Professional Development of EFL Teachers in Implementing Deep Learning-Oriented *Kurikulum Merdeka*

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Abstract

In the context of 21st-century education, professional development (PD) is a key driver of curriculum reform, particularly in advancing deep learning within Indonesia's Kurikulum Merdeka. This study examines how PD and systemic support shape the implementation of deep learning-oriented pedagogy in junior high school EFL classrooms in Bintan Regency. Employing a qualitative case study design, six teachers from diverse school contexts were involved. Data were collected through semi-structured interviews and document analysis, then analyzed thematically to identify patterns of practice and need. The findings indicate that while teachers made meaningful efforts to integrate discovery learning, cooperative tasks, and digital tools, these practices were constrained by limited access to sustained PD, infrastructural challenges, and uneven systemic support. Teachers stressed the need for practice-based PD, mentoring, and peer collaboration through MGMP and school-based learning communities, supported by accessible digital resources. Document analysis further revealed gaps between curriculum policy and classroom enactment, particularly in schools facing teacher overcapacity and inadequate facilities. At the institutional level, improved infrastructure, equitable training opportunities, and context-sensitive policy implementation emerged as crucial enablers of sustainable reform. This study contributes to TEFL by highlighting the interplay between PD and systemic support in sustaining deep learning pedagogy. It offers practical recommendations for policymakers and school leaders to design more equitable and sustainable professional learning systems that empower teachers to enact the Kurikulum Merdeka effectively.

Keywords: professional development, deep learning, *Kurikulum Merdeka*, TEFL, teacher support.

I INTRODUCTION

Curriculum has long been regarded as one of the cornerstones of education, serving as the key framework that shapes teaching and learning in schools and classrooms (Pinar, 2004). In Indonesia, reforms to the curriculum have been introduced repeatedly since independence, each reflecting the government's attempt to respond to shifting social dynamics, global pressures, and national educational aspirations (Hunaepi & Suharta, 2024). Yet, despite these repeated efforts, many implementation challenges remain, especially with regard to ensuring equity across Indonesia's highly diverse educational contexts.

The most recent reform, known as the *Kurikulum Merdeka*, was formally launched in 2022 as part of the wider *Merdeka Belajar* (Freedom to Learn) policy. Unlike its predecessor, the 2013 Curriculum, the *Kurikulum Merdeka* promotes flexibility, a stronger student-centered orientation, and a focus on higher-order thinking skills *(Badan Standar, Kurikulum, dan Asesmen, 2024;* Kartika, 2024). A significant feature of this reform is the shift in the role of teachers: rather than functioning mainly as deliverers of centrally designed content, they are now expected to exercise autonomy in determining learning objectives, instructional strategies, and assessment methods based on their students' needs (Retnowati et al., 2024). This shift represents a profound change and places considerable demands on teachers' readiness, professional competence, and ability to adapt to the realities of their classrooms (Nurzen, 2022).

At the heart of the *Kurikulum Merdeka* is the principle of deep learning. This approach emphasizes thoughtful, meaningful, and engaging encounters with knowledge through critical thinking, creativity, collaboration, communication, and problem-solving (Fullan et al., 2018; *Kementerian Pendidikan Dasar dan Menengah Republik Indonesia*, 2025). Unlike surface approaches, deep learning encourages students to transfer knowledge across contexts, grapple with authentic challenges, and cultivate dispositions that prepare them for lifelong learning (Perkins, 2009; Yulianto & Iryani, 2024). In English as a Foreign Language (EFL) classrooms, this emphasis is particularly relevant, as English serves not only as a subject for academic study but also as a gateway to global knowledge, employment opportunities, and intercultural communication (Broughton et al., 2003).

For such an approach to succeed, however, teachers must possess a high level of readiness. Teacher readiness can be understood as teachers' willingness, capacity, and preparedness to adopt and enact new pedagogical practices (Ardiasih et al., 2021; Syofyan et al., 2024). Research has shown that readiness is shaped by multiple factors, including pedagogical expertise, teaching experience, digital literacy, and professional attitudes toward educational change (Saputri et al., 2024). While teachers with high readiness are more likely to engage meaningfully with reform, those with limited readiness risk reducing implementation to superficial compliance (Lee, 1987).

Evidence from both national and international studies shows mixed results regarding teacher readiness. Abdullah & Hendrayanto, (2024), for example, found that elementary school teachers in Gorontalo demonstrated moderate readiness in applying the *Kurikulum Merdeka*, particularly in lesson planning and classroom adaptation. Similar trends were observed in Banyumas, where Karimatunisa & Sartika, (2024) reported that while teachers welcomed the new curriculum enthusiastically, they faced difficulties in translating it into practice. At the junior high school level, Tricahyati & Zaim, (2023) noted that English teachers in Padang remained uncertain about how to integrate deep learning strategies effectively. Comparable challenges have also been observed internationally. Jiang, (2022) reported that Chinese EFL teachers struggled to cultivate deep learning in online environments, while Nguyen & Le, (2024) found that teachers in Vietnam experienced difficulties applying constructivist approaches in their EFL classrooms.

In this regard, Bintan Regency presents an important case study. Located in the Riau Islands, Bintan consists of urban centers as well as rural and island-based schools, with stark differences in access to infrastructure, training, and digital resources (Safira et al., 2024) These

disparities directly influence the opportunities teachers have to pursue professional learning and to implement new pedagogies. Thus, exploring teacher readiness in Bintan not only highlights individual professional capacities but also exposes the systemic barriers that shape them.

A growing number of studies have identified the opportunities and obstacles inherent in implementing the *Kurikulum Merdeka*. Astuti et al., (2024) noted that teachers and students in Sangatta Utara faced difficulties in aligning classroom practice with curricular expectations. Similarly, Riskianto et al., (2023) highlighted that junior high school teachers in Yogyakarta experienced challenges in applying the curriculum, particularly in developing assessments aligned with deep learning principles. On the other hand, Puspitasari & Utami, (2023) showed that the curriculum provides space for schools to experiment with flexible models of teaching and learning. Nevertheless, there is still limited scholarship that examines the professional development and systemic support teachers require to enact deep learning effectively (Mulabbiyah et al., 2024; Ndari et al., 2023) This gap is particularly critical. (Darling-Hammond et al., 2017) argue that professional development must be sustained, practice-oriented, and embedded within enabling systemic conditions such as mentoring, manageable class sizes, and access to resources. Without such support, teachers may become overwhelmed by reform demands. In Indonesia, forums such as the *Musyawarah Guru Mata Pelajaran* (MGMP) have indeed played a crucial role in fostering professional learning and peer collaboration (Atmoko & Kuswandono, 2021). Yet these platforms alone are insufficient to overcome regional inequities, particularly in archipelagic areas such as Bintan.

Given this context, a qualitative inquiry offers the most suitable approach for capturing teachers lived experiences and the complex realities they face in implementing reform. Whereas surveys may capture broad trends, they often fail to illuminate the nuanced ways teachers interpret their professional development needs and the systemic conditions that enable or hinder their readiness (Creswell & Creswell, 2018).Through such an approach, this study aims to deepen understanding of junior high school EFL teachers' professional learning needs and the forms of support required to sustain readiness for deep learning within the *Kurikulum Merdeka*.

Specifically, the study focuses on EFL teachers in Bintan Regency. It seeks to identify their professional development needs, examine the institutional and systemic mechanisms that can strengthen their readiness, and propose recommendations for policymakers, schools, and teacher educators. The guiding research question is therefore: *What types of professional development and support systems are needed to improve EFL teachers' readiness for implementing deep learning in line with the Kurikulum Merdeka in Bintan Regency?*

II METHOD

This study employed a qualitative descriptive design with a case study approach, which is well suited for exploring teachers' experiences, perspectives, and professional needs in depth. Unlike quantitative surveys that capture broad patterns, qualitative approaches allow researchers to probe into how teachers make sense of reform in their everyday practice (Creswell & Creswell, 2018). By focusing on teachers' own voices, the study sought to uncover the kinds of professional development and support systems they perceive as essential for implementing the *Kurikulum Merdeka* with a deep learning orientation.

The research was conducted in Bintan Regency, Riau Islands Province, an archipelagic region that reflects the diverse educational contexts of Indonesia. Bintan is unique in that its schools span urban centers, rural hinterlands, and small coastal communities. These geographical and infrastructural differences shape the conditions in which teachers work, particularly their access to professional learning and educational resources (Safira et al., 2024).

A total of six junior high school English teachers participated in the study. Two of them were based in urban schools (T1 and T2), two in rural areas (T3 and T6), and two in coastal communities (T4 and T5). This distribution was intentional, as it ensured representation across contrasting contexts while still allowing for an in-depth, case-oriented exploration. The participants were selected through purposive sampling, focusing on teachers who had already

been exposed to the *Kurikulum Merdeka* in their schools. Such sampling enabled the study to capture rich insights into their experiences of professional development and systemic support (Patton (2022); Saunders et al., (2018)).

This study employed two main instruments: semi-structured interviews and document analysis. Interviews were the primary data source. Each teacher took part in an in-depth, semi-structured interview lasting between 45 and 60 minutes. The interviews, which were conducted in Indonesian to ensure teachers could express their ideas freely and comfortably, explored their prior professional learning experiences, perceptions of deep learning within the *Kurikulum Merdeka*, and the kinds of institutional support they considered necessary. All interviews were audio-recorded, transcribed verbatim, and then translated into English for analysis and presentation in this article. This process allowed the researcher to maintain the authenticity of teachers' voices while making the findings accessible to an international readership. Document analysis complemented the interview data. Relevant documents such as training participation certificates, invitation letters for ministry-led workshops, and school-based collaboration records were examined to provide contextual support for the interview findings.

Data were analyzed thematically, following the constant comparative method outlined by Miles et al., (2014). The process involved three main stages: data condensation, data display, and conclusion drawing/verification. First, the interview transcripts and documents were coded inductively to identify recurring categories related to professional development and systemic support. Next, the codes were organized into broader themes, such as *continuous professional development*, *peer collaboration*, and *institutional barriers*. Finally, the themes were interpreted in relation to existing literature on teacher professional learning and curriculum reform.

III RESULT

The findings presented here draw primarily from interview data with six junior high school EFL teachers, supported by relevant documents such as professional development certificates and official invitation letters. Together, these sources shed light on the professional learning experiences of teachers in Bintan Regency, the role of peer collaboration, and the systemic barriers that continue to shape their ability to implement deep learning within the *Kurikulum Merdeka*.

3.1 Continuous Professional Development Aligned with Classroom Practice

Document analysis revealed that the majority of teachers had participated in professional development (PD) activities at multiple levels, ranging from school-based initiatives to national workshops. Many of these programs were designed to run over an extended period and combined both synchronous and asynchronous formats. Importantly, the content of these trainings was tied directly to classroom practice, giving teachers the opportunity to immediately apply new strategies to their lessons.

Table 1. Continous professional development joined by the teachers

Document Type	Aspect Evaluated	Detailed Focus & Notes	Examples of Evidence
Teacher 1 (T1)			
Professional Development Records	Participation in PPG, PKG, *Guru Penggerak*, curriculum transition's workshops	What training related to *Kurikulum Merdeka* or deep learning has the teacher completed?	1. PKGBI held by *Kemdikdasmen* collaborated with Pearson 2. Independent Training on the *Platform Merdeka Mengajar*. Topic : *Merdeka Belajar*.

			3. Independent Training on the *Platform Merdeka Mengajar*. Topic : *Kurikulum Merdeka.*
Teacher 2 (T2)			
Professional Development Records	Participation in PPG, PKG, *Guru Penggerak*, curriculum transition's workshops	What training related to *Kurikulum Merdeka* or deep learning has the teacher completed?	1. *Pendidikan Guru Penggerak (PPG)* 2. Webinar on "Pemanfaatan *Inovasi Pembelajaran Digital dalam Implementasi Kurikulum Merdeka"*
Teacher 3 (T3)			
Professional Development Records	Participation in PPG, PKG, *Guru Penggerak*, curriculum transition's workshops	What training related to *Kurikulum Merdeka* or deep learning has the teacher completed?	1. PKGBI held by *Kemdikdasmen* collaborated with Pearson 2. Independent Training on the *Platform Merdeka Mengajar*. Topic : *Disiplin Positif.*
Teacher 4 (T4)			
Professional Development Records	Participation in PPG, PKG, *Guru Penggerak*, curriculum transition's workshops	What training related to *Kurikulum Merdeka* or deep learning has the teacher completed?	1. *Pendidikan Profesi Guru (PPG)* 20252 2. PKGBI held by *Kemdikdasmen* collaborated with Pearson
Teacher 5 (T5)			
Professional Development Records	Participation in PPG, PKG, *Guru Penggerak*, curriculum transition's workshops	What training related to *Kurikulum Merdeka* or deep learning has the teacher completed?	1. PKGBI held by *Kemdikdasmen* collaborated with Pearson
Teacher 5 (T5)			
Professional Development Records	Participation in PPG, PKG, *Guru Penggerak*, curriculum transition's workshops	What training related to *Kurikulum Merdeka* or deep learning has the teacher completed?	1. *Pendidikan Guru Penggerak (PGP)* 2. *Pendidikan Profesi Guru (PPG)*

One of the most significant programs was the English Teacher Competency Development Program (PKGBI) organized by the Ministry of Education. Teachers viewed this initiative positively because it emphasized the practical application of pedagogical theory rather than abstract concepts. In addition, some teachers reported joining advanced training that provided structured mentoring and follow-up support, which they found more impactful than one-off workshops such as *Pendidikan Guru Penggerak* (Teacher Leadership Program), *Pendidikan Profesi Guru* (Teacher Professional Education), and *Pelatihan Pembelajaran Mendalam* (Deep Learning Training) held by the Ministry of Education. This type of training integrated online

training (synchronous) and offline meetings (asynchronous). This integration of the two training models could bridge teachers' time constraints if they are away from class, while participants still receive direct support from the facilitator.

Interviews reinforced the importance of continuous and practice-oriented Personal Development. Teachers repeatedly emphasized that professional learning should not end when the training session concludes. Instead, they expected sustained follow-up through mentoring and on-site support. As one participant (T1) explained:

"Furthermore, after participating in the training, mentoring from tutors or resource persons is also expected. School mentoring can be conducted at a sample of schools for mentoring or follow-up, ensuring the training is meaningful and its success can be measured."

Another participant (T3) also highlighted the importance of professional development that combines independent study, direct training, and structured mentoring:

"I think the ideal aspect of the training is that it includes independent learning, and then, in addition to their independent learning, they will also receive face-to-face training. They will also be assisted in the mentoring process to measure improvements in their classroom learning abilities".

This perspective illustrated that for teachers, the value of Personal Development (PD) lies not only in exposure to new ideas but also in opportunities to revisit, adapt, and refine those ideas with guidance. Taken together, the evidence suggested that professional learning was most effective when it was continuous, classroom-centered, and supported by mentoring structures that help teachers translate theory into sustainable practice.

3.2 Peer Collaboration and Professional Learning Communities

For many teachers, professional growth extended beyond formal PD programs. Peer collaboration and participation in professional learning communities (PLCs) such as *Musyawarah Guru Mata Pelajaran* (Subject Teacher Forum) and school-based *komunitas belajar* (learning communities) emerged as crucial avenues for sustaining professional learning. These platforms became especially important because opportunities to attend ministry-led training were often limited and unequally distributed.

Analysis of official invitation letters for deep learning workshops showed that participation was highly restricted. From 38 junior high schools in Bintan Regency, only 9 were invited, and each was permitted to send just three teachers. In many cases, English teachers were not among those selected. As a result, the dissemination of training outcomes relied heavily on peer sharing. This finding underscored that the deep learning workshops organized by the Office of Teachers and Education Personnel (KGTK) of Riau Islands Province were crucial, but their impact can only be maximized if complemented by wider dissemination through MGMP-based activities and school-based learning communities.

Table 2. List of teachers and schools in Bintan regency invited on deep learning training

No	Instansi sasaran	Jenjang	Kab/Kota	Nama Peserta	Nama Kelas
19	SMP NEGERI 1 BINTAN	SMP	Bintan	TRA	
				TPJ	
				VAN	
20	SMP NEGERI 7 BINTAN	SMP	Bintan	YNT	
				DNH	
				HSR	
21	SMP NEGERI 13 BINTAN	SMP	Bintan	RKA	

				DKJ	
				HSL	
22	SMP NEGERI 19 BINTAN	SMP	Bintan	MAS	
				WAF	
				DWY	Bintan_Guru SMP_1
23	SMP NEGERI 2 BINTAN	SMP	Bintan	MLS	
				SRC	
				TPN	
24	SMPS TUNAS BANGSA	SMP	Bintan	PAN	
				MFA	
				YKN	
25	SMP TAHFIDZ DARUL FIKRI	SMP	Bintan	JLT	
				NNV	
				ESS	
26	SMP NEGERI 11 BINTAN	SMP	Bintan	HYS	
				FRI	
				IWP	
27	SMP NEGERI 17 BINTAN	SMP	Bintan	ZKA	
				APN	
				ISR	

The value of professional development through community-based learning activities and MGMP forums was also reinforced by the interview data. Teachers emphasized that these forums functioned as key channels for disseminating new pedagogical knowledge, particularly for colleagues who had not been directly involved in ministry-led training. As one teacher (T1) explained,

"I received deep learning dissemination from friends who had recently participated in training from the ministry, and there was also dissemination from the English Language Group (MGMP). So recently, there was a program from the ministry that designated several pilot schools to send several teachers to participate in this Deep Learning education. And friends who participated in this activity have disseminated it both at school and at the MGMP, making teachers in this school and in Bintan Regency in general familiar with deep learning."

School-based *Komunitas Belajar (Kombel)* also played a key role in helping teachers adapt new practices to their own classrooms. Teachers described these forums as collaborative spaces where they could reflect on strategies, co-design learning materials, and support one another in addressing implementation challenges. As one teacher (T2) explained:

"At school, there are groups of teachers from the same school. Each learning community (kombel) meets to discuss what and how we should teach. So, because we're new, we're adapting and learning from the material we learned from previous kombel, especially in designing learning materials."

Similarly, collaborative discussions created a sense of mutual support and solidarity among teachers. As T4 noted: *"It's quite helpful, because we meet friends who are in the same struggle, so to speak. And with diverse experiences. Yes, that's one of the things that really helps."*

Such testimonies underscore how shared experiences within collaborative forums contribute not only to professional growth but also to teachers' sense of solidarity in facing curricular reforms.

These testimonies demonstrated that peer learning was not only about sharing knowledge but also about building a professional community that sustained teachers' motivation and confidence during the transition to deep learning-oriented *Kurikulum Merdeka*. Its presence was very much needed for EFL teachers in Bintan in implementing the curriculum, especially since junior high schools in Bintan are spread across various regions that have different opportunities to participate in Personal Development (PD).

3.3 School and Local Government Support Systems to Overcome the Barriers.

While professional development (PD) programs and peer collaboration provided meaningful opportunities for growth, teachers' readiness to implement the deep learning-oriented *Kurikulum Merdeka* was still hindered by systemic and institutional challenges. One of the most pressing issues was teacher overcapacity in many public junior high schools. Overcrowded classrooms made it difficult to apply discovery learning, cooperative tasks, and differentiated instruction, the key strategies of deep learning pedagogy. In such situations, the vision of student-centered learning is compromised, as teachers often need to prioritize classroom control over individualized engagement.

School infrastructure and resource distribution also posed significant barriers. Several teachers highlighted the urgent need for better media and facilities to support interactive learning. As T2 explained:

"The type of support we expect for deep learning implementation and that needs to be further improved is our infrastructure, especially the media used to deliver learning. It needs to be further enhanced and more comprehensive. This will allow students to be more focused on what we want to achieve in their learning."

Similarly, T4 acknowledged that readiness depends not only on teacher knowledge and skills but also on supportive infrastructure, noting that while her school had adequate technology, damaged facilities and unreliable electricity often disrupted learning:

"If the electricity is out … I couldn't use the infocus in class … Not to mention if the power goes out, how can the class be hot? Maybe sometimes we can study in an outdoor room … it has to be in the classroom."

To overcome these challenges, schools and local governments must strengthen their support systems through targeted policy interventions. This included allocating funds for infrastructure rehabilitation, ensuring stable electricity and internet connectivity, and providing accessible media resources for all classrooms. Local governments can play a strategic role by prioritizing schools in rural and island regions that often face the greatest infrastructural gaps. At the school level, proactive maintenance policies, resource-sharing mechanisms, and contingency planning for technology failures can ensure that teachers have a supportive environment to consistently apply deep learning pedagogy. Without these systemic supports, even the most committed teachers would struggle to sustain meaningful innovation in their classrooms.

Unequal access to training opportunities also created disparities in preparedness, as many teachers valued PD initiatives but were excluded from participation. T3 reflected on this inequity, explaining that:

"The training held by KGTK from the Riau Islands yesterday on in-depth learning was excellent and ideal. Unfortunately, not all teachers participated in the training. … our school was able to participate, but only certain teachers."

To address this, education offices and local governments needed to ensure equitable access to professional development by expanding quotas, diversifying training formats, and rotating participation across schools. Instead of limiting PD opportunities to select representatives, policies should guarantee that all English teachers can directly benefit from training aligned with deep learning in the *Kurikulum Merdeka*. In addition, schools can institutionalize peer-sharing systems, such as structured MGMP or *kombel* meetings, to disseminated new practices more systematically rather than informally. Strengthening these support mechanisms would reduce the gap in teacher readiness across contexts, ensuring that innovation was not concentrated only in certain schools but becomes a more evenly distributed capacity across the region.

Resource limitations restricted teachers' ability to experiment with innovation, particularly in integrating technology, as T5 explained that showing how unequal access to digital tools and connectivity directly shapes the depth of curriculum implementation across contexts:

"If we have access to advanced technology, like AI and an internet connection … it really helps teachers with video production and all that. But if our resources are limited, we're constrained. So we end up using offline methods. For example, roleplays that don't use electricity."

To overcome these challenges, systemic support must prioritize equitable access to digital infrastructure. Local governments can invest in improving internet connectivity, upgrading ICT facilities, and providing digital literacy training for teachers to maximize the use of available technologies. At the school level, resource-sharing mechanisms, such as centralized media centers or joint procurement of software and tools, could ensure that innovation was not restricted to well-resourced schools. By reducing digital inequality, both schools and policymakers can create conditions where all teachers, regardless of location, have the means to integrate technology into deep learning practices in ways that are sustainable and impactful.

IV DISCUSSION

4.1 Continuous Professional Development Aligned with Classroom Practice

The findings of this study highlighted that professional development (PD) played a central role in supporting teachers to implement the *Kurikulum Merdeka*, particularly in fostering deep learning. Programs such as the English Teacher Competency Development Program (PKGBI), *Program Guru Penggerak (PGP)*, and *Program Profesi Guru (PPG)* provided teachers with structured opportunities to connect theory with practice and to apply new strategies directly in their classrooms. Teachers emphasized that Professional Development (PD) was most effective when it is continuous, hands-on, and reinforced by mentoring and peer collaboration. Short, one-off workshops were seen as insufficient, as they offered limited space for teachers to reflect, adapt, and refine their practice over time. These insights align with Darling-Hammond et al., (2017), who argue that effective professional learning is ongoing and directly linked to classroom practice.

Furthermore, the data revealed that sustained Professional Development (PD) can bridge the gap between curriculum expectations and actual classroom realities. Teachers noted that exposure to deep learning strategies during training sessions was most beneficial when supported by follow-up discussions in professional learning communities, where they could troubleshoot challenges and adapt strategies to their local contexts. This finding was consistent with Retnowati et al., (2024), who demonstrated that long-term Professional Development (PD) improved teacher readiness, and Atmojo et al., (2025), who showed that deep learning training enhanced teachers' pedagogical competence. In this sense, continuous Professional Development (PD) aligned with classroom practice becomes not only a means of building competence but also a mechanism for cultivating innovation, ensuring that teachers are able to translate curriculum reforms into meaningful, student-centered experiences.

4.2 Peer Collaboration and Professional Learning Communities

Beyond formal PD, peer collaboration and professional learning communities (PLCs) emerged as equally important mechanisms for professional growth. Teachers reported relying heavily on *Musyawarah Guru Mata Pelajaran (MGMP)* forums and school-based *komunitas belajar* to exchangd teaching materials, reflect collectively on challenges, and adapt strategies for their specific classroom contexts. Such collaborative structures helped reduce isolation and provided a space where teachers could experiment with deep learning pedagogy in a supportive environment. These findings resonated with Fullan & Hargreaves (2016), who emphasized that collective efficacy was central to meaningful professional growth, and with UNESCO, (2021), which highlighted the importance of PLCs in contexts where resources were limited and individual teachers cannot rely solely on formal training.

Evidence from Indonesia further reinforced this dynamic. Atmoko & Kuswandono, (2021) found that MGMP served as an effective platform for professional learning in English language teaching, particularly by enabling teachers to share resources and pedagogical innovations. Similarly, Pratiwi et al., (2024) demonstrated how peer collaboration directly supported curriculum innovation and facilitated the integration of technology into classrooms. In this way, PLCs complemented formal PD by providing ongoing, context-sensitive support that encouraged teachers to experiment, reflect, and refine their practices. This suggested that sustained collaboration, grounded in the realities of local schools, played a pivotal role in strengthening teachers' readiness to implement the deep learning-oriented *Kurikulum Merdeka*.

4.3 School and Local Government Support Systems to Overcome the Barriers.

Despite encouraging practices at the classroom level, systemic and institutional barriers remain a persistent challenge to the full realization of the deep learning-oriented *Kurikulum Merdeka*. Teachers in this study reported that overcrowded classrooms limited their ability to implement discovery learning, cooperative tasks, and differentiated instruction and other approaches that required time, attention, and active student participation. Unequal access to training further exacerbated disparities in teacher preparedness, leaving some educators reliant on second-hand information rather than direct participation in professional development. Similarly, teachers in rural and coastal areas described digital inequalities, including unreliable internet access and insufficient ICT resources, which restricted their capacity to integrate technology into lessons. These constraints point to the structural dimensions of readiness, suggesting that pedagogical innovation cannot be sustained without adequate systemic support.

Findings from other Indonesian contexts confirm these challenges. Siwa & Basthomi, (2023) reported that large class sizes in public schools hindered student engagement and limited opportunities for individualized learning, while Safira et al., (2024) highlighted how digital divided in rural regions constrained teachers' ability to innovate with technology in English classrooms. Such evidence underscores that readiness is not solely a matter of teacher competence or motivation but was also shaped by institutional and infrastructural conditions. Addressing these barriers required stronger commitments from schools and local governments to reduce class sizes, expanded equitable access to training, and invest in infrastructure and digital connectivity. This aligned with OECD's (2024) called for governments to provide the systemic support necessary to ensure that curriculum reform was both meaningful and sustainable.

V CONCLUSION

This study concluded that professional development and systemic support play a pivotal role in enabling junior high school EFL teachers in Bintan Regency to implement the *Kurikulum*

Merdeka through deep learning pedagogy. Teachers highlighted the importance of continuous, practice-based professional development, mentoring, and peer collaboration through MGMP forums and school-based learning communities. At the same time, systemic barriers such as overcrowded classrooms, uneven access to training, and digital inequality continue to constrain the sustainability of deep learning practices. These findings confirmed that teacher readiness was shaped not only by individual effort but also by the collective and institutional conditions in which teachers work.

The implication of these findings was the urgent need for policies and interventions that strengthen support systems for teachers. Schools and local governments should prioritize equitable access to professional development, invest in infrastructure and digital resources, and address teacher overcapacity to create more manageable class sizes. Teachers, in turn, should be supported to integrate differentiated instruction, collaborative learning, and innovative digital tools to ensure meaningful student engagement. In this way, the study contributed to the literature on professional development and systemic support in curriculum reform while offering practical insights for policymakers and educators in sustaining the goals of the *Kurikulum Merdeka.*

Based on these insights, this study recommended that education authorities design professional development programs that are continuous, context-specific, and practice-oriented, rather than one-off workshops. Local governments should allocate sufficient budgets to rehabilitate school infrastructure, expand internet access in rural and island areas, and provide additional teacher recruitment to reduce classroom overcrowding. At the school level, administrators should strengthen MGMP and school-based learning communities as platforms for collaboration, reflection, and peer mentoring. By combining these measures, policymakers and practitioners can ensure that the implementation of deep learning-oriented *Kurikulum Merdeka* was both sustainable and equitable.

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