact Study: Findings after the Second Year of Implementation, Executive Summary*. NCEE 2011-4025. [online] Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Available at: https://eric.ed.gov/?id=ED519923

Gathumbi, A.W., Njoroge, M.J. and Hintze, D.L. (2013). Towards Comprehensive Professional Development of Teachers: The Case of Kenya. *International Journal of Process Education*, 5(1), pp.3–14. Available at: https://www.ijpe.online/5_1.html

Hagger, M.S., Cameron, L.D., Hamilton, K., Hankonen, N. and Lintunen, T. (eds). (2020). *The Handbook of Behavior Change*. Cambridge: Cambridge University Press.

Haiyan, Q., Walker, A. and Xiaowei, Y. (2017). Building and Leading a Learning Culture among Teachers: A Case Study of a Shanghai Primary School. *Educational Management Administration & Leadership*, 45(1), pp.101–122. https://doi.org/10.1177/1741143215623785

Hanushek, E.A. and Woessmann, L. (2011). How Much Do Educational Outcomes Matter in OECD Countries?. *Economic Policy*, 26(67), pp.427–491. Available at: https://doi.org/10.1111/j.1468-0327.2011.00265.x

Hargreaves, A. (2000). Four Ages of Professionalism and Professional Learning. *Teachers and Teaching*, 6(2), pp.151–182. https://doi.org/10.1080/713698714

Hord, S.M. (1997). *Professional Learning Communities: Communities of Continuous Inquiry and Improvement*. [online] Austin, Texas: Southwest Educational Development Laboratory. Available at: https://sedl.org/pubs/change34/index.html

Hoy, W. (2012). School Characteristics that Make a Difference for the Achievement of All Students. *Journal of Educational Administration*, 50(1), pp.76–97. https://doi.org/10.1108/09578231211196078

Hyslop-Margison, E.J. and Sears, A.M. (2010). Enhancing Teacher Performance: The Role of Professional Autonomy. *Interchange*, 41, pp.1–15. https://doi.org/10.1007/s10780-010-9106-3

Mitchell, C. and Sackney, L. (2000). *Profound Improvement: Building Capacity for a Learning Community*. London: Routledge.

Molina, E., Hurtado, C.M., Pushparatnam, A. and Wilichowski, T. (2019). *Teach: Observer Manual*. Working Paper. [online] Washington, DC: World Bank Group. Available at: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/949541542659103528/teach-observer-manual

Niemi, H. (2015). Teacher Professional Development in Finland: Towards a More holistic approach. *Psychology, Society, & Education*, 7(3), pp.279–294. https://doi.org/10.25115/psye.v7i3.519

O'Dwyer, L.M., Masters, J., Dash, S., De Kramer, R.M., Humez, A. and Russell, M. (2010). *e-Learning for Educators, Effects of On-Line Professional Development on Teachers and their Students: Findings from Four Randomized Trials*. inTASC Report. [online] Chestnut Hill, MA: Technology and Assessment Study Collaborative, Lynch School of Education Boston College. Available at: https://www.bc.edu/research/intasc/researchprojects/eLearning/efe.shtml

Park, S., Steve Oliver, J., Star Johnson, T., Graham, P. and Oppong, N.K. (2007). Colleagues' Roles in the Professional Development of Teachers: Results from a Research Study of National Board Certification. *Teaching and Teacher Education*, 23(4), pp.368–389. https://doi.org/10.1016/j.tate.2006.12.013

Postholm, M.B. and Wæge, K. (2016). Teachers' Learning in School-Based Development. *Educational Research*, 58(1), pp.24–38. https://doi.org/10.1080/00131881.2015.1117350

Powell, D.R., Diamond, K.E., Burchinal, M.R. and Koehler, M.J. (2010). Effects of an Early Literacy Professional Development Intervention on Head Start Teachers and Children. *Journal of Educational Psychology*, 102(2), pp.299–312. https://doi.org/10.1037/a0017763

Rahman, A. (2016). *Teacher Professional Development in Indonesia: The Influences of Learning Activities, Teacher Characteristics and School Conditions*. Ph.D. thesis. Unpublished. University of Wollongong.

Rahman, A. (2019) Restrictive versus Facilitative Teacher Professional Development: A Case from Three Public Schools in Indonesia. *Asia Pacific Education Review*, 20, pp.673–686. https://doi.org/10.1007/s12564-019-09585-1

Rahman, A. (2021) High Participation, Low Impact: The Challenge for Teacher Professional Development in Indonesia. *International Journal of Pedagogy and Teacher Education*, 5(1), pp.1–10. https://doi.org/10.20961/ijpte.v5i1.46636

Revina, S., Pramana, R.P., Filaili, R. and Suryadarma, D. (2020). *Systemic Constraints Facing Teacher Professional Development in a Middle-Income Country: Indonesia's Experience over Four Decades*. RISE Working Paper 20/054. [online] RISE Programme. Available at: https://rise.smeru.or.id/en/publication/systemic-constraints-facing-teacher-professional-development-middle-income-country

Rout, S. and Kumar Behera, S. (2014). Constructivist Approach in Teacher Professional Development: An Overview. *American Journal of Educational Research*, 2(12A), pp.8–12. Available at: https://www.researchgate.net/publication/286196176_Constructivist_Approach_in_Teacher_Professional_Development_An_Overview

Ryan, R.M. and Deci, E.L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, 25(1), pp.54–67. https://doi.org/10.1006/ceps.1999.1020

Schipper, T.M., de Vries, S., Goei, S.L. and van Veen, K. (2020). Promoting a Professional School Culture through Lesson Study? An Examination of School Culture, School Conditions, and Teacher Self-Efficacy. *Professional Development in Education*, 46(1), pp.112–129. https://doi.org/10.1080/19415257.2019.1634627

Schoen, L.T. and Teddlie, C. (2008). A New Model of School Culture: A Response to a Call for Conceptual Clarity. *School Effectiveness and School Improvement*, 19(2), pp.129–153. https://doi.org/10.1080/09243450802095278

Stolp, S.W. and Smith, S.C. (1995). *Transforming School Culture: Stories, Symbols, Values, and the Leader's Role*. Eugene, OR: ERIC Clearinghouse on Educational Management.

Stupnisky, R.H., BrckaLorenz, A., Yuhas, B. and Guay, F. (2018). Faculty Members' Motivation for Teaching and Best Practices: Testing a Model Based on Self-Determination Theory across Institution Types. *Contemporary Educational Psychology*, 53, pp. 15–26. https://doi.org/10.1016/j.cedpsych.2018.01.004

Svendsen, B. (2016). Teachers' Experience from a School-Based Collaborative Teacher Professional Development Programme: Reported Impact on Professional Development. *Teacher Development*, 20(3), pp.313–328. https://doi.org/10.1080/13664530.2016.1149512

Sweetland, S.R. and Hoy, W.K. (2000). School Characteristics and Educational Outcomes: Toward an Organizational Model of Student Achievement in Middle Schools. *Educational Administration Quarterly*, 36(5), pp.703–729. https://doi.org/10.1177/00131610021969173

Teixeira, P.J. et al. (2020). A Classification of Motivation and Behavior Change Techniques Used in Self-Determination Theory-Based Interventions in Health Contexts. *Motivation Science*, 6(4), pp.438–455. https://doi.org/10.1037/mot0000172

Thair, M. and Treagust, D.F. (2003). A Brief History of a Science Teacher Professional Development Initiative in Indonesia and the Implications for Centralised Teacher Development. *International Journal of Educational Development*, 23(2), pp.201–213. https://doi.org/10.1016/S0738-0593(02)00014-7

Toole, J.C. and Louis , K.S. (2002). "The Role of Professional Learning Communities in International Education" in *Second International Handbook of Educational Leadership and Administration*, Springer. pp.245–279.

Tschannen-Moran, M., Hoy, A.W. and Hoy, W.K. (1998). Teacher Efficacy: Its Meaning and Measure. *Review of Educational Research*, 68(2), pp.202–248. https://doi.org/10.3102/00346543068002202

Turner, F., Brownhill, S. and Wilson, E. (2017). The Transfer of Content Knowledge in a Cascade Model of Professional Development. *Teacher Development*, 21(2), pp.175–191. https://doi.org/10.1080/13664530.2016.1205508

Unit Pengelola Statistik DKI Jakarta. (2021). *Satuan Pendidikan di DKI Jakarta Tahun 2020 [Education Units in DKI Jakarta in 2020]*. [online] statistik.jakarta.go.id. Available at: https://statistik.jakarta.go.id/satuan-pendidikan-di-dki-jakarta/ (Accessed: October 21, 2022).

Wang, H.C. and Hwang, F. (2009). Study on Organizational Culture, Organizational Commitment and Attitude toward Organizational Reform—Comprehensive High Schools as Example. In: Agrawal, N.M. (ed.) *Proceedings of the 2009 International Conference on Human Resource Development*. Taipei, Graduate Institute of International Human Resource Development, National Taiwan Normal University.