EXPLORING THAI ENGLISH TEACHERS' COGNITION SHIFTS FOLLOWING DIFFERENTIATED INSTRUCTION (DI) PROFESSIONAL DEVELOPMENT

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Teaching English to Speakers of Other Languages – Master of Arts

2024

ABSTRACT

This qualitative study explores the impact of the Differentiated Instruction (DI) professional development course on the cognition of Thai English as a Foreign Language (EFL) teachers. Focused on two in-service secondary school teachers, it examines how DI training influences their teaching beliefs and practices. Data were collected through interviews, reflective journals, and classroom observations. Thematic analysis shows that DI professional development shifts teachers' methods from traditional to student-centered approaches, improving how teachers respond to the different needs of students. This shift changes how they view their role as teachers, from being a source of knowledge to a facilitator of learning, moving away from simply giving out information to scaffolding the whole learning process. This leads to better interactions between teachers and students. The keys to this transformation are peer feedback, reflective practice, and the practical implementation of DI in the real classroom context. The findings highlight the potential of DI training to improve English language teaching in Thailand, suggesting its inclusion in teacher education programs.

To mom and dad, this one's for you.

ACKNOWLEDGEMENTS

While only my name appears on the cover, this thesis is the result of a collective effort. I am thankful to the individuals whose support and input have been key in developing this thesis.

I owe my deepest gratitude to my thesis advisor, Dr. Peter De Costa, for providing me with insight and guidance throughout the thesis process. Thank you for patiently guiding me through each stage of conducting my study. Thank you for your encouragement and constructive feedback. My special thanks also go to Dr. Dustin De Felice, my second thesis reader, for your precious time spent proofreading all the drafts. Your valuable feedback on my thesis played a big part in finishing it. Also, thanks for helping me stay on track and reminding me of my duties throughout.

A huge shout out to both of my participants whose cooperation and insights were essential to this thesis. Your participation has truly shaped the outcome of this study. Also, my sincere thanks to the MATESOL, SLS, and SOSLAP fellows for your invaluable help. Thank you for patiently answering all of my questions.

My deepest appreciation and love go to my best friends at MSU and those back home, along with Mom, Dad, my sister, and my brother. Thank you for always having faith and confidence in me. I truly believe that I could not have completed this without the encouragement of family and friends. And to whoever is reading this, I extend my deepest gratitude. Your interest and attention mean the world to me.

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CHAPTER 1: INTRODUCTION

This study worked closely with two English language teachers in Thailand to explore how teachers think and how their methods change when they use Differentiated Instruction (DI). It is focused on how DI influences teachers' beliefs, attitudes, and ways of teaching. The goal was to better understand how DI can be applied effectively to meet the diverse needs of students in the varied academic settings of Thailand. This exploration was relevant to the Thai context because of the ongoing issues in the English education system, where traditional teaching methods have not successfully improved English language proficiency among students.

Despite having studied English as a required subject in the regular Thai school system since elementary school and as their first foreign language, Thai students' level of language proficiency has constantly been compared to those in other Southeast Asian countries. According to the EF English Language Proficiency Index, Thailand has been ranked *very low* in terms of language proficiency for more than a decade now. One contributing factor to this trend is the teaching methodology employed by instructors. Upadhya & Lynch (2019) highlighted that it is because the predominant method of instruction in Thailand has long been the traditional approach, characterized by teacher-directed orientation, extensive reliance on textbooks, and memorization. Additionally, many teachers are not open to new teaching methods as they perceive that traditional instruction is already effective and, therefore, requires no change (Kaur et al., 2016). This goes against the nature of classrooms as teachers are faced with diverse student characteristics such as abilities, preferences, learning styles, and motivation. Traditional instruction, where teachers take on a central and leading role in the teaching and learning process, may limit students' experiences in their learning journey.

To address this problem, it is essential to understand its root cause and test out a way to fix it. In this qualitative study, understanding the root cause involves exploring their professional identity, which refers to the beliefs regarding teaching practices, while testing out a solution entails involving them as participants in the professional development of Differentiated Instruction (DI). DI will be used throughout to refer to this kind of teaching approach. While there have been many studies on how training courses change the way teachers think and teach (e.g., Gorter & Arocena, 2020), this study is unique in its focused examination of how DI specifically influences educators' mental frameworks and instructional approaches. To my knowledge, it pioneers the investigation into the effects of DI on the way teachers see and implement their teaching practices. Owing to this research gap, this study has focused on the interaction between three components: teachers' beliefs, classroom practices, and the teachers' professional development course. Thus this study aims to highlight the significance of the teachers' beliefs formed through professional courses and as evidenced in their classroom practices. Therefore, the study also seeks to investigate how the implementation of DI through professional development may influence professional identity. The three research questions that guide this study are:

1. In what ways do in-service Thai EFL teachers engage in the learning process in this DI PD program?

2. How does participation in such a program impact the professional identity of EFL teachers in terms of teacher cognition?

3. What are the major factors that contribute to changes in language teachers' professional identity with respect to teacher cognition?

Looking at it from a larger picture, it might seem simple to fix. The real issue goes much deeper, however, and just changing how Thai EFL teachers teach will not solve everything. Nevertheless, examining teaching practices is a small yet crucial step toward a enacting bigger change. This study remains hopeful that exploring alternative teaching methods could significantly change the ways teachers think about teaching and ultimately enhance Thai language education.

This thesis starts with a review of relevant literature by looking into important background information, beginning with the situation of English teaching in Thailand. It then goes into the details of teacher cognition and how teachers use different ways of teaching, and the idea behind DI. After that, it explains how the study was done, including all the steps taken from start to finish. The main part of the thesis answers three big questions based on information gathered before, during, and after professional development training. The thesis then concludes with a discussion of potential implications and possible future directions.

CHAPTER 2: LITERATURE REVIEW

Pedagogical Approaches and Challenges in English Language Education in Thailand

Although Thai students spend at least twelve years studying English in schools, their performance on standardized examinations and in communication situations is still regularly criticized. For decades, their English proficiency has been lower than that of other ASEAN countries, according to the EF English Language Proficiency Index (EF EPI, 2023). Some of the factors leading up to this unsuccessful English proficiency development include failure in terms of teaching and the heavy reliance on teacher-centered classroom activities (Noom-Ura, 2013). English language teachers in Thailand also pay too much attention to grammar instruction (Wang & Rajprasit, 2015), a practice that detracts from students' ability to grasp communication skills within real-life contexts, engage in activities relevant to their lives, and cultivate interactive relationships between teachers and students.

More recently, the Basic Education Core Curriculum B.E. 2551 (A.D. 2008), endorsed by the Ministry of Education (MoE, 2008), has been promoting a shift towards learner-centered pedagogy in response to identified challenges in fostering communicative English skills within Thai classrooms. Since its implementation in 2009, teachers must transition from being knowledge providers to facilitators of knowledge, emphasizing a more interactive and participatory educational approach across all subject areas. The teaching and learning activities should be designed and conducted based on a learner-centered approach, recognizing the potential of all learners in the learning process, and responding to their individual differences (Vibulphol et al., 2021). Even after more than a decade of the implementation of the curriculum, Thai teachers are still working on transforming their teaching practices, as expected by the government that seeks to implement a more learner-centered approach (Euanorasetr &

Suwanarak, 2023). Due to a lack of proper training in implementing learner-centered approach, Thai English classrooms continue to rely heavily on the grammar-translation method, a method that develops individual reading skills through grammar study and text interpretation. Poonpon (2021) reported that although training and workshops are provided for Thai English teachers, there has been little evidence of whether they have met teachers' demands for pedagogical development. Equipping teachers, who play one of the most crucial roles in the education system, with more student-centered approaches thus holds promise as a solution to the challenges in English language education in Thailand.

Teacher Professional Identity and Its Influence on Instruction

Identity is defined by Danielewicz (2001, p. 10) as "our understanding of who we are and who we think other people are." Meanwhile, Burns and Richards (2009, p. 5) defined teacher identity as "how individuals see themselves and how they enact their roles within different settings." Kayi-Aydar (2019) specifically addressed that understanding the complexities of identities that second/foreign language teachers construct is crucial because the ways teachers perceive themselves as professionals impact teacher development, pedagogical choices, and classroom practices (e.g., Duff & Uchida, 1997). In this vein, Yazan's (2018) Conceptual Framework for Language Teacher Identity outlines professional identity through five recurring characteristics: teacher learning, teacher cognition, teachers' participation in communities of practice, contextual factors, teacher biographies, and teacher emotions. He asserted that teacher identity significantly influences decisions regarding teaching behaviors and practices within the classroom, a concept referred to as teacher cognition. This study delves into teacher cognition, specifically exploring how two in-service Thai English teachers perceive themselves in terms of

the instructional choices they make after receiving training on DI. This perception is fundamental to understanding their professional identity as educators.

Before the concept of teacher cognition started to be used dominantly in the literature, teacher beliefs were defined as something broad and often held assumptions about students, classrooms, and the academic material to be taught. Borg (2003) has given a concrete definition of teacher cognition as "what teachers know, believe and think and teachers are active, thinking decision-makers who make instructional choices by drawing on complex practically oriented, personalized, and context-sensitive networks of knowledge, thoughts, and beliefs" (p. 81). In other words, these beliefs have a great impact on teaching behavior, learner development, and interactions with learners and guide their decision-making. As for the factors shaping the dynamics of this operational definition, Borg (2003) puts forward four main factors: the role of language learning experiences of teachers, their professional careers, contextual realities, and teaching practices (see Figure 1).

The complex nature of teacher cognition is claimed to have a significant influence on instructional decisions made by teachers in class and their pedagogical and instructional practices since teachers' beliefs are regarded as cognitive filters underlying teachers' performances in instructional settings (Shavelson & Stern, 1981). Kuzborska (2011) found that teachers make decisions about their classroom teaching regarding beliefs they have about language teaching and learning. Gilakjani & Sabouri (2016) also conclude in their review literature paper on teachers' beliefs in English language teaching and learning that their beliefs also affect what they say and what they do in class. Most importantly, their beliefs affect their teaching methods. Johnson (1992) observed three teachers with various beliefs. The results showed that the three teachers' teaching practices were consistent with their theoretical attitudes. Johnson concluded that

teachers teach based on their theoretical beliefs. MacAlister (2012) asserted that what teachers do is identified by their beliefs. It is, therefore, important to understand teachers' beliefs because, by comprehending these beliefs, educational leaders and policymakers can better support teachers and design effective professional development programs.

Framework for Teacher Cognition

Language teacher cognition has emerged as a significant area of research in recent years, exploring various aspects such as teachers' prior learning experiences (Hayes, 2005) and teaching practices (Basturkmen, Loewen, & Ellis, 2004). However, Feryok (2010) and Burns et al. (2015) point out that the dynamic nature of language teacher cognition is another key feature that requires investigation. Despite arguments supporting DI's potential to foster cognitive change among in-service teachers, research specifically addressing this within the DI literature remains limited.

Language teacher cognition research is a growing field that has received considerable attention in teacher education (Borg, 2003; 2015; Burns, Freeman, & Edwards, 2015; Freeman, 1996; Woods, 1996). Some see "teacher knowledge" and "teacher beliefs" as separate things, while others use these two constructs together to describe how teachers think about teaching and learning based on their experiences. This inconsistency has led to discussions of the constructs. After reviewing many studies on language teachers and practices, Borg proposed a framework that includes both knowledge and beliefs. Borg (2003) stated that teacher cognition includes, among others, the *knowledge, beliefs, theories, attitudes, images, assumptions, metaphors, conceptions,* and *perspectives* about *teaching, teachers, learning, students, subject matter, curricula, materials, instructional activities,* and *self* (p. 82). His framework (1997) suggests that (i) prior schooling, (ii) professional coursework, (iii) contextual factors, and (iv) classroom

experience make up for teacher cognition; and that teacher cognition i.e. *what teachers think, believe, and know,* is related to *how teachers teach* (p. 81).
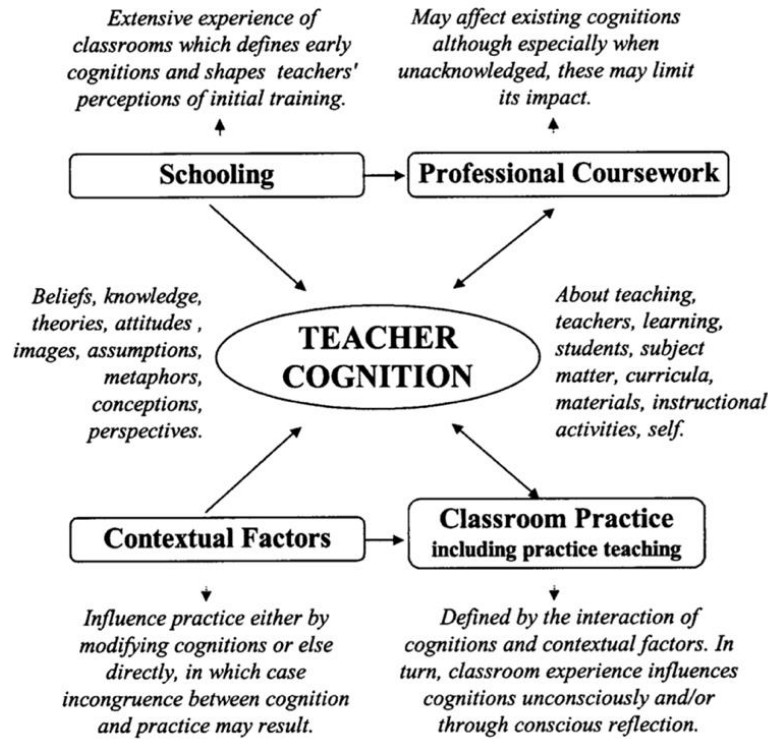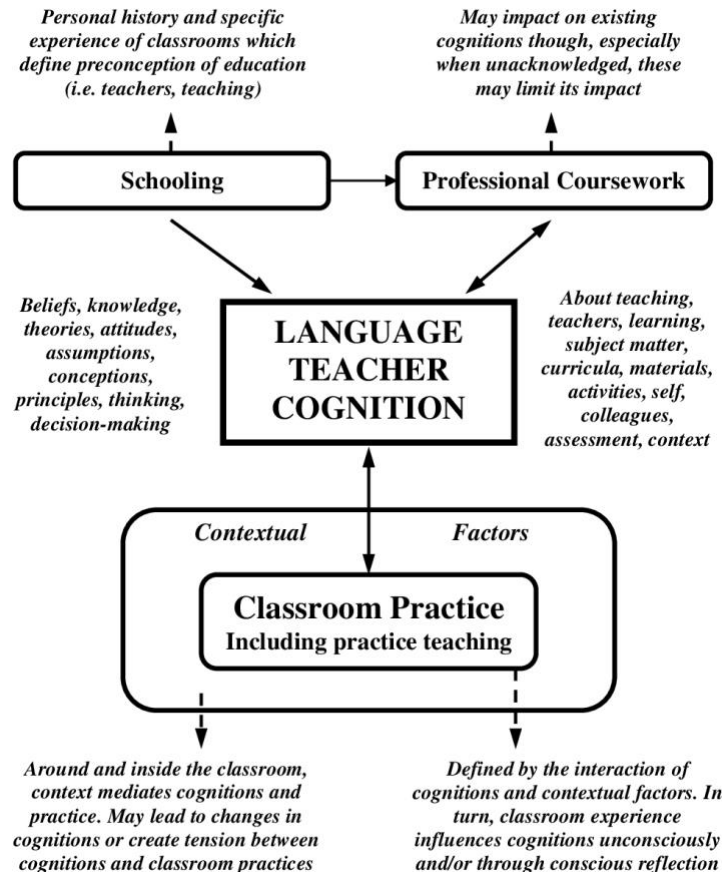

Figure 1. Borg's Language Teacher Cognition Framework (1997)

Firstly, the schooling element encompasses teachers' early learning experiences, including interactions with teachers or parents prior to starting undergraduate studies at university, which significantly shapes their beliefs. Secondly, professional coursework refers to the formal training teachers undergo before entering the teaching profession. Thirdly, contextual factors encompass the institutional support within which teachers operate. Finally, classroom practice refers to teachers' experiences in the classroom, including their beliefs about themselves, their students, the subject matter, and the broader context of their teaching.

In 2006, Borg made some modifications to the 1997 framework. The labels of schooling and professional coursework factors were changed to experience and training. He refined and

reimagined four central constructs that constantly mediate language teacher cognition, namely (i)

schooling experience, (ii) professional teacher education, (iii) school contextual factors, and (iv)

classroom teaching practices (see Figure 2).

Figure 2. Borg's Modified Language Teacher Cognition Framework (2006, p. 283)

This modified framework outlines four key influences on language teacher cognition.

Firstly, teachers' experiences as language learners before formal training shape their early

beliefs. Secondly, formal teacher training and professional development courses impact existing

beliefs. Thirdly, internal classroom practices – including perceptions of self and students, subject

knowledge, and teaching environment – continuously influence instructional decisions. Lastly,

external factors such as school management, curricula, and time constraints also significantly

impact classroom practices. This framework summarizes the main four key questions in teacher cognition:

- What do teachers have cognitions about?

- How do these cognitions develop?

- How do they interact with teacher learning?

- How do they interact with classroom practice?

In this study, Borg's Modified Framework of Teacher Cognition is used to analyze teachers' cognition through professional development training to understand Thai English classroom teachers and their practices on the DI teaching approach. The study examines two main areas: professional coursework and classroom practice.
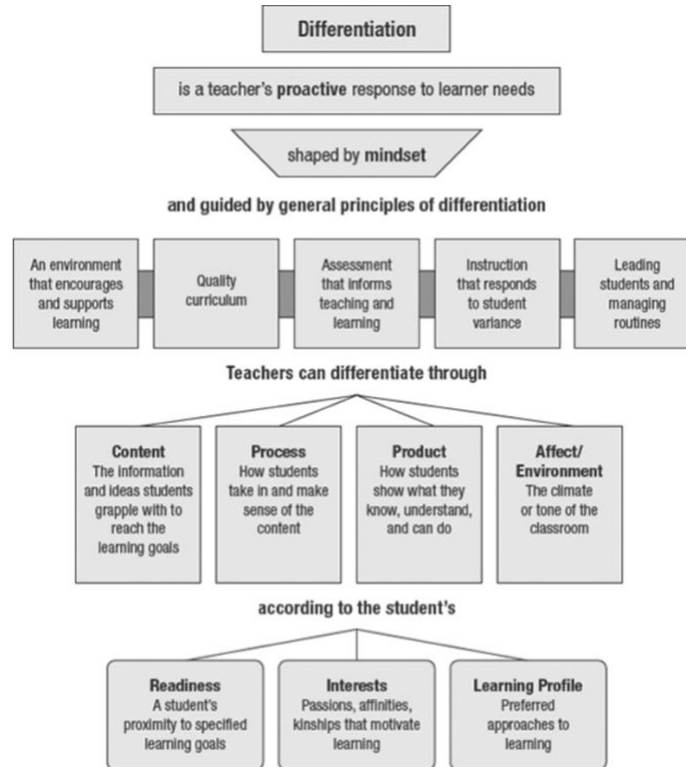
Differentiated Instruction (DI): An Overview

Differentiated instruction (DI) is known for its focus on learner diversity in the classroom. According to Tomlinson (2005), DI is a learner-centered approach that involves tailoring and adjusting the teaching and learning process to meet the individual needs of each learner. Having undergone DI approach training[1] myself, I see the benefits of applying this teaching approach to the Thai context as we shift towards a student-centered pedagogy that aligns with the Basic Education Core Curriculum. Utilizing this approach is considered to be one effective strategy to address this ongoing issue of Thai English Education. According to Tomlinson (Tomlinson, 1999; Tomlinson & Imbeau, 2010), teachers can differentiate four curricular elements: the content (what students learn), the process (how learners make sense of the content), the product (how learners demonstrate and extend what they have learned), and the

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[1] Workshop on Differentiated Instruction for Secondary School EFL Teachers, organized by Principals Academy Singapore, "Institute on Effective Differentiation: Understanding into Practice," presented by Professors Carol Ann Tomlinson, Tonya Moon, and Catherine Brighton, 26-29 June 2019, Singapore.

learning environment (the physical and affective climate in the classroom). These curricular elements can be differentiated along three types of learner differences: students' interests (passions and affinities that motivate learning), learning profiles (including learning styles, intelligence preferences, gender, and cultural background), and readiness levels (students' proximity to specified knowledge, understanding and skills) (see Figure 3).

Figure 3. Tomlinson's (2014) Differentiation of Instruction Model

Differentiated instruction has proven effective in various contexts. A study conducted by White and Vibulphol (2020) investigated the impact of a tiered approach to content, process, and product in an English reading course on the reading comprehension of ninth-grade EFL students in Thailand. The results suggest that tiered English reading instruction had a significant positive effect on the overall reading comprehension. The enhancement in reading comprehension suggests that all students, regardless of their initial reading abilities, had received adequate

support during the instruction. In addition to the improvement in their reading abilities, the

students conveyed favorable opinions regarding the tiered English reading instruction which

aligns with previous studies that investigated DI in Thailand (e.g. Suthipiyapathra et al., 2019)

and elsewhere (e.g., Aliakbari & Haghighi, 2014; Alsalhi et al., 2021; Bal, 2016; Danzi, Reul, &

Smith, 2008; Davidsen, 2018; Karadag & Yasar, 2010; Kordon, 2007; Magableh & Abdullah,

2020; Ortega et al., 2018; Senturk, 2018; Siddique & Alghamdi, 2017; Yavuz, 2020.) These

studies not only demonstrate the capacity of DI to enrich cognitive development but also

underscore its effectiveness in boosting engagement in learning. A mixed-method study by

Alsalhi et al. (2021) in Jordan, for example, was conducted within a scientific course that

highlighted DI's impact on students' overall success, aligning with earlier findings in this area of

research. Alsalhi et al. (2021), who worked with 483 students, split the students into two groups

and exposed one of the groups to DI. The experimental group was taught with more than one

teaching method. As a very important aspect of DI, students' readiness, interest, and learning

profile differences were addressed and taken into consideration before the sessions. The content

was differentiated according to the different ability levels of students. The assessment was

ongoing as the instruction continued with more than one assessment tool. They used achievement

tests and questionnaires to collect the data. The research outcomes indicated that students taught

under DI were more engaged and achieved higher scores compared to those who received

traditional, uniform instruction.

In a different study conducted in Iran, Aliakbari and Haghighi (2014) explored the

effectiveness of DI on students' achievement in English reading comprehension by conducting

an experimental study. Similar to Alsalhi et al. (2021), they worked with two groups of students

who were randomly selected either as an experimental or a control group. After an initial pre-

test, the experimental group engaged in DI strategies, such as tiered activities and diverse teaching methods, while the control group received standardized instruction. After the experiment, a final test showed that the experimental group who received different types of teaching improved significantly. This suggests that using various teaching methods helps improve reading skills.

While numerous studies have demonstrated the effectiveness of DI, there is a notable gap in research specifically focusing on professional development programs and teacher beliefs within this educational approach. This study aims to explore this under-investigated area, providing deeper insights into how DI training programs influence teachers' instructional methods and their cognitive and professional identities.

Teacher Characteristics: Teacher Beliefs on DI

Scientific literature and theoretical models emphasize that teachers' beliefs significantly influence how they respond to their learners' needs (e.g., Mansour, 2009; Smit & Humpert, 2012; Tomlinson, 2003). Research consistently suggests that teachers with positive beliefs tend to use DI more frequently (Dijkstra et al., 2016; Tomlinson et al., 2003). Dixon et al. (2014) found that teachers who receive more professional development in differentiated instruction perceive higher efficacy in differentiating instruction in their classrooms and adapt their teaching to students more often. Tomlinson (2003) also linked DI to progressive teaching approaches, highlighting elements such as student collaboration and accommodating individual differences. This study acknowledged the importance of teachers' beliefs and considered them in the investigation.

The literature review on Thai English teachers' cognition shifts following the DI professional development course highlights the importance of teacher cognition in influencing

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instructional practices. The review highlights the impact of professional development and DI's potential to accommodate diverse learner needs. It suggests that the change requires alignment with teachers' identities and comprehensive support systems. Understanding cognitive shifts in teachers is crucial for effective adoption of learner-centered strategies. The study emphasizes the significance of DI in improving educational practices and informs policy-making, advocating for sustained focus on this approach to enhance teaching and learning outcomes in Thailand.

CHAPTER 3: THE STUDY

Research Methodology

        A qualitative research approach was applied to address the research questions in this study. As highlighted by several authors, qualitative approaches have experienced increasing use among researchers in the field of second and foreign language teaching, particularly in the examination of teacher cognition (Basturkmen, 2012; Borg, 2003). Due to the nature of the study, the most appropriate approach is considered to be qualitative research methodology. Qualitative data collection methods, i.e., teacher interviews, journals, observation notes, and document analysis of lesson plans, were employed to elicit teacher cognition that includes their knowledge, views, experience, and perceptions in their practice of differentiated English language teaching from the teacher participants. These methods enabled a targeted exploration of Thai EFL teachers' beliefs and practices, along with an investigation into the factors of their instructional decisions.

Research Context

        This study reports on how two Thai EFL teachers who were working at a public and private school in Thailand participated in a professional development online course, and how their participation influenced their teaching practices and their language teacher identity. The study was mainly motivated by a concern for diversity in proficiency levels among students in one participant's public school classroom, leading to challenges in learner engagement. This issue was a frequent topic of discussion among teachers in the staffroom prior to the study. Thus, the study was conducted to respond to the teachers' concerns about different English language proficiency levels among their students. After completing a three-day training in DI in 2019, led by Carol Ann Tomlinson, an expert in DI, I recognized an opportunity to introduce these

methodologies to the participants and evaluate any changes in their beliefs and teaching methods. My ultimate goal was to facilitate a transition from traditional approaches to more student-centered ones.

Researcher Positionality

In this study, my positionality as the researcher is closely connected with the exploration of in-service Thai EFL teacher identity and its influence on classroom practices. Having graduated from the same Bachelor's in Secondary Education program with a major in English as the two participants under investigation, I share a common educational background with them. This personal connection afforded me unique insights into the context and challenges faced by Thai EFL teachers. Recognizing my positionality, I aim to bring transparency to the research process and acknowledge the potential influence of my background on the interpretation of my findings. As a researcher, my commitment lies in contributing meaningful insights that can inform improvements in English language learning practices in Thailand.

Participants

In the present study, purposeful sampling was used, as recommended by Patton (1990 p.169), to select participants who were expected to be able to give rich information. This method was adopted to ensure the selection of participants who could provide the most in-depth and insightful information relevant to my three research questions. As you may recall from Chapter 1, the three research questions that guided my study were:

1. In what ways do in-service Thai EFL teachers engage in the learning process in this DI PD program?

2. How does participation in such a program impact the professional identity of EFL teachers in terms of teacher cognition?

3. What are the major factors that contribute to changes in language teachers' professional identity with respect to teacher cognition?

My teacher participants were chosen based on the following criteria:

- Possession of a degree in Teaching English as a Foreign Language

- Minimum of five years of experience in teaching English language

- Employment at diverse types of institutions (public/private)

- No prior experience in DI-related training

Table 1 summarizes the characteristics of my two focal teachers. To preserve anonymity, all names used in this study are pseudonyms chosen by my participants.

Table 1. Participants of the Study

Participant	Highest Degree	Years of Teaching	Current Teaching Context
Ploy	MA in ELT	6	Private School
Nan	B.Ed in Secondary Education (English)	7	Public School

The data reported in this study are from these two female teachers, Nan and Ploy, who were invited to join the professional development course. The table shows the schooling background, highest degree, years of teaching, and current teaching context of the participants in this study. Ploy, a co-ed private school teacher with a Master's in ELT and 6 years of experience, and Nan, an all-boys public school teacher with a Bachelor's in Secondary Education (English) and 7 years of experience, are representative of the diverse range of participants involved in the study. Both participants have Thai as their first language. Neither of the participants had any prior experience in Differentiated Instruction prior to the study.

The PD Course

The goal of this online course is to provide DI training in language classrooms that teachers will find useful. In order to create an effective PD course, I followed the National Staff Development Council's (NSDC) guidelines. The NSDC (2001) suggested three areas of focus for professional development: content, context, and process. *Content* focuses on teachers' deep understanding of the subject area they teach and the research based instructional practices these teachers implement. *Context* refers to reflection and collaborative opportunities for each teacher to participate in collegial dialogue with fellow teachers. *Process* is defined as how teachers learn the information presented during the professional development session. Every part of this online course was carefully put together to include the three important areas. This way, each lesson helped the teachers get a better grasp of the topics, encouraged them to share ideas and reflect with others, and ensured that they made the best use of the material in a way that best suited them.

The course started out by exploring DI through discussions and an informative video, focusing on tailoring education to individual student needs. Sessions 2 and 3 involved my participants adapting their lesson plans to fit DI principles, with collaborative feedback shaping these adaptations. The concluding sessions featured Nan and Ploy sharing their practical experiences with DI in their respective classrooms, focusing on successes, challenges, and reflections for future improvement. The following section details the information of each session of the trianing.

Session 1

The first section served as an introduction to DI. We started by exploring the diversity present within classrooms and discussing individual approaches to managing it. Key discussion points included:

1) What diversity can we find among the students in our class?

2) What would you do if the English skills of the students in your class were different?

Following this, we engaged with a video titled *Differentiating Instruction: It's Not as Hard as You Think* by *Education Week.* We also explained the core concept of the approach, stating that "it is about getting to know the students and making decisions based on what they need." The video also offered some low-lift strategies for making activities accessible for students with all types of gifts and challenges. After viewing, we collectively summarized our understanding of the video content and engaged in a discussion regarding its advantages and drawbacks. Drawing from my personal experience in implementing DI in the classroom, I had the opportunity to demonstrate to my participants how I differentiated each element of the approach, including content, process, and product:

- *Content:* Students were provided with choices for their descriptive essay topics to accommodate diverse interests. This allowed each student to select a topic that resonated with them personally.

- *Process:* Students were given readings at different difficulty levels to address varying levels of reading proficiency.

- *Product:* To assess understanding of the movie in multiple ways, students were evaluated through various formats such as writing a summary, creating a comic strip, or presenting verbally

After reviewing each element I presented, we explored additional examples from language educators worldwide, examining their innovative practices and methodologies. Together, we discussed how we could use these approaches in our own teaching.

Sessions 2 and 3

In the second and third sessions, each participant brought in a lesson plan intended for future use and adapted it into a DI format. The objective of these sessions was to provide participants with practical experience in implementing DI principles into their lesson planning. Each session was centered around one participant's plan. Focusing on one participant's plan at a time allows for detailed discussion and feedback, giving us opportunities to thoroughly integrate all elements of DI into the lesson plans. During the discussion, we shared and exchanged our ideas with one another to foster a collaborative learning environment and broaden our understanding of the approach. At the end of each session, participants were asked to try out their modified lesson plans in their teaching.

Sessions 4 and 5

In sessions 4 and 5, Nan and Ploy respectively shared their experiences of applying DI strategies in their classrooms. Both sessions revolved around discussing the successes and areas for improvement in their DI implementation. We talked about what went smoothly and what could have been improved. We reflected on the lessons learned from this experience, identified key takeaways, and brainstormed changes we would make if we were to do it again. Throughout the session, we provided feedback to each other and learned from one another's experiences.

Table 2. The PD on DI Course

Session	Objective	Duration
1	to identify and articulate the key elements of DI	57 minutes
2	to apply different elements of DI into their future lessons	48 minutes
3	to apply different elements of DI into their future lessons	52 minutes
4	to reflect on experiences with implementing DI and share insights	41 minutes
5	to reflect on experiences with implementing DI and share insights	36 minutes

Data Collection

To ensure the collection of rich and reliable data, which entailed capturing detailed behaviors and rationales from the participants' perspectives (Bogdan & Biklen, 1998), multiple qualitative data collection methods were utilized. These included pre- and post-training semi-structured in-depth interviews, reflective journals maintained during the training, video recordings of training sessions, and video recordings of classroom observations. Throughout the data collection process, Thai was extensively used to gain a deeper understanding and to better reflect the participants' experiences. Translations were made word-by-word for the analysis.

However, a notable constraint in this process was the geographical separation between the participants and the researcher. Due to the researcher pursuing her master's degree abroad in the US, all procedures were conducted remotely. The data were collected from November 2023 to March 2024.

a) Semi-structured Interviews

A semi-structured interview was used in the study due to its versatility and flexibility since it allowed me to improvise follow-up questions based on my participants' responses. These interviews enabled me to obtain detailed and in-depth information (Prior, 2018). Prior to the professional development course, the interviews were conducted to investigate the participants' reflections on their identity, specifically in relation to their teaching beliefs. Following the completion of the course, in addition to their beliefs in teaching, questions about their

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experiences, the impacts of the course on teacher identity construction, and their perceptions towards implementing DI were discussed. The interviews were conducted with the participants' consent and were audio recorded. See Appendix A for the pre-training interview questions and Appendix B for post-training interview questions.

b) Reflective Journals

To explore the teachers' during-the-course identity construction of their beliefs in teaching and perceptions of the newly introduced approach, they were asked to write their reflections on Google Docs immediately after sessions 1, 2, and 4. This method allowed for a close examination of how participants' perspectives and experiences evolved throughout the training. Each journal entry contained 4-5 prompts designed to stimulate reflection. See Appendix C for the prompts.

c) Recordings of Training Sessions

The recordings from the four training sessions captured the entire experience, encompassing not just the presentation of concepts, strategies, and activities, but also the interactions and engagement of my participants. Conversations at each session were later transcribed for analysis. The conversation data served as a tool for analyzing instructional methods, assessing participant engagement, and gaining a holistic understanding of the learning environment.

d) Recordings of Classroom Observation

The recordings of classroom observations were used as evidence of how DI strategies, such as varied instructional materials, grouping strategies, and flexible pacing, were being employed. The recordings were also used to observe any challenges faced during instruction and

notable teacher-student interactions. Each participant was tasked with submitting one classroom recording for assessment.

Table 3. Data collected for the study

Type of data	Content
Pre- and Post-training Interview Transcriptions	10,906 words
6 Reflective Journals	2,762 words
5 Recorded Training Sessions	234 minutes
2 Recordings of Classroom Observation	42 minutes

Data Analysis

The data from the interview sessions, reflective written journals, and the recorded training session were analyzed via thematic analysis, which is "a method for identifying, analyzing and reporting patterns (themes) within data" (Braun & Clarke, 2006). The data from the two data sources – interviews and recorded training sessions – were transcribed word by word and translated into English to be thematically coded. Recordings of the classroom observation were used to review the use of DI implementation. This thematic analysis was employed to identify, analyze, and report patterns generated from the data. The qualitative data analysis followed the six-phase step-by-step guide recommended by Braun and Clarke (2006): (1) Familiarizing ourselves with the data, (2) Generating initial codes, (3) Searching for themes, (4) Refining and reviewing themes, (5) Defining and naming themes, and (6) Writing qualitative results.

Phase	Examples of Procedure for Each Step
1. Familiarization	Transcribing data: reading and re-reading; noting down initial codes
2. Generating Initial Codes	Coding interesting features in the data in a systematic fashion across the data set, collating data relevant to each code
3. Searching for Themes	Collating codes into potential themes, gathering all data relevant to each theme
4. Involved Reviewing Themes	Checking if the themes work in relation to the coded extracts and the entire data-set; generate a thematic map
5. Defining and Naming Themes	Ongoing analysis to refine the specifics for each theme; generation of clear names for each theme
6. Producing the Report	Final Opportunity for Analysis selecting appropriate extracts; discussion of analysis; relate back to the research question or literature; produce report

Figure 4. Braun and Clarke (2006) Six Phases of Thematic Analysis

This initial phase involved immersing myself in the raw data (Familiarization) to gain a deep understanding of the participants' experiences and perspectives regarding the DI professional development program. I started by reading and re-reading transcripts from interviews, reflective journals, and training sessions. Then, I watched and re-read classroom observation recordings, and took detailed notes on key points, recurring themes, and initial impressions.

Following data familiarization, I proceeded to generate initial codes by identifying recurring concepts, themes, and patterns within the collected data. These initial codes served as building blocks for organizing and categorizing the data into meaningful units of analysis. Codes encompassed a wide range of topics, such as participants' perceptions of DI, their experiences during the training sessions, and reflections on the impact of the program on their teaching practices and professional identity.

As the analysis progressed, a systematic search was conducted to capture key themes that emerged from the initial codes. I reviewed the initial codes and identified patterns across different data sources. I then grouped similar codes into categories that represented broader

themes. These themes reflected common challenges, successes, or transformative moments encountered by my participants throughout the training process.

The next phase involved reviewing the identified themes to ensure their relevance to the research questions. I critically examined the relationships between codes and themes to consolidate my data interpretations. During this phase, I reviewed the themes with one of my MATESOL colleagues for feedback and confirmation.

Once the themes were refined, I defined and named each theme to provide clarity to the analysis.I started by developing clear and concise names for each theme. I tried to use descriptive and specific language that captures the essence of the theme. Then, I ensured theme names were consistent throughout the analysis.

Finally, I synthesized the qualitative results into a coherent narrative that addressed my three research questions and highlighted key findings. I integrated data excerpts from quotes and observations to illustrate and support my interpretations. I then presented an argument for the impact of the DI program on participants' professional identity and teacher cognition.

To summarize, by analyzing qualitative data from various sources, including interviews, reflective journals, and classroom observations, this investigation aimed to address three research expectations:

- analyze data related to participants' experiences with the PD program, focusing on how participants engaged with the content, activities, and discussions.
- look for evidence of changes in participants' beliefs and approaches to teaching after the program. Analyze data from interviews, journals, and observations to understand how their understanding and implementation of DI evolved.

- identify factors that contributed to these changes by analyzing data from participants' reflections on specific aspects of the program that they found most beneficial or challenging.

This chapter details the qualitative methodology that was used to investigate how DI professional development affects Thai EFL teachers' cognition and practices. The study involved two Thai EFL teachers from different educational backgrounds who underwent an online DI course focused on content, context, and process which are the main principles of the. Various data collection methods including interviews, journals, observations, and lesson plan analyses were utilized to deeply explore the teachers' beliefs, instructional decisions, and identity changes post-training. Thematic analysis of the data highlighted how these DI principles were integrated into their teaching and reflected on the course's impact on their professional identity and efficacy, providing insights into the potential benefits of DI in enhancing educational quality and teaching practices in Thailand.

CHAPTER 4: RESULTS

This section presents an analysis of data collected from various sources by exploring the experiences of the two Thai English teachers in a DI professional development program. Through interviews, reflective journals, and video recordings of training sessions and classroom observations, this study sought to investigate the program's components, its impact on teacher cognition, and the factors influencing shifts in professional identity. As we delve into the findings, I would like to recapitulate my three research questions

1. In what ways do Thai EFL teachers engage in the learning process in this DI professional development program?

2. How does participation in such a program impact the professional identity of EFL teachers in terms of teacher cognition?

3. What are the major factors that contribute to changes in language teachers' professional identity with respect to teacher cognition after completing the DI professional development program?

RQ1: In what ways do in-service Thai EFL teachers engage in the learning process in this DI professional development program?

To unpack the layers of engagement among in-service Thai EFL teachers in the DI program, a comprehensive examination of participant interactions, discussions, and activities was undertaken. Two main themes emerged from this analysis: the use of questioning and clarification strategies and learning through examples.

The Use of Questioning and Clarification Strategies

Participants demonstrated a proactive stance toward understanding DI through dynamic questioning and clarification. During the initial session, Nan actively engaged in the learning

process by asking a question to confirm her understanding of DI principles. Drawing upon her

past experiences, particularly an observation of her junior friend's potential utilization of DI,

Nan sought clarification to validate her comprehension:

> **Excerpt 1: Exploring DI through Questioning**
> Nan: I feel that it's a very interesting method, and I think I've seen people
> who have done it. I remember one of my junior friends did it. She made her
> students retake the reading test, but gave students the choice of which reading
> passage they would like to read, and then they would go on reading and
> answer some questions on the reading. For example, one of her students
> wanted to read about football, so he went on to find a passage about football.
> Yeah I've seen that, is it something like that?
>
> (Training Session #1)

Questioning and clarification strategies were also seen a lot during Sessions 2 and 3.

Throughout these sessions, my participants frequently raised questions and sought clarification to

make sure they understood how to plan lessons that meet different students' needs.

> **Excerpt 2: Clarifying Differentiation Strategies**
> Ploy: What else can we do to differentiate the process?
> Nan: What about pair reading?
> Ploy: Usually when I let them read, it is freestyle, it can also be a group
> reading as long as they are working on it.
> Nan: If we do it this way, would it count as differentiating the process? They
> can use friends as a tool to help.
> Ploy: Process is how the content is taught, delivered, and received. In this
> case, before they read, if we give vocabulary in different levels, does it mean
> that the list of vocab will be less for the lower students? Under the vocab
> words, we can also use the translations, synonyms, pictures, and sample
> sentences.
> Nan: What if we used guided questions?
>
> (Training Session #2)

Excerpt 2 showcases an exchange between my two participants about differentiating

process of the activity. Ploy initiated the discussion by asking for suggestions on alternative

methods for differentiation. Nan sought clarification on whether pair reading qualified as

differentiation. This back-and-forth exchange demonstrates how questioning and clarification helped them explore various approaches for differentiated learning. These two excerpts exemplify how questioning and clarification were instrumental in effective DI planning. Participants not only identified differentiation strategies but also refined them through ongoing dialogue. This ensured a deeper understanding of DI principles and the development of lessons that catered to diverse student needs.

Learning through Examples

Example-based learning is a crucial aspect of professional development, where teachers adapt examples provided by experts to their own classroom contexts. Through a process of analysis and reflection during the training, teachers assess the relevance and applicability of these examples to their specific teaching environments though the examples from both DI introduction video and the examples provided. By integrating and modifying these examples, my focal teachers tailored their own class acitivites to suit the needs and dynamics of their respective classrooms.

> **Excerpt 3: Strategic Grouping for Effective Learning**
> Ploy: From one of the examples from our last discussion, what about if we put students into three groups where they start by themselves, with a pair, or with a teacher?
> Nan: I think that would work. Yeah I think the example from the last discussion would work.
>
> (Training Session #3)

Excerpts 4 and 5 feature valuable perspectives obtained from post-training interviews, where participants were prompted to reflect on the activities that proved most beneficial for comprehending DI. Notably, my participants underscored the significant roles through videos, and discussions in deepening their understanding and refining their lesson planning strategies.

Excerpt 4: Learning from Examples
Nan: The video and discussion gave me more understanding of what it is. So when I planned for that lesson, I based my activities on the video and the discussions we had.

(Nan's Post-training interview)

Excerpt 5: Reflection and Peer Examples as Learning Tools
Ploy: I feel that during the reflection, when I got to talk to the other fellow teachers, and seeing a lot of examples also helped. The introduction helped me learn some parts, but I felt like I got it 100% when I saw a lot of examples, not only from the video but also from Nan's examples as well.

(Ploy's Post-training interview)

Excerpts 4 and 5 emphasize the transformative impact of examples on participants' learning experiences. These excerpts show the importance of the examples when it came to effectively integrating this newly introduced strategy into their teaching practice. This helped them use new ideas in their classrooms, which could ultimately improve students' outcomes.

During Sessions 4 and 5 of the training, participants discussed the implementation of DI, Nan elaborated on the utilization of three different worksheets tailored to students with varying proficiency levels.

Excerpt 6: Differentiated Worksheets for Varied Learning Levels
Nan: So the objective is to use the simple past to talk about past actions and activities. So I was like "okay, I am going to try." I provided three versions of the worksheets. The easiest version of the worksheet is to change the tense of verbs from present to past. For the worksheet in the middle, students had to write sentences using simple past tense. I required them to write eight sentences, but they ended up writing five maximum. For the highest one, they had to write a story about what they did yesterday.

(Training session #3)

In Nan's DI lesson, the focus was on mastering the use of simple past tense. As mentioned in Excerpt 6, she used the expert's example of differentiating the process by creating varied

worksheets into three different versions and tailoring them to students' diverse proficiency levels while maintaining a consistent objective. Nan ensured that each student had access to materials appropriate to their proficiency level. This allowed her to effectively address the varying needs of her students, providing them with the appropriate challenges they needed.

Similarly, in Ploy's lesson, the objective was to check students' reading techniques that they have learned from the previous class focusing on vocabulary inference through prefixes, suffixes, and context clues. To gauge these reading techniques, students were provided with options to select a book within a specified timeframe, write a reflective piece, and articulate their experiences using those techniques. Ploy employed several components of DI, namely, differentiating content by allowing students to choose books based on their individual interests, and differentiating products by providing students with multiple options to demonstrate their understanding of the reading text. By offering choices such as writing a reflection or creating a video explanation, Ploy accommodated diverse student learning profiles and preferences.

> **Excerpt 7: Evaluating Reading Techniques through Students' Choice**
> Ploy: So the objective of this class is to use those techniques to read. So I told them I would evaluate them at the end of the class, to what extent they used these techniques in their reading. So I put books into three piles, and the majority are the B1 and B2 levels. The books are pretty varied, from mini-books and disney pop-up books to novels to nonfiction about space. I tried to choose the books that look intriguing. I introduced them to the three piles by the difficulty of the books. So I let them choose and gave them 20 minutes to do a free reading, meaning they could choose the chapter or page you want to read, or the whole book if it is possible. At the end, they have to write a reflection about what they have read, the title, the page(s) they chose, and what it was about. For this reflection, I told them they could write a summary or take a video explaining what they read, but they all chose to write.

(Training session #5)

The analysis of the transcripts and interviews shows that Thai EFL teachers engaged in the DI professional development program. They actively utilized examples shared by fellow

teacher and experts. Both participants did not simply copy those examples, but rather analyzed and adapted them to fit their specific classroom contexts and what their students need. This illustrates my participants' adeptness in integrating examples into their teaching practice, thereby reflecting their commitment to implementing effective pedagogy.

RQ2: How does participation in such a program impact the professional identity of EFL teachers in terms of teacher cognition?

Building on the modified framework of Borg's (2006) ideas on teacher cognition, this research question focuses on the exploration of the two main areas: professional coursework and classroom practice. These areas help us understand how professional coursework, the DI training in this case, affected teachers' thinking, their beliefs about this particular teaching method, and how it changed their classroom teaching. This approach gives us a clear view of how learning new teaching methods can change teachers' thoughts and actions in teaching.

I. Teacher Cogintion and Professional Coursework

This section examines the role of DI training as a form of professional coursework, investigating how it informs and modifies teachers' theoretical understandings and beliefs about teaching. It examines whether this coursework leads to a change in how teachers think, prompting them to re-evaluate and potentially reshape their approach to teaching. From the analysis, three distinct themes have emerged: a shift in pedagogical perspectives, an expansion of pedagogical knowledge, and an awareness of learner diversity.

Shift in Pedagogical Perspectives

This theme captures how teachers' views on effective teaching methods evolve following their engagement with DI training. Prior to the training, teachers may have adhered to more conventional, rigid instructional practices, such as employing a one-size-fits-all approach or

focusing solely on grammar and vocabulary drills. However, through their participation and

engagement with DI training, teachers experience a significant shift in their pedagogical outlook.

They begin to recognize the limitations of traditional methods and the importance of adopting

diverse, learner-centered strategies to meet the needs of all students effectively.

> **Excerpt 8: Traditional English Teaching Focus**
> Nan: Thai English in general mainly focuses too much on theory. Textbooks
> focused on grammar and doing tests. But not for communication. Not in use.
> So, teaching English in Thailand is when I go into a class and okay, subject,
> verb, yeah, like that. I don't think teachers put a lot of efforts into their
> teaching sometimes.
>
> (Nan's pre-training interview)

Nan expressed a perception of English language teaching as primarily focused on

grammar drills, which is indicative of a traditional approach prevalent in many educational

settings in Thailand. She initially saw English teaching as dominated by grammar-focused

activities, a reflection of such traditional practices. However, Excerpt 9 from Nan's post-training

interview highlights a significant shift in her pedagogical outlook after participating in DI

training. She addressed that this new teaching method gave more emphasis on student-centered

approaches and the adaptation of teaching methods to meet individual student needs.

> **Excerpt 9: A New Teaching Perspective**
> Nan: I think it is because the main focus is on the students, on their
> proficiency, on their interests. It's like me trying to adapt myself to the
> students, so I can maximize their learning ability.
>
> (Nan's post-training interview)

Nan's professional development journey thus shows how DI training pushes teachers like

her to explore new ways of teaching. It challenges their old habits and beliefs and leads them to

adopt more flexible and student-centered approaches.

> **Excerpt 10: Evolution of Teaching Philosophy**

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Ploy: I have this mindset that to be able to teach effectively, is to use English as much as possible in class, by forcing them to use English, including when they have to answer questions, discuss, or write reflections, that was my perception of what a good English class is. But now, I feel like making them use English only can create a language barrier, and the input that I have received from my students was pretty limited. But when I shifted from that perspective just a little, and allowed them to be themselves more and give them space to truly express themselves, it really differed, especially when teaching reading.

(Ploy's post-training interview)

Similar to Nan, Ploy's post-training interview reveals a shift in her approach to teaching, moving away from forcing her students to use English only to embracing inclusive and student-centered strategies, particularly in teaching reading. Excerpt 10 from Ploy's post-training interview reveals a transformative shift in her approach. This shift in perspective led her to reconsider her previous practices and embrace more inclusive and student-centered approaches, particularly in the context of teaching reading. These excerpts also show how DI training not only challenges traditional instructional practices but also empowers teachers to be more flexible and be more reflective on their teaching methodologies, thereby reshaping their professional identities as educators.

These reflections from Nan and Ploy exemplify how DI training encourages educators to rethink their approaches, moving away from unidirectional teaching methods towards more adaptive, responsive teaching practices. This transition not only challenges existing pedagogical norms but also fosters a more reflective and adaptable professional identity among EFL teachers.

Expansion of Pedagogical Knowledge

This theme shows the growth and development of how teachers learn a lot more about their teaching strategies and how to teach them in ways that work for all their students. DI training gives teachers new methods and tools to help students with different ways of learning,

different abilities, and different interests. Teachers learn how to make lessons more interesting and more engaging to diverse learners. They also get better at noticing when students are having trouble and figuring out how to help them.

> **Excerpt 11: Expanding Assessment Strategies**
> Ploy: One thing that I've learned is that we don't have to evaluate students solely in English. Using English can limit the expression of their understanding of the text.
>
> (Ploy's post-training interview)

The main key takeaway Ploy mentioned during the sessions and the interview several times is how she had learned that there are more than one way to assess students' reading comprehension. This theme aligns with the literature review on DI (Tomlinson, 2005), showing that some participants acknowledged every student comes to class with their unique personalities, needs, learning styles, and preferences. In Ploy's case, she was differentiating the process as well as the product of her learners.

Nan's approach to DI involved tailoring the learning process to match students' varied abilities, as evident when she created three different versions of worksheets (review Excerpt 6). This practice of differentiating instruction according to student needs shows the growth in their pedagogical understanding.

Enhanced Awareness of Learner Diversity

Teachers' awareness of the diverse needs and abilities of their students, and the implications of this diversity for teaching practice has been raised by both of the focal participants. Ploy noted before the training, she knew that there are a big gaps of the abilities among her students. Yet, she was not able to effectively bridge these gaps or adapt her teaching methods to address their varied needs.

Excerpt 12: Customizing Learning though DI Concept
Ploy: One thing about DI is how it allows the customization of learning
experiences to suit individual student needs, preferences, and learning styles.
For example, I've begun to implement grouping strategies where students
collaborate in different groups based on their abilities.

(Ploy's journal #3)

Here, Ploy reflected on the change in her understanding as a result of DI training, which

emphasizes tailoring learning experiences to individual student needs. She used grouping

strategies that allow students to work in groups according to their abilities. Similar to Nan, during

the planning stage, she recognized the challenges faced by low-proficiency students. She then

came up with idea to enhance her lesson introductions by adding additional vocabulary and

examples that resonate with students' experiences.

Excerpt 13: Enhancing Introductions Activities for Comprehension
Nan: If I was to change the introduction, I might add additional vocab words
related to habits and personality, and give more examples, in order to help the
weaker students gain an understanding of the concept. Also to introduce new
words to the weaker students.

(Training session #3)

In sum, Ploy and Nan's approach to teaching has shifted to better provide to the individual

needs of their students. After being introduced to the new teaching strategy, they now recognized

the different needs and abilities of each student and come up with new ways to teach each student

based on their needs. This outcome strongly suggests that Ploy and Nan had grown as teachers,

and that DI is a helpful way to make teaching more inclusive and effective.

II. Teacher Cognition and Classroom Practice

This section moves the focus to the classroom. Here, my analysis explores how the shifts

in teacher cognition became evident in practice. It investigates how the changes in teachers'

beliefs, influenced by DI training, are translated into action through their instructional choices,

interactions with students, and overall teaching approach. This part aims to trace the direct impact

of evolved teacher cognition on the quality and nature of classroom practice by observing how

these changes play out in the ways teachers operate in the classroom. Through the analysis, three

significant themes have been identified: integration of Differentiated Instructional strategies,

reconceptualization of the teacher's role, and enhancement of teacher-student interactions.

Integration of Differentiated Instructional Strategies

In putting theory into practice, Ploy and Nan who have undergone DI training began to

implement differentiated strategies within their respective classrooms. The bridge between theory

and practice was observed between Sessions 3 and 4, when both participants tried out their DI

lesson plans. This period showed a crucial phase for data collection, primarily through video

recordings and reflective discussions about their instructional approaches. This hands-on

application allowed for an in-depth exploration of how DI principles were integrated into actual

teaching scenarios. Through this process, the shift in teaching strategies, from a one-size-fits-all

approach to a more individualized and student-centered methodology, became evident.

Just as she discussed during the planning, the video recording from Nan's class showed

her approach of offering worksheets with varying levels of difficulty. She allowed students to

choose the one that best matched their level, a choice that was neither too hard nor too easy for

them. One thing that Nan noticed was that high-proficiency students were willing to try the most

challenging worksheet, while some average students opted for the easiest ones, even though she

believed they were capable of handling more difficult work. Nonetheless, a positive observation

was that some students, who typically showed little engagement, were now seeking assistance.

> **Excerpt 14: Motivation and Engagement through DI**
> Nan: I really see that they have more motivation. One of the students, instead
> of just sitting and doing nothing like he usually does, he sat with one of the
> good students in class and they worked together. They came to me too,

seeking help. In the past, I might have had one set of instructions for everyone, and they thought they could just sit and wait for me to give them the answers. Now that I gave them choices, they ran to get the worksheets. So at the end of the class, they have the concept of using past tense, even if they don't know how to write the sentences. Basically, they have the concept of past tense.

(Nan's Post-training interview)

Throughout the five workshop sessions, Ploy and Nan were exposed to various DI strategies demonstrated by experts. As they implemented it, they selected activities that aligned with their teaching contexts. While they had not yet implemented the entire DI process comprehensively, their efforts demonstrated a gradual integration of DI strategies into their pedagogical repertoires. Their experience showed that making small and gradual changes is a good and effective way to start using all parts of DI. The important thing is to start somewhere rather than not starting at all.

Reconceptualization of the Teacher's Role

The theme of reconceptualization of teacher role reflects a shift in how my focal teachers saw themselves, their positions and responsibilities within the classroom. Through the DI training, they began to see themselves not merely as sources of knowledge, but as facilitators of learning. This transformation involved moving away from a traditional, lecture-based approach towards a more student-centered methodology that prioritized the needs, interests, and learning styles of each individual student.

Excerpt 15 shows Nan's view about herself before training. She described her role in terms closer to a coach or advisor, focusing on providing tasks and guidance rather than direct instruction.

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Excerpt 15: From Knowledge Provider to Facilitator
Nan: Actually, I think when I see myself as a teacher…I feel like I am the one who is like an advisor or a coach. I don't explain much like, I don't go to class and like.. "Okay, subject, verb, something like that," no. I just, "okay, I have a task for you." And we just do it, I will coach and give you advice.

(Nan's post-training interview)

After the training, Nan talked about being more open to trying new ways of teaching and being able to accept how things turn out, even if she was worried at first. This big shift shows that she had been moving away from her old way of teaching, which was mostly giving lectures and assignments, and not really focusing on whether students were getting involved or not. Now, she felt more assured in her role as a facilitator. This shows her increased confidence in her ability to support and guide her students' learning journeys.

Excerpt 16: Adopting a Facilitative Teaching Style
Nan: I feel like I should be more open-minded in teaching, and stop thinking about whether the students will receive what I am trying to give. Because of that mindset, I limit myself to doing the average level. I did a lot of lectures, giving them exercises to do. Some students I don't care about as much, if they do it they will learn, if they don't do it that is their problem. So after the training and implementation, there has been a slight change. I feel like I have truly become a learning facilitator when I see them trying to work on their own and I was only there to guide them.

(Nan's post-training interview)

Nan's experience has shown us how receiving training in DI can make a big difference for teachers. Her shift from being unsure to trying new teaching methods points out how teachers can grow when they are open up to new ideas. Her initial strategy relied heavily on lectures, worksheets, and exercises. However, the DI training and its application in her classroom have prompted a shift in her perspective. Nan now saw the importance of being a facilitator rather than just a distributor of information. This change was evident as she observed her students taking more initiative in their learning, with her role evolving to provide support and guidance. This

shift illustrates how DI training can lead to a student-focused learning space, where Nan was able to help students learn on their own with her guidance. Her story strongly suggests that new teaching methods can greatly benefit both teachers and students, making the classroom more interactive and engaging.

Enhanced Teacher-Student Interactions

This theme digs deep into the transformative impact of DI training on the positive dynamics between teachers and their students. Numerous studies on education and development have revealed that students get better results when their connections with their teachers are more intimate and less contentious (Wentzel, 1998; Pianta & Stuhlman, 2004). As Ploy and Nan began to adapt their regular teaching procedures to suit the diverse needs and learning styles of their students through DI, there was a natural evolution in the way they interacted with and engaged their students in the learning process. This change led to more personalized, caring, and responsive interactions, and through these interactions, they created a more supportive and positive classroom environment.

In Excerpt 17, Ploy reflects on how she had become more accepting and gained a deeper understanding of her students and the learning process. Although she did not mention a specific example, this is a great foundation for a stronger teacher-student relationship.

> **Excerpt 17: Enhancing Teacher-Student Relationships Through Understanding**
> Ploy: I feel like I have accepted my students more in different aspects. I
> understand the nature of learning and teaching more.
>
> (Ploy's Post-training interview)

Nan shared a similar trend, noting a tangible change in her relationship with her students, particularly those who previously seemed disengaged.

Excerpt 18: Building Relationships and Engagement in the DI Classroom
Nan: I feel really good about this lesson. Although it's not a big change in my class, I do feel a change from some of my students who usually do nothing or care about nothing, I get to talk to them more. I think it's a kind of relationship-building as well because I feel like I get to spend more time with different students.

(Nan's Post-training interview)

These reflections from Ploy and Nan showed the capacity of DI training to not only modify teaching strategies but also to deepen the connections between teachers and students. By becoming more adaptable and responsive to their students' diverse needs, Ploy and Nan began to cultivate an environment where students felt valued, understood, and supported. This enhanced teacher-student interaction is a key factor in creating a positive learning atmosphere that encourages student engagement, understanding, and academic success.

Borg's (2006) framework suggested that there is a complex relationship between what teachers believe and what they do in the classroom. From these examples, we can surmise that Borg's argument that teacher cognition, which is composed of beliefs, knowledge, and attitudes, directly influences classroom practices and student learning experiences.

RQ3: What are the major factors that contribute to changes in language teachers' professional identity with respect to teacher cognition?

Research Question 3 sought to address what are the key factors that contribute to shifts in language teachers' cognition. This exploration reveals the critical factors that influence teachers' educational beliefs and the methods they use during the training and when implementing these methods in a real classroom context. The three themes that emerged from the data are peer feedback and reflection, the cultivation of a supportive learning environment, and the implementation of DI. These three themes are the main factors contributing to the change.

Peer Feedback and Reflection

The exchange of peer feedback and reflections among participants during the training sessions significantly enhanced their understanding of DI, and fostered the development of a strong learning community. This collaborative environment created more effective instructional practices, as participants adjusted their teaching methodologies and supported each other's professional growth.

> **Excerpt 19: Peer Learning and Support in DI Implementation**
> Ploy: What if we have to give the answers to each worksheet, what are some options? In the situation where there are 3 different worksheets.
> Nan: Maybe working through the worksheets one by one?
> Ploy: I think for the higher level, maybe they can pair up and do peer assessment. We might have to give more attention to the weaker students.
> Nan: Then in a situation like this, it may be better if we give the answers to the easiest worksheet because there are only a few students who choose the harder ones. We might give attention to the higher students from time to time because most of the students are weaker.
> Ploy: For our lower students, we could also just give them the answer keys during the checking process, and I would give credits to the high students so they feel that they are seen, and it can be an example for the weaker students to push themselves harder. Now they can do this, but if they try harder they can write a story. It will encourage the weaker students to try harder. We can also have a discussion of the stories of the higher students.
> (Training session #2)

In Excerpt 19, Ploy and Nan engaged in a dialogue about potential options for providing answers to the worksheets used in Nan's lessons. Ploy suggested the idea of introducing the concept of peer assessment for higher-level students. Nan expanded on this idea by proposing the provision of answer keys for the easiest worksheet to accommodate weaker students, while Ploy suggested giving credits to high-performing students to incentivize improvement among all students.

Excerpt 20: Utilizing Background Knowledge from Reflective Practice
Praew: If it's not vocabulary, what else can we help students with? Let's say if we are reading about elephants, before teaching vocabulary what else can we do?
Nan: Maybe there should be a small task for students to prepare about elephants. The background knowledge about elephants. It is more to warm up their brains, so when they read the text they feel a little more confident, it will be easier for them to comprehend the text. It will be easier than having them just read with no prior context. I think that way it may help them more. Let me give you an example. I had my students read about number superstitions. I gave them a short text about the lotto, and lucky numbers, what do you call that… just a really short text before jumping into the real reading passage.

(Training Session #3)

Excerpt 20 further highlights the value of peer feedback. When Ploy asked for suggestions beyond vocabulary, Nan proposed activating prior knowledge through a warm-up activity, and also shared a specific example from her own teaching experience. This exchange demonstrates how participants not only learn from the experts but also each other's experiences, thereby fostering a richer learning environment.

In the post-training interview, participants were asked about the impact of learning from their fellow teachers. Ploy expressed her enthusiasm for gaining insights into Nan's classroom context, noting that it broadened her perspective and stimulated deeper thought. Being exposed to different perspectives, Ploy was encouraged to think more critically and engage more deeply with the method.

Excerpt 21: Learning from Peer Reflections and Different Educational Contexts
Ploy: When I listened to Nan's lesson plan and her reflection, it excited me. Learning from different contexts (classroom environment, student background, lesson plan design, school context, etc) and with different skills, when I hear from different perspectives, it makes me think further. I think that is a good way for me to engage with this method. Discussion with the other two teachers was my favorite part.

(Ploy's post-training interview)

As noted in Excerpt 21, Ploy also mentioned that discussions with the other two teachers (Nan and me) were her favorite part of the training. This shows the significance of collaborative learning and the exchange of ideas in professional development. The exchange of peer feedback and reflections among participants during the training was not just about understanding DI concepts; rather, these actions fostered a strong learning community between them. Through peer support and reflection, participants like Ploy and Nan were able to adjust their teaching methodologies to create a more differentiated learning experience for their students, ultimately mutually supporting each other's professional growth.

The Cultivation of a Supportive Learning Environment

The cultivation of a supportive learning environment is important in professional development programs. It creates a sense of community and belonging, which can increase motivation and engagement among participants. Additionally, a supportive environment encourages risk-taking and experimentation, as educators feel more comfortable trying out new approaches and techniques without fear of judgment (Lieberman, 1995).

> **Excerpt 22: Collaboration is The Key**
> Nan: I think collaborating with the other teachers helps a lot. I imagine if I was doing it by myself I would get so confused, I wouldn't know how DI would work. But when I had the discussions with you two and got all the supports, I have gained more ideas, I have seen more examples, I can adapt that to my class as well. Yes, this supportive learning environment helps me a lot.
>
> (Nan's post-training interview)

Nan highlighted the importance of collaboration among teachers in fostering a supportive learning environment. She acknowledged the significant impact of engaging with her peers, expressing gratitude for the clarity and inspiration gained through their discussions. She emphasized that without the collective support and exchange of ideas with her fellow teachers,

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navigating the complexities of DI would have been daunting. By actively participating in discussions and receiving support from her peers, Nan not only gained new ideas but also felt empowered to adapt and implement these ideas in her own classroom. This disclosure highlights the invaluable role of collaborative learning in enhancing teaching practices and promoting professional growth within the DI professional development program.

The Implementation of DI

As part of the training, my participants were asked to apply the DI lesson plan in a real classroom setting. This hands-on approach is considered an effective way to familiarize teachers with the method. Nan and Ploy put their designed DI lesson plans into action with their students. Both of them shared positive feedback on the experience with DI.

Ploy, in particular, reflected on her experience with implementation as being a significant part of her learning journey. It was the first thing Ploy mentioned when asked about her overall training experience. She talked about the difference between discussing DI in theory and seeing its impact firsthand and the insight gained from the real-world application in the classroom:

> **Excerpt 23: The Real-World Impact of DI on Teaching and Learning**
> Ploy: When I was planning, I felt the motivation to really try in my class as well. When you talk about something you only get one perspective, but when you implement it, you can actually see how it works, it is a whole other experience. Although it is not a complete picture, I feel that I have learned so much, and have received positive feedback. I even learned about the complexities of my students.
>
> (Ploy's post-training interview)

The same development applied to Nan as she excitedly emphasized that practical application was the most valuable part of her training. Although she found videos and discussions helpful, actually applying DI principles in her classroom was by far the most transformative experience for her.

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Excerpt 24: Importance of Practical DI Application for Teacher Growth
Nan: When I applied it to my own lesson. If I just learned about it but was not able to use it in class, there is no point, and I wouldn't see the change in my students and myself as well. I'm glad I have tried, I was not sure about what the result would be, but I was not afraid to try.

(Nan's journal #3)

These reflections from Ploy and Nan show the impact that real-life implication of DI has on teachers. It not only enhances their understanding of DI strategies but also fosters a deeper connection with their students by acknowledging and adapting to their varied learning needs. This practical experience is, no doubt, an important step in reinforcing the theoretical concepts of DI.

In summary, Chapter 4 provides details of how a DI professional development program has positively impacted two Thai EFL teachers, both in their instructional practices and cognitive approaches. By engaging deeply with questioning techniques and practical examples, these teachers were able to grasp and implement DI effectively. This engagement led to a noticeable shift in their professional identity and cognition—moving from traditional teaching methods to adopting a more personalized, student-centered approach. This cognitive transformation allowed them to better address the diverse needs of their students, enhancing overall learning outcomes. The chapter highlights the vital role of ongoing professional development in evolving teacher cognition and improving educational practices.

CHAPTER 5: DISCUSSION

Different studies have been conducted in various contexts on teacher cognition (Borg, 2003; 2015; Burns, Freeman, & Edwards, 2015; Freeman, 1996; 2016; Woods, 1996). While numerous studies have explored changes in teacher cognition following professional development courses, this research stands out as, to my knowledge, the first to specifically examine the impact of DI on educators' thought processes and teaching methods. This study sheds light on how training in DI can transform teachers' approaches to education, potentially leading to more personalized and effective teaching practices that accommodate the diverse learning styles and needs of their students. For the purpose of exploring language teacher cognition, many researchers have used Borg's (2006) modified framework of language teacher cognition to delve into the complex interaction between teachers' beliefs, knowledge, and practices within the field of language education. Along with others, this study focused on the impact of a professional development course on DI on the development of language teacher cognition through Borg's framework.

Building on existing research about teacher learning, professional development programs, and DI, this research aligns with many research showing a close connection between how teachers are trained and how they teach (Borg, 2002; Gilakjani & Sabouri, 2017; Johnson, 1992; Kuzborska, 2011; MacAlister, 2012; Shavelson & Sterns, 1981). In the Thai context, there have always been challenges in Thai English education. In the past, teachers often used methods that focused on themselves instead of the students, and these methods did not consider the different needs of each student (Noom-Ura, 2013; Wang & Rajprasit, 2015). However, my study has tried to show that teachers can move from old-fashioned teaching methods to more modern and flexible ones after joining the DI training program. This aligns with Thailand's recent efforts to

improve education by making it more student-centered, as seen in the Basic Education Core Curriculum B.E. 2551 (A.D. 2008). The DI professional development program allowed teachers to actively participate and learn from each other's experiences. The methods that they used included asking questions, making things clear, and using examples. Through the presentation, discussion of DI principles, and examples, teachers could understand DI concepts better and give them some ideas to use in their classrooms (Van Gog, Rummel, & Renkl, 2019). The program also influenced how teachers thought about teaching and gave them more knowledge about different teaching methods. This supports what Borg (2003, 2006) said about professional development programs being able to change teachers' beliefs and how they teach. In addition, the study found that several things were important in changing how teachers viewed their profession and how they thought about teaching. These included getting feedback from other teachers, reflecting on their teaching, having a supportive learning environment, and putting DI into practice. This aligns with research by Nazari & De Costa (2022) on the importance of working together, reflecting on teaching, and using new methods in the classroom to help teachers improve.

This study confirms that DI professional development programs are valuable for Thai EFL teachers. My findings highlight the importance of using methods that encourage active participation, collaboration, and reflection in these programs. One challenge faced by a participant, however, was an unexpected change in the class schedule, which prevented her from teaching the class she initially planned. To address such uncertainties, workshop organizers should strategically schedule sessions early or mid-semester rather than towards the end, allowing enough time for participants to adapt to any changes. Overall, this study illustrates that DI is a crucial tool for moving Thailand towards more effective and inclusive teaching methods.

CONCLUDING THOUGHTS

The results of this study indicate that a DI professional development course helped the teachers increase the engagement and participation of the students in their class activities. With knowledge of DI, it was found that teachers became more adept at recognizing and accommodating the diverse needs of their students, leading to more engaging and effective instructional strategies. This finding aligns with the outcomes reported in existing literature reviews on the subject (Aliakbari and Haghighi 2014; Alsalhi et al. 2021; White and Vibulphol (2020), which span both Thai and international educational contexts, thereby confirming the effectiveness of DI in enhancing teachers' responsiveness to student diversity. Additionally, there was a notable transformation in teachers' pedagogical beliefs, shifting towards more inclusive and student-centered approaches. Before this shift, traditional teaching methods, such as lectures and grammar exercises, predominated in both of my participants' classes. Echoing the findings of Noom-Ura (2013) and Wang & Rajprasit (2015), this approach has been especially dominant among Thai language teachers. As a result, these impacts collectively contributed to shifts in language teacher identity and cognition, which led directly to the development of more effective interpersonal connections with students. As this study is based on three research questions, in the following sections of this chapter I will discuss, one by one, the findings related to the research questions.

Engagement in the DI Professional Development Program

The data demonstrated that the two in-service Thai EFL teachers, Nan and Ploy, engaged in the DI professional development program through questioning, clarification strategies, and learning through examples. Their engagement in questioning suggests that the teachers were not passive recipients of information but were actively seeking to understand each component of DI

by asking questions. The use of clarification strategies indicates that the teachers were involved in processes aimed at making DI concepts clearer. Also, the application of real-world examples has been particularly effective in bridging the gap between theoretical DI principles and practical classroom application. These three strategies, questioning, clarification, and learning through examples, made their DI professional development program not just more interactive but deeply engaging for my participants. These strategies also ensured a deeper understanding and practical application of DI principles which made the training significantly more effective.

Impact on Teacher Cognition

Participating in a DI professional development program has significantly impacted the cognition of the in-service Thai EFL teachers, as evidenced. Through Borg's (2006) framework, I explored how professional coursework influences teachers' beliefs and instructional methods. My findings indicate a shift in teachers' pedagogical perspectives, expansion of pedagogical knowledge, and enhanced awareness of learner diversity. Teachers like Nan and Ploy were traditionally accustomed to lecture-based instruction and grammar drills. After the training, however, they experienced a significant transformation in their teaching approach. The post-training interviews demonstrated their willingness to fully adopt a DI approach that focused more on student needs.

To my surprise, teachers have shown a change in their beliefs more deeply than expected. They now view effective teaching as prioritizing student engagement, understanding, and inclusivity. This deepened their understanding of DI and the resultant shift in their teaching philosophy underscores the profound impact that targeted professional development can have on teacher cognition and classroom practices, emphasizing the importance of adapting teaching methods to meet the diverse needs of students.

Factors Contributing to Changes

The study identified peer feedback and reflection, supportive learning environments, and the hands-on implementation of DI as key factors that contribute to changes in teachers' professional identity and cognition. Among these three factors, my participants agreed that hands-on implementation of DI in real classroom settings was the most crucial factor. This practical application is crucial in solidifying teachers' understanding and appreciation of DI principles. Tomlinson (2014) emphasizes the importance of practice-based learning in teacher development, arguing that the actual application of differentiated instruction strategies deepens teachers' pedagogical knowledge and skills. However, even though practicing a new teaching approach is the main thing that helps teachers grow, having support and feedback from others also plays a big part in helping them improve and feel confident in trying new things on an instructional level.

IMPLICATIONS FOR PRACTICE

The findings of this research suggest that teachers change their beliefs about their teaching from relying more on traditional teaching methods to more student-centered methods mainly through hands-on practice, peer feedback, and a supportive learning environment. These findings hold significant implications for policymakers as well as teachers.

For educational policymakers and administrators, there are two key areas to focus on. Firstly, invest in dynamic professional development programs. These programs should prioritize hands-on practice with DI strategies. These programs should also involve teachers in active learning and allow them to apply DI techniques directly to real-world classroom scenarios. Secondly, cultivate a collaborative school culture by creating an opportunity for teachers to collaborate. Encourage teachers to share their experiences and learn from each other's successes and challenges. This fosters a sense of community and ongoing growth among educators.

Teachers can also play a crucial role in creating this shift by seeking opportunities to learn more about the approach and find a chance to implement DI strategies in the classroom. The positive feedback from implementations, as highlighted in the interviews, shows a growing willingness among teachers to adopt these methods. This engagement not only boosts their confidence in their teaching abilities but also, according to Dixon et al. (2014), leads to a higher perception of efficacy and greater adaptability in meeting students' diverse needs. Teachers could also use peer feedback to serve as a valuable tool for ongoing improvement. Through observing colleagues who effectively utilize DI techniques and providing constructive assessments of their practice, educators learn from one another. Interactions between the participants play a critical role in these professional development activities; as Nazari and De

Costa (2022) found in their professional development course, the more teachers socialize with

one another, the better they gain knowledge and insights.

LIMITATIONS AND POSSIBLE FUTURE DIRECTIONS

While this study offers valuable insights, it is important to acknowledge some limitations. Firstly, the short duration of the study restricts the scope of understanding the long-term impact of DI training. To solidify this area of exploration, future research can look into how these programs affect teacher professional development in the long term and how well their students learn. By tracking changes over time, researchers can identify the long-term benefits and challenges associated with integrating DI strategies into language teaching. Moreover, longitudinal research can also look into the sustained effects of DI training on teacher efficacy. Such studies are crucial for evaluating the effectiveness of professional development programs in fostering meaningful and lasting pedagogical transformation. This will help us develop even better professional development programs for English language teachers.

Secondly, the study focuses only on teachers from a secondary school level. Extending the scope of participants to include educators from various levels such as kindergarten, elementaty or tertiary levels would provide a better understaning of DI's impact across different educational levels. Future research could look into how well DI training programs work on a larger scale, and their overall fit with different teaching contexts and ages of students.

Finally, another limitation was the limited exploration of how technology is used. One of the participants in the study mentioned the use of AI technologies, such as ChatGPT, for creating reading materials at different levels of difficulty. Although revolutionary online applications like ChatGPT have brought immense concerns to the education field, it is argued that these kinds of platforms offer major opportunities for teachers and educational institutions to improve foreign language teaching (e.g., Hong, 2023). This innovative approach can significantly aid in personalizing learning experiences, catering to the diverse needs of students within a single

classroom. Future research could explore the effectiveness of such technological tools in supporting DI strategies, examining how they contribute to student-centered learning environments.

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Pre-training Interview Quesitons

1. What do you think about Thai English education in general?

    1.1 Do you think the majority of Thai teachers agree with you?

2. What beliefs do you think other Thai English teachers hold on to?

    2.1 What about you? What beliefs do you have?

    2.2 Describe your current teaching approach in the EFL classroom? What are its key

    characteristics?

3. How do you describe yourself as a teacher?

    3.1 Reflecting on your career so far, how has your teaching approach evolved over time?

4. What is your opinion about curriculum? Do you follow the national curriculum?

    4.1 What kind of activities do you mostly do in class?

5. Do you believe in your ability in teaching?

    5.1 What specific aspects of teaching do you feel most confident in?

    5.2 Can you share an experience that made you particularly confident in your teaching

    abilities? / or lose confident

6. Do you see yourself as a teacher who can go out of your comfort zone in the classroom?

7. What do you do to deal with students with different proficiency?

    7.1 What are some strategies that you hold on to when dealing with diversity?

8. What level of confidence do you have of your students based on your instruction?

APPENDIX B: POST-TRAINING INTERVIEW QUESTIONS

Post-training Interview Quesitons

1. How was your experience participating in the DI professional development program?

2. What DI componenst or activities resonated with you the most?

3. What aspects of the DI professional development program were most valuable in helping you to understand DI?

4. Can you describe any changes you have observed in your beliefs or attitudes towards teaching and learning as a result of participating in the DI professional development program?

    4.1 What are the main factors contribute to these changes?

    4.2 Give examples of a certain situation.

5. Do you think in this program has influenced your approach to lesson planning and instructional decision-making? If yes, how?

6. Reflecting on your experience, how do you think your participation in this program has contributed to your ongoing professional development as a teacher?

7. What do you think about the collaboration between teachers?

    7.1 Have these interactions helped with the learning process? How?

8. Have there been any challenges or obstacles you encountered during the program?

    8.1 If so, how did you navigate them?

9. Looking ahead, how do you plan to continue integrating the principles of DI into your teaching practice?

    9.1 What do you think will be the effect long-term on you and your students?

APPENDIX C: JOURNAL QUESTIONS

Journal #1 - After session #1

1. What key insights or new knowledge have you gained regarding DI that you find most valuable?

2. What two aspects of DI have captured your interest the most and why?

3. On a scale of 0-100%, how confident do you feel in your ability to effectively implement the DI approach in your classroom,

4. Reflect on any challenges or concerns you have about implementing Differentiated Instruction in your classroom. How might you address or overcome these challenges?

5. What strategies or techniques from the DI session do you feel most excited to try in your classroom? Why do you think these will be effective for your students?

Journal #2 – After session 3

1. Were there any specific challenges or successes you encountered when planning your DI lesson?

2. Reflect on the collaborative aspect of sharing lesson plans with peers. Did the exchange of ideas impact your planning process? How?

3. Did you gain any valuable insights or feedback from your peers that influenced your approach to DI?

4. Do you think that the adjustment contributes to a more inclusive learning environment?

5. Share about your growth in planning lessons with a DI approach. What have you learned about yourself so far as an educator?

Journal #3 – After session 5

1. Can you share any examples (or activities you did in class) of how you adapted your teaching strategies to accommodate diverse learner needs?

2. Did you notice any changes in student engagement or performance as a result of implementing DI strategies? If so, what were they?

3. Reflecting on your previous teaching practices versus now, do you feel that your approach to teaching has shifted towards being more student-centered? If yes, in what ways?

4. Looking ahead, how do you plan to continue integrating DI principles into your teaching practice? Are there any specific areas you would like further support or resources in?