

**English-as-a-foreign-language Teachers' Expertise
in Teaching EAP Writing at the Tertiary Level in China**

by

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Statement of Originality

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Abstract

English for academic purposes (EAP) has developed rapidly since it emerged as an indispensable branch of English for specific purposes (ESP) in the early 1980s, attracting world-wide research attention (Hyland, 2006). In the Chinese context, EAP courses or programs have been promoted at the national level with the newly issued Guidelines for College English and English Major Teaching Guideline in 2020. Most teachers of EAP writing courses are English-as-a-foreign-language (EFL) teachers who have transferred from teaching general English at the tertiary level. They have encountered great challenges during this transition (Campion, 2016) because of a lack of systematic preparation and teacher training (Li & Ma, 2020). Despite this problematic situation, there have been only a few studies investigating teacher professional development and teaching expertise in the EAP context (Ding, 2019; Fitzpatrick et al., 2022). The existing literature on teacher expertise has advocated a shift from a purely cognitive to a sociocultural perspective given the complex and varying teaching contexts and conditions (Sorensen, 2017). More recent studies have regarded expertise as a complex system that highlights the interactions between individuals and their environment (Larsen-Freeman, 2019; Yuan & Yang, 2022). However, the complexity of the teaching expertise system in the EAP context and the dynamic developmental process are still under-researched.

To address the complexity and dynamism of EFL teachers' expertise in teaching EAP writing, the present study innovatively synthesizes Complex Dynamic Systems Theory (CDST) (de Bot, 2017) and Ecological System Theory (EST) (Bronfenbrenner, 2005). Accordingly, I collected data from two stages: understanding the overall perceptions of 12 EAP writing teachers via semi-structured interviews, and exploring the specific manifestation and dynamic developmental processes in four cases, which were traced longitudinally (for more than one

academic year). The findings reveal the basic structure of EAPWT expertise system encompassing multilevel and interacting components under five categories: 1) experience (i.e., academic learning, practice, and associated teaching experience); 2) an integrated knowledge base concerning EAP and L2 writing teaching; 3) progressive problem-solving; 4) motivation for changes; 5) adaptive agency. The self-organizing interactions among the components, which enabled teachers to maintain and develop their EAPWT expertise, were specified as follows: 1) motivation for changes and adaptive agency activating other components; 2) conceptualizing experience to knowledge and contextualizing knowledge into experience; 3) progressive problem-solving with other components working in synergy. The study also unveils the dynamic and nonlinear processes of EAPWT expertise development, along with depicting the changes the teachers made or experienced in terms of course design and delivery, assessment and feedback, and their emotional adjustment. Furthermore, the factors and constraints are identified, systematically explaining the influences of teacher-environment interactions on expertise development.

Afterwards, the ecological model of EAPWT expertise development is tentatively proposed. Theoretically, this study not only adds to our understanding of the complex nature and dynamic developmental process of teacher expertise, but also sheds light on the plausibility of utilizing theoretical frameworks related to complex and dynamical systems and ecological psychology to explain teaching expertise development. Practically, it provides implications for teachers, teacher educators, researchers, and institutional leaders regarding how to support EFL teacher expertise development in EAP and tertiary-level contexts.

Keywords: EFL teachers; teaching expertise; EAP writing; tertiary-level education

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List of Abbreviations

EAP	English for academic purposes
ESP	English for specific purposes
EFL	English as a Foreign Language
ESL	English as a Second Language
L2	second language
CDST	Complex Dynamic Systems Theory
EAPWT	EAP writing teaching
EGP	English for General Purposes
EGAP	English for General Academic Purposes
ESAP	English for Specific Academic Purposes
BALEAP	British Association of Lecturers of English as an Academic Language
CFTEAP	Competency Framework for Teachers of English for Academic Purposes
PCK	pedagogical content knowledge
TPACK	technological pedagogical content knowledge
PCK&S	PCK and skills
ELT	English language teaching
TK/CK	theoretical/ conceptual knowledge
EK/PK	experiential/ practical knowledge
AL	applied linguistics

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Chapter 1: Introduction

1.1 Chapter introduction

Given the growing significance of English as a lingua franca in international exchanges and cultural communication (Baker & Sangiamchit, 2019; Jenkins, 2009), English for Academic Purposes (EAP) has gradually become an important area of interest for “empowering students with the knowledge and skills they need to succeed in their studies and profession” (Hyland, 2016, p. 23). In the early 1980s, EAP evolved rapidly and emerged as an indispensable sub-field of English for Specific Purpose (ESP) (Hyland, 2006), which focuses on academic contexts and aims to “facilitate learners’ study or research through the medium of English” (Hyland & Hamp-Lyons, 2002, p. 1) and meet “the specific communicative needs and practices of particular groups in academic contexts” (Hyland & Hamp-Lyons, 2002, p. 2). Compared to the vast amount of research on EAP teaching, relatively few scholars have focused on EAP teacher development. The majority of EAP teachers are English-as-a-Foreign-Language (EFL)/ English-as-a-Second-Language (ESL) teachers transitioning from general English teaching (Campion, 2016). However, in recent years, a few studies on EAP teacher competencies and expertise have begun to appear (e.g., Fitzpatrick et al., 2022).

Using a two-stage qualitative research design, the present study investigates EFL teachers’ expertise in teaching EAP writing (EAPW) at the tertiary level in China. By adopting Complex Dynamic Systems Theory (CDST) (de Bot, 2017), this study can contribute to our knowledge of the complex nature of EAPW and its dynamic development in particular sociocultural contexts. With the additional use of Ecological System Theory (EST) (Bronfenbrenner, 2005), the study may provide a systematic explanation of how EFL teachers

interact with individual constraints and diverse environmental systems to foster teaching expertise development in EAPWT in tertiary-level contexts.

This chapter begins with an introduction to research contexts regarding debates among teacher/teaching expertise studies and an overview of the EAP reform in China and the emerging challenges regarding teacher preparation and professional development. Following this, the rationale for the current study is introduced by noting the gaps in current teacher or teaching expertise research especially in EFL/ESL contexts and EAP teacher studies; I also explain the study's purpose and significance. Finally, I outline the thesis organization.

1.2 Research context

1.2.1 Debates among teaching expertise studies

The caliber of teachers implementing a curriculum is a primary determinant of education quality (Harris & Sass, 2011; Sorensen, 2017). Although there is minimal agreement in the literature regarding the definition of quality, it is acknowledged that enhancing teacher training systems and fostering continuing professional development increases the productivity and effectiveness of teachers (Darling-Hammond, 2020; Zhang et al., 2020).

Several terms have been adopted to label effective teachers, depicting them as excellent and outstanding (Aliyyah et al., 2019, 2020), highly accomplished (Ingvarson, 2019; Mockler, 2022), or exemplary (Chaharbashloo et al., 2020; Duke et al., 2018; Johnson, 2019). These terms align with research on expertise and expert performance (Ericsson, 2006). Experts are defined as “the people whose knowledge of a subject or whose performance of a skill far exceeds that of other members of the profession” (Stewart, 2006, p. 101). A beginner and an expert can be separated by differences in the quality of “characteristics, skills, and knowledge” (Ericsson, 2006, p. 3) which constitutes their expertise. As Sternberg and Horvath (1995)

observed, “to know what we are developing teachers toward, we need a model of teaching expertise” (p. 9). Although teacher expertise reflects expert instructors’ knowledge, abilities, and qualities, its definition is context-bound and domain-specific. Ropo (2004) assumed that it is relatively easy to describe expertise in “knowledge-rich” (p. 2) domains with “well-defined problems” (p. 3), such as physics and maths; however, teachers need to solve problems situated in socially and culturally complex contexts, so teacher expertise construction is “ill-defined and variable” (Wieman, 2019, p. 50).

As for the common research methods, most researchers have adopted traditional ways of examining teacher or teaching expertise by employing “the absolute approach (that studies exceptional individuals) and the relative approach (i.e., a comparison of experts and novices)” (Chi, 2006, p. 22). However, it has been argued that clear criteria is lacking for designating expert teachers (Akbari & Yazdanmehr, 2014; Palmer et al., 2005). In the EFL/ESL field, as described by Tsui (2003), establishing objective standards for teacher expertise in English language teaching has been a challenging endeavor. Expert teachers are meant to serve as models for other teachers, which raises the question: who is an expert English teacher? Can we merely rely on insufficient criteria, such as duration of experience or other ways of evaluating, or do we require a solid basis for judgment? Studies to date (e.g., Berliner, 2001; Pířová & Janík, 2018; Tsui, 2005) have employed a combination of subjective criteria (e.g., nominations or recommendations) and objective ones (e.g., specification of classroom performance and teachers’ professional behaviors, learners’ achievement), each of which has its own limitations. Therefore, more recent studies have attempted to recruit teachers with varying years of teaching experience (e.g., Backfisch et al., 2020; Inoue et al., 2019) to avoid the controversy of identifying expert teachers while exploring the construction of teaching/teacher expertise without assuming anyone of them as being experts ahead of time.

To be domain-specific, research on teacher/teaching expertise has grown to include a variety of subjects, such as physics (Keller et al., 2017; Mason & Singh, 2011), mathematics (Backfisch et al., 2020; Horn & Kane, 2015; Schoenfeld, 2011), and science (Heineke et al., 2019; Traianou, 2006). However, two major debates have emerged within research on teacher/teaching expertise in various disciplines. First, scholars have argued about teacher expertise as a dynamic process or a state. When researchers (e.g., Persky & Robinson, 2017; Price et al., 2021; Van der Lans et al., 2017) have regarded teacher/teaching expertise as a state, they follow Berliner's (1988) staged model of teacher expertise, believing that teachers develop from novice to expert teachers through the phases of advanced beginner, competent, and proficient, when selecting expert teachers in specific domains as the main participants. On the other hand, researchers (e.g., Farrell, 2013; Lee & Yuan, 2021; Tsui, 2005) who view teacher/teaching expertise as a lifelong development process, question the boundaries of these set stages and highlight the difficulty of identifying really expert teachers. Moreover, research within the process perspective do not construct a list of expert teachers' characteristics (as the prototype approach does) to summarize shared central tendencies (e.g., Anderson & Taner, 2022; Smith & Strahan, 2004; Sternberg & Horvath, 1995), but rather, it focuses more on teachers' advance of divergent characteristics over time. Thus, when adopting a process perspective, the pool of participants can be widened to include teachers with varying levels of teaching expertise.

An increasing number of researchers (e.g., Johnson et al., 2020; Kelly, 2006; Sorensen, 2017; Toraskar, 2015) have advocated studying teacher/teaching expertise from a sociocultural perspective, taking into account the situational complexity of teaching, as opposed to a cognitive psychology perspective that primarily underlines teachers' information processing

processes and cognitive skills (e.g., Berliner, 1988, 1994, 2004; Hanin & Van Nieuwenhoven, 2020; Price et al., 2021). These scholars have emphasized the “socio-emotional and sociocultural nature” (Hatano & Oura, 2003, p. 26) of acquiring teaching skills, rather than viewing it as a purely cognitive process, because teaching is restricted to certain sociocultural contexts. In the past, the investigation of teacher/teaching expertise from a cognitive perspective was typically conducted by having participants complete conventional laboratory tasks. However, additional studies are required to consider sociocultural aspects and identify teacher expertise in various classroom circumstances (e.g., McIntyre et al., 2019; Sorensen, 2017; Traianou, 2006). Consequently, teacher/teaching expertise investigations are increasingly contextualized in genuine classroom teaching contexts rather than in laboratories.

Researchers have selected diverse terms interchanging “teaching/ teacher expertise” with other terms such as “instructional and pedagogical expertise” (e.g., Rose & Mckinley, 2022; Van der Lans et al., 2020). Differentiating the use of teaching expertise or teacher expertise, it is noteworthy that the former focuses more on the teachers’ contextualized work and the latter specifies the identities of a teacher’s community, such as ESL teacher expertise (Farrell, 2013) and L2 writing teacher expertise (Lee & Yuan, 2021). For example, teaching expertise studies have stressed teaching behaviors or aspects of professional work indicating the sociocultural context, such as expertise in lesson planning (Backfisch et al., 2020), expertise for language-responsive mathematics teaching (Prediger, 2019), and teaching expertise in three countries (Hayashi, 2022b). Accordingly, the terms, “teaching expertise” and “teacher expertise” have been used interchangeably with different focuses. The current study adopts the term “teaching expertise” to indicate the specification of EFL teachers’ work in the EAP writing teaching context.

1.2.2 An EAP reform in China and concomitant problems

In 2021, the number of tertiary-level students in mainland China reached 44.30 million (Ministry of Education, 2022), all of whom are required to complete English courses. In the context of developing “Double First-Class” universities and disciplines as well as the Belt and Road initiative, tertiary education intends to “promote high-level substantive international cooperation and exchanges, and become a participant, facilitator and leader in the reform of higher education in the world” (Li & Xue, 2021, p. 164). As reported in the Annual Report on the Development of Chinese Students Studying Abroad (Wang et al., 2022), more than one million Chinese students studied at overseas higher education institutions from 2019 to 2020, securing the top spot in the world with nearly 600,000 more than second-place India. In 2018, China became the world’s third largest and Asia’s top destination country for studying abroad, only behind the United States and the United Kingdom.

Accordingly, to satisfy the national need for international and world-class universities and students’ learning needs, national or local educational policies have started to promote EAP courses to enhance students’ English competence in academic communication. For example, the Shanghai Education Bureau published the first framework for the implementation of EAP at Chinese tertiary institutions (Shanghai Education Bureau, 2013). As a pioneering program, it implements a large-scale hybrid EAP framework (incorporating characteristics unique to the Chinese context) in China. Its inception marks several important milestones: first, the revitalization of the previously unsatisfactory pedagogy practised when delivering English for General Purposes (EGP) at most universities (Cai, 2012); and second, the implementation of a large-scale hybrid EAP framework (incorporating characteristics unique to the Chinese context) (Gao & Bartlett, 2014). Cai (2013) claims the objective of the EAP course offered in

Shanghai is, “the cultivation of professionals in various disciplines” through students learning English “to study their academic subjects” (p. 11). In 2017, the framework was changed by subdividing English for General Academic Purposes (EGAP) and English for Specific Academic Purposes (ESAP) courses further. The former seeks to equip students with interdisciplinary academic skills, such as attending lectures and intellectual discussions, taking notes, and preparing academic papers and presentations. The latter focuses on developing students’ communicative competencies in specific domains related to the education of disciplinary discourse, register, genre knowledge, and certain language aspects (Cai, 2017). With the pioneering trials in Shanghai, as prescribed in Guidelines for College English Teaching (The National Advisory Committee, 2020) and Guidelines for Teaching Undergraduate English Majors (Ministry of Education, 2020), EAP courses have been incorporated into the existing tertiary-level English curricula.

While ESP/EAP teaching has gained a high level of recognition in English education, it is still a relatively underrepresented, marginalized field in China (Tao & Gao, 2018), so the preparedness of EAP teachers seems inadequate (Li & Ma, 2020). There has been no consensus among English teachers regarding what to teach and how to teach EAP courses. Meanwhile, EGP and EAP teacher roles have clear discrepancies and English teachers are not receiving adequate support during their identity transformation (Gao & Cui, 2021; Tao & Gao, 2018). Without clarifying who should teach EAP courses and how to teach them, the new reform of English curricula at the tertiary level may remain in a state of “taking the old road while wearing new shoes” (Wen, 2014, P. 3). Thus, EAP teachers are entering the profession without the necessary credentials. The tertiary-level institutions recruit EFL teachers with master’s or doctoral degrees in applied linguistics, translation, language and literature, or other relevant fields. EAP instructors under these conditions, however, have seldom obtained

formal training in EAP instruction (Li et al., 2020). Therefore, it is particularly difficult for beginner EAP teachers to study EAP pedagogy on their own because they lack the instructional expertise and confidence necessary to teach EAP effectively and may not understand what constitutes effective EAP teaching and what it takes to be a qualified and competent EAP teacher. Accordingly, to improve EAP teaching effectiveness, it is imperative to address the issue of EFL teacher quality for EAP instruction and their professional development.

1.3 The rationale of the present study

The subsequent sections illustrate the motivation for the study by identifying the gaps in teaching expertise studies and in the EAP field, clarifying the research aims and research questions, and emphasizing the significance.

1.3.1 The gaps in teaching expertise studies especially in EFL/ESL contexts

Scholars have been interested in examining the components that comprise teacher/teaching expertise from divergent perspectives. Although scholars have not reached a consensus on the nature of expertise, there are universal and fundamental components: “knowledge, experience, and problem-solving” (Herling, 2000, p. 13). Regarding teacher knowledge, researchers have classified knowledge types into two major categories. One group is related to conceptual/theoretical knowledge proposed by Tynjälä (2008), which corresponds to Shulman’s (1986, 1987) proposal of content knowledge and declarative knowledge about what to teach, and Cochran-Smith and Lytle’s (1999) idea of knowledge for practice characterized as theory and formal knowledge. The other group is associated with experiential/practical knowledge (Tynjälä, 2008), which is in line with Shulman’s (1986, 1987) concept of pedagogical content knowledge (PCK) or procedure knowledge, or the term,

“knowledge in practice” (Cochran-Smith & Lytle, 1999) indicating how to teach in specific circumstances and domain-specific teaching skills. However, teacher knowledge consists of a variety of constituents. For instance, Shulman’s (1986, 1987) PCK has been extended and further explored by other researchers adding components such as curricular knowledge (Grossman, 1990), assessment knowledge (Tamir, 1988), and technological pedagogical content knowledge (TPACK) (Lundeberg et al., 2003). The influence of TPACK was widely explored during the pandemic (e.g., Nazari et al., 2019; Zimmermann et al., 2021).

It has been found that expert teachers possess an integrative and interacting knowledge base (Park & Chen, 2012; Tsui, 2003). For example, PCK is subdivided into personal PCK and personal PCK and skills, which are used heuristically in teaching practices (Chan & Hume, 2019). According to Park and Olive (2008), as one component of PCK is developed, others are also developed, which enhances the overall system. In addition, the integration of all aspects of a teacher’s knowledge is one of the most complex aspects of PCK for effective teaching. Other researchers have identified the category of meta-cognitive knowledge (e.g., Tynjälä, 2008; Veenman, 2012), which indicates that divergent facets of teacher knowledge reflect various aspects of teaching expertise, i.e., knowledge, skills, and meta-cognition. Meanwhile, teacher knowledge constituents still need to be studied in specific contexts.

As for experience, teachers need to develop from novice to experienced and proficient (Berliner, 1988, 2004) but sufficient conditions (Tsui, 2009, p. 422) for gaining teaching expertise are lacking Herling (2000) claimed that teacher expertise is “heavily dependent on the type, quality, and quantity of the individual’s experiences” (p. 15). However, it is unknown whether and what experience can be considered as components of teacher expertise. However, problem-solving is regarded as one essential component (e.g., Köhler & Rausch,

2022; Schoenfeld, 2011). Apart from studying problem-solving processes or strategies by expert-novice comparison, progressive problem-solving proposed by Bereiter and Scardamalia (1993) needs more research attention.

Non-cognitive aspects of teaching expertise have been explored in answer to the call to consider sociocultural contexts, such as affective dimension (e.g., Lee & Yuan, 2021), motivational beliefs (e.g., Backfisch et al., 2020; Kunter et al., 2013; Zimmermann et al., 2021), and teacher agency (Lee & Yuan, 2021; Reichenberg, 2022). Adaptive agency, which is defined as “how teachers, especially English teachers, maintain a form of agency despite both external constraints and internal self-regulations” has been newly recommended as a key component of teaching expertise (Goodwyn, 2019, p. 153). However, most studies have focused on identifying the components, without analyzing the interactions between the many components that equip instructors to address complicated and situational difficulties when teaching. In addition, similar to the research trends in teacher expertise studies in other contexts, researchers in the EFL/ESL fields prefer to take the state view of teaching expertise, i.e., by making novice-expert teacher comparisons (e.g., Farrell, 2013; Mehrpour & Mirsanjari, 2016; Tsui, 2003, 2005, 2009; Yazdanmehr et al., 2016)), while focusing on the cognitive aspect (e.g., Dimitrova et al., 2021; Hosseini et al., 2017; Li & Zou, 2017). Thus, there have been few studies conducted from the sociocultural perspective (e.g., Li & Zou, 2021; Stewart, 2006).

Furthermore, researchers have explored the development of expertise through deliberate practice (e.g., Ericsson et al., 1993; Macnamara & Maitra, 2019), reflection (e.g., Farrell, 2013; Schön, 1983, 2017), progressive problem-solving (e.g. Bereiter & Scardamalia, 1993; Köhler & Rausch, 2022), and continuing professional learning (e.g., Elvira et al., 2017;

Shulman & Shulman, 2009; Tynjälä, 2008). Nonetheless, these studies demonstrate only the potential methods for teaching expertise growth. As for the developmental process, Tsui (2005) observed expert-novice differences in both pre-active planning and inter-active teaching phases of EFL teaching, highlighting expert teachers' teaching fluency and flexibility, teacher autonomy, and the integrated knowledge base. Farrell (2013) followed teachers for a longer period and described essential elements such as knowledge of learners and learning, critical reflection, referring to past experiences, reasoned lesson planning, and active student engagement. More recently, Johnson et al. (2020) followed three novice ESL teachers' expertise development over two years and identified the shift from a teacher-centered to a dialogic teaching due to the application of their pedagogical knowledge. Lee and Yuan (2021) highlighted the contextual factors that influence the development of teaching expertise while recommending longitudinal studies to reveal additional information about the process. Internal and external restrictions have been noted by researchers examining teacher professional growth; however, few studies on teaching expertise have thoroughly explored them.

Accordingly, the present study seeks to examine teaching expertise as a complex, adaptive, and dynamic system, which comprises interacting components at various levels and stresses teacher changes and growth over a variety of timescales, with reference to Complex Dynamic Systems Theory (CDST) (de Bot, 2017). CDST has been extensively linked to research, such as second language acquisition development (e.g., Fogal & Verspoor, 2020; Larsen-Freeman & Cameron, 2008) and teacher professional development (e.g., Henry, 2016; Kimura, 2022). Rarely has CDST been used to explore the formation and evolution of teaching expertise, which represents the novelty of the present work. CDST points out that systems evolve when components interact with each other producing emergent features, but how the system

interacts with other environmental systems is unknown. Therefore, this study further describes person-environment interactions for teaching expertise development by referring to Ecological Systems Theory (EST) (Bronfenbrenner, 2005), which has been adopted mainly for skill acquisition in the domains of sports and music.

1.3.2 The gaps in studies of EAP teacher professional development

In tandem with the fast expansion and provision of EAP courses, the need for EAP practitioners has increased. Despite its importance, the field of EAP instructors remains underdeveloped (Du et al., 2022). The majority of EAP teachers are typical English teachers who lack specialized training and assistance for the shift to EAP (Campion, 2016). In addition to English language teachers, subject-specialist teachers have also been recruited for EAP instruction. According to Atai and Fatahi-Majd (2014), the specialties and backgrounds of EAP teachers, either teaching English language or content subjects, may result in diverse conceptualizations and understandings of EAP course teaching.

According to Hamp-Lyons (2011), there is a dearth of empirical research in this field and too few professional development opportunities available to EAP teachers.

In 2008, the British Association of Lecturers of English as an Academic Language (BALEAP), a UK-based professional organization that promotes the growth of EAP practitioners, categorized for the first time the competencies required of EAP teachers as well as EAP teacher education. The BALEAP framework outlines the fundamental teaching competencies, skills, and abilities that are needed for effective teacher training and student learning. The Competency Framework for Teachers of English for Academic Purposes (CFTEAP) is helpful for anyone contemplating a move into EAP practice, as it strives to represent best practice and to improve the visibility of the profession (BALEAP, 2008).

Beginning with CFTEAP, the more current TEAP Scheme offers qualifications for EAP instructors, both of which have been incorporated and updated in the 2022 handbook (BALEAP, 2022). The development of the BALEAP TEAP handbook and the system of accreditation indicates that credentials and competences of EAP teachers have begun to draw attention and be investigated.

For EFL/ESL teachers, it has been reported that they have experienced a loss of confidence or feel deskilled after making the difficult transition from EGP to EAP (Alexander, 2012).

Several challenges have been outlined by O'Dwyer and Atli (2018), related to curriculum design, pedagogical settings, and students' language abilities in EAP programs. Professional education and training for EAP instructors still “lag[s] behind the vast increase in demand for EAP teachers” (Hamp-Lyons, 2011, p. 100). Additional contextualized research on EAP teachers is required to make informed decisions to promote teacher professional development in light of the diverse EAP contexts (Ding & Bruce, 2017), among which are the content of EAP teacher education programs, the evaluation of EAP instructors' practices, and the development of recruitment standards (Ding & Campion, 2016; Kaivanpanah et al., 2021). According to Bruce (2011), writing is commonly recognized as the central skill in EAP courses. Through writing, students are able to demonstrate their academic credentials primarily by studying a specific topic in depth, using appropriate sources and data to support their claims, and being able to envision a questioning audience (Fernández & Parker, 2017). However, few studies have specifically targeted teachers of EAP writing courses.

1.4 Research objectives and research questions

Considering instructors' continual adaptation to complex and shifting environments, this study employs a process approach and sociocultural viewpoint to investigate the elements and

growth of teaching expertise. Informed by CDST (de Bot, 2017), this study views teaching expertise as a complex, adaptive, and dynamic system with multi-leveled and interactive components that evolve over a variety of time periods. To fill the research gap in EFL/ESL teacher expertise and EAP teacher professional development, the present study employs a two-stage qualitative research design to investigate the complexity of EFL teachers' expertise in teaching EAP writing and the dynamics of their teaching expertise development.

In Stage One, to illustrate the complexity, interviews were conducted with 12 EFL teachers at Chinese universities regarding their teaching experience, current EAP writing course design and past course development, teaching implementation, and the rationale behind them. The qualitative data were evaluated and categorized to determine the multi-leveled components and their varied relationships.

In Stage Two, I traced the developmental processes from the past to the present (classes and semesters) to understand the dynamism of expertise development. In the first round, participants' past experience and how they constructed EAP writing courses were revealed in interviews. I followed four professors for one or two academic years. Multiple rounds of semi-structured interviews, classroom observations, casual conversations, and pertinent documents created rich qualitative data that were analyzed to uncover the changes the participants had been through over the semesters including their teaching modifications. Based on EST (Bronfenbrenner, 2005), I also examined the factors triggering the changes and the constraints to the development of teaching expertise. I also aimed to determine the teacher-environment interactions at various environmental system levels.

The study was guided by the following research questions.

Regarding the complexity of EAPWT expertise constituents:

- (1) What components comprise the EAP writing teaching expertise system?
- (2) How do the components interact and holistically inform the EFL teachers' EAP writing teaching?

Regarding the dynamism of EAPWT expertise development:

- (1) What developmental processes and changes have the EFL teachers experienced while developing their expertise in teaching EAP writing?
- (2) What factors have contributed to their teaching expertise development?
- (3) What constraints have impeded their teaching expertise development?

1.5 The significance of the study

Using a two-stage qualitative research design, the study expands our understanding of EFL teacher expertise by contextualizing it in EAP writing teaching at the tertiary level in China, shedding light on the multi-leveled and interacting components and the developmental process. The findings have potentially significant implications related to theory and practice. Theoretically, the study does not intend to provide an exhaustive list of teaching expertise components or summarize some expertise development means, but rather, adds to previous studies by illuminating the complexity, adaptability, and dynamism of teacher expertise (e.g., Lee & Yuan, 2021; Raduan & Na, 2020). To illustrate, it specifies the core components and sub-components of the EAP writing teaching context and the main interactions among the components, manifesting teaching expertise as a multi-level and self-organizing system.

I followed four EFL teachers' teaching expertise developmental processes longitudinally, analyzing the empirical findings of EAP writing teaching (EAPWT) expertise system

development with CDST and EST frameworks to propose an ecological model for EAPWT expertise development. This model embodies a process and sociocultural view of teaching expertise, highlighting teacher adaptations to contextual and environmental factors reflecting the dynamism of system advancement.

Practically, the study provides future EAP or EAP writing instructors with insights about the components that develop their EAPWT expertise and how to develop them in daily work. It also suggests ways that teacher educators can design contextualized EAP writing teacher training programs by identifying multi-leveled EAP writing teaching expertise components and noting their interactions. In addition, after clarifying the developmental process of EAPWT expertise and summarizing the teacher-environment interactions, the study provides recommendations for institutional leaders who select or recruit EAP writing teachers and for institutions supporting teachers' professional development and facilitating EFL teachers' transformation in their institutions.

1.6 Organization of the thesis

I investigate the components that comprise the EAP writing teaching expertise system and the dynamics of how EFL professors in Chinese universities improve their EAP writing teaching expertise. The thesis is organized as follows:

The first chapter introduces the research context and rationale for the current study. The second chapter provides a systematic review of previous research on teacher or teaching expertise, EFL/ESL teacher and L2 writing teacher expertise, EAP teaching, and EAP teacher professional development to justify the study. In the final section, the two theoretical frameworks (i.e., CDST and EST) and their applications in the study are described.

In the third chapter, I explain the research methodology, including the research design, context and participants, data collection and analysis, and ethical considerations.

Chapter 4 focuses on the research findings. The first section reports the results of the interviews in Stage One, identifying the main components. The second section presents the findings from the four cases, showing the changes the participants made concerning course design (macro-level) and course delivery (micro-level), assessment and feedback, and the adjustment of their mental states.

In Chapter 5, significant teaching expertise components and interaction findings are compared to the literature in Chapter 2; the intricacy of the EAP writing teaching expertise system is also discussed. The case study data are combined to summarize the changes in the process of developing instructional skills. At the end of Chapter 5, the facilitating factors and restrictions are also mentioned and categorized according to multilayered environment systems.

The sixth chapter provides an overview of the dissertation and explores its theoretical and practical implications. The limitations of the current study are then commented upon, and suggestions for future research are made accordingly.

Chapter 2: Literature Review

2.1 Chapter introduction

This chapter presents the operational definition of teaching expertise used in the study, traces historical research trends, and discusses the fundamental components and hypotheses regarding the development of teaching expertise. Studies on EFL/ESL teacher expertise and EAP teacher professional development are discussed to identify the research gap and validate the study's rationale. Afterwards, the theoretical framework based on CDST (de Bot, 2017) and EST (Bronfenbrenner, 2005) is introduced. Finally, the framework used in the study is explained.

2.2 Understanding teaching expertise

Since the 1980s, researchers have investigated the nature of teaching expertise in the same manner as other domains of expertise. It has been observed that studies of teaching expertise exhibit contested characteristics: being general or domain-specific; being a state, prototype, or process; and being cognitive phenomena or socially constructed. The study uses an operational definition of teaching expertise as a complex, adaptive, and dynamic system, drawing on historical research trends.

2.2.1 *Being general or domain-specific*

As Johnson (2010) summarized, the study of expertise entails examining “what characteristics experts possess, what procedures they follow, and how they differ from non-experts” (p. 217). The preferred techniques for the study of expertise are the examination of expert performance and the depiction of the variations and changes in features that evolve from novices to experts (e.g., Ericsson et al., 2018; Ericsson & Towne, 2010; Ward et al., 2020). Two approaches exist – absolute (which investigates extraordinary individuals) and

relative (comparing experts and novices) (Chi, 2006). Expert performance is defined as the superior reproducibility of a person's performance on tasks that capture the essence of a domain (Ericsson et al., 2018). Nevertheless, the absolute approach has been challenged for its narrow emphasis (Gruber & Harteis, 2018; Ward et al., 2018). There are at least two shared arguments in these criticisms. First, it tends to emphasize stable tasks with objective performance standards that are not indicative of complicated professional areas. By focusing on individuals and task performance as units of study, expert performance research misses the impact that the social and cultural context has on the acquisition of expertise, as well as what constitutes expertise (van Dijk et al., 2022). Therefore, it is difficult to unify the definition of expertise across various professions and disciplines because “how expertise is constituted, and how it is exercised, all depend on the domain” (Hoffman et al., 1995, p. 131). According to Berliner (2004), expertise research must be domain-specific and contextualized. Given this difficulty, academics from various domains have investigated the nature of expertise in particular circumstances. Since de Groot's (1966, 2014) worked on chess masters, the investigation of the nature of expertise has expanded to other professional disciplines. Ericsson et al. (2018), for instance, compiled a collection of notable empirical research on experts' superior performance, i.e., expert performance, in diverse disciplines involving arts, sciences, sports, and games. Their publication of the handbook of expertise and expert performance marked an important milestone, showing that even after decades, scientists from diverse domains have continued to contribute to research on expertise.

There has been no consistency among researchers about the selection of terminology and definitions of teacher/teaching expertise. Researchers have used terms such as “instructional expertise” (e.g., Mehrpour & Mirsanjari, 2016; Van der Lans et al., 2020) and “pedagogical expertise” (e.g., Hosseini et al., 2017; Rose & McKinley, 2022) interchangeably with

teacher/teaching expertise. Adopting the concept of teacher expertise, studies have tended to identify the recognized identity of specific teacher communities as research targets. In contrast, when emphasizing teaching expertise (or other synonyms such as instructional or pedagogical expertise) or expertise in teaching, scholars have tended to underscore the contextualized and specialized application of expertise rather than the identities of the participants. For example, teaching expertise studies have highlighted teaching procedures, such as expertise in lesson planning (Backfisch et al., 2020) and expertise in professional noticing (Jacobs et al., 2010), teaching subjects or methods, such as expertise for language-responsive mathematics teaching (Prediger, 2019) and expertise in second language teaching (Kryszewska, 2007), or the social contexts, such as teaching expertise in three countries (Hayashi, 2022b). Several studies have not only demonstrated the targeted teacher categories but also described their teaching skills in certain areas, such as mathematics teachers' expertise in resource work (Wang, 2018) and EFL teacher expertise in lesson planning (Li & Zou, 2017). The word selection demonstrates that contemporary research has been increasingly subdivided, considering diverse instructional situations and work aspects.

2.2.2 Being a state, a prototype, or a process

When academics adopt diverse perspectives or positions, their preferences for defining teaching expertise diverge. For scholars who view expertise as the state of expert teachers (e.g. Berliner, 1988; Persky & Robinson, 2017; Price et al., 2021), they attempt to highlight expert teachers' outstanding performance, knowledge, skills, beliefs, and characteristics by decoding their expert performance or comparing them to novice or experienced teachers. As Schoenfeld (2011) assumed, "expertise is the 'target' for professional development: if one knows what comprises expert teaching, one would hope to find ways to help teachers develop such competencies" (p. 333).

David Berliner (1988) is a representative scholar who investigated teacher expertise as a state. Building on the Dreyfus brothers' teacher development model (Dreyfus et al., 2000; Dreyfus & Dreyfus, 1986), he depicted a staged model of teacher expertise, emphasizing that teachers must advance their expertise by passing stages such as “novice, advanced beginner, competent, proficient, expert” (Berliner, 2004, p. 2-5). The major indicators of a teacher's level of expertise are their behavioral characteristics, which evolve alongside their teaching experience to become flexible, automatic, and intuitive. He hypothesized that novices are typically students, teachers in their first year, and individuals. In the second or third year of instruction, their proficiency reaches that of an advanced beginner. In the third or fourth year, if they have “talent and motivation” (Berliner, 1988, p. 6), they will reach the competent level. A subset of skilled teachers will eventually attain the level of expert. Proficiency may be attained by the end of the fifth year. Nonetheless, this staged concept has been criticized for a variety of reasons. First, the distinctions between each level are obscure and confused (Cowley, 1996). Second, the growth of expertise is not always linear but takes on more complex shapes. The stage models regard expertise as a set of attributes, which are depicted in a decontextualized manner, separate from practice. As Dall'Alba and Sandberg (2006) argued, “A fundamental dimension of professional skill development—namely, understanding of, and in, practice—is overlooked in stage models” (p. 388).

Researchers have constructed checklists or dichotomous tables of expert behaviors to be used as indicators of expertise based on staged models. Sternberg and Horvath (1995) rejected these models, arguing that such simplistic methodologies are incapable of measuring the complex phenomenon of teaching skills. They asserted that there is no clearly defined criterion that all experts and no non-experts meet. Instead, they argued, “[e]xperts have a

familial resemblance to one another, and it is this familial similarity that forms the concept of ‘expert’” (p. 9). They outlined three characteristics shared by expert teachers: knowledge quantity and organization, problem-solving effectiveness, and the insight to seek creative solutions. Cowley (1996) argued that the prototype model might be enhanced because Sternberg and Horvath’s (1995) model lacked the individual characteristics of teaching (such as teacher-student interaction); thus, he developed an expanded version of the expert teacher prototype. In Cowley’s (1996) framework, personal characteristics pertaining to attitude/personality and numerous relationships were augmented.

The categories of the teacher expertise model have continuously increased. For instance, Smith and Strahan (2004) used the prototype perspective to collect and summarize similar descriptions and representations of the instructional practices and verbal replies of three experts. They combined numerous sources of qualitative data (e.g., classroom observation, semi-structured interview, and participant survey) and subsequently presented six central tendencies, including personal qualities (i.e., relationships with students, leadership, and service) aligned with Smith and Strahan (2004). Subsequent studies have further explored teaching expertise with the prototype approach. For example, Li et al. (2011) revealed six comparable central tendencies adopted by five expert Chinese teachers of mathematics. Anderson and Taner (2022) summarized the results of 106 empirical studies involving 1,124 expert teachers. A total of 73 characteristics of expertise were identified across six domains building a expert teacher prototype for primary and secondary teachers, which encompasses “knowledge base, cognitive processes, beliefs, personal attributes, professionalism, and pedagogic practices” (p. 8). Notably, the prototypes in the studies covered here vary when teacher communities and social contexts change.

Another group of studies have examined teaching expertise from a developmental standpoint interpreting expert knowledge as coming from the teacher's participation in the social practice of teaching, thus understanding expertise as a process rather than a state (see Bereiter & Scardamalia, 1993; Tsui, 2003, 2005). This group of studies adopting the process view focuses on expertise development over time (see Tsui, 2003) and the gradual changes in characteristics when a person passes through various stages towards expertise, i.e., to approach expertise from a relative perspective, indicating that individuals have less or more expertise, as opposed to focusing on top performance (Chi, 2006; Elvira et al., 2017). Extending targets to experienced teachers, a group that is somewhat easier to define by comparing them with novice teachers, process-oriented research mitigates the challenge of defining "expert" teachers due to debates among scholars on the selection criteria (Akbari & Yazdanmehr, 2014; Palmer et al., 2005).

Bereiter and Scardamalia (1993) pioneered identifying the expert features of progressive problem-solving, in which professionals always choose to address progressively difficult issues to extend their competence and develop their expertise. During the ongoing problem-solving process, researchers have attempted to reinvest and improve procedures to make room for novel issues. Bullough and Baughman (1995), for example, conducted a longitudinal study incorporating observations, interviews, and the recording of meetings, to investigate the development of expertise in a teacher who was regarded as an expert in her prior employment but who faced problems in her new position. Even for an experienced teacher, her development of teaching expertise was remarkably uneven, indicating a product of complex interactions between person and place. Due to the contextual changes, she was unable to use the techniques she had learned; the increasing necessity for teamwork also prevented her from using her expertise. This study challenged the notion that expertise is

static; instead, it develops from the experiences an individual is exposed to, with a significant influence from personal traits such as motivation: “...one wonders whether or not the disposition to engage in progressive problem-solving is a learned trait, an expression of a general orientation toward life, or both, as this study in some way suggests” (Bullough & Baughman, 1995, p. 475). These findings refuted the claim that teacher expertise is steady and unchanging. Rather, it is fluid and variable.

According to Hatano and Inagaki (1984), regarding expertise as a dynamic process itself is strongly supported, and they proposed that routine expertise and adaptive expertise should be distinguished in order to illustrate the paradoxical images of expertise. As a result of abundant and well-organized routines, experts can perform autonomously and effortlessly; on the other hand, experts are adaptable and flexible in addressing unconventional challenges and adapting to unconventional situations. If teachers rely excessively on their acquired routines, their instructional expertise will not continue to grow. Along with the development of adaptive expertise, which is defined as “adjusting teaching for different conditions” (Corno, 2008, p. 161), teachers are inclined to adopt adaptive teaching with macro- or micro-adaptations. The former relates to large-scale instructional adjustments such as changing curricula and teaching plans when new information arrives; however, the latter concerns teaching adaptations in the classroom, for example, teachers’ noticing and interpreting embedded information in students’ responses to satisfy students’ differentiated needs (Corno, 2008; Gallagher et al., 2022).

Professional development and teacher education target the development of adaptive expertise; effective teaching is characterized by creativity, innovation, and adaptability (Anthony et al., 2015; Kua et al., 2021; Männikkö & Husu, 2019). Adaptive teachers combine the art and

science of teaching in addressing individual differences, blending research-based methods along with their own inventions (Randi, 2022). Similar terms of crystallized and fluid knowledge are coined by Bereiter and Scardamalia (1993). The former highlights the development of routines through accumulated experience, whereas the latter helps teachers resolve non-routine situations and adapt to new challenges. Thus, the distinction between routine and adaptive expertise is based on the demands of the work and the familiarity with the circumstances.

Nonetheless, studies have asserted that adaptive expertise is developed from routine expertise, sharing comparable fundamental components (Carbonell et al., 2014, 2016; Hatano & Oura, 2003). Hatano and Inagaki (1984) contended that both routine and adaptive experts may perform tasks flawlessly under familiar settings because they possess the same domain knowledge. Therefore, both types of expertise can be detected if familiar situations and tasks in particular domains are encountered (Carbonell et al., 2014). Based on the characteristics of these two types of expertise, adaptive expertise exhibits comparative advantages, particularly when adapting to changes in working needs, environmental complexity, and uncommon scenarios (Croskerry, 2018; Mees et al., 2020). Schoenfeld (2011) noted that routine expertise can ensure procedures are “highly competent, so long as the issues dealt with fall within the familiar” (p. 332). Although specialists in their field can solve old problems with speed and precision, they frequently struggle with fresh difficulties. In contrast, adaptive experts can “create new procedures based on their expert knowledge” (Holyoak, 1991, p. 310). In a similar vein, Opre (2015) explained that a routine expert is a knowledgeable individual who is able to solve problems common to their field with a high degree of accuracy, speed, and automaticity. A stable and familiar environment is necessary for them to function efficiently. Conversely, adaptive experts not only display efficiency but also innovation and flexibility in

executing their procedural knowledge. As a result of their flexibility, adaptability, inventiveness, and creativity, persons with adaptive expertise are able to overcome novelty and soon achieve superior performance, whereas routine experts struggle when confronted with novel difficulties and demands (Loughran, 2019; Schwartz et al., 2005).

In their teaching practice, teachers with adaptive expertise tend to adopt adaptive teaching (Xiang et al., 2022). Loughland and Alonzo (2019) developed a classroom observation tool for adaptive teaching practice called the Teacher Adaptive Practices Coding Guide encompassing 15 Adaptive Practice Indicators, which was a practical tool for researchers probing into the manifestation of teachers' adaptive expertise. Accordingly, when studying teaching expertise from the process perspective, scholars are inclined to focus on the adaptive and dynamic aspects of teacher/teaching expertise indicating teachers' adaptive teaching to various sociocultural contexts. However, how teachers' adaptive teaching is used to explain teacher expertise needs investigating.

2.2.3 Being cognitive phenomena or socially constructed

On a cognitive level, expertise can be defined by “(1) its development, (2) the knowledge structures of experts, and (3) the reasoning processes of experts” (Hoffman, 1996, p.83).

Using cognitive psychology, namely, information processing and schema theory, researchers have examined how people develop expertise and the nature of the differences between experts and novices (Dodds, 1994). In disciplines other than education, comparisons between experts and novices are used to identify their qualitative performance gaps (Chi et al., 2014). The work of Glaser and Chi (1988) represented the mainstream cognitive view of expertise; they concluded characteristics of expertise are based on cognitive mechanisms underlying expert performance, such as memory capacity and perception of patterns, as well as

characteristics of processes underlying cognitive activities, such as problem solving.

Educational scholars have also investigated expertise, documenting how expert teachers differ from novices in cognitive structures and behavioral markers and theorized how expertise should be fostered, maintained, and promoted. One study stream has investigated the knowledge area of teaching expertise. Shulman's (1986) knowledge domains have been extensively employed to discern expert-novice distinctions or expert traits. Experts' knowledge and expertise are stored and structured as mental schema in their long-term memory, from which they may be efficiently recalled to facilitate the effortless and effective performance of expert teachers (Berliner, 2004). With lab-based tasks, researchers have compared the knowledge bases of expert teachers and novices. Berliner (1988) and his research team pioneered a significant line of studies investigating the expert-novice distinctions on topic knowledge and pedagogical content knowledge (Shulman, 1986, 1987), occasionally including a third set of candidates (people with subject matter knowledge but without specific pedagogical training). In their studies, teachers with differing levels of expertise (based on Berliner's five-stage developmental theory) were compared when given informational materials about a class and asked to interpret slides of class events, or asked to comment on videotapes of simultaneous and multidimensional aspects of actual teaching (Berliner, 1988, 1994, 2001, 2004). Experts were found to consistently surpass novices in quantity and depth of their individual knowledge bases, enabling them to instruct with ease and fluency (Berliner, 2004).

During the same period as Berliner and his colleagues, other researchers examined expert performance and the distinctions between experts and novices in cognitive processes such as decision-making and problem-solving. For example, Westerman (1991) analyzed qualitative

data from audio-taped planning interviews, videotapes of lessons, stimulated recall interviews, post-teaching interviews, delayed self-reports, and printed materials to compare expert-novice differences in thinking and decision making prior to, during, and after teaching. The findings revealed that skilled teachers considered learning from the students' perspectives and completed a cognitive analysis of each learning assignment while planning, which they then tailored to the students' needs during instruction. In contrast, novices employed defined lesson objectives to develop organized lesson plans that they did not modify to accommodate the requirements of their students throughout instruction.

Concerning problem-solving, Swanson, O'Connor, and Cooney (1990) investigated potential qualitative variations between expert and novice teachers in their think-aloud methods for resolving classroom discipline issues. The results indicated that professional and beginner teachers varied in their answers to classroom discipline problems and their descriptions of the mental processes involved. Expert educators are characterized by their emphasis on defining and presenting problems, whereas beginner educators seek to portray difficulties in terms of potential solutions. More recent studies on teacher expertise from the cognitive psychology perspective have adopted similar methods. For instance, Hogan and Rabinowitz (2009) examined the ways in which expert and novice teachers conceptualize classroom problems related to instruction, assessment, and curriculum development by analyzing their performance in a triad judgement task. Price et al. (2021) interviewed 52 experts in science and engineering education, framing 29 specific decisions in the problem solving process.

Expert teachers' remedies to discipline issues appear to be independent of how the situation is represented. Bromme and Tillema (1995), for example, claimed that research on expertise "overlooks the fact that expert activity is mainly professional activity, and that the

information processed in this course belongs mainly to the culture of the respective profession” (p. 264). The methods of acquiring expert knowledge also have “a socioemotional and sociocultural nature” (Hatano & Oura, 2003, p. 26), which stresses expertise as a social phenomenon referring to “the emergence of the public perception that such knowledge is the exclusive domain of specially trained and licensed practitioners” (Welker, 1991, p. 264). Kelly (2006) also argued against the notion that experienced teachers develop or modify teaching plans based on the support and limitations of various settings and the diverse requirements of communities. Expert teachers are able to carry out or modify their plans based on the situation’s needs, affordances, and constraints; as such, they exemplify best pedagogical practices and through their activities enable students to achieve as much as possible in relation to the parameters deemed important within their educational context (Dorf et al., 2012; Kelly, 2006). According to Ball (2006), this is because “teaching has always required decision-making within a complex and rich field of contradictions, dilemmas, and priorities” (p. 83). Therefore, research on teacher/teaching expertise has shifted to recognize the sociocultural context. Even recent studies on the cognitive aspect of teacher expertise, such as teacher cognition, which “is not a fixed entity but involves thinking, knowing, understanding, conceptualizing and stance-taking” (Li, 2017, p. 191), has undergone a social turn viewing cognition as social action (Li, 2020).

Rather than depending solely on tasks replicated in labs, researchers have begun to conduct empirical studies in actual classroom settings. Some have ethnographically investigated authentic classroom instruction in natural settings. For example, Traianou (2006) conducted a sociocultural case study on science teacher expertise, emphasizing the contextualized character of knowledge and the participation of teacher expertise through reflective practices in communities. Dorf et al. (2012) designed a qualitative comparative study on national

language and mathematics education in lower secondary schools in Denmark and England. In the project, it was determined that expertise in teaching Danish language and literature in lower secondary schools can be characterized using a set of characteristics based on objectives, norms, discourses, and practices. Teachers appeared to switch between various types of teacher expertise based on the perceived demands of the moment, negotiating regulatory requirements, practicing interpretations of educational aims, and delivering classroom discourses and practices in ways that are not always intended. Therefore, the manifestation of teacher expertise is context-bound and improvised. Sorensen (2017) also argued that teacher competence is socially produced while reporting the outcomes of a doctoral research project on the improvisatory character of teacher expertise. The data were drawn from a series of comparative case studies of seven experienced secondary school teachers in England who were chosen as experts in their schools. Findings revealed a teacher's expertise is best expressed as a practice that is always changing, as opposed to a state that reflects a prototype model. It is believed that teacher expertise is essentially improvisatory since it is formed socially and has a positive effect on the quality of instruction.

Teacher expertise is also related to culture. For example, McIntyre et al. (2019) investigated expertise-related and teachers' cultural priorities by analyzing the gaze proportions of 40 secondary school teachers wearing eye-tracking glasses during class time, including 20 teachers (10 experts and 10 novices) from the United Kingdom and 20 from Hong Kong. The results suggested that independent of culture, expert teachers' gaze proportions prioritized students, but novice teachers prioritized non-instructional (i.e., not students, teacher materials, or student materials) classroom locations. Regarding culture-specific expertise, Hong Kong experts prioritized teacher resources more than British experts, who in turn prioritized

teaching materials more than British novices.

These studies differ based on the degree of comparability between the performances of expert and non-expert teachers and the degree of authenticity in teaching, indicating the researchers' attention to naturalistic and authentic teaching contexts with regard to communities, school settings, educational policies, and national cultures.

2.2.4 Being a complex, dynamic, and adaptive system

Along with the research trends noted above, studies of teaching expertise have become domain-specific, characterizing it as a dynamic process built within social and cultural contexts. One more recent study has defined expertise as “an emergent, adaptive complex System” (Yuan & Yang, 2022, p. 660) influenced by complex social, cultural, and historical settings (Johnson, 2006; see also Lee & Yuan, 2021). Informed by complexity theory, scholars (e.g., Larsen–Freeman, 2019) assert that within such a system, numerous elements and patterns coexist and interact, producing collective impacts on the system's function and evolution (Cameron & Larsen-Freeman, 2007). Due to the interactions between various components, a system might exhibit emergent properties, i.e., its capabilities are larger than the sum of its constituents. In accordance with the concept of adaptive expertise and CDST, the expertise system evolves with constant and adaptable responses to novel problems and changing circumstances, and the interactions between the components lead to spontaneous self-organization and a process of dynamic development (De Bot, 2017; Manson, 2001; Xiang et al., 2022). Regarding teaching expertise as a complex, adaptive, and dynamic system, it is necessary not only to investigate the interacting components within the system, but also to exploit surrounding constraints, allowing functional patterns of behavior to emerge in particular performance contexts and within dynamic change. Overall, the system

view of teaching expertise corresponds with the view that defines teaching expertise as a dynamic process (e.g., Bereiter & Scardamalia, 1993; Herling, 2000; Tsui, 2005), which is built and influenced by sociocultural elements (e.g., Hatano & Oura, 2003; Kelly, 2006).

2.3 Components of teaching expertise

2.3.1 Teacher knowledge

Even though scholars have not reached a consensus on the nature of expertise, there are universal and fundamental components: “knowledge, experience, and problem-solving” (Herling, 2000, p. 13). To illustrate, it is difficult to unite the components of the instructional domain of knowledge. Shulman (1986, 1987) proposed to divide teacher knowledge into three basic categories. First, subject matter knowledge (equivalent to what others refer to as declarative knowledge) involves an understanding of how the facts, concepts, and principles of a subject are organized and structured, also known as content knowledge (CK). According to Shulman (1986), “[t]he teacher must understand not only that something is true, but also why it is true” (p. 9), implying that instructors’ content knowledge should reflect a profound comprehension of the topic to be mastered by the students. Next, pedagogical content knowledge (PCK, often referred to as procedural knowledge) requires knowledge of how to best express and formulate the subject to make it understandable to others, as well as an awareness of students’ subject-specific ideas and misconceptions (see Grossman, 1990). Lastly, conditional knowledge comprises the beliefs and values utilized to define the specific circumstances in which declarative and procedural knowledge are applied, as well as the knowledge of both learners and context. Under the heading of teaching competence, subject matter knowledge, pedagogical content knowledge, and conditional knowledge have been examined extensively. It is essential to note that relationships across these domains make the study of expertise more complicated. These forms of knowledge encompass what teachers

think and do (i.e., the cognitive and behavioral indicators of expertise) and are featured in the primary findings from the aforementioned research and are difficult to consider separately.

Teachers encounter and are impacted by knowledge for practice, knowledge in practice, and knowledge of practice, according to Cochran-Smith and Lytle (1999). In sum, knowledge for practice can be characterized as theory (i.e., formal knowledge), which is typically generated by researchers and intended to provide generalized knowledge for use in teaching.

Knowledge in practice more closely resembles practical knowledge derived from a teacher's personal reflection on experience. Knowledge of practice is developed through the discovery of the relationship between knowledge and practice and is typically based on teachers actively seeking to construct knowledge from which learning and growth occur through inquiry, such as teacher research, and is supported by a professional learning community. By distinguishing between knowledge for, in, and of practice, it is possible to identify distinct components of the large picture that influences a teacher's thoughts and actions.

As previously explained, teacher knowledge may be broken down into two major components: declarative or formal information regarding what to teach, and procedural and conditional knowledge or practical knowledge regarding how to teach in certain settings. This classification is consistent with Tynjälä's (2008) proposal of conceptual/theoretical knowledge, which is universal, formal, and explicit in nature and depends on conscious, conceptual thought processes supported by texts, figures, discussions, or lectures (also see Heikkinen et al., 2012). Practical knowledge (often referred to as procedural knowledge), is manifested as skills or "knowing how;" this type of tacit knowledge is rarely taught in formal educational settings and is based on actual experience and is difficult to articulate explicitly (Engel & Johan, 2008). This does not mean that people cannot learn procedural knowledge

through textual means, such as handbooks, manuals, or usage instructions.

In Elbaz's (1983, 2018) study, the substance of practical knowledge was identified as knowledge of self, the teaching environment, subject matter, and curriculum creation and instruction. Clandinin and Connelly (1986) extended Elbaz's framework with their conception of personal practical knowledge, which is characterized by personal philosophies, metaphors, rhythms, and narrative coherence as representations. Personal philosophy consists of experience-based ideas and values, whereas narratives situate these views and values within the framework of classroom happenings. In other words, a teacher's personal philosophy is a contextualized subjective theory about teaching that represents cohesion among the teacher's ideas, values, and deeds. The metaphors employed in narratives govern how teachers think about and approach teaching, as well as how they act. In addition, practical knowledge is defined as tacit knowledge by Polanyi (1966), who analyzed its relationship to perception and scientific reasoning while contending that "we can know more than we can say" (p. 4). To summarize, teacher knowledge can be separated into two major categories: theoretical knowledge (i.e., conceptual knowledge and declarative information) and practical knowledge (i.e., experiential knowledge and procedural knowledge).

Teacher knowledge is complex because its basic framework has been continuously expanded, resulting in comprehension divergence. For instance, academics have elaborated on the two components of Shulman's (1986) pedagogical content knowledge (PCK) model. New components include curricular knowledge (i.e., knowledge of the goals and breadth of the curriculum) (Grossman, 1990) and assessment knowledge (i.e., knowledge of what and how to test) (Tamir, 1988). Since its introduction by Lundeberg et al., (2003) extending Shulman's knowledge framework, technological pedagogical content knowledge (TPACK) has attracted

the attention of scholars in tandem with the promotion of integrating technology into teaching and learning.

More recent studies have explored teaching expertise with the promotion of TPACK in various contexts due to Covid-19. For example, Nazari et al. (2019) surveyed 427 EFL teachers and interviewed 16 of them to compare different perceptions of TPACK and studied its influence on professional development among novice and experienced EFL teachers. The findings revealed that, in contrast to experienced EFL teachers, novice teachers scored higher on TPACK and its sub-components compared to their pedagogical and content knowledge. The two groups of teachers developed their TPACK levels in a differentiated manner, requesting customized professional development programs based on their needs. Zimmermann et al. (2021) involved pre-service chemistry teachers from two different universities with varying levels of expertise (i.e., master and bachelor students). The researchers conducted the same teacher training seminar for the two groups and measured their development of self-efficacy, attitude, and lesson planning competence regarding TPACK. It was found that both groups' TPACK was improved due to the seminar since students could incorporate educational technology into their lesson plans more effectively. There was, however, a higher level of improvement in master students' abilities, and only master students demonstrated a significant increase in their TPACK self-efficacy and attitude.

Moreover, the ongoing development of teacher knowledge theories have been contextualized in varying domains, such as science teacher knowledge (e.g., Kaya & Nafiz Kaya, 2023), mathematics teachers' situation-specific knowledge (e.g., Depaepe et al., 2020), and TPACK for integrating Science, Technology, Engineering, and Mathematics Education (Chai et al., 2019).

In addition, complexity can be seen in the teaching practices when integrating many forms of teacher knowledge. Studies comparing the knowledge bases of experienced and novice teachers (see Berliner, 2001) have indicated that not only do expert teachers know more than novice teachers, but their information is also structured differently and maybe more thoroughly integrated. Thus, the knowledge bases of experts are typically not only larger than those of beginners, but also more interconnected and integrated (Park & Chen, 2012; Tsui, 2003). For instance, PCK itself has two variations: personal PCK, which refers to “teachers’ knowledge of, reasoning behind, and planning, and personal PCK and skills (PCK&S),” which refers to “the act of teaching a particular topic in a particular way for a particular purpose to specific students in order to improve student outcomes” (Julie, 2015, p. 36). Therefore, PCK is used heuristically in teaching practices, where existing personal PCK informs teachers’ lesson planning, enactment of teaching, and reflection, and personal PCK&S is displayed in the teaching artifacts that teachers create through the articulation of their pedagogical decisions and the use of pedagogical moves (Chan & Hume, 2019). Park and Olive (2008) claimed that in the process of developing one component of PCK, the development of others may be encouraged, which in turn enhances the overall PCK. Meanwhile, PCK for effective teaching involves the highly complex integration of all facets of teacher knowledge. According to Winch (2010), the link between propositional knowledge (knowing what) and practical expertise (knowing how) is complex, and to comprehend any type of expertise, we must comprehend both types of information and their interrelationships.

In addition to the cognitive aspect of teacher knowledge, researchers also consider meta-cognitive knowledge. Experts on meta-cognition contend that it is a high-order form of cognition (Veenman, 2012) that controls thinking while simultaneously becoming a

component of meta-cognition itself (Veenman et al., 2006). According to Tynjälä (2008), self-regulatory knowledge of meta-cognition, comprising meta-cognitive and reflective abilities, is knowledge about learning strategies and how to organize, monitor, and assess one's own learning and work, which enables teachers to become conscious of their own learning assumptions and initiate the production of new knowledge about their own teaching. Engagement in a more rigorous and self-conscious process of reflection can “allow teachers’ personal theories of action to be examined and made public” (Winkler, 2001, p. 447). The complexity resides in the varied nature of teacher knowledge, as represented above, as scholars embrace a conception of teacher knowledge that manifests various facets of teaching expertise in terms of knowledge, skills, and meta-cognition.

2.3.2 Experience

As Berliner (1988, 2004) suggested, with the accumulation of teaching experience, teachers grow from novices to being proficient. He regarded teaching expertise as a function of teaching experience (Gonzalez & Carter, 1996). To develop teaching expertise, experience is necessary but “not a sufficient condition” (Tsui, 2009, p. 422) since “expertise is probably developed contingently over extended periods of time in a specific context” (Siedentop & Eldar, 1989, p. 257). Experience, like skill, is a concept with multiple meanings. When it is considered as a component of expertise, it is “heavily dependent on the type, quality, and quantity of the individual’s experiences” (Herling, 2000, p. 15). As Bereiter and Scardamalia (1993) noted, regarding the performance of equally experienced school instructors (based on training obtained and number of years employed), “experience distinguishes veterans from novices, but not experts from experienced non-experts” (p. 81).

Due to the lack of consensus on comparison criteria for teachers, many academics equate

expertise with years of teaching experience. However, unknown as of yet is the extent to which experience accounts for the quality of the final product of teaching skill (Standley & Madsen, 1991) and what other types of experiences facilitate teaching expertise development in addition to teaching experience.

2.3.3 Problem-solving

Teaching typically entails dealing with ill-structured problems characterized by an abundance of knowledge, loose limitations, and the absence of a unique proper answer (Mansour, 2009). Research in cognitive psychology has also provided substantial support for the notion that problem-solving is a key element of expertise (e.g., Köhler & Rausch, 2022; Schoenfeld, 2011; Swanson et al., 1990). A representation is a “mental structure that represents something else: a word for an object, a sentence for a state of affairs, a diagram for an arrangement of things, and a photograph for a scene” (McKendree et al., 2002, p. 59). The intricacy and sophistication of the representation of a problem scenario are essentially governed by the conceptual organization that underlies this mental structure. It has been suggested that specialists are capable of developing more intricate and nuanced representations of situations than their beginner counterparts in part due to a deeper, more robust organization of information and ideas of the subject (Bransford et al., 2000).

Bereiter and Scardamalia (1993) saw problem solving as the single dynamic element in the growth of expertise and experts as progressive problem solvers, while “the problem-solving efforts of the non-expert are taken over by well-learned routines...aimed at eliminating still more problems thus reducing the activity even further” (p. 81). They demonstrated that persons pursuing “expert careers” (p. 11) continuously reinvest the mental resources liberated by the process of pattern learning and automatization into the work-related challenges they

meet. Thus, teachers approach these challenges at ever-increasing levels of complexity, leading to the development of more advanced skills and knowledge. Experienced personnel who rely solely on established procedures, regardless of how efficient they may be, limit the scope of the job to what they are accustomed to accomplishing. This implies that specialists seek fresh opportunities to advance their understanding of complex issues. Through the process of identifying, analyzing, and solving problems, professionals build increasingly effective problem-solving skills over time.

2.3.4 Other frequently discussed dimensions

Researchers (e.g., Lee & Yuan, 2021) have also uncovered the affective dimension of teaching competence, such as a teacher's enthusiasm and dedication, which motivates their professional development efforts. According to O'Sullivan and Doutis (1994), virtuoso teachers not only possess advanced content knowledge and pedagogical content knowledge frameworks, but also demonstrate social, political, and moral commitment.

The emotive dimension is incorporated into instructors' motivation as the driving force. Kunter et al. (2013) asserted that values, beliefs, and motivational orientations are important aspects of teacher expertise in addition to professional knowledge and self-regulation abilities. The enhancement of intentional aspects of expertise, such as attitude, willingness, and self-efficacy, is equally important to the successful application of instruction (Zimmermann et al., 2021). Others have adopted the term motivational beliefs. According to Boekaerts (2001), motivational beliefs include self-efficacy beliefs, values, expectations, and desires. Referring to Wentzel (2021), motivational beliefs serve as a mechanism for promoting and maintaining goal-directed behavior. Recognition of task-related (e.g., values, efficacy, causality) and socially oriented (e.g., belongingness and social obligation) beliefs provides a more

comprehensive understanding of motivation. Backfisch et al. (2020) investigated whether the cognitive and motivational components of mathematics teachers' professional competence (i.e., professional knowledge and motivational beliefs) influenced their relative expertise in technology-enhanced lesson preparation. They discovered that instructors' motivational beliefs is a crucial additional factor that may favorably strengthen teachers' planning efforts enhancing the quality of technology integration.

Teacher agency has also been incorporated into teaching expertise constituents (e.g., Lee & Yuan, 2021; Reichenberg, 2022). An individual's agency can be characterized as their ability to make decisions and to act on those decisions in ways that contribute to their success (Martin, 2004). In everyday practice, agency is the result of the interaction between individual capabilities and environmental factors (Oosterhoff et al., 2020). According to social cognitive theory (SCT) and Bandura's (1989) definition, agency is perceived as the capability of regulating and controlling cognition, motivation, and behavior through the influence of existing self-beliefs (i.e. self-efficacy) (Cited by Code, 2020). Bandura (2001) proposed four core features of human agency: "intentionality and forethought, self-regulation by self-reactive influence, and self-reflectiveness about one's capabilities" (p. 1). To be specific, intentions work as self-motivators influencing the likelihood of actions happening in the future, which are realized by goal setting and planning. To act strategically, it is necessary to consider anticipated outcomes in the context of current activities. In this manner, people can transcend the constraints imposed by their immediate environment and shape and regulate their present situation to achieve their long-term goals. People regulate their behavior by focusing on the expected results and discard actions that are likely to bring unsatisfactory or punishing outcomes. Bandura (2001) also claimed that "an agent has to be not only a planner and forethinker, but a motivator and self-regulator as well" (p. 8) with

constant self-reflection. In addition, he stated that efficacy beliefs play a pivotal role in self-regulating motivation by helping individuals face challenges and achieve their goals. Under the influence of efficacy beliefs, some people choose what challenges to undertake, what amount of effort to expend in the endeavor, and how long they will persevere after encountering obstacles and failures; these beliefs also determine whether failure serves as a motivator or a demotivator.

Among the models of agency, teachers' adaptive agency has become an integral part of their expertise, which is understood as "how teachers, especially English teachers, maintain a form of agency despite both external constraints and internal self-regulations" (Goodwyn, 2019, p. 153). With adaptive agency, teachers are better equipped to survive and cope in difficult environments, while promoting their adaptive expertise (Goodwyn, 2016, 2019).

As indicated above, the components of the intentional dimension of teaching expertise have not been unified, and several aspects of these concepts overlap. Additionally, the components not only constitute teaching expertise, but also act as the elements influencing teaching expertise growth. Furthermore, these components have not been systematically investigated.

2.4 The development of teaching expertise

Studies have explored the ways teachers develop their teaching expertise, among which deliberate practice, teacher reflection, progressive problem-solving, and continuing professional learning are the most frequently discussed methods.

2.4.1 Deliberate practice with reflection

Ericsson et al. (1993), who investigated motor expertise from a cognitive perspective,

described an expert as an individual that has accrued at least 10 years or 10,000 hours of deliberate, high-level practice. They hypothesized that learners subjected to such a period of intense, repetitive practice would develop the ability to reproduce the same behavior with automatic movement control. Deliberate practices have as their primary objective the reduction of any deviation from an internalized expert model to generate optimal methods for task performance. Deliberate practice is also defined as engagement in tasks that are at an appropriate level of difficulty and that provide the individual with multiple opportunities to repeat tasks; they also receive informative feedback on the performance of these tasks so that errors may be corrected (Ericsson et al., 1993). In other words, repetitive engagement and informative feedback are both essential for expertise development.

However, an expert in one domain cannot attain a comparable level in another domain without extensive training. This is one of the most enduring findings from the study of expertise (see Glaser & Chi, 1988). According to Ericsson et al. (2006), “there is little transfer from high-level proficiency in one domain to proficiency in other domains – even when the domains seem, intuitively, very similar” (p. 9). Sternberg’s (2001) model of developing expertise underscores the importance of active work in a specific domain for the development of expertise. Sternberg argued that the primary determinant in attaining expertise is the individual’s deliberate engagement in the practice of their expertise, even though there are individual differences in the rate of acquisition and level of expertise attained. This engagement involves both direct instruction and extensive reflective practice on the part of the individual who is motivated to acquire the expertise. Since the mid-1980s, a certain disposition, specifically that of the reflective practitioner, has frequently been associated with expertise (Schön, 2017). Winkler (2001) endorsed the notion that teachers’ reflection bridges the gap between teaching experience and knowledge. Without reflection,

according to Shulman and Shuman (2009), teachers “still lack the capacity for learning from experience and, thus, the capacity for purposeful change” (p. 4).

However, few studies have clarified the deliberate practice activities for teachers and the types of experiences from which they can develop their teaching skills. An influential study by Dunn and Shriner (1999) proposed three types of instructional activities: planning, preparation, and evaluation. In addition, they stressed that teaching activities involving planning and evaluation, which are routine aspects of the job do not automatically qualify as deliberate practice. However, these activities can serve many purposes, and teachers utilize them in various ways. Each of the specific activities investigated contained a feature that suggested the activity could provide teachers with opportunities to acquire new teaching knowledge. It is possible to learn through these activities, but it is not automatic. These planning and evaluation tasks would be considered intentional practice for instructors if they were performed frequently and even when they are not strictly necessary. Côté et al. (2007) argued that the acquisition of expertise is dependent not only on the overall amount of practice, but also on the nature of the experiences encountered during practice. Araujo et al., (2010) noted that not only do specialists commit more time to practice overall, but they also devote more time to specific activities that are most useful for building essential abilities for the highest level of performance. In sports or music, the expert players may receive little systematic training but rather, more repeated practice for gaining superior performance.

2.4.2 Progressive problem-solving

When faced with difficulties that surpass their capacity, experts, like non-experts, simplify them “to the minimum that their knowledge and talent will permit” (Bereiter & Scardamalia, 1993, p. 20). To put it another way, experts operate at the limit of their expertise and they

push the boundaries ever further. Therefore, the development of expertise is “one of gradually advancing on the problems constituting a field of work, while the career of the non-expert is one of gradually narrowing the field of work so that it more closely conforms to the routines the non-expert is prepared to execute” (Bereiter & Scardamalia, 1993, p. 9). Clearly, the adage “practice does make perfect” is false (Bullough & Baughman, 1995, p. 461).

When searching for expertise, “[w]e have to find it in the ongoing process in which knowledge is used, transformed, enhanced, and attuned to situations” (Bereiter & Scardamalia, 1993, p. 46).

2.4.3 Continuing professional learning

According to Kennedy (2016), teaching is a “noisy” profession; it is difficult to distinguish and make sense of the competing demands on teachers’ time. Effective professional development provides classroom teachers with targeted learning, allowing them to filter out the noise to advance their practice. Professional development that is integrated into instructors’ work lives and provides opportunities for practice, discussion, and feedback is most likely to result in altered instructional methods (Dennis & Hemmings, 2019; Girardet, 2018). That is, a teacher’s career is a process of growth and change through on-the-job training leading to professionalism (Opfer & Pedder, 2011).

Since not all teacher learning promotes professional development in practice and school improvement, studies have identified key professional learning activities that enable teachers to adapt to rapid change. They include: staying current; experimenting with new ideas; engaging in reflective practice; sharing knowledge; and implementing teaching innovations (e.g., Forde et al., 2019; Mockler, 2022; Tam, 2015). Tynjälä (2008) highlighted the use of the insights provided by expertise development research by proposing a model that incorporates

three core learning processes to promote desired learning in terms of developing expertise. In the model, he did not differentiate specific stages, but contended that the various elements of expert knowledge and the learning processes underlying expertise development unfold around problem solving. Experts are continuously solving problems, and the capacity to do so demonstrates their level of expertise. Using the three learning processes, the model predicts that three types of knowledge are acquired during problem solving: “transforming conceptual/theoretical knowledge into practical/experiential knowledge; explicating practical knowledge; and reflecting on both practical and conceptual knowledge by applying and developing self-regulatory knowledge” (cited by Elvira et al., 2017, p. 187). The interactions among the elements in the model represent the continuous, holistic character of expertise development.

In a similar vein, Shulman and Shulman (2009) provided a model for teacher learning in which an accomplished teacher is a member of a professional community who is ready, willing, and able to teach and learn from teaching experiences. They promoted a model of teacher learning that describes the states of being “ready (having vision), willing (having motivation), able (both knowing and being able to do), reflective (learning from experience), and communal (acting as a member of a professional community)” (Shulman & Shulman, 2009, p. 2), with interactions between the elements. A thoroughly developed and defined vision, for instance, serves as a target for teacher growth and a benchmark against which one’s own and others’ thoughts and deeds are judged. Discrepancies between one’s vision and performance can motivate one to learn or, if excessive, can discourage learning and replace optimism with despondency (Hammerness, 2006). As described above, the components of teaching expertise in the models interact with each other to promote expertise development.

In conclusion, the development of professional expertise is described as a long and ongoing process, beginning with formal education and continuing throughout professional life, during which the various components of knowledge, skills, and attitudes undergo continuous qualitative and quantitative transformations (Gruber & Harteis, 2018).

2.5 Factors influencing teaching expertise development

From an ecological standpoint, it is essential to understand how some individuals can cope with environmental restrictions in a particular performance setting, utilizing available physical and social resources successfully. Therefore, an important aspect of demonstrating knowledge is the ability to carry out behaviors congruent with sociocultural norms (Barab & Plucker, 2002). As essential limits on expert behavior, social, historical, and additional external processes must be recognized. Expert performance should be viewed as a function of the interaction of internal and external restrictions (Barab & Plucker, 2002). Meaningful practice environments can only be constructed if the ecological aspect of expert performance is acknowledged. Similarly, EL-Deghaidy et al. (2017) specified that internal constraints are linked to teachers' beliefs, capacity, and pedagogical knowledge and skills, whereas external constraints are linked to administrative support, collaboration amongst teachers, resources/facilities, science curriculum content, class capacity, time constraints, and the existence of a teacher guide and professional development etc. Kreber (2002) emphasized that if being effective is viewed as sufficient and being even more effective is not externally rewarded, then the internal incentive must be extremely strong.

Consistent with the notion of being aware of external constraints, Kelchtermans (1993) argued that "teachers' professional behavior is largely determined by, and must be comprehended through their career experiences" (p. 443). In other words, the development of

teaching expertise as a means of improving teacher quality and efficacy raises questions about the nature of teachers' careers and their work experiences (Forde & McMahon, 2019). Merson (2000) discovered that the intensification of teachers' work had an effect on their practice as well as their professional and personal lives: more time was spent on teaching and tasks to sustain increased demands as well as increased administrative duties. As a result, teachers had less time for collaboration and professional development, and their personal lives were interrupted by work demands. Teachers must then confront these conflicts in their professional life. In addition, Hayashi (2022) perceived expertise development as the changes teachers undergo with experience that are influenced by wider social, political, and cultural settings, demonstrating that teaching competence has both cross-national parallels and nation-specific distinctions.

2.6 Empirical studies on teaching expertise

The following parts introduce main studies on EFL/ESL teacher expertise, EFL/ESL writing teacher professional development, and EAP teaching and teacher professional development to identify research void in these field.

2.6.1 Research on EFL/ESL teacher expertise

EFL/ESL teachers are in a profession that is well-recognized and employs huge numbers of individuals. In response to teacher expertise or teaching expertise research in other areas, EFL/ESL teacher expertise has received a growing amount of attention over the past several decades.

Concerning the investigation of the constituents and their growth, on the one hand, EFL/ESL teacher expertise follows the research trends of general teaching expertise research, yielding

comparable results. Tsui (2003), for instance, focused on ESL teacher expertise, laying the groundwork for subsequent scholars. Tsui (2005) compiled the results of previous research exposing the cognitive processes of teachers from the pre-active to the interactive phase. In the pre-active planning phase, expert teachers demonstrate “more autonomy,” appear “more efficient” and “more flexible,” and have “a much more integrated knowledge base” (Tsui, 2005, p. 172-173). In the inter-active teaching phase, expert teachers outperform novices because: 1) they can quickly make sense of classroom events through the identification of patterns and inner relationships; 2) they select critical information and distribute their attention accordingly; 3) they autonomously respond to the unpredictable events and are more adept in improvising; and 4) they manage to interpret the events with teaching principles, represent and analyze the problems deeper, and justify their practices.

Three veteran ESL teachers were guided by Farrell (2013) to reflect on their teaching for two years, during which time qualitative data were collected from interviews and teacher journals, resulting in the identification of five characteristics of teacher expertise: having knowledge of learners and learning, engaging in critical reflection, accessing past experiences, having informed lesson planning, and encouraging active student involvement (p. 1070). Using the novice-expert comparison, Mehrpour and Mirsanjari (2016) investigated the teaching expertise of both high school and university English teachers in Iran. They categorized teacher expertise into six categories: “expertise in management, motivational expertise and providing guidance and feedback, instructional expertise, content knowledge expertise, expertise in making connections between subjects of study, and expertise in dealing with challenges” (p. 167).

In contrast, a few studies have uncovered domain-specific characteristics of EFL/ESL teacher

expertise. Yazdanmehr et al. (2016) interviewed 20 experts (e.g., mentor teachers and teacher educators) in English language teaching (ELT), and proposed a conceptual model with eight interrelated factors constituting teacher expertise in ELT: “teacher’s language proficiency, pedagogical content knowledge, social recognition, cognitive skills, experience, professional development, contextual knowledge, and learner-centered teaching” (p. 631).

Among other studies focusing on particular facets of teacher expertise, the vast majority address cognitive views. The significance of teacher knowledge has been investigated by comparing novice and experienced EFL or ESL teachers as well as specialists and non-experts. For instance, Hosseini et al. (2017) used three research instruments (questionnaire, observation, and interview) to determine the similarities and differences in the pedagogical expertise of novice and experienced EFL teachers. Notably, correlations were very strong in two categories of pedagogical knowledge (i.e., incorporating L2-related values into the tasks and making them interesting for learners) for both groups of teachers, while the most and least frequently used motivational strategies remained the same. In addition, students of experienced teachers achieved significantly better results than their novice counterparts. However, when Chen and Goh (2014) had 527 teachers from 56 universities in China complete a self-reported questionnaire and interviewed 30 of them concerning their self-perceived knowledge about oral English teaching, they found that there were no significant differences in knowledge among teachers with differing teaching, training, and overseas experiences. Nevertheless, the teachers’ knowledge was significantly influenced by their learning experiences, self-perceived level of speaking ability, and familiarity with teaching methodologies. Chen and Goh’s (2014) study tentatively examined the relationship between teacher knowledge and experience, indicating the interactions between the teaching expertise components.

Yet other studies have examined singular aspects of teaching expertise. From the perspective of teacher decision-making, Kaya (2007) collected copious data from four novice and four experienced EFL teachers regarding their instructional decisions, revealing that experienced teachers deployed a greater range of pedagogical decisions in response to student performance. Li and Zou (2017) investigated the differences between novice and expert teachers' expertise in making judgments of lesson plans. They concluded that expert instructors performed more fluently and efficiently, which was consistent with Tsui's (2003) study. In another study, Dimitrova et al. (2021) coded 15 ESL/EFL teachers' verbal reflections on their own lessons revealing that experience influences the development of problem-solving schemata at different levels in qualitatively distinct ways. With experience, most elementary school teachers built comprehensive and many domain-specific problem-solving schemata; however, few experienced teachers constructed schema at the expert level. At this level, experience mostly influenced the type of domain-specific knowledge and the quality of feedback on effective techniques included in these schemata.

Unlike the studies conducted from the cognitive perspective, a few studies have investigated the sociocultural aspect of EFL/ESL teacher expertise. Stewart (2006) argued for additional research on the social dimensions of language teacher expertise because expertise is also dependent on "a teacher's capacity to negotiate with others in their work communities and have their voices heard" (p. 101). Li and Zhou (2021) adopted a qualitative inquiry comparing two expert EFL teachers, 20 experienced non-expert teachers, and two novice teachers in Chinese primary-school settings to uncover the level of expertise in scaffolding among EFL teachers. The findings revealed that among expert teachers, scaffolding strategies are more frequently employed and used appropriately.

Regarding the growth of EFL/ESL teaching expertise, few studies have been conducted. Tsui (2003) investigated and compared the developmental trajectories of four teachers (one expert and three non-experts) revealing they used two different strategies regarding expertise. Initially, Tsui (2003) discovered that the expert instructor refreshed her knowledge by “theorizing practical knowledge and practicalizing theoretical knowledge” (p. 257). However, because the expert tended to “problematize the unproblematic” (Tsui, 2003, p. 267), she needed to spend more time analyzing and correcting her teaching. Thus, she was able to search out “situated opportunities” (p. 253) to maximize every opportunity for expertise growth. As Tsui (2009) noted, context plays an important role in the acquisition of expertise: “the knowledge and skills that teachers acquire are closely tied to the context of their work and their personal histories” (p. 3).

In a similar vein, researchers have investigated the development of teaching expertise using sociocultural theory. Drawing on Vygotskian sociocultural theory, Johnson et al. (2020), who tracked three novice ESL teachers over two years as they progressed through three praxis-oriented pedagogy courses, found the teachers were able to shift from a teacher-centered to a dialogic instructional posture as a result of a specific set of pedagogical concepts that were used as mediational tools. In case study, Weng and McGuire (2021) followed one native English-speaking teacher’s professional identity creation and teaching expertise growth across national contexts (i.e., China and the United States). The findings indicated: 1) the participant teacher’s identity construction and his teaching (to international Chinese students) across contexts were facilitated by his increased knowledge of Chinese students, their learning styles, and local Chinese culture, and 2) his adaptive expertise was developed through critical reflection and the exercise of agency on instructional practices.

The results further imply that teacher identity and expertise development is nonlinear, mediated by circumstance and built through continual negotiation. However, the developmental processes have been still under-researched.

2.6.2 Research on EFL/ESL writing teacher professional development

Recent research has demonstrated a growing interest in the professional development of L2 writing teachers (Lee, 2011, 2017; Lee & Yuan, 2021; Yu et al., 2022; Zhang, 2016), with a particular emphasis on teacher cognition (Lee, 2018; Ngo, 2018; Yigitoglu & Belcher, 2014), teacher beliefs and practices (Bao, 2019; Karaca & Uysal, 2021; Teng, 2016), and teacher feedback and assessment (Hyland & Hyland, 2019; Lee, 2017; Lee et al., 2016; Yu et al., 2022). Like research on EFL or ESL teachers' knowledge, there are few studies that employ the phrase "teacher expertise" to explore writing instructor quality and professional growth. For instance, in answer to Hirvela's (2019) call for greater research on L2 writing teacher expertise, Lee and Yuan (2021) explored what defines writing teacher expertise and what elements influence their expertise development highlighting important aspects of writing instructor expertise, such as

integrated knowledge base about writing and teaching writing; student-centered pedagogy focusing on learner motivation and confidence building; professional visions, self-agency, and reflectivity; leadership in writing innovations; passion as teachers of writing and as writers; and ongoing teacher learning and progressive problem solving.
(Lee & Yuan, 2021, P. 10)

Their study noted the rich, dynamic, and contextual nature of writing teacher expertise, which is influenced by the teachers' cognitive engagement, social interactions, and affective experiences in their situated contexts. Inspired by their research, Seloni (2022) recommended using activity theory to comprehend L2 writing teaching expertise and proposed shifting

research attention from what teachers know to the teaching practices and activities they are engaged in with others in their local sites. Seloni observed that “teaching expertise is not a station to arrive in order to become an all-knowing figure, but a road to co-explore with pockets of ongoing opportunities for growth and transformation” (p. 2). Zheng et al. (2022), who analyzed studies on L2 writing instructors’ cognition, behaviors, and expertise, found few studies on expertise in the area. Their review revealed distinct aspects of L2 writing teaching expertise, such as the process of teaching L2 writing through tasks and activities with teacher-student interactions, the efficacy of written corrective feedback, and teacher strategies for responding to student texts and teaching writing genres.

In response to the call for research on L2 writing teacher expertise, several scholars have dissected its various facets, which only partially reflect what constitutes L2 writing teacher expertise. Myhill et al. (2013), for instance, investigated the role of teachers’ grammatical knowledge, including both content and pedagogical content knowledge, in mediating learning about writing in the classroom by involving 32 teachers in 32 schools with a qualitative data-set consisting of lesson observations and teacher and student interviews. In this study, grammatical pedagogical content knowledge was found to be more significant than declarative grammatical knowledge for supporting effective writing teaching and learning.

Teachers’ assessment and feedback competence in writing courses has been a hotly debated topic in L2 writing teacher research. For instance, Crusan et al. (2016), who investigated the assessment knowledge, beliefs, and instructional practices of 702 second language writing instructors, discovered that teachers’ linguistic background and teaching experience influenced their assessment knowledge, beliefs, and instruction. With a different focus, Yu et al. (2021) studied the emotional experiences in giving feedback to 27 EFL writing teachers in

Chinese universities. The findings highlighted the value of teacher feedback; however, teachers found it very time consuming, which was emotionally laden. Scholars have also promoted the adoption of formative assessment in writing courses. For instance, Guadu and Boersma (2018) investigated 25 EFL instructors' beliefs and practices of formative assessment in teaching writing with a mixed methods approach. The findings showed teachers' positive attitude toward the adoption of formative assessment; however, in practice, they mainly resorted to summative assessment. Guo and Xu (2021), who investigated the formative assessment strategies of 362 EFL writing teachers in Chinese universities, found that the participants' relatively weak ability of using the strategies was in line with previous studies (e.g., Lee & Coniam, 2013; Zhao, 2018). This finding underscored the summative-assessment-dominant and test-oriented culture in China as being the main impediment blocking writing teachers' formative assessment competence.

Overall, in the EFL/ESL sector, teaching expertise studies have been largely aligned with mainstream teacher expertise research, i.e., domain-specific and adopting methodologies that document the performance of expert teachers or evaluate the disparities between experts and novices. However, the literature indicates that cognitive expertise components have received greater attention than other types. Further, not all components use the term teacher expertise or teaching expertise, resulting in the absence of a comprehensive and systematic description. EFL/ESL teacher expertise is new ground compared to the extensive research on teacher expertise in general. In addition, although studies on EFL/ESL teacher skill development have included sociocultural determinants, the developmental process is still unknown due to a lack of longitudinal research (Lee & Yuan, 2021).

2.6.3 EAP teaching and teacher professional development

EAP has been viewed as a sub-discipline of ESP; both intend to “draw on the disciplinary methodology and culture, and center on the discourse and genre of the discipline” (Jiang & Zhang, 2017, p. 173). Within the discipline of ESP, EAP emphasizes academic situations in an effort to “facilitate learners’ study or research through the medium of English” (Hamp-Lyons, 2011, p. 89) and meet “the specific communicative needs and practices of particular groups in academic contexts” (Hyland & Hamp-Lyons, 2002, p. 2). EAP is viewed as “an eclectic and pragmatic discipline [with] a wide range of linguistic, applied linguistic, and educational topics” (Hamp-Lyons, 2011, p. 89). Hyland and Hamp-Lyons (2002) enumerated the typical demands of English by academics from non-native English-speaking countries, including the ability to teach in English, give lectures and presentations in English, perform English administrative work, participate in English meetings, debate in English via email, and conduct research and publish findings in English. In addition, EAP addresses the needs of higher education students, such as thesis and dissertation writing (Johns & Swales, 2002). Dudley-Evans and St. John (1998) regarded EAP as vital for teaching the four macro skills of speaking, listening, interacting, and literacy (specifically reading and writing), as well as the four macro skills of speaking, listening, and engaging (e.g., being able to use discourse markers when writing). They referred to the macro and micro talents as EGAP (i.e., generic skills transferable across fields) and ESAP, respectively (the teaching of language related to a specific disciplinary discourse). Among all the EAP skills, EAP writing is especially challenging for both undergraduate and graduate students from EFL/ESL countries (Bian & Wang, 2016; Cai, 2017; Nasser, 2018; Singh, 2019).

Contrary to the belief that students from other disciplines merely need to grasp a set of transferable rules and decontextualized academic skills, EAP teaching is thought to be a profession with complexities due to disciplinary differences, (Hyland & Hamp-Lyons, 2002).

According to Hyland (McDonough, 2005), EAP is perceived as being “at the cutting edge of a lot of innovations in language teaching: needs analysis, genre approaches, critical pedagogy, have really been sharpened in EAP and are crossing over to ELT [English language teaching]” (p. 57). Based on Charles’ (2022) review on EAP research from 1975 to 2019 published in volumes of BALEAP conference proceedings and shared in Professional Issues Meetings (PIMs), five key teaching approaches have been most prevalent regarding “intercultural, critical, corpora, genre and academic literacy” (p. 7). Among the five approaches, genre ranks fairly low on the keyword list at #37. Despite the importance of this topic, there were no proceedings or presentations on PIMs. Similarly, the number of papers on genre approaches was low ranking 28th, representing only 2.1% of all papers submitted. Hyland (2006) stated that “while students’ learning experiences are influenced by needs analysis, course design, and materials, it is methodologies, and the teachers’ understanding of language and learning which lie behind these, which are at the heart of EAP instruction” (p. 193).

In Asia, research has focused on the efficacy of EAP instruction and programs. For instance, Grant (2017) implemented project-based language instruction in an EAP writing course at a university in Macao. Vitta et al. (2019) analyzed four East Asian EAP writing programs and provided recommendations for enhancing the effectiveness of their programs. Their study underlined the benefits of engagement and collaboration between researchers and teachers, as well as the uniformity of programs (unifying the department-level standards and an employment of an internationally recognized proficiency scale). Vitta et al. also used a teacher-led curriculum more frequently which was deemed more beneficial for students with lower competency, while a student-led curriculum was perceived more acceptable for students with higher proficiency. In mainland China, Xu and Li (2018), who designed an EAP course for doctoral students and conducted action research using the process-genre approach,

found that peer-reviewed activities were advantageous. Li et al. (2020) shed light on the effectiveness of localizing genre-based instruction with a linguistic approach, boosting students' genre awareness and understanding, and resolving concerns in their EAP writing. As indicated above, Asia has followed the international trend of experimenting with strategies that facilitate students' EAP writing.

When focusing on EAP teachers in China, most of them transferring from general English have met considerable obstacles (Campion, 2016). As Post (2010) identified, there were six challenges: the difficulty of mastering EAP materials, insufficient subject/content knowledge, the need to teach critical thinking, a sense of insecurity, the balance between teacher input and students' own practice, and the need to instruct less competent students. O'Dwyer and Atli (2018) summarized a variety of challenges associated with EAP programs for non-native English speakers, including poor curriculum design, unsuitable pedagogical settings, and students' poor language performance. Hyland (2018) claimed, "[w]e have failed to establish the value of our work and the status of our profession. In part EAP units have brought this on themselves in their willingness to work FOR rather than WITH subject specialists" (p. 395). There are also contradictions between the pressing demand for effective EAP instruction among college students and the lack of structured teacher preparation and teacher training (Li & Ma, 2020).

It is evident that claims concerning the amount and nature of differences between general English and EAP have permeated significant professional papers that inform teacher education, such as the Competency Framework for Teachers of EAP (CFTEAP) (BALEAP, 2008). These are perceived as "a description of the core competencies of a professional EAP practitioner, in order to provide teachers new to the field, and those responsible for training

them, with clear goals and understanding of the role of an EAP teacher” (p. 2). In 2014, CFTEAP was renewed as the TEAP scheme, which not only describes a range of “professional knowledge, values, competencies, and professional activities” (BALEAP, 2014, p. 4), but also introduces the accreditation pathways developed from “recognized associate fellow[s], accredited fellow[s], and accredited senior fellow[s]” (BALEAP, p. 4). As for the TEAP Competency Framework, it specifies various professional activities in terms of “Professional Development, Research & Scholarship, Programme Development, Academic Practices, [and] The Student and Course Delivery” (p. 8). The framework is systematic with specific descriptions for each dimension, which are synthesized with CFTEAP in the updated TEAP guidebook (BEALP, 2022) for EAP teacher professional development. As noted by Ding and Campion (2016), without training, experienced teachers are advised to resort to articles about EAP and to attend and speak at workshops, seminars, and conferences. However, teachers with less experience are advised to read EAP teacher development literature and attend EAP staff development workshops and conferences. Riazi et al. (2020), however, suggested that further investigation is necessary with regard to EAP teacher education.

Despite these generalized conceptions of EAP teachers and teaching, little is known about EAP teachers’ backgrounds, qualifications, beliefs, and values (Ding & Bruce, 2017). Thus, more studies are needed to explore what EAP teachers consider to be fundamental to their profession, what constitutes EAP teaching expertise, and how it is developed. EAP teachers’ professional development has been investigated in a few studies. For instance, Wette (2014) examined the practices of EAP writing teachers to gain a deeper understanding of how writing instruction was organized, what instructional strategies were used by teachers, and how they explained their decisions. After interviewing seven experienced practitioners and

analyzing their teaching materials and course documents at five tertiary institutions, it was found that a variety of strategies were regularly used by participants. In this study, grammatical pedagogical content knowledge was found to be more significant than declarative grammatical knowledge for supporting effective writing teaching and learning. Participants, referred to as “modeling.” It was their practice to integrate textual, cognitive, and interactive components to advance the students’ proficiency in a variety of academic texts. The study stressed the value of explicit instructional conversations and social interactions within the L2 writing classroom as a means of generating learning opportunities through a combination of planned and responsive teaching.

Unlike Wette (2014), Kaivanpanah et al. (2021) focused on two main groups of ESAP practitioners in Iran with English language teaching (ELT) or subject content teaching backgrounds. Their study identified ESAP teachers’ self-judged strengths in teaching academic reading and translation and their need for further developing EAP listening and writing skills. The findings also underscored seven major challenges: students issues (e.g., large class sizes and low learning motivation), limited teaching materials, curriculum and syllabus (e.g., vague and incoherent EAP curriculum), testing, ESAP teachers (e.g., content teachers being equipped with inadequate language teaching skills), administrative issues (e.g., lacking teacher training programs), and content knowledge (e.g., English language teachers’ difficulties in expanding their content knowledge). Both English language teachers and content teachers highlighted the significance of teacher training and ongoing professional development. However, the researchers did not uncover the differences between the two groups of teachers regarding their self-reported perceptions of EAP teaching competencies and professional development activities.

Fitzpatrick et al. (2022) conducted the only research using a mixed-methods approach to explore EAP teachers' expertise reaching three conclusions: 1) peers highlighted peer mentoring, observations, and shadowing as invaluable sources of professional development; 2) EAP practitioners must have the time, opportunity, and resources necessary to maintain, update, and expand their professional knowledge; 3) Good practices and expertise should be shared and disseminated throughout the greater academic community to improve the marginalized status of EAP practitioners in institutions. Overall, it was clear from their participants' responses that professional development cannot be approached in a one-size-fits-all manner but instead, should be viewed as a continuous process, "which by nature needs to be fluid and dynamic allowing them to keep up to date with the field of EAP and to maintain their expertise" (Fitzpatrick et al., 2022, p. 10).

2.7 Theoretical framework

Given the current trends in research on teaching expertise and the void in the EFL/ESL and EAP fields, I investigated the expertise of EFL teachers in teaching EAP writing drawing on de Bot's (2017) Complex Dynamic Systems Theory. My study describes the complexity of teaching expertise system in the EAP writing teaching context in Chinese universities by revealing its multi-leveled and interactive components while depicting the dynamism manifested in the expertise developmental processes EFL teachers underwent as a result of previous and ongoing EAP teaching refinement. To explain the evolution of teaching expertise, I examine teacher-environment interactions at several system levels by specifying the factors and constraints based on Ecological System Theory (see Bronfenbrenner, 2005).

2.7.1 Complex Dynamic Systems Theory (CDST)

The following parts elaborates the definition and concepts related to CDST framework and

how it was used in the current study.

2.7.1.1 Understanding CDST

There are several labels for explaining the systems comprising an assortment of interrelated variables (Larsen-Freeman & Cameron, 2008), the most salient of which are “Complexity Theory (CT), Dynamic Systems Theory (DST), and Chaos Theory” (de Bot, 2017, p.

51). These systems are referred to as complex, dynamic, or complex dynamic, all of which coexist yet have similar meanings. Dynamic systems are termed complex and adaptive with interacting variables (De Bot et al., 2013). Larsen-Freeman (1997) introduced the concept of complex systems to the field of applied linguistics (AL). Later, Cameron and Larsen-Freeman (2007) explained that dynamic systems highlight “the elements and agents change over time, but crucially so also do the ways in which they influence each other, [and] the relations among them” (p. 228). When de Bot et al. (2007) released a study on bilingualism, complex systems in AL received additional research interest. In 2017, de Bot compared the use of Complexity Theory and Dynamic Systems and concluded that historically, the two terms “have no systematic differences” (p. 54); thus, he proposed Complex Dynamic Systems theory (CDST) as the newly-agreed label for unifying the terms explaining complex and dynamic systems, which has been examined in AL studies as well (Verspoor & Lowie, 2020). Specifically, CDST is thought to contribute to the understanding of the developmental process (van Geert, 2011).

There has been accumulating research characterizing the complexity and dynamism of systems to explain the properties of CDST. According to van Geert and van Dijk (2015), a complex dynamic system is made up of “many components or elements that interact with one another, frequently based on quite simple interaction principles” (p. 2). They predicted that

these components evolve on both short- and long-term timelines as a result of interactions with other components, adding that “these changes are typically self-organizing and coordinated in the form of emergent properties” (p. 2). The interacting components demonstrate complexity, whereas changes and emergent features demonstrate dynamism. The intricacy and dynamics were nicely illustrated in an overview graphic by Ferreira (2001). Composed of tiers of sub-components with self-organizing structures, the construction of complex systems involves multiple components dynamically interacting with one another and leading to emergent new patterns and behaviors, including a multitude of sub-components with self-organizing structures. The emergent quality is more than the sum of its interacting parts; it depends on the mechanism in between, such as an airplane (de Bot & Larsen-Freeman, 2011).

The other aspect of analyzing the dynamics of a system entails investigating its evolution at different time scales. Small-scale alterations can influence large-scale behavior (Ferreira, 2001). Thus, the dynamic is exemplified by the evolution or change across different timescales (de Bot, 2008). Consistent with earlier researchers, Toffoli (2020) proposed six CDST factors: “initial conditions, nonlinearity, dynamism, attractors, emergence, and co-adaptation” (p. 5). Beginning conditions can induce unpredictable and nonlinear changes in the state (de Bot, 2008; Larsen-Freeman & Cameron, 2008). As Sulis et al. (2021) illustrate, the initial conditions of pre-service teachers’ well-being system before the pandemic appeared to play a significant role in determining their response to this shock, demonstrating that well-being, like all systems, changes in an iterative manner, where each state is dependent on the previous one (Larsen-Freeman & Cameron, 2008). The pandemic acted as a critical incident that introduced new environmental conditions into the system, altering its trajectory in accordance with beginning conditions and existing attractor states. In the early days of the

pandemic, the quick change to online education and commencement of lockdowns caused a massive shock to each participant's system, who endured an initial period of instability and disorder. This is in line with Kostoulas and Lämmerer (2020), who considered that "a large perturbation, such as a professional crisis or a major transition, might lead to a radical restructuring of the system" (p. 95).

The systems are co-adaptive, meaning they respond to and influence variations in other systems, and they are receptive to resources and influences from other systems (Larsen-Freeman & Cameron, 2008). Sometimes these systems are stable and predictable, moving toward equilibrium; this is known as an "attractor state" (Hiver, 2015, p. 21). Kimura (2022) explained the concept in the context of an L2 classroom. For example, where a clear and immediate goal is set (such as joining a short-term study-abroad program scheduled to be carried out at the end of the term), the class may be in a "attractor state" of learning the L2 when the end of the term approaches. How well the attractor state can be stabilized is determined by the size and depth of the "attractor basin" (Larsen-Freeman & Cameron, 2008, p. 52). When the basin is shallow, the present attractor state can transition to a different attractor state more quickly. Alternately, when the basin is deeper, it can provide greater stability, requiring a greater amount of energy to shift the system out of this attractor condition. Even when stable, these attractor states are prone to change as a result of variations in the system's "control parameters" (Hiver, 2015, p. 24), which are the precise principles that govern the system's transitions. These changes can be gradual and consistent, but they can also be abrupt and startling. They can cause a "phase shift" (Larsen-Freeman & Cameron, 2008, p. 45) from which a completely new "state space" (Larsen-Freeman & Cameron, 2008, p. 46) can arise.

Subsequently, systems are seen as self-organizing at each level due to their tight connection to non-linear causal effects (N. C. Ellis & Larsen-Freeman, 2009), as more interactions make it more difficult to forecast the changes (de Bot & Larsen-Freeman, 2011; Larsen-Freeman, 2015). According to van Geert (2011), complex systems exhibit both regularity and randomness, which can progress along a variety of pathways leading to the creation of dynamic interactions between the relevant complements.

2.7.1.2 The use of CDST

The use of CDST to investigate teacher professional development has been associated with the study of development because “development is a complex dynamic process” (van Geert, 2011, p. 273) and “the developmental process is viewed as change within a complex dynamic system” (Smith & Thelen, 2003, p. 343), particularly with respect to second language development (e.g., Dimitrova et al., 2021; Larsen-Freeman, 2019; Lowie & Verspoor, 2022; Verspoor & de Bot, 2022). As for the growth of teacher expertise, it is perceived to be neither linear nor sequential, but nonlinear and multidimensional (Raduan & Na, 2020), which can be examined by CDST. However, few studies have used this framework in teacher expertise research. One notable one, Xiang et al. (2022), used CDST to examine an EAP writing teacher’s adaptive expertise and teaching adjustments in the classroom with a focus on short time spans without focusing on the expertise development processes.

Recent studies have investigated the concept of teacher professional development as a dynamically complicated system. Using the complexity approach, Henry (2016) examined the changes in a pre-service teacher’s identity. During a four-week practicum, he collected personal and interpersonal data over three timespans (the entire period, day-to-day, and a lesson) to capture identity changes. Unlike Henry, Sulis et al. (2021) explored the dynamic

and complex nature of the construct by examining the well-being system of six pre-service teachers through individual interviews conducted during the first pandemic wave. They implemented CDST in two phases: The first phase involved identifying the various components of each participant's well-being system and examining their interactions. In the second phase, they examined aspects of dynamism and stability within the data; this involved the close examination not only of dynamic changes in the system over time, but also of how salient attractors, or “signature dynamics” (Dörnyei, 2014), emerged within the system leading to particular system outcomes. However, Sulis et al.'s (2021) study differed from Henry's (2016) in that it traced the changes over multiple time periods, focusing on the states after important events.

In sum, there is a dearth of studies examining the development of teacher/teaching expertise via the perspective of CDST. Research utilizing CDST to decode the dynamics of teachers' professional growth are either intended to reveal changes from diverse timespans or to represent emerging conspicuous attractor states, both of which have provided methodology references for the present study.

2.7.2 Ecological System Theory (EST)

From a CDST perspective, the system's components are interconnected in a manner analogous to organisms interacting in an ecosystem, networking to compete and cooperate (van Geert, 1993). It is believed that complex systems are contextualized and associated with other systems (van Geert, 2008). However, contextual elements and settings have not been addressed from a system perspective in relevant studies. In other words, the interactions between the systems, in addition to the interactions between the components, have not been thoroughly examined to analyze the dynamic process of system advancement. Thus, the

present study seeks to add to the knowledge of the interactions between the teaching expertise system and other contextual systems (the ecosystem of EFL teachers' EAP writing teaching).

The ecological theory of human development (Bronfenbrenner, 2005), which emphasizes the characteristics of person-environment interactions over time, may help inform the present study. In 1979, Bronfenbrenner published *The Ecology of Human Development, experiments by nature and design*, in which he defined ecology of human development as a study of the interaction between a human being actively seeking growth and all the changing contexts influencing personal lives. This theory is in line with the ecological dynamics view of skill acquisition, highlighting performer-environment interactions to satisfy constraints (i.e., individual, task, and environmental) (Newell, 1986). Expertise can be viewed as the individual's capacity to interact with a task and environmental constraints to successfully achieve the performance goals (Newell, 1986; also cited by Davids et al., 2013). In 1995, Bronfenbrenner proposed the process-person-context-time model (PPCT), called the Bioecological Model, emphasizing person-environmental interactions operating over time (both past and present) and changing “substantially as a function of the characteristics of the developing person, of the immediate and more remote environmental contexts, and the time periods, in which the proximal processes take place” (Bronfenbrenner & Morris, 2006, p.795). Ten years later, Ecological System Theory (see Bronfenbrenner, 2005) was introduced to specify the multilayered feature of person-environment interactions and define ecology of human development:

The ecology of human development involves the scientific study of the progressive, mutual accommodation, throughout the life course, between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is

affected by the relations between these settings, and by the larger context in which the settings are embedded. (Bronfenbrenner, 2005, p. 107)

According to Bronfenbrenner (2005), at that time, its publication signified the maturity of the bioecological theory of human development. He further explained the the features of human development over time:

Development is defined as the phenomenon of continuity and change in the biopsychological characteristics of human beings both as individuals and groups. The phenomenon extends over the life course across successive generations and through historical time, both past and present. (p. 3)

In Ecological System Theory, Bronfenbrenner (2005), designed four-levels of ecological environments: microsystem, mesosystem, exosystem, and macrosystem. Taking this perspective, teaching expertise is not viewed as a collection of traits, elements, or components, but as a part of ecological systems highlighting teachers' interactions with their specific working contexts.

Microsystem

The innermost level is the microsystem, which is defined as a pattern of activities, social roles, and interpersonal relationships experienced by the developing individual in a given setting with specific characteristics that influence interactions with the immediate environment. These activities involve coaching, training, deliberate practices, and formal or informal learning, and have direct effects on development. Only microsystems are physically localized in this context. The rest are “system forces,” which describe how other

microsystems influence the individual and the specific microsystem under examination.

Mesosystem

The mesosystem is comprised of the interactions between two or more settings (i.e., microsystems). This level represents the extended family environment or activities beyond training, such as social and community engagement. The mesosystem is composed of microsystems that the individual frequents.

Exosystem

The next level of Bronfenbrenner's framework is the exosystem, which consists of the connections and processes between two or more environments. In these contexts, events occur that have indirect effects on the microsystem of the developing individual. The mesosystem is composed of microsystems that the individual frequents.

Macrosystem

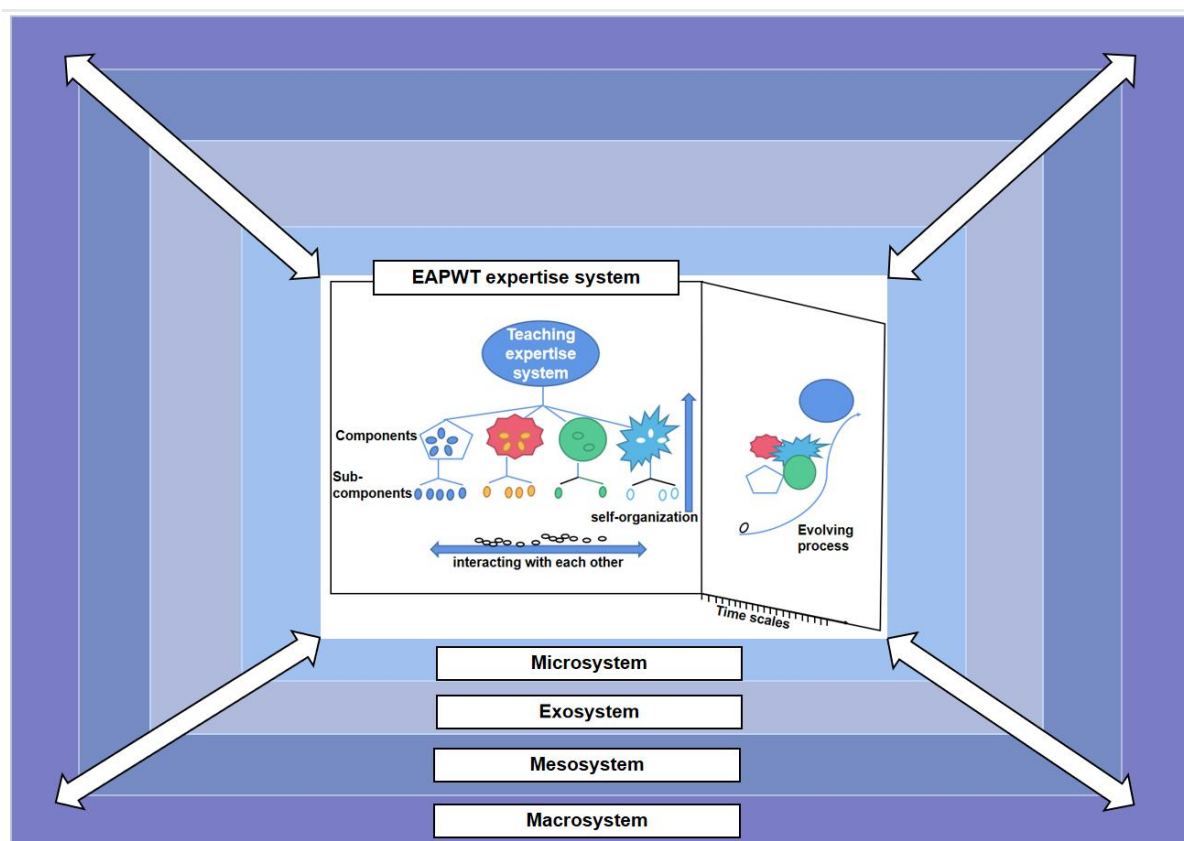
This is the highest level of Bronfenbrenner's systemic method, and it represents the wide sociocultural background for the developing individual (e.g., national culture).

2.7.3 Combining CDST and EST in the study

As illustrated in Figure 2.1, teaching expertise system is inside of the micro-level system which is influenced by the teacher-environment interactions in other environmental systems.

Figure 2.1

EAPWT teaching expertise system and its ecological systems



Note. Adapted from *Overview of the characteristics of complex systems*, by Ferreira, 2001, p. 3 and Bronfenbrenner's (2005) framework of Ecological System Theory

Inspired by CDST, the present study evaluates EFL teacher expertise in teaching EAP writing as a complex and dynamic system. Inside the microsystem, agents consist of EAP writing teachers and their students. In EAP instruction, EFL teachers self-regulate their teaching habits. The attractor states of teaching expertise may induce a transition to a new phase with emergent new patterns. They may co-adapt among the components to facilitate the adjustments. Thus, the growth of teacher expertise is nonlinear and unexpected. Consequently, the concepts within CDST, such as self-regulation, co-adaptation, attractors, and emergencies, are adopted to evaluate data elucidating the complexity and dynamism of the teaching expertise system. With the adoption of this conceptual framework, the study aims to define the hierarchy of teaching expertise components, how they interact with one another, how they

self-organize and generate emergent features, and how they grow dynamically across short and long time scales. Accordingly, the study fully implements the CDST approach in exploring the nature and developmental processes of EFL teacher expertise in teaching EAP writing, indicating the possibility of extending the use of CDST for teacher professional development and employing a new method of teacher expertise research.

To supplement CDST, the study employs EST (see Bronfenbrenner, 2005) to characterize the various teacher-environment interactions at different levels. For instance, EAP writing courses are viewed as closely linked microsystems with varying physical environments related to class size and equipment. When the course is taught online, the setting changes. Engagement, teacher-student relationships, and class interactions can have a direct impact on a teacher's effectiveness. Regarding EAP writing instruction, a variety of practice situations involving teaching, learning, and deliberate academic activities should be developed. The mesosystem comprises the relationships between teachers, their colleagues within the institution, and others outside of the classroom, who have direct effects. Exosystem-level impacts include institutional policy, regulations, requirements, instructors' other obligations outside of the institution, and the working environment. New national educational rules or reforms can be implemented at the macrosystem level. To better understand the contextual influences on teaching expertise development, the study follows the process-person-context-time model (PPCT) (Bronfenbrenner, 2005) stressing chronological characteristics of development, tracing teaching expertise development from varying timespans including both historical periods and the present.

Chapter 3: Methodology

3.1 Chapter introduction

This chapter introduces the two-stage research design: 12 EFL teachers were interviewed in Stage One, and four were observed for one or two academic years as case studies in Stage Two. The research context related to EAP writing teaching at the tertiary level in China is briefly introduced, and detailed explanations are also provided for how the participants were recruited. Afterward, I explain the process of data collection and analysis in detail. In the end, the ethical considerations and my roles in the research process are elucidated.

3.2 Research design

The study employed a qualitative research design involving 12 EFL teachers teaching EAP writing courses at the tertiary level in China. The purpose was to explore the complexity of the EAPWT expertise system constituents and the dynamism of its development. The data collection was divided into two stages: semi-structured interviews for all the participants and follow-up case studies on four. Data collection in Stage One aimed to examine the multi-leveled and interacting teaching expertise components; in Stage Two, the four participants' ongoing EAPWT practices and their changes were observed for one or two academic years to uncover the teaching expertise development process and the factors triggering or restraining the changes, during which rounds of semi-structured interviews, informal talks, and the relevant documents were the data sources.

The two-stage qualitative research design was to address the following research questions.

Regarding the complexity of EAPWT expertise constituents:

- (1) What components comprise the EAP writing teaching expertise system?
- (2) How do the components interact and holistically inform the EFL teachers' EAP writing

teaching?

Regarding the dynamism of EAPWT expertise development:

- (1) What developmental processes and changes have the EFL teachers experienced while developing their expertise in teaching EAP writing?
- (2) What factors have contributed to their teaching expertise development?
- (3) What constraints have impeded their teaching expertise development?

3.3 Research context and participants

In the EAP teaching context in China, two significant groups of teachers – subject teachers from non-English majors and EFL teachers – have disputed responsibilities and roles. The study targets EFL teachers teaching EAP writing courses at the tertiary level because universities still mainly recruit EFL teachers for their massive EAP writing courses, given the demanding language requirements to teach these courses and the national policy for university English teaching. Thus, tertiary-level EFL teachers who become EAP teachers no longer teach professional English to English majors or general English to non-English majors. The national standards for the English curriculum at the tertiary level explicitly highlight the integration of general EAP teaching into college English courses.

The participant selection followed a qualitative approach. Purposeful sampling (Palinkas et al., 2015) was adopted to recruit participants who would possibly produce the information concerning the research topic in depth. The study was designed around the complex and dynamic nature of expertise, and its maintenance and ongoing development, which requires a life-long effort and deliberate practice (Casanave, 2019). Accordingly, the participants do not necessarily have to be expert teachers in studies investigating expertise. However, scholars

have yet to reach any consensus on how to identify expert teachers as their participants (Palmer et al., 2005), although novice and experienced teachers can be roughly distinguished by their years of teaching. Some researchers regard novice teachers with one or two years of teaching experience (Karataş & Karaman, 2013) or less than five years of practice (Davis et al., 2006; Lavigne, 2014). Therefore, teachers teaching EAP writing courses with varying teaching experience were recruited for the study. The participants' teaching experience diverged in their length of teaching years and differed in the subjects and the types of students they taught. EAP writing teaching reflects features of L2 writing, sharing the purpose of improving students' English writing competence; thus, the study intentionally involved participants with and without English writing course teaching experience.

To find targeted participants, I began the recruitment by posting a notice on social media and also sent it to friends working at tertiary-level institutions. The notice included a brief introduction about the research topic, the research aims, the data collection methods, and descriptions of potential participants. The participant-recruitment process, however, did not proceed as expected. The primary targets were those easily accessible to the author, who taught at tertiary-level institutions in Chongqing city, the provincial capital of one municipality in China where my network was centered. Ideally, it would have been convenient and efficient if the case study participants were teachers in Chongqing for the class observations and interviews. However, during the participant-recruitment process, insufficient participants were recruited at the first stage due to the author's social connections limitation.

Furthermore, multiple cities in China witnessed multiple lockdowns due to the corona-virus pandemic in 2020, forcing tertiary-level teaching online irregularly. Accordingly, this

situation allowed the author to collect classroom observation data from online classes. This way, the range of potential participants expanded to participants working in other cities.

Ultimately, the study involved 12 EAP writing teachers (eight females and four males, as seen in Table 3.1) from nine universities in mainland China's six cities for the first stage.

Four participated in both stages based on the accessibility and the participants' willingness.

The pseudonyms are used in the table below.

Table 3.1

The participants' information

Name	Gender	Age range	Degree	Years of EFL teaching	Writing teaching experience (Yes/No)	Years of EAP writing teaching	Target students
Mia	Female	30-40	Doctor degree	3.5 (<10)	No	3.5, 6 rounds	Postgraduates non English majors
Carrie	Female	30-40	Doctor degree	10-15	No	5 years for undergraduates; 2 years for postgraduates	Undergraduate English majors postgraduate non English majors
Jane	Female	30-40	Master degree	10-15	Yes	1	Undergraduates English translation
Jose	Female	30-40	A doctoral student	10-15	Yes	2	Undergraduates English teaching pre-service students
Zac	Male	30-40	Doctor degree	10-15	Yes	6	Undergraduates English majors
Gerald	Male	41-50	Master degree	16-20	No	2 years for undergraduates; 5 years for postgraduates	Both undergraduates and postgraduates non English majors
Lisa	Female	41-50	Master degree	16-20	No	4	Undergraduates non English majors

Quinn	Male	41-50	Master degree	21-25	Yes	8	Undergraduates non English majors
Flora	Female	41-50	Master degree	21-25	No	5	Undergraduates English majors
Kade	Male	41-50	A doctoral student	21-25	Yes	7 in-consecutive rounds from 2010 to 2022	Undergraduates English majors and English as a second major
Linda	Female	51-60	Doctor degree	21-25	Yes	7	Both undergraduates and postgraduates English majors
Hallie	Female	>60	Doctor degree	>30	No	16; 1 year for undergraduates	Both undergraduates and postgraduates English majors

Moreover, the participants' teaching experience varied in type and length, as illustrated in Table 3.1. Most participants (except Mia) were experienced EFL teachers, six of whom had taught writing courses before. Compared to their EFL teaching experience, EAP teaching years were much shorter.

3.4 Data collection

The data were collected in two stages. In Stage One, 12 EAP writing teachers from universities located in mainland China were interviewed to explore the EAP writing teaching components. Semi-structured interviews were adopted to elicit the participants' descriptions concerning their EAP teaching experience, the current teaching design and implementation, students' achievements, critical incidents, and challenges. In Stage Two, four participants were followed after the first round of interviews for one or two academic years, depending on their curriculum arrangement and the convenience of the teaching situations. Semi-structured interviews, classroom observations, and informal talks were conducted, and teaching documents were collected to trace the changes the participants had experienced in developing their EAP writing teaching expertise.

Seven of the 12 participants I interviewed individually resided in Chongqing and were interviewed online or offline at their convenience. The other five lived in other cities and were interviewed online. Before the interviews, I approached the participants using WeChat (a popular online chatting tool in China), introduced the study, discussed the interview steps, sent the interview protocol (Appendix 1), and asked them to prepare relevant materials to help them recall their teaching as needed. The interview questions contained three main parts. The first part encompassed questions regarding the participants' teaching experience and current teaching, i.e., a brief introduction about how they became EAP writing teachers, how the course was developed through the past years, their current class settings (target students, the number of classes and class size), the course design (course goals, teaching content and methods, and frequently-used activities) and teaching implementations, their rationale, achievements and challenges, and their evaluations. The second part centered on eliciting the participants' perceptions of EAP writing teacher expertise concerning experience, knowledge, skills, and attributes they believed teachers needed to develop when teaching an EAP writing course.

When being interviewed in person, the participants proposed locales such as their offices, home, or cafes. When being interviewed online, the participants selected the platforms they preferred, WeChat or Tencent Meeting (a prevalent online meeting platform). The participants could freely choose to open the camera or not. Interviews lasted one to one and a half hours and were audio-recorded with the participants' consent.

According to the complex system perspective, the detailed and longitudinal data indicate various levels and kinds of variations and changes within different timescales

(Larsen-Freeman & Cameron, 2008). In Stage two, the four participants (Carrie, Flora, Mia, and Frade) were invited for the following case studies to share the changes they experienced and generated during the ongoing teaching of their EAP writing course for the next one or two academic years. In the first round of interviews, they manifested divergent experiences in refining course design and course delivery. Moreover, as some scholars (e.g., Berliner, 1988; Chingos & Peterson, 2011) stress, the first five years are the most critical period for teacher growth. The four participants stayed in the period or just passed it. Thereby, they could provide rich data concerning changes in teaching expertise development.

Among the four participants, I observed Carrie from September 2021 to December 2022, Flora from May 2021 to June 2022, and Kade from September 2021 to December 2022, all of whom taught one EAP course an academic year; I observed Mia's teaching throughout 2022 over two semesters. Carrie was a particular case because she participated in the pilot study of the Ph.D. project and was interviewed first in November 2020. Thus the first interview she undertook in the main study differed from others, for she elaborated on her past teaching experience and especially how she had developed the EAP writing course. Thus the first interview of the main study focused more on the current course design and delivery. As for the experience, I confirmed the information with Carrie, who corrected me if anything was wrong.

Table 3.2

Data collection for case studies

Name	Time duration	Interviews and informal talks	Classroom observation	Documents
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Carrie	09/2021 - 12/2022	11/2020 pilot study (around 1h) Main study 11/2021 (around 1h) 04/2022 (around 1.5h) 08/2022 (around 1.5h) informal online communications during 10-12/2022	Eight 45-minute lessons in 2021; Ten 45-minute lessons in 2022	Teaching materials, student worksheets, students' homework and feedback, written reflections, students' reflections (mind-maps)
Flora	05/2021 - 08/2022	05/2021 (around 1h) 03/2022 (around 1.5h) 08/2022 (around 1.5h)	Four 45-minute lessons in 2022	Free to access to the online teaching platform resources (e.g., syllabus, teaching plans and Power Points, teaching and learning materials; online activities, homework and teacher feedback etc.); teacher written reflections
Kade	09/2021 - 12/2022	07/2021 (around 1h) 10/2021 (around 1.5h) 04/2022 (around 1.5h) Intensive informal online communications during 11-12/2022	Four 45-minute lessons in 2021; Four 45-minute lessons in 2022	Teaching materials, students' worksheets, students' homework and feedback, teacher written reflections, some online platform resources
Mia	03/2022 - 12/2022	07/2021 (around 1h) 04/2022 (around 1.5h) 08/2022 (around 1.5h) Intensive informal online communications during 11-12/2022	Four 45-minute lessons in 2021; Eight 45-minute lessons in 2022	Teaching materials, students' homework and feedback

The semi-structured interviews were arranged before, during, or after teaching sessions in each semester at the participants' convenience. As suggested by the CDST, all the questions probed the developmental process of EAP writing teaching through the past, present, and future timescales. Each round of interviews (as seen in Appendix 2) focused on the ongoing process of EAP writing teaching, i.e., the parts that remained the same and or were changed each semester and why; the self-evaluation of teaching effects and the achievements and problems; contributing factors to the positive and negative teaching effects; and instructional refinements for subsequent courses. During the interviews, the participants freely discussed

their feelings and memories of past experiences while confirming uncertain information missed in the previous rounds of interviews if needed. I also followed up on participants' viewpoints from previous interviews. For example, Flora provided more detailed depictions regarding her course development. In this way, the interviews' main content conformed to the interview protocols' design. However, additional open questions were asked to gain insights into critical incidents and stories, especially those I had observed and noted down during the classroom observations.

During the interviews, the participants shared documents like their teaching materials, students' homework, teacher feedback, and evaluation surveys to help them recall their teaching and support their opinions. Carrie, Flora, and Kade lived in Chongqing, so the interviews were arranged online or offline according to the participants' preferences and the influence of the pandemic. Mia resided in another city, so I conducted and recorded the interviews online on WeChat or Tencent Meeting Room audio or video with her permission. The face-to-face interviews were audio recorded. I transcribed the recordings with the assistance of Xunfei (an application adopted for automatic transcription), which I manually checked, after which the transcriptions were organized in different Word files for each participant.

In between the rounds of interviews, I observed the participants' teaching to capture their adaptations. The pandemic increased the difficulty of arranging sit-in-class observations. For example, before the pandemic's wide outbreak, I could enter Carrie's classes in the autumn semester of 2021, but not for those in 2022, which were mainly online. Therefore, in 2021, I observed and audio-recorded eight 45-minute lessons during consecutive weeks in the classroom; in 2022, I completed ten 45-minute lesson observations with screen recording,

including my observation notes. Kade's university had campus entrance restrictions that posed complicated admission procedures, which caused Kade inconvenience. Therefore, he audio or video-recorded (if the course shifted to the online mode) his lessons and sent the files to me. Due to technical problems (e.g., the recording failed sometimes) and unexpected issues (e.g., the drive was lost), only four 45-minute lessons for each semester were successfully recorded. Mia was not in Chongqing, so I used a similar method for her offline classes. Fortunately, the university permitted using Tencent Online Room, so she could share the class meeting number and password with me. I observed the online classes as a non-participant observer while taking notes. I observed four 45-minute lessons in the 2022 spring semester and eight in the autumn semester.

Flora's situation was distinct as well. When she was contacted and agreed to participate, her EAP writing course in 2021 was approaching the end, so no observations were arranged. However, Flora provided the account and password for me to enter her online teaching platform, which housed the teaching plans for each lesson, PowerPoints, paper samples, online mini-videos, other resources, and some online discussions. In the spring semester of 2022, the classroom observations were not smoothly arranged because the participants were unavailable for some lessons or there were time conflicts. In the end, I observed four 45-minute lessons, which were representative of the new attempts to adjust her teaching to be more student-centered, as suggested by Flora. The online platform was also free to log in to, and online teaching and learning resources could be browsed anytime. As described above, the data collection process was adaptive due to the participants' varying situations.

Although the data collection process was challenging to control, I tried to build rapport with the participants by actively communicating and sharing empathy regarding their difficulties.

Some informal talks naturally happened before or after the classroom observations or during daily life concerning problems or new teaching attempts. With the enormous support from the participants, documents were shared, which enriched my understanding of the courses and instructions (e.g., online teaching platform resources, textbooks, supplemented teaching materials, students' worksheets and assignments, and teacher-written reflections).

3.5 Data analysis

I tentatively coded each round of interviews and classroom observations and revised the codes in the following rounds of data collection. In this way, the data analysis was intertwined with data collection. For example, in Stage One, after interviewing each participant, I roughly noted down the codes concerning the components of teaching expertise. In Stage Two, I asked more questions in the interviews to clarify my thoughts about the main course design and instructional changes in the preceding rounds for the participants to confirm. When the data for each case were completely collected, the word files containing multiple rounds of interviews, along with the pictures or files of teaching documents, were entered into Nvivo. As for the classroom observation data, I used media software to repeatedly watch the videos or listen to the recordings to capture the teaching adaptations. All the qualitative data were analyzed in conformity using thematic analysis to search for themes capturing patterns in the data to respond to the research questions (Braun & Clarke, 2006).

3.5.1 Coding to understand EAP writing teaching expertise components

To identify and categorize the components of EAP writing teaching expertise, I adopted two cycles of data analysis (Miles & Huberman, 1994; cited by Yuan & Yang, 2022) for the thematic analysis. The first cycle aimed to assign rudimentary codes to data chunks concerning the components. Deductive and inductive analysis was interchangeably employed.

Deductively, holistic coding drew on the essential components proposed by previous studies regarding experience, knowledge, and problem-solving (Herling, 2000). During this cycle, I identified data chunks for these three types. I first created the corresponding codes “knowledge,” “experience,” and “problem-solving” in Nvivo. Take knowledge as an example. It was further categorized into two types, according to Tynjälä (2008): theoretical/ conceptual knowledge (TK/CK) and experiential/ practical knowledge (EK/PK). The former type is explicitly articulated and universally acknowledged with the use of concepts or theories more related to declarative knowledge. At the same time, the latter refers to procedural knowledge and skills (i.e., knowing how), which are gained from practice with personal and tacit features. The data chunks concerning teacher knowledge were identified to match the two groups. For each data chunk, the author-generated codes and the vivo codes, i.e., the participants’ original expressions, were both used to create codes, such as “systematic functional grammar,” “genre knowledge and awareness,” “genre approach,” “process writing approach,” “formative assessment,” “teacher corrective feedback,” “research and academic writing skills,” “knowing the students,” and “knowing the curriculum requirements.” I performed similar steps to create rudimentary codes under the experience and problem-solving categories. When the data did not fit into the three groups, the initial codes were listed in Nvivo for the next analysis cycle.

In the second cycle, the codes in the three code groups were further classified to form themes by comparing existing literature. For example, under the theme of teachers’ TK/CK, the sub-themes regarding “EAP-related knowledge,” “L2 writing teaching approaches,” and “assessment and feedback theories” were identified. The analysis process entailed the repetition of reading, summarizing, and classifying the initial codes. For instance, EAP has been categorized into EGAP (generic skills for academic communications across domains)

and ESAP (EAP related to specific disciplinary discourses) (Dudley-Evans, St John, 1998). The initial codes, such as “genre knowledge about academic writing” and “genre awareness,” formed the theme of EGAP-related knowledge; the ones (e.g., “subject-matter knowledge in different domains” and “disciplinary discourse”) constituted the theme of ESAP-related knowledge. Besides EAP-related knowledge, the codes (e.g., “systematic functional grammar” and “L2 writing development”) showed L2-writing-related knowledge.

Moreover, I drew on the concept definitions explained by teacher knowledge frameworks to understand TK/CK for teaching EAP writing courses, such as pedagogical content knowledge (PCK) (Shulman, 1986, 1987) and technological pedagogical content knowledge (TPACK) (Lundeberg et al., 2003). The participants’ PCK was reflected in the codes alluding to some EAP and L2 writing teaching approaches, such as the “genre approach”, “project-based teaching,” and “process writing approach.” Similarly, the teachers’ TPACK was observed in the codes (e.g., “flipped classroom” and “blended teaching,” indicating the theme of “technology-integrated teaching approaches.” The group of codes (e.g., “formative assessment and feedback”, “teacher corrective feedback”, and “portfolio assessment”) were matched to the theme of “assessment and feedback knowledge.” The codes and sub-themes of TK/CK are illustrated in Table 3.3.

Table 3.3

Codes and sub-themes of theoretical knowledge/ conceptual knowledge (TK/CK)

Sub-Themes of TK/CK	Codes
EAP-related knowledge	EGAP-related knowledge: genre knowledge about academic writing, genre awareness; ESAP-related knowledge: subject-matter knowledge in different domains, disciplinary discourse
EAP teaching approaches	genre approach, project-based teaching
Knowledge of L2 writing and	genre approach,

writing teaching	process writing approach
Technology-integrated teaching approaches	flipped classroom, blended teaching
Assessment and feedback knowledge	formative assessment and feedback, teacher corrective feedback, and portfolio assessment

In addition, the initial codes concerning teachers' EK/PK were divided into the following eight groups (i.e., sub-themes of EK/PK), which are presented in Table 3.4.

Table 3.4

Codes and sub-themes of experiential knowledge/ practical knowledge (EK/PK)

Sub-Themes of EK/PK	Codes
Academic writing and research skills	literature search, critically reading literature, paraphrasing, summarizing, and methods of data collection and analysis
Contextualized knowledge	knowledge of students (e.g., their backgrounds, their needs, and their writing competence levels), knowledge of teaching contexts (e.g., institutional requirements, course settings, class sizes)
Adaptive teaching	adjusting teaching to students' reactions, adapting teaching to students' backgrounds and needs, adding or reducing content in teaching materials, flexible teaching methods, student-centered teaching, learning-centered teaching
L2 writing teaching methods and pedagogical strategies	intensive in-class writing practices, writing strategies, and multiple revisions
Technology-integrated pedagogical strategies	the use of multiple online platforms, building online resources, implementing online activities
A balance of teacher control and students' self-exploration in classroom management	reducing teacher talk and increasing time for students' self-explorations, time management, organizing students' group work with detailed instructions
Teacher-student relationship-building skills	creating student-friendly classroom environment, seeking students' feedback for teaching effects, frequently communicating with students
Assessment and feedback strategies	implementing peer review/ self-assessment activities, selecting some students' homework to provide teacher feedback, cooperating with the teaching assistants

Teacher experience was specified with the sub-themes of “academic learning experience,” “academic practice experience,” and “teaching experience.” As for problem-solving, the participants did not describe the detailed process but focused on the problem types and the

attempts for more effective solutions. Therefore, the sub-themes were described as “identifying major problems” and “continually seeking better solutions.” The participants revealed three significant problems in EAP writing teaching, that is, “the improper course setting,” “students’ low learning motivation and negative attitudes,” and “the mismatch between teachers’ specialties and the course demands.” During the problem-solving process, each participant suggested personalized ways, which were hard to classify but reflected the feature of progressive problem-solving proposed by Bereiter and Scardamalia (1993). Accordingly, the original theme of “problem-solving” was changed to “progressive problem-solving.”

The initial codes that did not belong to teacher knowledge, experience, and problem-solving themes were reviewed and analyzed to form new themes referring to the relevant literature. For instance, all the themes mentioned above concerning knowledge demonstrated “the integrated knowledge base” (Lee & Yuan, 2021; Tsui, 2005) of an EFL teacher instructing EAP writing courses.

According to Shulman and Shulman (2009) and Lee and Yuan (2021), the codes regarding “my standards of good EAP writing teaching,” “better satisfying students’ needs,” and “seeking more effective teaching” were summarized to the theme of “visions of EAP and EAP writing teaching”; the codes like “expecting to become an expert in EAP field” and “planning for future doctoral study” were understood as the theme of “long-term career visions.” Informed by self-regulative knowledge (Tynjälä, 2008), teacher meta-cognition (Veenman, 2012), and agency (Bandura, 2001), codes such as “constantly reflecting on my teaching problems,” “contemplating the possible reasons,” and “questioning my instruction” were categorized under the theme, “deliberate self-reflection on teaching issues.” The codes

such as “regulating my negative emotions,” “changing my intentions,” and “finding ways to improve my teaching” were put under the theme of “self-regulating behaviors and emotions.” With the proper deduction, a new theme was created, labeled as “adaptive agency” (Goodwyn, 2019), since the ideas of setting goals, self-reflection, and self-regulation are the indicators of the agency. The findings demonstrated the participants’ efforts in survival and coping with challenges in EAP writing teaching, which conformed with the idea of adaptive agency.

Referring to studies on the affective dimension of teaching expertise, “motivation” is another significant theme. Combing the analysis of initial codes, the codes such as “being responsible for my students’ learning” and “out of the conscientiousness” were assigned to “the sense of commitment” group; the codes like “caring for my students’ learning” and “being fulfilled for students’ gains” showed the participants’ “sincere care for students” and “passion for teaching and willing to experiment with new methods” and “enjoying conducting research” presented their “passion as teachers and researchers.” All the summarized themes constructed a higher-level theme called “affection.” In a similar vein, the codes (e.g., “being open-minded,” “willingness to make changes and innovations,” and “continuous learning”) were concluded as the sub-themes of “proactive attitude toward self-updating.”

In the end, five themes were formed: “experience,” “an integrated knowledge base,” “progressive problem-solving,” “motivation for changes,” and “adaptive agency.” All the initial codes and the categorized themes regarding EAP writing teaching expertise are provided in Appendix 3.

Inspired by CDST (de Bot, 2017), the data were further analyzed to explore the system complexity characteristics, such as multi-leveled components co-existing with emergent

features produced by the interactions between components. I selected the incidents and examples as evidence of the interactions between the components identified by the two data analysis cycles.

3.5.2 Coding to identify the developmental processes

According to CDST (de Bot, 2017), to explore the dynamics of the EAPWT expertise system, the data analysis focused on the dynamic evolving process with changes from the past, present, and expected future. The analysis followed the two cycles outlined above for the interview and documentary data. The initial codes summarized the data chunks describing the instructional changes. These included: “changing the teaching to be more student-centered,” “shifting the course to focus on paper publication,” “revising the peer review activities,” “changing the way of assessing students’ writing,” “adding more in-class writing practice,” and “reducing the content in the student worksheet.” Keywords implying change were identified as the signals, e.g., “changing, shifting, revising, adding, or reducing.”

Themes were identified by categorizing initial codes referring to the existing literature.

Informed by the notion of teachers’ macro- and micro-level adaptations (Corno, 2008; Gallagher et al., 2022), the changes concerning course level and class level were differentiated. When the participants mentioned changes regarding course design (e.g., course goals, content arrangement, teaching modes, and course assessment) and course materials (e.g., curriculum files, teaching, and learning materials), the codes were grouped into macro-level adaptations. When the participants elaborated on the changes regarding course delivery (e.g., teaching implementation in class, classroom activities, and assessment and feedback in class), the codes were classified under themes of micro-level adaptation. Since assessment and feedback comprised both levels, they were defined as a new theme. Another

new theme was located when the participants depicted their emotional changes reflecting different mental states, such as “becoming less nervous” and “turning tranquil without emotional ups and downs.” After the two cycles of data analysis, the main changes were grouped under the themes, i.e., “changes in course design,” “changes in course delivery,” “changes in assessment and feedback,” and “changes in emotions.”

Classroom observations and documentary data were coded and put under themes to triangulate the data among the identified changes. To analyze the classroom observation data, I referred to the codes and data chunks formed in the interview data analysis. For example, Carrie mentioned that she changed to teach from the students’ perspective by being more student-centered. She divided students into groups studying the same research, such as linguistics, literature, and translation. Students were encouraged to work in groups to share materials, conduct peer reviews, and complete in-class writing. I repeatedly played the observation videos or audio recordings to identify the examples matching Carrie’s descriptions and find supporting viewpoints along with the guidance of observation notes. When I observed the same activities enacted differently in successive semesters, I marked them and noted the changes in research memos.

Based on Loughland and Alonzo’s (2019) Teacher Adaptive Practices Coding Guide, I reviewed the data to identify more classroom teaching adaptations indicating the instructional changes at the micro-level. The coding guide encompassed 15 Adaptive Practice Indicators (as seen in Appendix 4), working as a checklist to identify teachers’ adaptive teaching practices. The 15 indicators were grouped into three categories to facilitate the data examination: (1) utilizing formative assessment to adjust teaching; (2) adopting student-centered teaching; and (3) teachers’ flexible class control and improvisation. I then

selected the clips matching the three groups and compared them with the detailed indicators. As for the documents, only the ones corresponding to or contradicting the data from interviews and classroom observation were chosen and noted in research memos.

To illustrate the dynamic developmental process of EAP writing teaching expertise, aside from tracing the changes, the data regarding the changes of expertise components identified in Stage One of the study were recognized and analyzed. For example, the participants explained that internal and external factors pushed them to renew or accumulate knowledge, enrich experience (e.g., academic learning and practice experience), and be dedicated to progressive problem-solving and refining their teaching. The internal ones could be exemplified as: “the commitment as teachers and researchers,” “sincere care for students,” “intentions for self-updating,” and “willingness for continuous learning.” The external ones include: “the students’ negative reactions,” “the new teaching inspirations,” and “the new requirements of the program accreditation.” They also identified negative factors like “distractions from other roles in and out of school,” “improper course settings,” and “fixed requirements for summative assessment.”

The qualitative data were collected from several sources for data triangulation to enhance research credibility and reliability (Carter et al., 2014), such as semi-structured interviews, informal talks, and relevant documents (e.g., teaching materials, students’ worksheets or other learning materials, teacher written reflections, and online platforms and activities). The codes and preliminary findings were also sent to the participants for checking. For example, the changes the participants made or experienced were summarized in the form for them to check the accuracy. Translations of their comments were presented in paragraphs for the participants to check whether the meaning was conveyed accurately.

3.6 Ethical considerations and self-positionality

Research approval (Appendix 5) from the Education University of Hong Kong was obtained before data collection. All participants involved in the study signed an informed consent form (Appendix 6). As Denzin and Lincoln (2011) stressed, “informed consent” is the foundation of ethical research, and it should contain a clear explanation of the research intent and design, participants’ information, data collection, participants’ commitment, the data usage, and any potential benefits and risks.

When collecting data, there were no conflicts of interest. The author respected the participants’ opinions, expressed no judgment, and became friends with some of them. As I interviewed teachers from different institutions, data leakage was avoided. Moreover, I did not interrupt the teachers or students during classroom observations or contact students after class. When reporting the findings, the participants’ identity was kept confidential by using pseudonyms and removing their affiliations using general descriptions, such as “a comprehensive university,” which are known only to me.

Considering the potential harm to the participants, I adopted some measures. First, the research data were saved with their pseudonyms as file titles on my laptop with a security code. Second, upon transcription, any identifiable markers, such as personal names and places, were removed from the transcript. Third, all personal data will be deleted after all the findings are published or reported at academic conferences.

As for my self-positionings in the study, I continually reflected on my roles to avoid the researcher’s bias in qualitative studies, being involved in “reflexivity.” It is perceived as “the

ways in which a researcher critically monitors and understands the role of the self in the research endeavor” (Daly, 2007, p. 188). On the one hand, I was aware of my past experiences and knowledge that might influence the data interpretation. To minimize the subjectivity, I sought confirmation from the participants about my understanding of their thoughts, sayings, and feelings. Moreover, I did not interrupt or judge the participants’ sharing in interviews. I also employed non-participatory classroom observations to keep my distance and noted down behaviors and activities that occurred naturally in class.

On the other hand, I regarded myself as their friend who patiently listened to their stories, shared my observations, and discussed encountered issues. Owing to my experience of being an L2 writing teacher and researcher, I felt empathy for the participants’ struggles and intentions in EAP writing teaching practices. Meanwhile, I shared my experiences and feelings, encouraging them to open up. As Ellis and Berger (2003) opined, the interview process is “more a sea swell of meaning-making in which researchers connect their own experiences to those of others and provide stories that open up the conversations about how we live and cope” (p. 161). Then I could build rapport with my participants, which promoted the socially produced research ideas and situated knowledge through our in-depth communications.

Chapter 4: Findings

4.1 Chapter introduction

This chapter intends to describe research findings reflecting the complexity and dynamism of the EAPWT expertise system. According to de Bot's (2017) Complex Dynamic Systems Theory, a system's complexity is caused by its multi-leveled and interacting components. The dynamism is demonstrated by the changes in the system development process over varying timescales.

The first section demonstrates findings concerning the multi-faceted system components with tiers of sub-components. More explanations regarding how the components informed the teachers' EAPWT practices are provided.

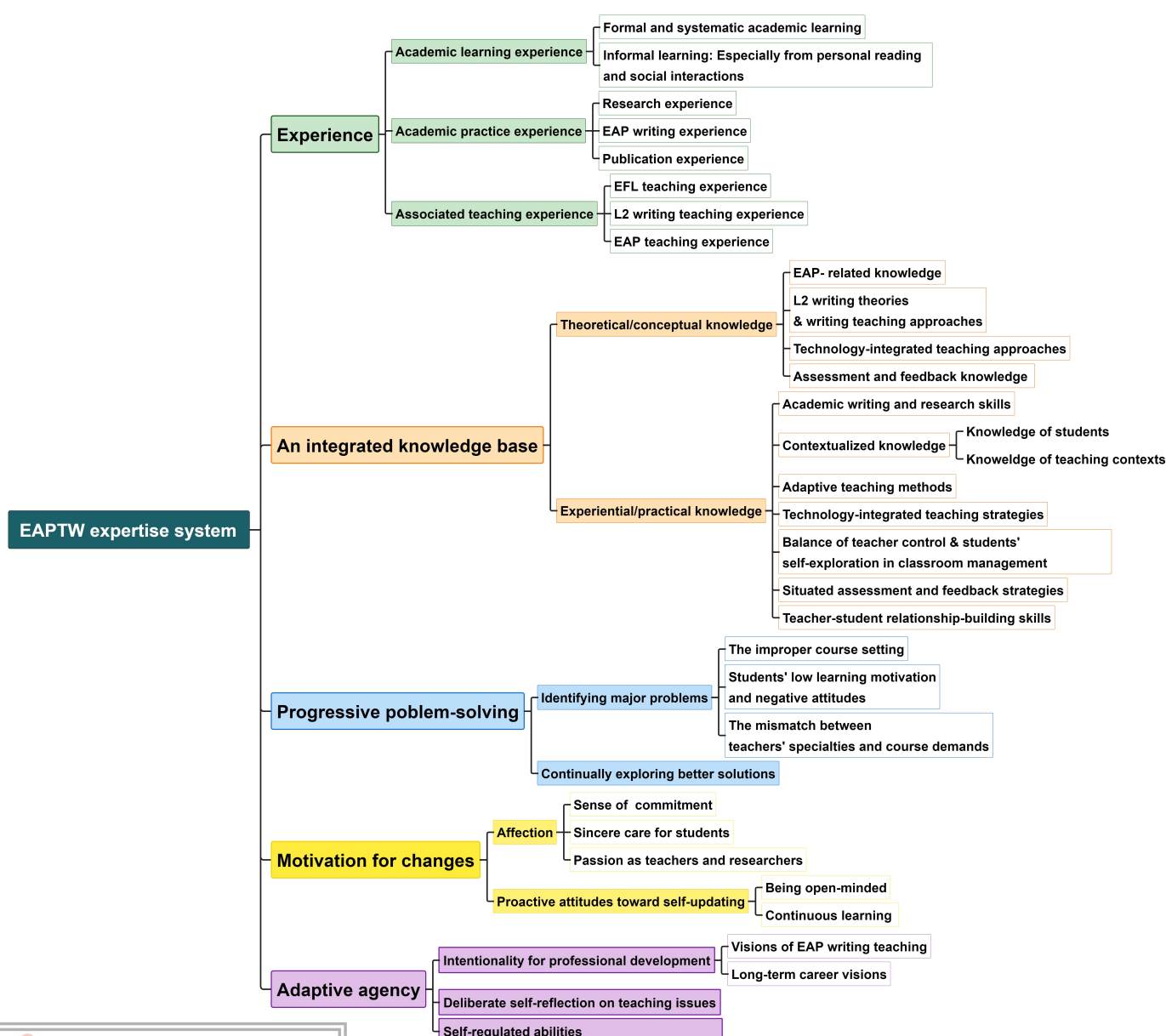
The second section describes the findings from four cases to illuminate the dynamism of expertise development. The diverse developmental processes experienced by the four participants are depicted by illuminating the initial conditions and changing attractor states (Hiver, 2015; Larsen-Freeman & Cameron, 2008). Moreover, the section delineates how EAPWT expertise components developed when the attractor states altered. Meanwhile, it evidences the expertise development with the refinement of course design and delivery, the amelioration of assessment and feedback, and the changes in teachers' emotions. In addition, drawing on the ecological view of human development (Bronfenbrenner, 2005), teacher-environmental interactions can influence the EAPWT expertise system and its advancement. Accordingly, the case study findings also report the individual and environmental factors prompting the changes and the expertise development. The different constraints in the participants' socio-cultural contexts are expounded at the end of each case.

4.2 The components of the EAPWT expertise system

After analyzing the interview data from 12 participants, the study identified five components central to EAPWT expertise: experience, an integrated knowledge base, progressive problem-solving, motivation for changes, and adaptive agency. The following sections provide detailed descriptions of each component with its sub-components and explain the components (as seen in Figure 4.1) and how they inform EAPWT.

Figure 4.1

Components and sub-components of EAP writing teaching (EAPWT) expertise



4.2.1 Experience

According to Herling (2000), there are three fundamental components constituting teaching expertise: “knowledge, experience, and problem-solving” (p. 13). Teaching expertise has been considered as a function of teaching experience (Gonzalez & Carter, 1996). In the current study, the participants identified three types of experience indispensable for their EAPWT expertise system: academic learning experience; academic practice experience (i.e., research, EAP writing, and publication experience); and associated teaching experience (i.e., EFL writing teaching experience, L2 writing teaching experience, and EAP teaching experience). These experiences were not only sources of EAPWT expertise but were also considered essential constituents.

4.2.1.1 Academic learning experience

Seven participants (Carrie, Kade, Hallie, Jose, Linda, Zac, and Mia) received formal and systematic academic training during their doctoral or postdoctoral studies. Four (Kade, Hallie, Jose, and Linda) had pursued doctoral or postdoctoral studies while working as university EFL teachers. The other three started EAPWT right after obtaining their Ph.D. degrees. All seven participants acknowledged the benefits of completing the doctoral studies for their EAP writing instruction. Some (e.g., Linda, Jose, and Kade) said that systematic formal learning concerning a particular research field established a solid theoretical foundation for their EAP writing instruction. For instance, Linda mastered theories of Systemic Functional Linguistics and discourse analysis that, forming part of her postdoctoral experience, enabled her to integrate the belief of reading to learn and learning to write into the EAP writing course syllabus. As she emphasized, “Genres are social activities with staged goals, so writing is about communicating with others in different work spaces and not simply about completing an essay” (Linda, Interview). Accordingly, in EAPWT, Linda mainly guided students to use

discourse analysis to analyze genre features and closely related academic reading to understand the application to academic writing.

Moreover, learning Cognitive Linguistics for her Ph.D. research enabled her to realize the thinking mode behind language usage. She began to look at the relationship between thinking and language, emphasizing thinking training in EAPWT. Due to a developing belief that “thinking training was most crucial” (Linda, Interview), Linda expanded her theoretical learning in critical thinking. She implemented the critical thinking framework into EAPWT as criteria for evaluating academic reading and writing. In Linda’s opinion, teachers with no experience in systematic theoretical learning might not implement teaching correctly because they failed to comprehend the theories fully:

Without a theoretical foundation, the teachers taught the writing courses with the same framework, combining extensive reading with everyday writing practices. It revealed their superficial comprehension of reading to learn and learn to write. If teachers had not systematically learned relevant linguistic and cognitive linguistic theories, they were not sensitive to and capable of discourse analysis that could not be fostered by one or two short training. (Linda, Interview)

Similar to Linda’s gains from her doctoral study, Jose studied synthesis writing in depth; Kade understood theories of L2 writing development, genre approach, and formative feedback; Mia was familiar with L2 writing pedagogical knowledge, critical thinking, and written corrective feedback; and Zac felt able to apply the linguistic theories in teaching. These four teachers, like Linda, endeavored to apply the learned theories to teaching EAP writing in ways that featured their instructional practices. For instance, in their teaching practices, Kade and Mia paid particular attention to students’ writing process by valuing peer

review and multiple revisions. Furthermore, Kade insisted on using portfolio assessment by collecting students' writing assignments. Mia created opportunities for students to evaluate their peers' writing along with her corrective written feedback and immediate in-class oral feedback to help students revise their writing.

In contrast, Carrie's doctoral study was focused on L2 listening acquisition, so she did not directly apply her postgraduate theoretical learning to her instruction. However, she was immersed in EAP writing and research for her thesis, which she regarded as her "peak time of academic development" (Carrie, Interview). Moreover, as a student, she had completed an EAP writing course which played as the exemplar of successful teaching. Knowing how the teacher taught the course and how students responded afterward, she transferred her learning resources into teaching materials. She followed the teaching method she believed was operative and productive from a learner's perspective. Her mastery of EAP writing and the experience of a practical EAP writing course boosted her confidence to teach EAP writing. Due to the learning experience, she was aware of learners' possible difficulties. She said, "I would deliberately guide my students to circumvent the detours in which I was trapped during my learning process, leading them to experience fewer struggles and improving teaching efficiency" (Carrie, Interview).

The participants with no doctoral degrees also highlighted the value of systematic academic training from doctoral studies to consolidate academic writing and research competence. For instance, Quinn believed that teachers with a Ph.D. degree could easily handle the content of EAP writing courses because they have written their thesis and probably several research paper publications, the writing of which was the systematic training itself. Jane expected to pursue doctoral study one day to broaden her horizon to better instruct students in academic

writing, such as topic selection and literature review.

The interview findings show that, before teaching EAP writing courses, participants had yet to experience other forms of systematic training in EAP writing or teaching EAP writing apart from their doctoral or postdoctoral studies. During their professional work, all the participants (with or without doctoral or postdoctoral study experience) resorted to various informal learning opportunities to acquire, maintain or develop their expertise in teaching EAP writing. Personal reading was the standard method, such as collecting and reading dozens of EAPWT textbooks (e.g., Flora and Flora) and newly-published papers in the EAP or related subjects (e.g., Carrie and Mia). Some (e.g., Linda and Quinn) suggested that the more they read, the better.

Another method frequently mentioned by participants was learning from social interactions. The teachers without doctoral degrees often took informal learning chances to enhance their research and academic competence. For example, Lisa attended several academic writing and publication training sessions and lectures regarding discourse analysis, which “elaborated EAP as a valuable new direction” (Interview) so that she could transfer from a general English teacher to an EAP teacher. Quinn recommended lectures organized by some presses in which journal editors made practical suggestions. Likewise, the teachers participated in academic conferences, seminars, or lectures to communicate with experts, scholars, or teachers from other universities and exchange ideas about teaching EAP writing or teaching in higher education. For example, Flora recounted what she had gained from participating in a symposium held at a university concerning the project-based teaching mode in college English teaching, which inspired her to change the current course design. Carrie presented and shared her EAPWT practices at an academic conference to attain feedback from others.



At work, multiple social communications facilitated the teachers' professional learning. Jane consulted her colleagues with doctoral degrees to ensure her teaching's accuracy. Jose discussed her teaching ideas with colleagues exchanging thoughts and feelings in teaching practice. Lisa participated in another EAP writing course teaching group that guided students to publish research papers. She cooperated with teachers from other schools in the same university to refresh her knowledge of EAP writing.

In the same way, participants Kade, Gerald, Linda, Quinn, and Flora worked with other teachers as a teaching team to prepare teaching resources, discuss teaching issues, and collectively reform the EAP writing courses. At the same time, some highlighted what they had learned from communicating with their students. For instance, Mia approached her students from various science and technology majors to verify her understanding and analysis of the subject-related parts in sample papers. She was always willing to listen to students' ideas in class. Carrie and Jane also incorporated their students' sharing as teaching resources. Like Carrie, Mia, and Jane, Linda regarded students as equal counterparts who enjoyed discussion and idea-sharing and brought insights and reflections to the teaching.

Some participants also acknowledged that social interactions during earlier doctoral studies had influenced their perceptions about and devotion to the contemporary teaching of EAP writing. For example, some learned from examples set for them by their supervisors. Jose was impressed by "the broad vision" (Jose, Interview) with the high academic competence of a professor who incisively pointed out her learning issues, inspiring her to "jump out of her comfort zone" (Jose, Interview). Jose was motivated to reform the EAP writing course by investigating the new teaching mode with synthesis writing theories that challenged the teaching policy in her school (e.g., the curriculum requirement for specific textbooks),

supported by her wide literature reading and the empirical research findings. Similarly, Carrie emphasized her persistence in developing the EAP writing course and patience in assisting her students because she had obtained her supervisor's guidance and support. She affirmed that "the teacher's devotion would influence the students' learning attitude, which is the modeling effect" (Carrie, Interview). Kade supplemented what he had learned from communications with colleagues in the same office during his doctoral study, who widened his horizons in L2 writing concerning developing students' writing competence and genre awareness. He then used what he learned in the EAP writing course.

4.2.1.2 Academic practice experience

The participants acknowledged that their experience of academic practice (i.e., EAP writing, research-related, and publication experience) was an essential part of their expertise in teaching EAP writing. First, it facilitated more practical, concrete, and updated teaching. Zac stressed that, without academic writing and research experience, the teachers would lack personal and deep comprehension concerning theoretical knowledge and skills. Thus, as Flora agreed, "The teaching would be simply repeating what the textbooks wrote and mechanically scripted" (Interview). Jane gave an example that, when teaching literature review, she admitted that a lack of experience in EAP writing and publication limited her to "theoretical and abstract knowledge explications" (Interview).

In contrast, participants who had conducted research and written for publications could apply their experience in instructing typical writing issues or practical techniques in EAPWT. For example, Kade stressed his attention to some writing problems often neglected by Chinese writers, such as the usage of the definite article and logical issues, which his supervisor in his writing frequently diagnosed. Mia described a session on how to publish journal articles for

doctoral students. She shared her experience of the publication process and valuable tips, from finding a journal to responding to reviewers. She also used her published research articles as samples for students to analyze how drafts were revised. Carrie recalled, “I had been in close contact with common situations where EAP writing knowledge and skills were applied, such as conducting relevant research, supervising students, and writing for publication” (Interview). She believed that these intensive practices enabled her to identify advances in the field of EAP writing and to develop practical strategies. Carrie further explained, for example, the comprehension of language features, the usage of vocabulary, and the psychological experience of the writing process, all of which would be transformed when she possessed EAP writing experience. She specified the significance of practical experience with a comparison to swimming:

EAP writing was similar to swimming as a skill. You would never find someone who could not swim to teach you swimming. When you swam well, you could predict possible difficulties and guide learners to bypass potential mistakes. (Carrie, Interview)

Second, it was believed that their experience of the whole research, writing, and publishing process helped the teachers build confidence in managing the teaching content and the credibility of their teaching. As some participants (e.g., Flora and Jane) stressed, if the EAP writing teachers did not conduct research or publish papers, their instruction was unlikely to convince the students. Teachers with relevant experience (e.g., Carrie, Flora, and Zac) expressed fewer concerns about mastery of EAPWT content than those without publications (e.g., Jane and Lisa). Nevertheless, publishing was perceived to be demanding for English teachers at the tertiary level if they had yet to experience systematic training in the past. Flora said that it took her years of self-learning and exploration to master research and academic writing skills, and she still found writing and publishing a challenge. Lisa was still struggling

for publication even after teaching the EAP writing course for several rounds, showing the difficulty of transferring knowledge and skills into practice. Despite the need to enhance academic competence, Jane and Quinn both mentioned the need for an academic atmosphere in universities where teachers were not eager for academic development but were fully occupied in daily teaching or other administrative work. Jane described colleague interactions as “limited to work and life being devoid of academic communications” (Interview). In contrast, participants with doctoral study experience (e.g., Carrie, Hallie, Jose, Kade, and Mia) were naturally involved in research and publication while working. It was because they had formed the fundamental academic competence and habits of mind with an academic way of thinking to support their ongoing academic development.

Moreover, they tended to create a teaching-research nexus. Carrie began to follow research in the EAP field after teaching the EAP writing course, reading the more relevant literature (e.g., genre approach, meta-discourse, and the community and identity), and increasing her research interest. Correspondingly, Kade and Mia both conducted studies on their EAP writing classes: Kade applied for projects to develop the effects of EAP course teaching, and Mia collected data on students’ knowledge and perceptions of plagiarism while, in turn, teaching relevant knowledge to deal with students’ everyday problems. Carrie summarized that her experience of learning, teaching, and academic practices aligned with what she described as “a circle” (Interview). It was, therefore, “effortless” (Carrie) for her to develop an EAP writing course, given her enhanced expertise. In particular, the EAPWT was the research site and the source of inspiration. In return, the research findings informed the direction of teaching development.

Furthermore, the experience of being researchers and EAP writers enhanced the teachers’

ability to assess students' work, which equipped them with discernment. For instance, some participants (e.g., Jane, Linda, Flora, and Zac) believed that experienced researchers and academic English writers could provide students with more accurate feedback and concrete guidance. For example, when selecting research topics, the teachers could “share practical topic-selecting strategies” (Flora), “guide the students to evaluate and discuss the quality of the topics” (Linda), “diversify and expand the ideas of selecting proper topics” (Jane), and “provide specific and effective guidance, such as the right way to phrase the topics” (Zac). Mia offered another example when she said her academic practices (i.e., reading, researching, writing, and publishing) enabled her to evaluate students' writing and identify problems. She also believed that high proficiency in English was required to recognize students' language issues and offer appropriate suggestions.

4.2.1.3 Associated teaching experience

The participants' teaching experiences varied. There were differences in years of EFL teaching and teaching EAP writing. For example, Jane and Jose had taught English at the tertiary level for more than ten years and won multilevel teaching awards but were novices in teaching EAP writing, having started in 2020 and 2021. Apart from Mia, the other participants were more experienced in EFL teaching than in EAP writing.

The divergent teaching experiences influenced the participants from the following aspects when they initiated teaching EAP writing courses. First, it was noteworthy that the EFL teaching experience helped the teachers embrace the challenges of teaching a new course. For instance, Carrie and Mia both commenced teaching EAP writing courses after finishing their doctoral studies with similar concerns about a lack of subject-matter knowledge in other domains/ research directions. However, they enacted their new roles with opposite mental

states. Carrie stressed that she was not nervous initiating the EAPWT as she understood “how to manage new classes and get acquainted with students” (Interview) due to her EFL teaching experience over a decade. In line with Carrie, other participants with long years of EFL teaching experience were familiar with course preparation and did not resist teaching new courses like EAP writing courses. As Gerald highlighted, he believed he could manage any new courses as an experienced EFL teacher. Flora, Jane, Jose, and Kade even took the initiative to apply for teaching the EAP writing courses and regarded EAPWT as an opportunity for self-development.

In contrast, Mia also had the required EAP writing knowledge and skills but, because she was a novice in EFL teaching, had more concerns about classroom management and struggled more in self-exploration. Mia recalled that “I was anxious even before entering the classroom (at the first two rounds of teaching EAP writing)” (Interview). One reason for the anxiety was her lack of confidence in teaching doctoral students from diverse science and engineering majors. Apart from the lack of related subject-matter knowledge, she was inexperienced in teaching, had transferred to be a teacher from being a student and researcher, and needed to figure out effective ways to control teaching procedures and manage students. As Mia said, “With no guidance and experience, I could only explore the teaching by myself” (Interview).

Second, the participants’ L2 writing teaching experience influenced the teachers’ EAP writing instruction preferences. Jane, Jose, Kade, Linda, Quinn, and Zac, with EFL writing teaching experience, highlighted the significance of involving students in various writing practices in their EAP writing instructions, such as sentence or paragraph writing and multiple revisions, along with “the training on language usage (e.g., rhetoric, vocabulary, and sentence structure) and writing strategies” (Zac, Interview), and “teacher feedback” (Kade and Jane, Interview).

As Kade explained, if the teachers obtained writing teaching knowledge and experience, the teaching design and focus would be different:

Teaching writing was distinct from instructing in other language skills. EAP writing teachers familiar with writing instruction would possess more tools, such as product and process approach, portfolio assessment, and corrective feedback, to develop more systematic writing teaching and improve instructional efficiency. (Kade, Interview)

Quinn added one point to Kade's view: "teachers with EFL writing teaching experience could prioritize the teaching focuses and selecting the significant content from the textbook to meet students' situations" (Interview). Quinn especially stressed his focus on instructing students in the writing process, such as the preparation stage concerning forming viewpoints, topic selection, writing resource searching, and critical reading. Kade also spent much time guiding students to experience the whole writing process instead of focusing simply on the writing products. However, only some EFL writing teaching experience could be transferred to their EAP writing instruction. In particular, the task complexity and course time limits constrained the arrangement for writing practice. Zac pointed out that the writing tasks for EAP writing, such as writing literature a review were more complicated than general writing, and students needed more time to complete them. Moreover, the course syllabus incorporated writing for the Test for English Majors Level Eight (TEM 8), thesis writing, and business reports, leaving insufficient time for each part, so he did not arrange writing practices for students in the latter two parts but delivered more lectures concerning relevant knowledge and skills. Similarly, Jane mentioned that course limits of eight weeks to accomplish all the EAP writing sessions left little time for language training.

In addition to EFL and L2 writing teaching experience, the participants' EAP teaching

experience was considered an essential part of their teaching expertise. EAP teaching experience was found to enable teachers to familiarize the teaching content and contexts. When interviewed, Hallie, who has taught EAP courses (e.g., EAP speaking and writing) for over 15 years, manifested her confidence in managing EAPWT. She recalled that she had taught students from varying majors in domains of both Humanities and Social Science and Technology and Science, so she knew students' learning situations well. However, she started teaching undergraduates in 2022, who still adapted to the new teaching context. In a similar vein, Gerald had taught EAP writing to postgraduate students for five years but initiated teaching undergraduates in recent two years. Comparatively, he was more confident in teaching the former group and still exploring how to better arrange classroom activities based on students' reactions to the latter. Compared with the experienced EAP teachers, Jose and Jane were novice EAP teachers who constructed the EAP writing courses from ground zero and still made the initial teaching trials in 2021 and 2022.

4.2.2 An integrated knowledge base

When designing and enacting the EAP writing course, the participants wielded their integrated knowledge encompassing theoretical/conceptual knowledge and experiential/practical knowledge based on Tynjälä's (2008) classification. The components of the two main types of knowledge were further classified regarding EAPWT: theoretical/conceptual knowledge (e.g., EAP-related knowledge and L2 writing and writing teaching approaches), experiential/ practical knowledge (e.g., academic writing and research skills, contextualized knowledge, and adaptive teaching methods).

4.2.2.1 Theoretical/conceptual knowledge

First of all, the participants underlined EAP-related knowledge. As for the reasoning for the

teaching content, genre knowledge concerning assorted academic writing types and written academic discourse were regarded as the primary reference. Eight participants (Carrie, Gerald, Jane, Kade, Linda, Lisa, and Mia) concentrated on the writing structure, content, and language features of a thesis or research article writing, encompassing topics, introduction, literature review, methods/methodology, discussion, implication, and conclusion. In contrast, Jose's course centered on synthesis writing. Three participants (Hallie, Quinn, and Zac) taught genres used in divergent academic situations. In particular, genres concerning emails, literature review reports, academic writing for publication, and academic presentation, were covered in Hallie's EAP writing course. Quinn selected conference papers (or posters) and research articles as the main genres commonly encountered by his students from scientific and technological domains. Zac was required to teach both thesis writing and business reports for English majors from differentiated directions, such as linguistics, literature, and business English, in addition to writing to pass TEM 8 as the compulsory content in his school.

Despite genre knowledge, the participants took student diversity into account when discussing subject-matter knowledge. For teaching English majors, as mentioned by Carrie, Kade, and Zac, the students' research covered several fields, including linguistics, literature, translation, and business English. The discourse features and research methods were inconsistently identified, as some exceeded the teachers' specialties. In particular, Carrie and Zac expressed their lack of confidence when instructing students from directions other than linguistics (in which they were well-trained). Kade struggled with the depth of instruction on the differences in research methodologies. They agreed that students needed domain-specific guidance, or the teachers could only "provide general or surface-level instructions for unfamiliar directions" (Carrie, Interview).



As for instructing non-English majors, participants whose classes consisted of divergent majors (Hallie, Lisa, Quinn, and Mia) did not agree on the need for subject-matter knowledge. For instance, Mia found it stressful that she could barely comprehend papers from the research domains of students whose research paradigms contradicted her knowledge. For example, she noticed that mathematics papers contained only an introduction. When she gained more knowledge of subjects in science and technology, she became more confident and fluent in commenting on the disciplinary differences in academic writing. Quinn's experience was similar to Mia's. He added that "increasing the teachers' knowledge in depth and breadth was beneficial to students" (Interview). His students were majoring in arts and management, and he believed they would be more attracted if he could provide examples of their backgrounds instead of his specialty.

In contrast, Hallie said that language teachers could teach EAP writing courses to non-English majors without mastering their domain-specific knowledge. They should focus more on language teaching by summarizing the conventional and standard features. In line with Hallie, Lisa recommended that EFL teachers either merely teach language features of general academic writing in the mixed-major class. Their instructions focused on guiding students to summarize their domain-specific features or teaching academic writing discourse in one particular domain (if the curriculum allowed). She suggested that EFL teachers cooperate with subject teachers in instructing the methodology part, especially for graduate and postgraduate students in technology and engineering. She further explained the possibility of acquiring disciplinary discourse for EFL teachers instead of mastering subject-matter knowledge:

EFL teachers might not necessarily learn subject-major knowledge, which was too demanding, but it was practical for them to acquire disciplinary discourse features. Like

developing expertise in translation, the teachers could specialize in one direction, such as engineering, medicine, and law, with more focused targets and audiences. (Lisa, Interview)

To summarize, the participants argued that equipping EAP writing teachers with subject-matter knowledge was helpful for classroom teaching, increasing students' interest in learning and improving teachers' confidence in classroom management when teachers' illustrations were closely related to students' majors. However, the participants asserted that EFL teachers teaching EAP writing could hardly master subject-matter knowledge but would possibly be capable of developing disciplinary discourse knowledge.

As for knowledge about L2 writing and writing teaching approaches, for instance, the participants mentioned functional grammar theory and cognitive linguistics (Linda), synthesis writing theory (Jose), L2 writing development theories, and L2 writing pedagogical knowledge such as genre approach and process writing approach (Carrie, Kade, Lisa, Mia, and Zac). Lisa was the only one who mentioned the project-based teaching approach, reflecting her theoretical knowledge about EAP teaching approaches. In addition, the participants proposed some technology-integrated teaching approaches for EAPWT. For instance, Flora, Gerald, Jane, Kade, and Quinn implemented flipped classroom teaching or blended teaching due to the promotion of remote teaching in the pandemic era. However, none mentioned specific theories for course design with technology-integrated teaching.

Regarding theoretical knowledge about assessment and feedback, the participants suggested concepts of formative assessment, such as teacher corrective feedback (Mia), formative writing assessment with peer review and self-assessment and self-revision (e.g., Carrie, Hallie, Kade, Linda, and Mia), and portfolio assessment (Kade). However, only two

participants (Kade and Mia) with a solid theoretical foundation and experience in researching L2 writing and writing teaching systematically integrated the theories into course design and classroom instructions.

4.2.2.2 Experiential/practical knowledge

In addition to theoretical and conceptual knowledge, participants stressed the importance of experiential or practical knowledge gained from their academic and teaching practices. First, some participants highlighted the need for **academic writing and research skills**. As mentioned in the part of EAP writing, research, and publication experience, the participants could share more concrete and personal comprehension instead of mechanically lecturing about the theoretical knowledge and provide operational guidance or suggestions for students' writing. For instance, they shared how to select and compose a good topic (Flora and Zac), organize and synthesize literature for the review (Jane), and design studies and report the findings (Lisa). Some (e.g., Carrie, Kade, Jose, and Linda) mentioned that EAP writing entailed a skill set, and both teachers and students needed to sharpen the skills relevant to them. As Lisa reflected, "Instructing the EAP writing course demanded multiple skills, in which the teacher needed to teach all the skills involved in the process from conducting a mini research project to reporting findings" (Interview).

Second, the participants added that authentic classroom teaching required adequate **contextualized knowledge**. In particular, knowledge of students was crucial for teachers to adjust their instruction. For instance, some participants (e.g., Kade, Jose, and Mia) arranged the teaching content according to students' needs. In particular, some identified that the students' basic writing issues (e.g., logic, coherence, and grammatical problems) continued to exist in their academic writing, so they arranged general writing training sessions such as

“synthesis writing, enabling students to integrate the resources to form viewpoints and make arguments” (Jose, Interview), “process writing (paragraph and essay) to enhance the students’ basic writing skills and set the foundation for future methodology writing” (Mia, Interview), and “more writing practice in logic training, paraphrasing, and summary writing” (Kade). Some participants (e.g., Carrie, Quinn, and Mia) adjusted teaching materials based on their knowledge of their students’ reactions. For example, Carrie, Mia, and Quinn added teaching materials relative to students’ majors or research directions, while students themselves brought materials into classes. Carrie further explained that she deleted or supplemented materials according to students’ performance and feedback in previous lessons.

Moreover, some participants (e.g., Kade and Carrie) adapted their instruction after speculating about students’ learning situations. For instance, the EAP writing courses were open to senior students who dealt with the colossal pressure brought on by graduation, pursuing further study, or job hunting. They were less motivated to devote themselves to the course but more inclined to earn the credit. When faced with the students’ reality, Kade and Carrie endeavored to make full use of class time and assign the necessary homework for students considering their highly-occupied status after class. Carrie even adjusted content to match the students’ thesis writing schedule set by the school, promoting students’ initiative and reducing their workload.

In addition to knowledge of students, knowledge of teaching contexts, such as the institutional teaching requirements, was pivotal for the participants in implementing their teaching ideas. For example, Mia did not figure out the assessment requirement in her school in the first two years. She attempted to adjust the assessment plan to meet her instruction, changing it to a formative one without asking students to take a summative exam. However,

Mia was informed that the summative exam was compulsory when she sent the new plan to the school. Afterward, she notified the students of the final exam arrangement, but the students did not expect it, and some later complained about it in the teacher evaluation.

In contrast, Jose was conversant with her school's requirements and could use the relevant knowledge to avoid conflicts between her teaching and the rules. When she reformed her EAPWT with synthesis writing theory, she taught the course by demonstrating to students how to revise compositions. She was not restricted to one textbook in class but used various materials as samples, especially students' writing. Moreover, Jose did not arrange many interactive activities but engaged students in observing the teacher's reviewing process and conducting peer review. In her opinion, "What mattered was the students' real gains and being clear about what they learned, not superficial interactions or fancy activities" (Interview). This way of instruction was contrary to the teacher evaluation standards in her school, so she adjusted teaching activities to "be more interactive" when the administrative staff came to evaluate her class. When the rules were unaltered, experienced teachers such as Jose attempted to implement innovative teaching in their ways without conflicting with the unified requirements in the institutions.

Furthermore, contextualized knowledge facilitated the participants' instructional decisions. For instance, whether teachers stressed the instruction of research skills in students' domains depended on the course settings and the balance between their thoughts and the realities. Two participants (i.e., Flora and Lisa) specially allocated time for teaching research methods because their students lacked relevant knowledge and experience. Flora commented, "Without knowing anything about research, the students could hardly produce proper academic writing products since conducting research was more challenging in their situations

than writing” (Interview). Lisa also highlighted that she needed to guide the students to complete the research process step by step ranging from literature search to writing research reports, e.g., searching for literature, collecting and analyzing data.

However, some participants (e.g., Carrie, Kade, and Mia) doubted that it was necessary to instruct students in all research skills, especially for research methods. One reason was that the teachers might not be competent. Carrie admitted that she could not offer suggestions for students researching literature or translation but could only provide a general introduction about their methods as she was a scholar studying applied linguistics. Mia was more distressed as her students from the science and engineering domains showed how the research methods diversified from each, about which she did not know. Hallie stressed, “There was no need for the language teacher instructing the research methods for it was more subject-specified and could be left to students themselves or their subject teachers” (Interview). Consistent with Hallie’s view, Lisa added that others could take on some responsibilities, such as the library being in charge of the literature search and the supervisors being responsible for the research process guidance. She felt it was too much to handle for a language teacher in the current EAP writing course since she had to teach all the skills instead of being focused on the language part.

Another reason was that the participants (e.g., Kade) were uncertain about balancing course time between research and academic writing. Kade struggled with how much depth he should teach students data collection and analysis skills in qualitative and quantitative studies bearing in mind the course time limits. He was inclined to regard it as a writing class requiring more time to train writing skills. However, as Flora said, the course comprised research methods and academic writing as set by the program, and there was no extra course

for research method instruction, so she had to balance both parts. In her view, writing practices and language training should be realized in the advanced writing course. The different teaching practices described above manifest how the participants made instructional decisions (e.g., selecting teaching content) proper to their students and teaching contexts based on their contextualized knowledge.

Third, participants emphasized adopting **adaptive teaching methods** in varying teaching contexts. Flora said, “EAPWT expertise not only requires the teachers to have the knowledge and skills themselves but also needs them to use effective pedagogical ways to enable students to apply what they learn” (Interview). The majority of the participants (e.g., Carrie, Flora, Gerald, Jane, Jose, Kade, Linda, Lisa, Mia, and Quinn) highlighted that the instruction should be “student-centered” (Interview), even when it was quickly fallen into “teacher-dominant teaching in EAP writing courses” (Flora, Gerald, and Kade) because of the theory-loaded nature and students’ lack of relevant knowledge and experience leading to the silent classes. Hallie added that “the key was to hold a learning-centered belief and explore varying teaching methods to realize the belief” (Interview). Carrie and Kade underlined that the teaching should be both student-centered and learning-centered because, apart from the contemplation of students’ needs and active participation in class, it is pivotal to consider the learning objectives the activities were meant to achieve. Carrie said, “Sharing learning goals to make students understand the tasks they need to accomplish were the requirements of learning itself, not demanded by me” (Interview), so they were proactive in self-organizing their learning and actively participated in the tasks with fewer complaints. From the teaching side, Kade elaborated on his perceptions about student-centered and learning centered teaching.:

The students were simply occupied in activities, which was not the real

student-centeredness. I cared more about making the class exciting and students engaged in class in the past. Now I also deliberated what capability to improve, what knowledge to increase, what learning effects brought to students, and whether the methods were right before designing the classroom activities. Becoming both student-centered and learning-centered gave me a clear direction to develop my teaching expertise. (Interview)

The teaching methods adaptive to be student-centered or learning-centered were especially beneficial in tackling issues in EAP writing instruction. Hallie commented, “Language teachers could use learning-centered teaching methods to deal with instructional problems, such as the teacher being unfamiliar with subject-matter knowledge” (Interview). In particular, her class was always mixed, with students from miscellaneous majors, such as journalism and chemistry. She depicted that she did not teach subject-matter knowledge but concentrated more on teaching the general language features of EAP writing, leaving the domain-specific ones for the students to discuss and summarize in groups as their learning goals. Jane agreed with Hallie’s view, insisted on involving students as part of teaching, and stated, “The teacher and students communicated equally with each other” (Interview). When Jane was not adept in research-related software, she created opportunities for students to explore Cite-space for data management and share in class. Moreover, Jane had attempted blended teaching since 2017. She used materials shared by students illustrating how to use Cite-space as an online learning resource.

In other words, the participants stressed that empowering students in classroom teaching was a typical strategy and highlighted students’ self-exploration, self-regulation, and peer support. For instance, Mia invited students to teach each session by providing textual samples from their domains in a group presentation. She could instruct upon their sharing by further

explicating missing points or correcting problematic ones. Mia supposed this facilitated the development of students' self-regulation and reduced her lecturing time. Carrie adopted a similar pedagogical strategy by grouping students from the same research direction to support each other's learning, working out the exercises together, and conducting peer review instead of the teacher being in charge of all the knowledge instruction. Flora agreed with Mia and Carrie, shifting teacher lecturing to engaging students to solve theoretical-learning problems in group discussions. She thought the latter way "being more efficient and creating better classroom atmosphere by students' actual engagement" (Interview). In the past, she had made strenuous efforts to explain theoretical knowledge. However, the students still needed help comprehending and applying it in their thesis writing.

Furthermore, being adaptive also means that the participants tried associating teaching with formative assessment (Loughland and Alonzo, 2019). In the study, the participants adjusted their teaching based on the information revealed in the assessment. For instance, Carrie, Kade, Linda, and Mia deliberately designed formative assessment activities such as peer review and self-assessment for revisions. They encouraged students to write multiple drafts based on peer and teacher feedback. Also, they summarized students' writing issues and added specific training, such as paraphrasing or summary writing, or more in-class writing exercises.

Along with the prevalence of remote teaching theories, participants shared **technology-integrated teaching strategies** into EAP writing instructions. Flora, Gerald, Jane, and Quinn explored blended teaching for years, developing online teaching and learning resources individually or in groups and leading students to learn or practice before and after class online. Moreover, they used multiple online platforms or applications to facilitate their instructions, such as apps for classroom interactions (e.g., Xuexi Tong and Yunban, calling

the roll, students uploading their ideas for online discussion, and conducting surveys), apps for uploading teaching and learning resources (e.g., Mooc and Chaoxing), and apps for after-class writing assignments and feedback (e.g., i-Write and Pigai, sending the compositions for automatic scoring, corrections, and general comments). Quinn proposed integrating AI-assisted writing techniques into the EAP writing course, which his students found helpful and practical. Similarly, Carrie, Kade, and Mia developed their online teaching skills by adopting various platforms and technical tools. Additionally, they attempted to handle online teaching by becoming fluent in using the functions of online meeting rooms (e.g., sharing screens, using annotations, and sharing in the chat box).

In addition, participants stressed the significance of **balancing teacher control and students' self-exploration in classroom management** to enact learning-centered or student-centered teaching successfully. The first reason was that some participants (e.g., Kade, Gerald, and Linda) found it hard to control the time and manage the classroom when the class was handed over to students. Kade pointed out that, in a large class, it was incredibly challenging to release students to work by themselves, for some would loiter away their time, and he could hardly monitor them; Gerald mentioned that students were sometimes eager to present their ideas more than required; Linda described a class immersed in intense inquiries and quickly overrunning the discussion time. For the management issue, with consistent student-centered teaching practices in the EAP writing course, Carrie was assured of balancing and controlling the time for students' individual or group work and her illustration. Classroom management became more challenging when the student took online classes because “we could hardly know whether the students were engaged when they shut the cameras and kept silent” (Kade, Interview) and “the class interactions were limited when the face-to-face classroom practices might not be applicable online” (Carrie, Informal talk). Then the teachers felt lost control of

the classroom interactions.

Regarding assessment and feedback, the participants manifested different concerns and resorted to their practical knowledge formed in their teaching contexts. For example, Gerald and Quinn were familiar with using various online tools for grading and providing automatic written feedback for students' writing. They relied more on these tools for reducing the workload caused by the large number of overall students from non-English majors. With fewer students from English majors, Carrie, Kade, Jose, Hallie, and Mia not only strove to provide individual written feedback for students' writing but also made time for immediate oral feedback after classroom practices.

The assessment and feedback strategies that were situated and proper for the teaching contexts mattered. For example, Carrie, Hallie, and Mia adopted different feedback strategies to handle the heavy workload. Carrie elaborated the assessment requirements for her teaching assistant, after which the assistant would review students' work and provide feedback for the first two drafts, saving time for her and encouraging students to revise their writing before she provided the final marks. Hallie also made use of the teaching assistant's help. Differently, she reviewed ten students' work as examples before handing over to the assistant all the assessment and feedback work. Without the teaching assistant's help, Mia assessed ten students' work from different classes for each writing assignment. It was time-consuming to mark all the students' work and summarize common writing errors to share in class. Accordingly, the teachers formed practical knowledge of arranging assessments and feedback to students' assignments mainly based on the contextual situations, such as the class size, teachers' time and energy, and the help from teaching assistants.

Lastly, **the teacher-student relationship-building skills** were accentuated. Flora was perplexed by students' negative comments on her strictness when they described the pressure of undertaking this course. She explained that she required students to accomplish the tasks without lowering the standards, for "they had to make efforts to learn this challenging course though it was painstaking" (Interview). However, Flora changed her style to give students more encouragement and comfort. For example, she empathized with the students' difficulties by stating, "It was common to feel laborious because it even took teachers years to master research and academic writing" (Interview). Like Flora, other participants (e.g., Carrie, Kade, Jane, Linda, and Mia) cared about students' emotional responses. For instance, Kade strove to explore ways to make students feel less painful in the course learning, especially adjusting their disliked teaching activities.

In class, the participants endeavored to create a free and friendly classroom environment conducive to equal teacher-student communication by encouraging dialogues and discussions in class. For example, Carrie described the class as "student-friendly and encouraging" (Interview) owing to the emphasis on free sharing without harsh judgment on students' performance. Linda even threw herself into the class inquiries as one of the students, for she believed that "teaching and learning were reciprocal" (Interview). Similarly, Mia encouraged students' sharing about personal experiences in EAP writing and opinions about how to understand and compose each part of research papers in class so they could learn from each other.

Furthermore, some participants made extra effort after class to strengthen teacher-student bonds. For example, the teachers functioned as consultants helping students with thesis revision (Kade), research article revision (Mia), or suggestions for future study (Jose). As

Jane pointed out, students could devote more effort to course learning when they felt cared for by the teacher, so she communicated with them both in and after class.

Another point proposed by Carrie was that “it took time for teacher-student co-adaptation and becoming familiar with each other” (Interview). As an experienced teacher, even for the novel class, she could familiarize herself with the students in weeks, but the students required varied time to adapt to her teaching style. Before that happened, “some students might feel laborious and distant from the teacher” (Carrie, Interview). Conversely, some students who had experienced Carrie’s other courses before the EAP writing course felt acquainted and relaxed and quickly followed her instruction. Reciprocally, Carrie was gratified when the students she taught registered for this course, requiring less time to build the relationship in the EAP writing course. Meanwhile, she believed that the class interactions were easier to activate and atmosphere were quicker to warm up, along with the familiarity or closeness between the teacher and students.

4.2.3 Progressive problem-solving

Progressive problem-solving was regarded as an essential component of EAPWT expertise. The participants highlighted their persistence in seeking better solutions to the major issues encountered in academic writing teaching. In this process, they could sense their progress in EAPWT and became more competent.

4.2.3.1 Identifying major problems

In the teaching of academic writing, novel problems continuously emerged as the EAPWT progressed. The participants shared their strategies for identifying the problems. On the one hand, they (e.g., Carrie, Kade, Jane, Jose, and Jose) stressed that students’ reactions and class

participation could indicate some problems. Carrie even specified that she could tell the teaching effects by observing students' facial expressions. On the other hand, the participants proactively took feedback and comments from their students for instructional problems. Some (e.g., Carrie, Flora, Kade, and Mia) designed online surveys for students to fill in, sharing their comments about the learning experience in the EAP writing course, or invited students to write self-reflections after the course ended. Some (e.g., Carrie, Jane, Jose, and Mia) communicated with their students casually about suggestions for improving the course or welcomed their colleagues to listen to their class and provide suggestions. However, only Jose mentioned that her class was observed by colleagues and friends who were curious about her teaching rationales and proposed puzzles. Then she would contemplate possible problems that might be causing their questions. As Carrie mentioned, communication with colleagues continued to be merely sharing information or complaints about students, but more feedback for EAPWT remained in teacher-student interactions.

Despite the trivial issues arising from daily work, as the participants stated in the interviews, they encountered **three main problems** during EAPWT, which needed constant exploration in the search for solutions. The primary one was to tackle the issue of **the improper course setting** leading to overfull course contents in limited teaching hours. Lisa stated, "It was particularly challenging to pull students from zero to one" (Interview). The first-year students knew little about research and held no concept of academic writing initially but were asked to complete a research report at the end. Lisa described the EAP writing course as overloaded. She suggested that the EAP writing course for non-English major undergraduates could be centered on basic skills, such as paraphrasing, summary writing, and literature review, to set the foundation for students' graduate study. Similarly, Flora pointed out that when both research methods and academic writing were necessitated in the syllabus, she assigned more

time for the prior one based on students' situation of possessing no other related course. Nevertheless, it left insufficient time for writing practice. It was impossible to teach both parts in depth because the course already contained too much content.

The problem also existed in teaching EAP writing to seniors. For example, Kade mentioned that the students lacked clear comprehension of writing and were still problematic in fundamental writing skills such as paraphrasing and summarizing. The revealed language-related problems were more severe than he estimated, and he had to reteach the basics during the EAP writing course. He questioned whether previous writing courses had effectively improved students' writing competence and whether students relied too much on template writing to pass exams (e.g., College English Test 4 and 6 or TEM 4 and 8). Li described a similar issue: students were directed to practice writing for exams instead of improving their writing competence. As Jose commented, "The current writing courses seemed ineffective in solving students' writing problems" (interview).

The second problem was ameliorating **students' low learning motivation and negative attitudes**. As described before, some participants (e.g., Carrie, Kade, Flora, and Zac) taught the EAP writing course to senior undergraduates who were highly occupied in preparing for graduation and future work or study and were more interested in gaining the credit than in improving their EAP writing competence. That was especially true for those who did not intend to go on to graduate study. Kade was especially troubled by this issue. He recalled that students were not interested in classroom participation and procrastinated assignments in and out of class. He was so disappointed that, when he assigned them a small writing practice in class, only a few students completed it, and he felt upset that students often asked for leave to prepare for the postgraduate entrance exam. At one time, more than 90 out of 153 students

were not attending the class. Kade claimed it was even worse when they attended the online class because some shut the cameras and immersed themselves in their work without participating in class activities. He commented, “It was demanding to change the situation by one teacher, which was related to the curriculum arrangement and university culture” (Interview). Zac added that the situation worsened when the class was mixed with students from linguistics and literature, translation, and business English. The latter two majors were optional to write a thesis but to complete translation or business reports. Hence, translation and business English students were not interested when the thesis session was being taught, and vice versa.

The third problem was associated with the previous two. As depicted above, the students’ low learning motivation was partly caused by their diverse backgrounds and needs, which needed to be satisfied in the EAP writing course. Meanwhile, the improper course setting enlarged the students’ diversity, leading to another **mismatch problem between the teachers’ specialties and the course demands**. The participants explained that it increased the difficulty when the students came from diverse majors. For non-English majors, though they mainly concentrated on the instruction of general EAP writing features, they needed to consider the students’ diversity. For example, when preparing materials, Lisa found it troublesome to select papers for sample analysis because of the students’ diversified backgrounds from varying majors in humanities with science so that she could search for the ones comprehensible by general undergraduates. However, she assumed it would be more focused if she could teach students from domains under similar research paradigms, like engineering or medicine. Quinn encountered a similar problem and suggested equipping EAP writing teachers with some ESP (English for Special Purposes) background to develop the instruction depth.

When dealing with English majors, the participants were concerned about how to satisfy students' diverse needs. As Zac mentioned, the students from linguistics and language, translation, and business English, aimed for differentiated final work in the EAP writing course and should not take the course jointly. Moreover, Zac believed that his specialty in applied linguistics could offer little guidance for students from other branches of English majors. Agreeing with Zac, Carrie was worried that she could not balance the instruction for the diversified directions since her specialty was in applied linguistics, and she was unfamiliar with the other two (i.e., literature and translation).

4.2.3.2 Continually exploring better solutions

To better solve the major issues encountered in EAPWT, the participants strove to explore better solutions. For instance, as for the improper course setting, some participants (e.g., Carrie, Kade, and Linda) proposed to open a series of writing courses from year one to year four, which should be coherently arranged and highly associated to steadily scaffold students with the relevant knowledge and skills to make them capable of higher-level study in the EAP writing course at the senior year. Carrie said, “if we regarded the EAP writing course as a dish to cook at last, we needed to prepare the materials, ingredients, and basic cooking skills like controlling fire and time, from the freshman year” (Interview). However, she admitted that she needed help to achieve it and depended on the school's coordination. Nevertheless, she contemplated a compromise whereby she would use her other courses, such as research methods in social science and applied linguistics, to supplement some knowledge or skills related to the EAP writing course. Similarly, Linda and Lisa provided some basic training (e.g., literature analysis, critical reading, topic selection, and summary writing) in the preceding course before they taught EAP writing.

When the course setting could not be altered, the participants, such as Kade, felt powerless to solve this issue but still endeavored to fulfill all the teaching content scheduled in the syllabus. Kade emphasized, “All I could manage was to refine the teaching to attract the students’ learning interests and improve the teaching effects” (Interview). When they noticed the mismatch between their specialties and the students’ diverse needs, the participants could, on the one hand, propose to the institutions to change the course setting, on the other hand, work hard to adapt their teaching to students’ situations and expand their knowledge to the unfamiliar domains. To illustrate, Carrie and Zac had proposed to the school to open the EAP writing course respectively for each direction of an English major to ensure teaching efficiency. In course teaching, they attempted to prepare the teaching and learning materials separately in various directions to keep all students engaged. Moreover, they enhanced their knowledge concerning the other branches of English majors by self-study or consulting their colleagues.

4.2.4 Motivation for changes

As identified in the semi-structured interviews, motivation for changes was viewed as another crucial component of EAPWT expertise, revealing the intentional aspect of teacher expertise. The participants accentuated their motivation for making changes and adaptations, which showed their willingness to seek effective academic writing teaching and enhance their teaching expertise. This kind of motivation encompasses two sub-components: affection and proactive attitudes toward self-updating.

4.2.4.1 Affection

Regarding the affective components of EAPWT expertise, the participants mainly elaborated

their **sense of commitment, sincere care for students, and their passion for teaching and researching**. To illustrate, first, the participants underlined **a sense of commitment to being a teacher** as the primary motivation for better teaching. Carrie and Mia said they did not want to waste students' time but enable them to learn something valuable and applicable to their academic practice. They felt committed to ensuring teaching quality by continuously refining course design and improving teaching effectiveness. As Mia explained, "I could simply follow the textbook and not make adaptations, but my conscience did not allow that" (Interview). Similarly, Flora and Kade worked hard to transform face-to-face to a blended teaching mode to better adapt to the new challenges of teaching in a pandemic. They were experienced in EFL teaching but still explored new technologies and online platforms applicable to the EAP writing course by themselves. They were willing to start from scratch and seek teaching innovations. Flora stressed, "The teaching could not be set in stone, and responsible teachers were bound to change" (Interview). In addition to responding to the new environmental challenges, Flora added ideological and political education into the course as advocated in tertiary-level education by a national policy, guiding students to conduct educational studies giving effect to teachers' responsibilities to spread Chinese culture and values and enhance students' national identity and patriotism.

Moreover, **sincere care for students** led participants to dedicate their time and energy to facilitating students' learning. For example, it took Flora significant time to develop online learning resources during the holidays and respond to all the students' questions on the online platform. Carrie typed out all the student worksheets and learning materials for students' learning convenience. The participants (e.g., Carrie, Kade, Jane, Jose, and Mia) spent much time assessing students' writing and providing individualized feedback. Mia gave an example: she spared three days to mark students' assignments, pick out the ones for whole-class

revision, and summarize their common writing issues. Lisa and Flora provided extra tutorials for students to refine their work after class.

The participants believed that care and love for students motivated them to quest for teaching expertise. Hallie said that, even though she was strict with their study, she was gentle when the students needed help. Similarly, even if the students kept complaining about Flora's strictness, she insisted on treating some mistakes seriously while at the same time giving students many chances to solve their problems as she cared about their learning gains. Flora recalled that one student, who was continuing her postgraduate study, came to her at one conference, expressing gratitude that Flora was serious about the plagiarism issue during the EAP writing course because her classmate was punished hard for plagiarism in writing a paper. That made Flora feel rewarded for her devotion to the course.

Moreover, the participants (e.g., Carrie, Kade, Jose, Linda, and Flora) showed enjoyment and fulfillment when their students succeeded. Carrie remembered feeling fulfilled when the students left the class with expressions of satisfaction. Jose said that when students expressed that they were finally clear about what they learned, she was "more joyful than winning a teaching award" (Interview). Kade and Mia both mentioned joyful moments when students approached them to express how helpful the EAP writing course was, such as "improving writing competence" (Kade, Interview) and "useful for their doctoral study" (Mia, Interview).

Moreover, the participants manifested their **passion as teachers and researchers**. Gerald showed that he was passionate in any class, which was "a natural characteristic and contagious to students" (Interview). Linda said, "I enjoyed exploring teaching and learning with my students" (Interview). Hallie stressed that she still reformed her teaching when she

was about to retire because she was sincerely enthusiastic about teaching. Furthermore, Kade described, “It was the passion and love supporting me to hang on even when the external condition was not favorable” (Informal talk). Some participants (e.g., Carrie, Hallie, Jose, Kade, and Mia) expressed great passion for teaching and research, so they enjoyed exploring the teaching-research nexus. They collected data or conducted research projects on their EAP writing instruction or their students’ learning and used the research findings to improve their teaching effects. As Carrie described, as a university teacher, she was demanded to seek publications for a job promotion. When she shifted her research interest from L2 listening acquisition to the EAP field, she felt it was more efficient when she aligned teaching with research work. In a similar vein, Jose developed more research ideas since she tested the teaching effects of using synthesis writing in EAPWT with a quasi-experiment. She stressed, “I enjoyed being assured about the teaching efficiency for I obtained evidence and data to support the positive teaching outcomes” (Jose, Interview).

4.2.4.2 Proactive attitudes toward self-updating

In the interviews, the participants manifested a proactive attitude toward self-updating. Carrie and Mia described that they were perfectionists to some degree. Mia admitted, “I could not help thinking about what part of teaching to improve before a new semester commenced” (Interview). Besides Carrie and Mia, other participants (e.g., Flora, Hallie, Kade, Linda, and Lisa) kept reminding themselves to **be open-minded**, that is, be willing to accept new ideas and make changes. For instance, Carrie, Kade, and Lisa underlined the significance of keeping updated on the theories and research in the EAP or L2 writing field. Flora and Kade were sensitive to the national policy reform for English majors and the era’s new requirements, such as incorporating ideological and political education or implementing flipped classroom teaching theory into the course design. As Kade acknowledged, teachers

who saw teaching as merely a job to earn wages “would be devoid of internal drive to make changes, that is, teaching for nurturing our students” (Interview). Kade also commented, “If the teacher did not care about students, was not sensitive to the policy and environmental changes, or resisted the new technologies, teaching expertise development would be restricted” (Interview).

Moreover, almost all the participants held the attitude of **being willing to continue learning**. Some participants (e.g., Flora, Jane, and Mia) were willing to take the EAP writing course teaching because they regarded it as a learning opportunity to enhance their academic competence and challenge themselves. Some participants (e.g., Carrie, Flora, Kade, and Mia) unremittingly reformed the course design and refined their instructions by following the trend in the EAP and L2 writing teaching fields and the novel requirements of the teaching contexts, such as the flipped classroom, blended teaching, and online teaching during a pandemic. Carrie stressed that “the EAP writing field itself was developing continuously, such as the APA style updated to the seventh version” (Interview). Some (e.g., Carrie, Lisa, Mia, and Quinn) sought professional learning opportunities (e.g., expanding personal readings and attending lectures or seminars) to make up for deficient capabilities such as lack of formal and systematic academic training (Lisa and Quinn), and insufficient subject-matter knowledge (Carrie and Mia). Among the participants, Jose particularly exemplified how a university EFL teacher pursued further study after work. Once, she attended a writing training that put the concept of logic in writing into her mind. Jose tried to put the concept into her writing teaching the following year, but the instruction could have been more effective because she needed to elaborate the relevant theories comprehensibly. Jose thus intended to pursue doctoral study as she felt powerless to solve the instructional problem. She applied when the school issued a quota supporting teachers for postgraduate study. In her case, the

quest for self-improvement pushed her to seize the opportunity for continued professional learning.

Furthermore, some (e.g., Carrie, Flora, Gerald, Hallie, Kade, Linda, and Mia) highlighted a lifelong learning disposition. Kade underscored, “The teachers themselves should be life-long learners” (Interview). Linda affirmed that she read in breadth to keep herself from being static. She emphasized that “expanding readings to divergent disciplines could equip you with flexible thinking modes instead of letting you become fossilized or formatted in one specific discipline” (Interview).

4.2.5 Adaptive agency

The adaptive agency suggests teachers’ capability of regulating and controlling their cognition, motivation, and teaching behavior due to their self-beliefs (Bandura, 1989; Cited by Code, 2020) to survive and tackle difficult situations despite environmental constraints (Goodwyn, 2016, 2019). Based on Bandura’s (2001) proposal, “intentionality and forethought, self-regulation by self-reactive influence, and self-reflectiveness about one’s capabilities” (p. 1) remain the core elements of human agency. Accordingly, the findings identified the sub-components of adaptive agency in EAP writing teaching context through inductive and deductive analysis as follows.

The first sub-component was **the intentionality for professional development**, possessing pellucid visions of EAPWT and long-term career visions. The visions served as the teachers’ goals for professional development and teaching refinement. Provisional visions served as the guiding light for the participants to enhance their EAPWT expertise. Firstly, the participants manifested that it was crucial to hold clear visions of EAPWT. As Carrie and Mia expressed,

they kept a set of standards for effective teaching in their mind, such as “to better satisfy students’ needs” (Carrie, Interview) and “to enable students to apply what they learn into their academic writing practices” (Mia, Interview). Kade’s efforts were to realize his teaching beliefs of “being both student-centered and learning-centered” (Interview).

Moreover, the participants’ divergent visions of EAP writing courses led them to different directions for future teaching expertise development. For instance, most participants (e.g., Carrie, Jane, Lisa, Quinn, and Zac) acknowledged that EAP writing was a significant branch of EAP, so they intended to develop both students and their own academic competencies and thinking habit. Especially for themselves, they expected to seek more publications (Jane, Lisa, and Quinn) and be devoted to studying the EAP field (Carrie and Lisa). Hallie, Lisa, and Quinn had underlined the ESP feature of EAP writing courses, so they highlighted the necessity of equipping teachers with some ESP knowledge. Differently, Kade and Mia regarded the EAP writing course as a hybrid one entailing the features of both EAP and L2 writing courses, so he planned to advance his expertise in these two areas.

Some participants (e.g., Carrie and Mia) highlighted their long-term career visions as the motive for enhancing their EAPWT expertise. The career vision to be productive scholars with particular specialties served as a guiding light for participants’ self-development. For instance, Lisa admitted that she was lost in finding a professional development direction before teaching the EAP writing course. However, after exploring the responsibilities of language teachers in EAP courses and acquiring more knowledge about this field, she became assured about her future research direction, and her teaching, research, and personal learning became better aligned. Similarly, Carrie shifted her research interests to EAP after teaching the EAP writing course to build research-teaching nexus and align her daily work with her

professional development direction. As Carrie described it, she persisted in self-development because she held a steadfast idea that “extending the academic life as long as possible was the career goal” (Interview). She would be dedicated to EAPWT and her academic life and career as she expected one day to become an expert like her supervisor and other distinguished scholars publishing high-level papers in the top journals. Like Carrie, Mia stressed her habit of making adaptations for each round of teaching, a process of working at the edge to perfect herself. Apart from teaching, she sought continued improvement in her academic publications to become more specialized in EAP and L2 writing teaching field. Hallie also possessed a clear vision regarding her professional development. She persisted in implementing her belief of “learning-centered teaching, the fundamental idea of ESP teaching” (Interview) since she started teaching EAP writing in 2007. She recalled, “My whole teaching career was dedicated to ESP teaching and researching with such a belief” (Hallie, Interview). With a clear and sturdy vision of what professional development was, Hallie, became specialized in the ESP field, for she centered her research and teaching in this direction, believing that obtaining teaching expertise needs to “be firm about your direction, dedicate yourself, and then be patient” (Interview).

The second sub-component was coined as **deliberate self-reflection on teaching issues**.

Possessing the proactive attitude of seeking continuous learning opportunities in EAP writing teaching for self-development, the participants (e.g., Carrie, Flora, Kade, Linda, Lisa, and Mia) chose to face challenges to develop their course design and delivery instead of holding negative attitudes and dodging problems. Then they deliberately conducted critical and constant reflections facilitating the improvement of their EAPWT. Some (e.g., Carrie, Flora, Kade, and Mia) reflected on their teaching before or after class began and prepared for revisions. For example, Flora wrote her reflections on the issues in the preceding lessons. She

specially checked the students who were not active or showed misunderstanding on the online platform and noted down their names to call for participation in the following lessons. Carrie and Kade also wrote self-reflection notes at periodic intervals about the problems they encountered, such as difficulties in in-class writing practices and students' adverse reactions to some activities. During reflection, they examined the gaps between their expectations and students' performances, making the teaching more adaptive to students' situations.

Sometimes, the self-reflections were triggered by feedback and comments, sometimes, the participants had considered parts to improve further or change, and sometimes the source was a wish to stabilize according to students' performance and reactions, and evaluations and comments from colleagues or students. As Carrie and Mia suggested, "the major part was satisfactory according to students' responses" (Carrie, Interview), and "the teaching became stable when the students accepted it, and they had realized my intentions" (Mia, Interview). However, Mia pointed out that sometimes the students' comments were not objective or did not demonstrate their honest thoughts due to the traditional culture of respecting teachers without harsh criticism. Without other sources of feedback and self-limitations for identifying more problems, she felt it would be "hard to make further improvement when the teaching had been stable" (Interview). After habituating herself to take the research perspective examining her teaching effectiveness, Jose found that her thinking automatically diverged to more teaching trials with possible research angles. She also admitted that she was confident about viewing herself as a competent teacher once she studied her EAPWT effectiveness with measurable and visible research findings. Jose underlined the significance of measuring the teaching outcomes:

It was more assured in my mind when the teaching effects could be quantified and measured, and students acknowledged their gains compared to the time winning various

teaching awards, which manifested that I was good at performing on stage and activating the class atmosphere; all these superficial work. (Interview)

Apart from self-reflection, the participants' **self-regulated abilities** were another indispensable sub-component, which supported their behavioral and emotional regulations. For instance, Lisa and Quinn were aware of their deficiency in academic competence, so they deliberately took learning or training opportunities to enhance relevant knowledge and skills, as depicted in the informal academic learning experience part. Jose realized her problem of needing more theoretical knowledge to instruct students to develop their writing logic, so she applied for doctoral study. After gaining feedback on the teaching effects, some participants (e.g., Carrie, Flora, Hallie, Kade, and Mia) quickly adjusted themselves to seek solutions for instructional problems or make teaching adaptations. For example, Flora adjusted her emotions when receiving negative comments from students by telling herself that “the students misunderstood me for they did not grasp my good intentions” (Interview). Meanwhile, she increased communication with students and made teaching activities more student-centered, encouraging more students' explorations and group discussions. When the students complained to Hallie about too much homework, she felt they did not appreciate that it was time-consuming for her to check their assignments but still considered their feedback. Haillie then adjusted her course design to reduce students' work by using a new teaching mode (i.e., guiding students to be editors who wrote less but reviewed their peers' work more). Like Flora and Hallie, Kade felt disappointed and upset when he noticed students' negative learning attitudes and inactive class participation, even though he had endeavored to prepare multiple learning activities for them and reflected on possible reasons. He read more and added new practices or refined the previous ones, believing that the perseverance of teaching refinement would make a difference one day.

In addition to making self-adjustment to improve teaching effectiveness, the participants mentioned that they needed to adjust their emotions, especially when they were under pressure or struggling with their professional development. For instance, Carrie accentuated that she felt stressed by the continuous denials of her career promotion because of the policy changes in her university. She was anxious but endeavored not to bring negative emotions into her class. Likewise, Jose was bothered by the teacher evaluation at her university, but she could tactfully avoid the influence on her EAP writing instruction.

Overall, the participants set their EAPWT teaching and professional development goals, reflected on their teaching problems and self-limits, regulated their behaviors by actively seeking formal and informal learning or training opportunities, and adjusted their behaviors and emotions. All these working together constituted their adaptive agency.

4.3 Findings from four cases: changes, factors, and constraints

The following sections report findings regarding the four cases, focusing on the instructional and personal changes the four participants made or experienced while developing EAPWT expertise. The initial conditions when they started teaching EAP writing courses and the later attractor states are presented and illuminated to depict the expertise developmental processes. Moreover, the factors and constraints for teaching expertise development are also explained.

4.3.1 Carrie's Case

Carrie began teaching the EAP writing course to undergraduate English majors in the autumn semester of 2018. She had just obtained her doctoral degree abroad and was newly recruited to her current affiliation. However, Carrie was not a novice teacher because she had taught EFL courses for over ten years. Then she continuously taught this course for the next four years, until 2022, including five rounds. Her EAPWT had witnessed various changes in course design and teaching implementation during different semesters and years (as illustrated in Table 4.1). These changes were supported by the development of EAPWT expertise. The non-linear and dynamic developmental process is depicted in the following parts by analyzing the initial condition and the altered attractor states and explaining what and why expertise components developed.

Table 4.1*Changes Carrie made or experienced*

Teaching times	Semester	Changes in teaching content arrangement	Changes in teaching resources and the usage	Changes in teaching methods and classroom implementation	Changes in assessment and feedback	Changes in emotions
The first round	Autumn semester in 2018	Introduction, Literature Review, Methodology, Results, Discussion, Conclusion	Teacher-made students' worksheets, teacher Power-Point, and the use of blackboard	Genre approach, teaching from the teacher's perspective, separating the four classes into groups with the same direction to teach them at different times in the Methodology session	Providing written feedback regarding students' weekly assignments to around eighty students each week, checking students' language problems in teacher feedback, all the assignments being credited to 60% of the final score	Being not anxious or nervous like a novice teacher, Being a little nervous about insufficient domain knowledge about literature and translation
The second round	Autumn semester in 2019	Literature Review, Methodology, Introduction, Results, Discussion, Conclusion	Tailoring the amount of materials and reducing their difficulty	Changing to students' perspective to better satisfy their needs, dividing students into groups in class according to their research directions and personal wills, being more student-centered and student-oriented, more students' engagement in various activities (individual work, peer work, and group work)	Reducing the number of assignments	More satisfied with the current teaching
The third round	Autumn semester in 2020	The same	Refining the handouts' structure, moving the focused conceptual knowledge and strategies parts into teacher PowerPoint, preparing different materials for students from linguistics, literature, and translation, renewing the EPA knowledge to APA 7th,	More students' self-regulated group work	Only three of around 300-500 words writing assignments to match the instruction of Literature review, Introduction, and Methodology sessions	Be aware of the improvement each year, being struggled with pressure of job promotion

updating samples
to newly-published
papers

The fourth round	Autumn semester in 2021	Title and Research questions, Literature Review, Methodology, Introduction, Results, Discussion, Conclusion	The same	The same, and more adept at course enactment and class management	Each assignment being counted as an individual part of the students' final grades, providing feedback with checking the students' writing logic, the precondition of comprehensible writing, inviting two teaching assistants (her supervised graduate students) to comment on students' first drafts and adding teacher feedback on students' second drafts, in-class peer review and teacher individualized oral feedback	Being fulfilled and satisfied with the course becoming routine and mature, being struggled with pressure of job promotion
The fifth round	Autumn semester in 2022	The same	The same	Online and blended teaching mode, coordinating two online platforms (i.e., Tencent Meeting Room and Lanmo Yunban), deleting some group work (e.g., group discussion and peer review in online classes), more individualized and whole-class activities	No in-class teacher individualized feedback	Teaching with ease, being struggled with pressure of job promotion

4.3.1.1 The initial condition: Being prepared with both theoretical knowledge and relevant experience but lacking contextualized knowledge

In 2018, although Carrie realized the challenges, she accepted teaching this course because she believed “it was not beyond my competence” (First interview). This confidence originated from her doctoral study’s systematic academic training, academic writing and publication experience, and ten-year-long EFL teaching experience. Carrie described, “I was not anxious or nervous like a novice teacher in 2018, but able to quickly handle the course

because I was familiar with academic writing and experienced in EFL teaching with about ten years teaching experience” (First interview). At that time, she was only a little nervous about having insufficient domain knowledge when she encountered teaching content related to academic writing in literature or translation fields.

Without any guidance, Carrie initiated EAPWT by self-exploration. She recalled, “I did not even know who taught this course before me, and no one told me what to teach” (First interview). Therefore, Carrie constructed this course based on her beliefs, knowledge, and experience. In the first round, she transformed her overseas learning experience in an EAP writing course to course teaching, which not only enhanced her knowledge and academic writing competence but also provided her with a practical teaching method and abundant teaching materials. Carrie commented, “It was the prime time for my academic writing for systematic training in the doctoral study” (First interview) after the “immersive study about EAP writing” (Third interview).

However, Carrie misjudged the learning needs of her students because she lacked contextualized knowledge regarding students (e.g., their backgrounds, learning difficulties, and interests) and the teaching context (e.g., the course setting and institutional requirements). Accordingly, some problems reading teaching content arrangement emerged. Carrie combined the two books she used in her doctoral study as the primary resources to construct teacher PowerPoint and student handouts. She followed the typical structure of writing a research paper to set the syllabus with sessions ranging from Introduction, Literature Review, Methodology, Results, Discussion, to Conclusion, which appeared ineffective. Carrie then specially observed students’ responses to the teaching content and noted that it was troublesome for the students to comprehend the introduction right from the start since “they

had no conceptual knowledge about it and no relevant writing experience in the past” (First interview). It reminded her that this arrangement did not match the actual writing process in which the abstract and introduction are not written until the rest of the paper has been completed. Therefore, students could not apply the theoretical knowledge to their writing practice.

A similar problem was also manifested in teaching material preparation. In the beginning, Carrie had much to share with students in that “transition period” (First interview), changing from a doctoral student to an EAP teacher. She also prepared much information that was assumed helpful for the students to learn, providing a handout for each lesson that encompassed all the conceptual knowledge she would focus on in class, the exercises, and even long lists of relevant language expressions. Contrary to expectations, the teaching effect was less than satisfactory. As Carrie reflected, for example, “The students still did not know what to use from the long list of suggested language expressions in their writing” (First interview). She acknowledged that the overwhelming teaching content was due to “the unfamiliarity with her students, without knowing what they had mastered and what courses or training they had undergone” (First interview) and “the wrong assumption of students’ levels, teaching them while treating them as graduate students” (Third interview). In the meantime, Carrie felt exhausted during the first round of teaching since the course was built from zero ground. She exemplified, “I designed the teaching PowerPoint slide by slide and typed out all the handouts word by word, which was a heavy workload” (First interview).

4.3.1.2 The attractor state one: Progressive problem-solving in refining EAPWT while gaining more knowledge and experience

After the first round of teaching, Carrie reorganized the order into Literature Review,

Methodology, Introduction, Results, Discussion, and Conclusion. This change was triggered by “the stance shifting from the teacher’s angle to the learners’ in 2019” (First interview), leading to more consideration of what the students, the seniors, needed to accomplish their thesis. Carrie reflected, “I then intentionally made the course arrangement matching to the thesis timeline set by the school, so they could be more motivated and take the initiative” (First interview).

The change of stance altered Carrie’s teaching focus in each chapter. In the first round, Carrie had in mind a standard paper, so she stressed instructing every part of the paper. However, with the accumulation of EAP teaching and writing experience, she realized that “I did not need to use all my strengths on instructing each session with the same high requirements” (First interview). For instance, in 2021, Carrie explained the transfer of her teaching focus concerning the introduction session. Although she acknowledged its significance in the thesis, she had since 2019 spent less time instructing it and more time on Literature and Methodology because she affirmed that the students could summarize the two parts adequately to compose the majority of the introduction according to her academic writing experience. In 2022, Carrie reduced the literature review instruction from three weeks to two weeks. She arranged more practice and repetitions in the other sessions to enhance their understanding of this session. More than intensive teacher lecturing was needed for students to grasp how to write a literature review. Carrie emphasized, “I would increase or decrease the proportions of knowledge instruction based on the student’s previous experience” (Third interview). As explained above, Carrie became more flexible in assigning teaching focuses in the teaching procedure because of her increasing practical knowledge of EAP teaching and writing and her students’ needs.

After gaining experience from the first round of teaching, Carrie also changed her way of preparing and using the teaching materials. First, in 2019, she began tailoring the number of materials and reducing their difficulty, showing more knowledge of her students. For example, Carrie presented students with only some commonly used language. Instead, she invited them to write as much as possible. Then she guided them to delete those non-academic ones, which “engaged them more” (First interview). Afterward, she revised the handouts, adapting them to the students’ levels at each round of teaching and their performances each week. In particular, she might offer students the shorter version for difficulty digesting the instruction in the last class.

Moreover, Carrie refined the handouts’ structure in 2020. She deleted some handout content regarding the key concepts’ definitions, the writing strategies, and the detailed explanations because she noticed that the students did not listen carefully in class with the detailed handouts. Thus, she moved the focused conceptual knowledge and strategies parts into her PowerPoint slides to manage students’ attention better. When Carrie made knowledge and strategy introductions, explanations, and summaries, the students were guided to specific PowerPoint slides. When they exercised, they referred to the handouts. In addition, clear-cut sections of the handouts concerning structure and language were reorganized to be more logical and fit her instruction. Carrie could comprehensively use the integrated knowledge base, both theoretical and practical, to better prepare teaching materials. Theoretically, she included the content related to EAP knowledge needed for writing a thesis; practically, she added, reduced, or reorganized the content based on her knowledge of students’ levels and performance.

Meanwhile, Carrie paid more attention to the students’ diversity while preparing teaching

materials. In the first round, Carrie gave students the same handouts. Later, she found that the uniform materials could not meet the diversified needs of students who selected different directions for their thesis, that is, linguistics, literature, and translation. However, Carrie's specialty was applied linguistics, in which she was more familiar with the theories, research norms, and writing strategies than in literature and translation. In order to add more material in the two unfamiliar areas, Carrie searched for and read papers and consulted her colleagues. Nevertheless, to her, it was demanding to comprehend those papers in other domains beyond her specialty. Carrie explained, "in my school, many teachers researched the other two directions in sub-branches, such as American literature, English literature, Latin literature, interpreting, and translation studies" (First interview), indicating the difficulty of preparing proper materials for each direction. To handle the problem of knowledge limitations, Carrie continued learning by reading and consulting other colleagues to provide updated and relevant materials; meanwhile, she required her students to bring papers from their interests to be analyzed, shared, and compared in class, satisfying their diverse needs.

Furthermore, Carrie's persistence in self-learning expanded her theoretical knowledge about EAP writing and teaching EAP writing, such as by reading more papers or books or participating in lectures or short-term teaching training. With more knowledge about this field, she added more up-to-date content to this course. For instance, when she read one EAP writing guidance book for undergraduate students, she was inspired to add the content to her course with respect to what academic writing was, how to find a research topic, and how to raise pertinent research questions. These contents were assumed to be "basic and necessary for the undergraduate students" (Third interview). Carrie changed to explicitly teach them with two lessons to lead her students into the EAP writing learning instead of implicitly integrating them in other sessions as in her previous teaching. As Carrie studied EAPWT, she

paid attention to and learned more about the development of this area, which “kept evolving by itself” (Second interview). Carrie asserted that she also developed her teaching resources by following the development trend of EAP writing. She mentioned the development of the APA style as an example: “You could not use the academic writing norms from decades ago to teach this course as the APA had been updated to the seventh version; you should keep updated” (Second interview).

What is more, Carrie’s self-reflection enhanced the application of her knowledge in EAPWT. With the shift in Carrie’s thinking to the student’s perspective instead of the teacher’s, she reflected on the course goals becoming more practical. Carrie explained that the course was supposed to equip the students with “the frame and norms of EAP writing to accomplish their thesis, such as general structures of each part and language features, which were applicable with immediate effect” (First interview). She believed “the students would soon sense the usefulness of this course by learning these comprehensible basics” (First interview). Different from holding high expectations of her students, Carrie refined her understanding of their needs by recognizing that they were not required to achieve accuracy and complexity levels as high as hers, who continued to work in academia but to complete their undergraduate thesis. She asserted that “if the students were demanded to master the content beyond their current level, it put both you and them under pressure” (First interview).

Despite adjusting course design and implementation, Carrie changed her handling of assignments and feedback issues due to her increased knowledge and EAPWT experience. In the first round of teaching, Carrie provided written feedback regarding students’ weekly assignments to around eighty students. However, this arduous work was not rewarded with the expected effect on students’ learning. For example, the students were reluctant to do their

assignments, so Carrie had to “urge them to complete assignments, but the final quality was unsatisfactory” (First interview). After Carrie taught more rounds of this EAP course, she realized that “it was not more effective to learn with more assignments as students got bored of practicing writing every week” (Third interview). Therefore, she reduced the number of writing assignments. For example, in 2020, there were only three sessions of around 300–500 words each to match the instruction of the literature review, introduction, and methodology sessions. In addition to reducing the assignments, Carrie revised the assignment management. In 2021, unlike the previous way of crediting all the assignments with 60% of the final score, each assignment would be counted as an individual part of the students’ final grades because Carrie affirmed that the specification could push the students to take each assignment more seriously.

What is more, with the continual emphasis on logic and structure of EAP writing in class, Carrie noticed her feedback strategy had also been adjusted. She recalled that, in the beginning, she would first identify specific language problems. In contrast, in the latest teaching rounds, she started providing feedback by checking the students’ writing logic, the precondition of comprehensible writing. Carrie’s feedback was more in line with her instructions. However, Carrie mentioned that she usually provided thorough and detailed written feedback for the first draft, which was time-consuming, and the students did not write more drafts. Instead, in 2021, she stopped marking assignments, provided written feedback by herself, and asked two teaching assistants (her supervised graduate students) to comment on students’ first drafts. She also added teacher feedback to their second drafts. By doing so, Carrie stressed that “it saved me more time, provided my graduate students with an opportunity to reflect on their writing, and the students taking this course could also see their improvements between the two drafts” (First interview). Thus, Carrie developed his practical

knowledge of providing teacher feedback in this course.

In 2021, as observed in class, Carrie arranged the activities of peer review, self-revision, and individual teacher feedback to help the students revise their methodology writing drafts and enhance their understanding of academic language usage. Conducting teacher feedback, she walked around the classroom to approach different students. Carrie catered to the students' diversity by providing individual oral feedback on their drafts. During the feedback process, Carrie intended to interact with each student, who immediately identified and commented on the student's writing problems and discussed them with possible revisions. Also, she grabbed the chance to interact with the whole class, relating the problems to what the students had learned in the previous classes, such as the theme and rhyme and the ways of writing numbers. When reviewing the previous learning, she did not directly explicate the points but asked the students to reflect first. In the end, Carrie summarized the students' common writing issues: the format mistakes, the lack of academic language expressions, the inadequate language variety, and mismatched themes and rhymes.

Accordingly, Carrie's instruction was built on students' work and responses, and the students actively interacted with the teacher, making the whole process interactive and co-adaptive. The teaching was improvised, which required Carrie to synthesize all the information and perform a critical evaluation with high language proficiency (e.g., quickly offering revision suggestions). All in all, Carrie had adjusted her perceptions and actions regarding how to set assignments, provide feedback more strategically and effectively, and use formative assessment to facilitate students' learning. The fluent use of formative assessment to adjust teaching reflected her adaptive teaching style, indicating her adaptive expertise in EAPWT.



4.3.1.3 The attractor state two: Gaining routine expertise and self-efficacy to align teaching practices with beliefs

After years of exploration, she could handle problems in teaching and teach with ease. Carrie stated that her teaching expertise developed as evidence by “the familiarity with the course, the mastery of teaching content, and the teaching effects advancing every year” (First interview). She could “smoothly prepare, instruct, and mark students’ writing” (Second interview) in the latest rounds of teaching this course. Carrie recalled that she would spend days preparing the lessons in the beginning, but that was now down to less than one hour. She could fluently teach this course with a clear plan regarding “when to explain the knowledge, when to guide the students using handouts or reading the PowerPoint, and when to arrange discussions” (First interview). She commented, “I had the content and materials imprinted in my brain, so I was fluent in instruction without stopping to refer to something” (First interview). After that, Carrie described, “The course and teaching had stabilized with minor changes but no extensive modifications” (Third interview). With the course and instruction now routine and mature, she felt “fulfilled and satisfied” (Second interview), especially when the students expressed enjoyment and gains in class and their written reflections.

After rounds of teaching, Carrie developed a teaching mode of “integrating top-down and bottom-up methods” (First interview) after 2019, forming her practical knowledge of EAPWT. When adopting the top-down way, Carrie “built the scaffold for students with a clear framework encompassing the essential chapters of a thesis” (First interview) and instructed them in the main concepts or strategies related to “what, why, and how” (First interview) to comprehend the basic structure and language use in each chapter. When applying the bottom-up approach, Carrie left time for the students themselves to discuss, do small exercises, and practice writing. Afterward, she led them to summarize the knowledge

and problems, compare the confusing concepts, and synthesize the associated chapters. After rounds of deliberate practice of this model, Carrie developed self-efficacy about her teaching. First, the top-down way was perceived as more efficient than waiting for the students to figure out the frame by repeatedly reading papers in the limited sixteen-week course time; second, integrating the bottom-up practices would allow them to comprehend the knowledge better and feel that “they filled their frames by themselves step by step” (First interview). Overall, the mixed-use was thought to “follow the cognitive process of learning” (First interview), so “if the students followed the teaching in class, completed the assignments, and understood the feedback, they could at least imitate and produce something in compliance with academic norms” (First interview). Carrie commented positively on her current teaching:

It was a win-win situation and an intelligent teaching method because you did not have to over-push your students. Your students would not be exhausted when you identified and conformed to their needs and cognitive learning patterns. It was doing twice the work in half the time. (First interview)

As Carrie gained more EAP teaching experience and practical knowledge, she could make her teaching practice more aligned with her perception of teaching style and features. Carrie’s fluent and flexible teaching could be observed in her teaching practice.

First, the teaching was self-perceived as “student-centered” (Second interview). Carrie stressed her effort to “cater to students’ diversity” (Second interview), so the adaptive teaching could be exercised to develop her adaptive expertise. For instance, she explored various ways to teach students with diversified research directions. In the first round of 2018, she separated the four classes into groups with the same direction to teach them at different

times in the methodology session, so she could focus on teaching the genre features in one direction at a time. However, after 2019, another teacher joined the course, and each was responsible for two classes, so it was not operational to divide the class. Carrie changed to dividing students into groups in class according to their research directions and personal wills. Each group could then share ideas and materials and conduct a peer review. Moreover, the students were encouraged to approach different groups to extend their thoughts by communicating with more classmates. The students gained more insights and opportunities to “self-organize their learning” (Second interview). Carrie remembered that once she taught the methodology in 2021, her explanations took around 20 minutes. The rest of the time (around 70 minutes) was spent on the students’ self-arranged group discussions, exchanging their analyses of the structural and linguistic features. When instructing different classes, Carrie added more explanations, examples, and checks in the class, giving fewer responses to her, even mutating her tone and tongue, to “drag the students forward” (Second interview).

The second evidence for Carrie’s adaptive teaching was that her instruction became more “student-friendly” (Second interview) with her enhanced teacher-student relationship-building skills. Carrie persisted in this belief through the five rounds of teaching, especially when she began to think from the student’s perspective to cater to their learning difficulties and problems. Starting from the first round, Carrie had deliberately paid attention to the classroom atmosphere, such as inserting some humor into teaching to liven up the class, because she did not “want the students to feel it painful to take this challenging and boring course” (First interview). Moreover, Carrie stressed that she had experienced the pain of being stuck in EAP writing, so she “intended to help the students mitigate the pain” (First interview) with her carefully designed teaching. In addition to adopting top-down and bottom-up teaching methods with varied teaching activities, Carrie strove to nurture a relaxed

and encouraging environment for students. She showed strong empathy for students' struggles because she had been a student for years, from undergraduate to graduate study. She was considerate of students' learning difficulties, "highly tolerating for their mistakes" (Second interview), and had never revealed any judgmental comments on their performance in or out of class. As Carrie self-described, "I regarded myself as a friend to my students, supporting equal communication with them" (Second interview).

The teacher's sincere care for students' learning positively influenced the students' learning attitudes. For example, in 2021, one student manifested his disdain for this course in the first three weeks, always bringing some other unrelated books to read in class. He seldom followed the handouts or completed the exercises. However, Carrie never scolded him or made any negative comments. On the contrary, she gave her handouts to the student when he did not bring them to class or assumed that he did not have them printed out. Gradually, under Carrie's influence, he actively engaged in practices and group discussions and even automatically answered Carrie's questions, activating the class atmosphere with his enthusiasm and adding more laughs.

In addition, Carrie endeavored to organize differentiated exercises and practices for each session since "the students could find their interested ones among the diverse tasks and activities" (Second interview). In each class, the students accomplished various exercises or activities to enhance their comprehension in terms of each chapter's structure, contents, and language. As presented in the student handouts and observed in class:

In the Introduction session:

The exercises in the handouts consisted of the following:

- (1) Sample paragraph analysis (How many parts can this text be divided into, and what are they? What is the primary function of each part?)
- (2) Reconstructing the sentences into their original order, numbering them from 1 to 10;
- (3) Discuss the differences between these phrases with IP expression in a literature review.

In Methodology session :

- (1) Work with a partner and decide which of the statements applies to writing a methods section. Write an A if you agree or a D if you disagree. If you are unsure, indicate this with a question mark (?);
- (2) Match the terms and definitions in the table below;
- (3) Match each of the extracts below with an element from the table above;
- (4) Analyzing the following different sections of methodology and filling the table below.

In the Results session, presenting data :

- (1) Identifying the main information elements in the Results sections below;
- (2) Reading the data presented in the table below and complete the commentary on Results;
- (3) Categorizing the sentences below according to whether they make a comparison, describe a change, or describe a relationship.

As manifested above, the students were involved in diverse practices in class, ranging from individual and pair work to group work. In actual classroom practice, the students tried to work out the answers themselves, discuss with partners or groups, and then exchange opinions between groups before Carrie clarified the answers. The laughter and active classroom atmosphere could be observed in class.

The third evidence for Carrie's teaching fluency and flexibility was that the teaching became more "knowledge-centered" (Second interview) when she better managed classroom teaching. In 2018, Carrie admitted that she generally introduced what they would learn in each lesson. In contrast, she became more precise about the specific objectives for each class in the latest teaching rounds, leading to the assured achievement of the course goals. In class, Carrie recursively introduced the learning objectives for new lessons and reviewed what they had achieved in previous sessions, strengthening the cohesion of her teaching and facilitating students to associate the heterogeneous and abundant knowledge respecting EAP writing. Carrie assumed that sharing the teaching and learning objectives at the outset showed that "I was not the one controlling the class, but the knowledge or the information itself, entailing those learning tasks" (Second interview). The students would then "join the teacher to fulfill the objectives and check how much was being executed at the end" (First interview) and "take the initiative to learn" (Second interview), becoming more reflective and regulative in their learning. As well as keeping in mind each lesson's learning objectives, Carrie also guided the students to contemplate their long-term goals of thesis writing, in particular, self-checking their thesis planning by filling in a map including the main points of the thesis parts (e.g., topic selection, research questions, literature review, and methods) and reflecting on whether they had achieved the overall learning goals for each part.

The beliefs concerning being "student-centered/oriented," "student-friendly," and "knowledge-centered" were not newly constructed in this course since Carrie possessed more than ten years of EFL teaching experience and specialized in second language acquisition. Regardless, the teaching beliefs were further actualized and developed by Carrie's ongoing explorations in the EAP writing course with enhanced EAPWT expertise, and "it took time

and needed polish like writing” (First interview).

More significantly, the teaching practices fulfilling these beliefs were developed to be contextualized and “suitable for the course and the students” (Third interview). Carrie thought of the EAPWT as “technical or practical skills” (Second interview) requiring more practice to be more adept at classroom implementation and class management. She said, “I felt confident managing the teaching materials, content, teaching methods, and activities” (Third interview). Despite the self-efficacy regarding the course design and preparation, Carrie was assured that:

I could precisely control the time of each lesson, as I had considered the time ahead for the activities, the exercises, the teacher’s explanations, and the students’ discussions. It was like writing an 8000-word paper when you needed to be sure of the focus of each part and how you were supposed to compose them. (Second interview)

4.3.1.4 The attractor state three: Continually developing adaptive expertise with motivation for changes

Even when the course design and teaching implementation had been gradually routinized, Carrie underscored that the unsure part of teaching was the students’ reactions, engagement, and feedback, which she regarded as “both challenges and opportunities” (Third interview). Moreover, she regarded the continuous refinement of EAPWT as her commitment to better managing the unsure part. Her passion as a teacher and sincere care for students made her adapt teaching to students’ diversities in personal interests, learning needs, backgrounds, and levels.

Bearing that in mind, Carrie constantly adjusted the activities or adapted the implementation

to facilitate students' comprehension better. For example, even for the same activity, Carrie conducted it differently through the five teaching rounds. She designed a figure indicating the typical structure of academic writing with five sections. In 2020, Carrie showed it all to the students from the beginning. However, Carrie noticed it was "overwhelming when they had no conceptual knowledge about all the sections" (First interview), so she presented it after the methodology instruction in 2021. At that time, the students had a basic understanding of literature review and methodology, which could be associated with the introduction. Carrie claimed they could make quick connections among these parts when they read the figure and focused on the three left parts. In her opinion, "if I broke the figure into fragments, they could not grasp the whole image in mind; now it was divided into two parts, which were easy to piece together and did not manifest overwhelming information" (First interview).

In 2022, Carrie again refined the way of using this figure. In the first lesson, she showed the students an empty figure and invited them to fill it in with the five sessions based on their apprehension. They uploaded their figures to an online teaching platform to share in class. The students could explore their versions of the thesis structure and content arrangement without having to give a uniform and standard answer. Afterward, they uploaded theirs onto the online teaching platform. In class, Carrie encouraged the students to read others' figures, make a comparison, and share their rationales. Accordingly, divergent and creative ideas were promoted. As the teacher provided no fixed and correct answer, students were motivated to concentrate on the following sessions to check their comprehension. In other words, this figure constructed by the students themselves served as a guide for self-reflection and self-exploration in the subsequent learning in this course. Then Carrie unveiled half the figure before she taught the literature review and the other half before the introduction session. Thus, the students could compare theirs with the teacher's and correct their misunderstandings.

The changes concerning Carrie's instruction with the figure indicated that her teaching expertise evolved along with her increased consideration of students' learning patterns, difficulties, and intentions to engage them more. In addition, these transformations manifested her teaching flexibility with insistent adaptations and the fluency "freeing my attentions to more innovations on the spot" (Second interview). With the support of routine expertise, Carrie could spare more attention to developing adaptive expertise. As Carrie believed:

The adaptive use of the figure belongs to the innovative part of teaching, which happened more and more when my attention was free from other parts of the course and instruction, which all went smoothly. It was similar to learning to swim. Initially, you focused on moving your hands, feet, and breathing. Later once you were relaxed, you suddenly could do some artistic dance with your hands and even chat while swimming. (Second interview)

What is more, Carrie could adapt to novel teaching settings and students' situations. Though Carrie's instruction in the EAP course went "more and more smoothly" (Third interview) along with the deliberate practice and polish, in 2022, she encountered a novel situation that made her previous teaching design inapplicable. First, the students had not determined their directions even when the course had proceeded for around two months. Therefore, the group work could not be set as in the previous teaching rounds. Second, due to a new wave of the pandemic, the classes changed to online mode using Tencent Meeting Room. With these constraints, Carrie did not continue the face-to-face teaching activities, such as dividing students into groups from the same direction, asking students to bring their materials to analyze and discuss in groups, conducting peer reviews for their writing assignment, and providing individual oral feedback to their writing paragraphs in class.

On contrary, Carrie spent more time lecturing and explicating knowledge because of “the inconvenience of the online discussions (for diversified materials) and the difficulty of activity arrangement when the students were not sure about the research directions” (Informal talk, 2022). This was possibly also because Carrie was still exploring online tools for creating multiple interactions in class as she did in face-to-face teaching. She strove to involve students and promoted interactions in class. For example, she set class-sharing tasks on one online teaching platform called Lanmo Yunban. The students could post their answers and provide comments. She also used annotations to guide students’ attention while giving teacher instructions and explanations and asked students to type their ideas in the chat box of the online meeting room. In other words, she started a new journey to refine the online teaching mode, which added a new part of her EAPWT expertise.

Carrie was devoted to ceaseless adaptations during the five rounds of teaching to develop her teaching expertise. One significant reason was “the conscience of being a teacher” (First interview). Carrie believed the students could feel the teacher’s care and devotion, which would reciprocally influence them. For example, one student acknowledged that they should study harder with such detailed and valuable handouts during the course. One student came to Carrie, expressed her appreciation that it was helpful and exciting, not dull as she imagined, and asked if she could conduct research on academic writing by collecting data in Carrie’s new semester teaching. Carrie also mentioned that her students would recommend this course to their junior schoolmates. She felt “fulfillment” (First interview) when her teaching was acknowledged by the students, when she saw them leaving the classroom with contented, happy faces, and when they still greeted her warmly after the course ended. She opined that she had achieved the teaching quality standards in her mind, constructed through professional

training in EFL teaching and EAP writing and her supervisor's modeling. As Carrie remembered, "My Ph.D. supervisor was willing to assist my study and help me revise anything, which affected how I treated my students" (First interview).

Another motivation for Carrie to seek continuous development in these years was her intense awareness of self-development in academia. She described that teaching EAP writing was closely associated with her academic life. On the one hand, her own EAP writing competence had been promoted while teaching this course; on the other hand, she had converted her research interests into the EAP writing field when continually teaching this course, so the EAP course became her research setting, where she drew inspiration and collected data.

Reciprocally, the research results facilitated the course development when Carrie built teaching-research nexus. For instance, Carrie studied the improvement of students' academic genre awareness and genre knowledge through pre- and post-test questionnaires, which gave her empirical evidence of teaching effectiveness. With the reciprocal benefits, she was willing to conduct research, write papers, and see publications due to the job promotion requirement and her own will. Since she kept immersed in the academic environment and her passion as a researcher, she was in touch with various scenarios for using academic writing, such as "researching EAP writing instructions, supervising students, applying for projects, and publication" (Third interview). Moreover, she aimed to become an expert in teaching EAP and a distinguished scholar as her supervisor. Thus, Carrie stressed that "everything was on the same track and closely connected, so it would not be laborious to develop this course, requiring no extra time and energy" (Second interview). In other words, maintaining consistency mattered, helping her develop the course and teaching expertise in an efficient way.

4.3.1.5 The constraints on Carrie's teaching expertise development

Administrative constraints hindered Carrie's expertise enhancement in teaching EAP writing. One issue was that she had negotiated with the school since 2019 to open the course according to students' research directions because both she and the other teacher had been perplexed by teaching mixed classes. Carrie had been striving to solve this problem. Considering the management difficulty of arranging three teachers to teach this course, in 2022, she proposed another way where she would still be the primary instructor. However, two other teachers from the literature and translation research directions could be arranged to teach some sessions with significant research discrepancies (e.g., methodology). No response was received.

Moreover, Carrie devised a more thorough plan advocating the reform of the curriculum system for English majors to open a series of courses related to academic writing and research for first-year students, sophomores, and juniors to prepare students for the final thesis writing course. Carrie affirmed that, in consequence, all the writing courses would form a connected series, and the students could smoothly transfer what they learned in the past three years to the final year. As she described it:

This process was similar to cooking a fish. The EAP writing course was the final step, but before cooking it, the materials and the seasonings should be prepared, and the cooking skills should be equipped. All these preparations should be directed toward the final step. (Second interview).

Carrie knew this idea could not be well executed by herself and relied more on the approval

and coordination from the school and the English department. She could only insert the relative content into her other courses' instructions. For example, Carrie taught the students to select topics in Social Science Research Methods course and introduced the empirical research methods in the Applied Linguistics course, which would also be helpful in EAP writing.

All in all, Carrie was committed to the course's advancement, but her efforts were still powerless to break the administrative limits. Carrie stressed, "I was less capable than desired because the development of the course design and implementation was restricted by external conditions and pressures out of my control" (Third interview). Notwithstanding the limitations, Carrie had been used to making unrelenting adaptations, even minor ones, to better fit better the students' situations, levels, and needs. As Carrie remarked, "I was a perfectionist, so I pursued the incessant refinement of my teaching; the students always changed, and the field kept advancing, so how could the instruction be immutable?" (Third interview)

Akin to the process of teaching expertise development, Carrie was devoted and hardworking in her work, but the administrative arrangement impeded the job promotion. Though the teaching brought contentment, Carrie still struggled with the pressure of job promotion. Carrie summarized, "I developed this course and my teaching under various pressures, such as career development pressure causing anxiety and negative emotions, and the pressure of physical health" (Third interview). Then she applied for the post-doctoral program to become free from university constraints. However, the EAPWT would be suspended, so Carrie's future expertise development in this field would be unpredictable.

Moreover, when the teaching shifted to online mode, Carrie's expertise was not fully manifested due to the unfamiliarity with the tools and new teaching environment and the lack of technology-integrated teaching knowledge. Although Carrie quickly adapted to the new mode, indicating a state of fluent and flexible teaching, refining teaching implementations required more time to renew and expand her knowledge and accumulate online teaching experience. Nevertheless, since she would leave for post-doctoral study, whether she would deliberately advance this technology-integration aspect of teaching expertise was unknown.

4.3.1.6 Summary of Carrie's case

In brief, Carrie's teaching expertise development started with the relatively favorable initial condition, being prepared with theoretical knowledge and relevant experience but lacking contextualized knowledge in terms of EAPWT. Then her expertise system evolved from the following attractor states: (1) progressive problem-solving in refining EAPWT while gaining more knowledge and experience; (2) gaining routine expertise and self-efficacy to align teaching practice with belief; and (3) continually developing adaptive expertise with motivation for changes. These states also manifested three processes of Carrie's EAPWT expertise development: (1) from being relatively confident in teaching to teaching with complete confidence; (2) from more fixed teacher control to more flexible classroom management; (3) from unsure teaching trials to obtaining teaching fluency and flexibility; (4) EAPWT halting.

To illustrate, Carrie's initial condition in 2018 to take on the teaching work was relatively favorable. She was confident because her background was closely connected to EAP and EFL teaching. Meanwhile, she obtained the freedom to explore course design and instruction.

However, Carrie had never taught this course before, so she borrowed the teaching mode she

learned from an EAP writing course during his doctoral study. Because of the lack of contextualized knowledge, Carrie overestimated her students' capability to digest the knowledge. Then, in 2019, she changed to contemplate more about students' needs and situations, creating more chances for them to practice and share. Her reflection on the teaching issues worked as the stimulus for the transformation of Carrie's teaching to be more student-centered and student-oriented, which was more adaptive and improvised because students' reactions were not fixed. Carrie could effortlessly handle the course enactment with more students' self-exploration and self-regulation because of her enhanced routine expertise (i.e., more knowledge and experience regarding EAPWT) and adaptive expertise (i.e., flexibly tackling new challenges and progressive problem-solving).

In 2020, the main course design and delivery were gradually routinized, but Carrie unrelentingly made micro-adaptations to refine teaching materials, polish teaching activities, and fine-tune assessment and feedback strategies. The teaching fluency and flexibility had been improved in the meantime. Until 2022, Carrie believed that she could teach with ease, even when she encountered new situations of online teaching mode, indicating an increase in self-efficacy. Meanwhile, it also reflected that more learning and practice regarding technology integration in EAPWT were needed for further expertise development. Nevertheless, Carrie had yet to intend to tackle this problem at present, for she stopped teaching the course in 2023 and would go abroad for post-doctoral study.

During the developmental processes, Carrie did not undergo many pains or struggles owing to the accumulated knowledge of EAP and experience of EFL teaching and academic practices. The components of EAPWT expertise interacted and self-organized to evolve when Carrie persisted in refining the course design and delivery. She could quickly manage the

course teaching when she altered her stance to be more student-centered, becoming aware of and familiar with students and the teaching context. The unremitting teaching adaptations were caused by the sense of commitment, the fulfillment brought by students' learning gains, and Carrie's strong awareness of self-development in academia. She was enthusiastic about course development, expanding her knowledge of the EAP field, building the teaching-research nexus, and continuing to write for publications. As she expected, she strung teaching, learning, and research into a connected circle due to the requirement of job promotion and her own will, as she aimed to grow into an outstanding scholar like her supervisor.

However, the curriculum arrangement for the course needed to be revised for the students because English majors with divergent research directions mixed in class, which was unchangeable and hindered Carrie's further course refinement. Furthermore, the university's policy constraint on job promotion caused colossal pressure, so she applied for post-doctoral study to free herself from the environmental constraint. However, it would also cause the suspension of teaching the EAP writing course, so the future development of Carrie's EAPWT expertise still needed to be discovered. Given the dynamism and unpredictability of the expertise development, the developmental processes were non-linear.

4.3.2 Flora's Case

In 2018, Flora took over the EAP writing course from a retired teacher. She began teaching this course for two reasons: out of responsibility as the department leader when other teachers were unwilling to teach it and out of her wish for self-development in research and academic writing. Since then, Flora had continued teaching this course for five rounds until 2022.

However, Flora was still unsatisfied with the teaching effects, even though she had considerably changed course design and delivery (as seen in Table 4.2). In refining EAPWT, Flora's teaching expertise developed with the dynamic changes and interactions of the expertise components. The developmental process is described in the following parts by explicating the initial condition and attractor states Flora had experienced.

Table 4.2

Changes Flora made or experienced

Teaching times	Semester	Changes in teaching content arrangement	Changes in teaching resources and the usage	Changes in teaching methods and classroom implementation	Changes in assessment and feedback	Emotional changes
The first round	Spring semester in 2018	Covering the main main parts of a thesis (e.g., Introduction, Literature Review, and Methodology)	Selecting content from dozens of academic writing textbooks, teacher Power-Points	Teacher lecturing	Not considering much about the assessment and feedback	Feeling challenging
The second round	Spring semester in 2019	The same	Uploading more cases and papers online for students' self-learning	Adding case analysis and more student discussions	The same	The same

The third round	Spring semester in 2020	Introduction to Academic Research (e.g., the basic knowledge and concepts), Academic Research Procedure (e.g., literature review, research topics, data collection and analysis), Academic Research Design (e.g., survey, case study, experimental studies, and action research), Thesis Writing Practices (e.g., structure and language features, outline, literature review writing, writing practices for other parts), and The Requirements for Thesis Writing (e.g., citations and references, proposal, and final viva examination)	The same	Online mode teaching, but not changing the teacher-dominant teaching style	The course assessment and assignments becoming more systematic, final score comprising two parts, the daily performance and the final literature review writing, the former including students' attendance, self-learning on the platform (e.g., watching videos and browsing the supplemented materials), completing small tests for the mini-videos and participating in online discussion and the students five writing assignments, marking each assignment and providing overall feedback, aligning teaching and assessment with the course goals	Being disappointed about unsatisfactory teaching outcomes, receiving relatively low teaching evaluation score
The fourth round	Spring semester in 2021	The same	Producing some mini-videos to explicate the basic knowledge and concepts	Attempting flipped classroom approach (suggesting students to watch mini-videos before class so focusing more on the knowledge use in class), but still mainly using teacher lecturing	The same	The same
The fifth round	Spring semester in 2022	Adding one session with respect to rigorous teaching attitude, educational research awareness, research ethics, and academic integrity to respond to the national policy of "courses for ideological, political education"	Producing all mini-videos, adding more resources comprising books, papers, and videos from other websites	Being more student-centered, fully implementing flipped classroom approach (e.g., adding tests for students' online learning to do self-check), more time for class discussion and case analysis instead of lecturing, uploading the questions onto the online platform for the in-class inquiries, more in-class group discussions and idea-sharing activities	The same	The same

4.3.2.1 The initial condition: Being ill-prepared with insufficient knowledge and experience

In the beginning, Flora was aware of the challenges of teaching EAP writing. She admitted, “I was required not only to teach students how to write the thesis but also to possess experience conducting research and academic writing” (First interview). However, at that time, she received no formative and systematic training concerning EAPWT and had only limited experience in academic practice.

Flora could only use personal readings and previous EFL teaching experience to prepare for the course. As recalled, she regarded the EAP writing course as “a writing course” (First interview) aiming to instruct the students how to write a thesis when she selected content from dozens of academic writing textbooks regarding the main parts of a thesis (e.g., introduction, literature review, and methodology). However, Flora noticed that the students knew nothing about conducting research during the teaching practice. She believed that “the writing norms of a thesis did not need strenuous effort to master, but research was needed, so this course was more than a writing course” (First interview). Therefore, the guidance gained from the multiple textbooks appeared inadequate for the teaching context.

Moreover, Flora’s teaching in the first two years was limited to teacher lectures because she lacked theoretical knowledge regarding EAP teaching or L2 writing teaching approaches. Her EFL teaching experience was not applicable in the teaching context. Flora occupied most of the class time to lecture on all the knowledge and concepts regarding academic writing because the course was theory-loaded. She explained all the concepts, for she was concerned about the students’ comprehension difficulties, leaving little time for other activities with more students’ exploration. Then she felt it was challenging to implement student-centered

teaching in the EAP writing course, which was frequently adopted in EFL teaching. Flora reflected, “in the beginning, my instruction remained how to explain the knowledge lucidly, but I paid little attention to how to enable students to apply it” (Third interview).

4.3.2.2 The attractor state one: Progressive problem-solving in refining EAPWT while gaining more knowledge and experience

With more knowledge and EAPWT experience, Flora refined her EAPWT regarding course design, teaching implementation, assessment, and feedback. Flora’s active responses to national and institutional requirements largely influenced the development of her EAPWT expertise. She was also open-minded and proactive about new learning and committed to refining her teaching as the institutional leader and teacher.

To illustrate, given the knowledge of students’ actual needs, Flora set two goals for this course in 2020: “One was to help the students grasp the general procedure of conducting a preliminary study; the other was to enable them to write a thesis in compliance with academic norms” (First interview). Accordingly, the course was divided into two parts: research methods and thesis writing.

The course goals were further refined to be more connected to students majoring in English teaching and aligned with the new national standards issued in 2022. The revised goals were elaborated from three aspects: to support the students in conducting educational research in the elementary English teaching field, to synthesize the knowledge and skills and critically evaluate literature to complete academic research papers or theses, and to apply the relevant research and literature-search skills for future professional development. The course content was expanded to five sessions: Introduction to Academic Research (e.g., the basic knowledge

and concepts), Academic Research Procedure (e.g., literature review, research topics, data collection, and analysis), Academic Research Design (e.g., survey, case study, experimental studies, and action research), Thesis Writing Practices (e.g., structure and language features, outline, literature review writing, writing practices for other parts), and The Requirements for Thesis Writing (e.g., citations and references, proposal, and final viva examination). The new arrangement emphasized the literature review, which appeared twice in the syllabus. She explained, “It was demanding for the seniors to collect data for this course, but it was feasible for them to search for literature and accomplish literature reviews” (First interview).

Moreover, the students were supposed to transfer the related skills to read more literature to follow the trends in foreign language teacher professional development and ponder their career plans, indicating that Flora devised the course content with a long-term vision. The program accreditation brought about this change for the English teaching major in Flora’s school, which obliged the course design to change in compliance with the graduation requirements. Flora said, “The accreditation caused a fundamental change in my teaching beliefs, causing me to contemplate what the course could serve for the students’ future teaching work” (First interview). In addition, responding to the national policy of “courses for ideological, political education,” Flora added one session with respect to a rigorous teaching attitude, educational research awareness, research ethics, and academic integrity.

In addition, the course assessment and assignments became more systematic after 2020, when the course goals were refined to meet the English teaching major graduation requirements as required for the program accreditation. Not only were the course design and teaching activities required to conform to corresponding course goals, but also the assessment and assignments. As Flora admitted:

I used to score students' performances loosely without specific criteria. However, the accreditation set higher demands for the assessment design, requiring the teacher to specify the objectives of each assignment and provide detailed criteria for the grades. After the course, the achievement report was requested with supporting evidence. (First interview)

Under the school-level curriculum reform with high-level requirements for accreditation, Flora renewed her perception by constantly reflecting on “why I implemented the activities and how I evaluate teaching effects after class” (First interview). Accordingly, she redesigned the assignments and assessments. The students' final scores comprised the daily performance and the final essay. More specifically, students' attendance, self-learning on the platform (e.g., watching videos and browsing the supplemented materials), completing small tests for the mini-videos, and participating in the online discussions were all recorded automatically by the platform as evidence supporting the students' daily performance grades. Moreover, Flora assigned the students five writing assignments to enhance their knowledge comprehension and examine their mastery of the course focuses, which consisted of critical literature readings, comparisons of educational research methods, and sample analysis and evaluation in terms of research design, academic paper writing, and thesis writing. All the mentioned tasks indicated Flora's efforts to “align both teaching and assessment with the course goals” (First interview).

In addition to the program accreditation setting higher standards for teachers' teaching expertise, the school recommended that teachers use technology to facilitate their teaching in 2019. Flora was willing to commit to teaching reform with technology because she regarded herself as the one with “a pioneering spirit, who enjoyed new attempts and changes and advanced with the times by continuous learning and perception renewal” (Third interview).

She adopted one online platform called Xuexi Tong to upload more cases and papers for students. In 2020, because of the COVID pandemic, the course was shifted to online mode. After one semester, Flora reflected that the textual materials and teacher PowerPoints were not attractive to the students.

Afterward, Flora produced mini-videos to explicate the basic knowledge and concepts through self-exploration, as she was unsatisfied with her online teaching. Flora pointed out, “I had to repeat elaborating on the conceptual knowledge repeatedly, so I wondered why not record the teacher lecturing in mini-videos by splitting the knowledge into small points” (Third interview). Thus in 2021, she gradually produced some mini-videos through self-learning, which were not completed due to time and energy limitations. Flora taught two courses and undertook enormous administrative work as the school dean. Meanwhile, she needed to write all the scripts and communicate with a technology company to edit the videos. In 2022, she finally accomplished all the mini-videos and added more resources comprising books, papers, and videos from other websites. As demonstrated, Flora enriched the teaching materials when the course content was settled, owing to his open-mindedness for new teaching trials and more practical knowledge of technology integration.

As for the refinement of teaching methods and classroom implementation, Flora’s self-improvement in pedagogical knowledge played a significant role. She first added case analysis in class to illustrate the usage of theoretical knowledge in 2019, when she learned this technique through informal learning from online teaching videos. However, the primary teaching method continued being teacher-dominant lecturing, even when the mini-videos were produced in 2021. Flora recalled, “I did not use the videos to facilitate my teaching, but simply suggested the students watch them for self-learning” (Third interview). The possible

reason was that Flora did not fully apply her theoretical knowledge of blended teaching or technology-integrated teaching in the course. Besides, she needed more time to monitor how much the students had learned by themselves. The students were slack on the course learning, so the teaching effects needed to be more satisfactory.

In addition, Flora adapted his teaching to be more “student-centered” (Third interview) with a complete application of the blended teaching mode featured with the flipped classroom. The students were required to watch the videos for conceptual learning and conducted self-checks with the small tests. Then Flora could leave more time for class discussion and case analysis instead of lecturing. Moreover, before class, she had already uploaded the questions onto the online platform for the in-class inquiries, which the students could deliberate on ahead of time. For instance, when instructing the academic writing structure, language feature, and outline writing, the students responded to the questions: “What is academic writing? What are the differences between academic writing and argumentative essays? What is the structure of academic writing? What are the language features of academic writing? And what are the features of the outlines?” (Online platform). Students’ answers showed their basic conceptual comprehension gained from the mini-videos.

Later in class, the students were first encouraged to raise their group questions after discussions. The questions were diverse and specific, such as: “How to understand the variety of academic language use?” (Group one) “What is the connection between the paper structure and outline?” (Group three) (Online platform) Second, they discussed more for the case analysis to make comparison and critical evaluations. For example, the students watched a video of two interviews and then discussed them in groups to compare the differences and effects. In these activities, they were guided to apply and enhance their comprehension of

interviews. Afterward, each group analyzed two textual materials: a short interview transcript and a brief passage of classroom observation notes. Furthermore, Flora involved the students more in idea-sharing activities in class. For instance, she even arranged a class debate concerning whether teachers in primary and secondary schools should conduct research. As depicted above, the students were given more opportunities to express their ideas, and more class time was left for discussions and idea exchange.

Besides, Flora changed her way of lecturing. Flora explained, “I used to instruct students according to my standards to select what should be explained” (Informal talk after class, 2022). With more knowledge of students’ situations and needs, Flora became selective in teacher explanations. She did not elaborate on all the points as equally detailed but selected the ones that the students were confused about or found difficult to apprehend. She used information from the online teaching platform as a reference for self-reflection when she browsed students’ answers to the uploaded questions regarding the concept learning in each session. After self-exploration and self-reflection, she deepened her comprehension of the perception that “to be student-centered did not mean pandering to the students, but to speculate on how to facilitate their learning from their perspective (Third interview).

Apart from increasing student engagement in class, Flora emphasized facilitating the students’ application of knowledge instead of simply apprehending the concepts. For instance, she created group mini-research activities where each group conducted individual or focused group interviews or surveys with or of their classmates on different topics such as “the academic integrative in my view” and “the most rigorous learners on our course” (Online platform). Besides, the students were guided to practice their writing. For instance, they brought laptops into class to read and analyze the sample outlines, selecting the best in groups

and providing rationales. Then they wrote their outlines and conducted peer review. The above teaching trials were supported by Flora's application of her integrated knowledge base regarding blended teaching and her experience of EFL teaching while practicing student-centered teaching beliefs.

What is more, Flora made such changes owing to her active reflection on the teaching issues. She recalled that "I reflected on the problems every week after teaching" (Second interview) and that "the teaching effects were deduced from students' performance and assignments" (First interview) to develop the pertinence of her teaching to students' situations. During the reflective process, Flora realized that "student-centeredness was a perception and belief I upheld, but it required more devotion to practically implement it" (Third interview). The sense of commitment and care for students' learning gains motivated Flora to spend extra time and energy. To realize the novel teaching mode, she not only spent her holidays establishing the online teaching and learning materials but also transformed her old habit of classroom instruction and attempted various ways to empower the students to take charge of their learning through discussions and practice.

In addition, Flora's classroom management skills were also developed as he intended to balance teacher control and students' self-exploration. When implementing student-centered teaching, she made constant adaptations exploring ways to restrain herself from self-indulgence in teacher talk. She reviewed the data demonstrating the students' online learning situation before class. She selected those not active online to share ideas in the next class to engage more students. Besides, she continually refined the group work to utilize class time fully. For instance, she was worried about her dominance in class in the first half of the course in 2022. Hence, she arranged more group work in the second half and encouraged the

students to talk to other groups or swap groups to gain more insights. Flora was thrilled that “the students began sharing their ideas, being immersed in discussions” (Informal talk after class). Furthermore, she was alert to how much time she took for knowledge elaboration and strove to save more for the students’ discussion and practice. For instance, once in one class, Flora could not help extending the explanations to the students’ questions about the structure and language features of academic writing, which took more time than she had planned. Therefore, the group activities were not accomplished. Accordingly, in another course, she reduced her elaborations and reminded the students of the time during the group work to complete all activities in class.

Another strategy Flora adopted for time management was redacting the activity instructions on the platform. In 2021, she briefly described the activity, but in 2022, she explained the goals, the steps, and the requirements in detail on the platform. She said, “I did not need to use more time to give instructions in class” (Informal talk after class). In other words, better time management facilitated the development of Flora’s teaching efficiency and actualized the student-centered teaching belief. The classroom management strategies evidenced Flora’s formation of her practical knowledge in EAPWT.

4.3.2.3 The attractor state three: Obtaining routine and adaptive expertise but lacking self-efficacy

With the continual refinement of the course content and teaching materials, Flora was firm about her current arrangement based on rounds of exploration, unrelenting reading and learning, and self-practice of academic writing and publishing. She affirmed, “I promoted my academic writing competence accompanied with rounds of exploring the better course design, and I could elucidate the norms and strategies more clearly than before” (First interview). In

the meantime, with rounds of teaching practice, as Flora highlighted, she became confident about the course content, teaching methods, and activity design revealed in the three interviews due to the constant learning and past teaching and researching experiences. Flora believed she was professional in educational research and English teaching since she had more than twenty years of teaching experience and continued to study teaching and teacher education. She could fluently manage EAPWT and routinize part of teaching with the gained routine expertise.

However, Flora still sought opportunities to refine the course design by self-updating the current knowledge concerning EAPWT. After the course teaching in 2022, she went on to communicate with teachers from another university teaching college English at an academic conference, who inspired her to adopt a project-based teaching method. After that, she devised a new design, overturning the current content arrangement. Flora assumed, “If I were to apply the project-based teaching in this course, the content would be reconstructed to serve the production of a paper by closely connecting theories and practices” (Third interview). Moreover, Flora was enlightened that she could experiment with formative assessment in this course, “which changed the teaching process as the assessment process, as well as the after-class assignments, could be decomposed into in-class practices” (Third interview). She realized that the practices in the current assignments still focused on textual analysis and evaluation. Inspired by the communication with other scholars at a conference, she was wondering about the feasibility of working backward for the assessment and assignment design, aiming to produce a paper. Therefore, Flora’s knowledge of EAPWT was renewed, and more teaching adaptations (macro and micro) could likely occur. It also manifested that even when the course design was settled at some point, it could be further developed if the teacher renewed her belief and was inclined to continue advancing.

Furthermore, she lacked confidence in the course delivery, especially the degree of student engagement, which was still out of her control. The uncertain part of teaching pushed her to continually explore “more effective ways to associate theoretical knowledge with their academic writing practices” (Third interview). Another reason for the lack of self-efficacy was that, although Flora persisted in adjusting her teaching to facilitate students’ learning, she was still unsure about the teaching effects. She was confused about the failure to achieve the expected effects in reality. Taking the latest three rounds of teaching in 2020, 2021, and 2022 as examples, Flora was disappointed about the low quality of students’ final literature review writing and puzzled about “how they could not even master the basics when I assumed it was clearly instructed” (Third interview). Moreover, she felt “upset” (First interview & Third interview) when receiving a relatively low teaching evaluation score in each round of teaching (e.g., in 2020, 2021, & 2022), for she had been devoted and endeavored to improve her instruction.

When faced with negative student comments, Flora recalled, “I was so dejected and distressed because of the low teaching evaluation score against my enormous effort in this course” (Second interview). Then she reflected on “why the students did not like me and how to make them gain a sense of achievement” (Second interview). In the students’ comments on her teaching, Flora mentioned that they complained about the heavy work of this course. She realized the students might not understand her intentions and care for their achievement but regarded her as “too strict” (Second interview). She contended, “I only gave them a pass when they fulfilled the basic requirements” (Second interview). However, Flora was softhearted due to her sincere care for students’ learning gains. Flora insisted on marking each assignment and providing overall feedback despite the time limitation. When the students

handed in the written literature review, she offered them extra opportunities to approach her for face-to-face individual feedback. The students could repeatedly revise their writings if they were willing to. For instance, some students revised their drafts twice or three times until they met the passing standards.

After the course teaching in 2022, Flora was still bewildered by the dilemma that “the students were not enthusiastic about homework, but mastering such a difficult course required hard work” (Third interview). She admitted, “I was not confident about designing the assignments more accurately and effectively” (Third interview).

To uncover the reasons behind students’ negative comments, Flora intended to communicate more with the students, enhancing the teacher-student relationship. To better understand the students’ perceptions and gains from the course, she designed a mid-term reflection survey in 2022 to investigate what the students perceived they had learned from the course and what cognitive and behavioral changes they experienced. At the course’s end, she invited the students to self-evaluate the achievement of the course objectives. Correspondingly, Flora collected more feedback from the student side. After analyzing the self-reflection survey, Flora realized that “one-third of the students perceived many gains from the course, but the majority still felt more negative emotions than a sense of fulfillment, such as being too laborious” (Third interview). Even when she continually received relatively low teaching evaluation scores from the students, she did not cease to deliberate on the problems and experiment with possible ways in virtue of “the consciousness of being a teacher” (First interview), “the sense of commitment” (Second interview), and “genuine caring for students’ gains” (Third interview).

In addition, Flora adjusted her attitude toward the students' negative comments, showing her self-regulation of the negative emotion. She stated, "I began not to mind the low teaching evaluation score that much, but regarded the reformation process as self-promotion and duty fulfillment" (Third interview). She acknowledged enriching her experience and knowledge and enhancing her adaptive expertise by continuously refining her teaching.

4.3.2.4 The constraints for Flora's teaching expertise development

In Flora's opinion, the primary constraint for her teaching expertise development was the multiple roles she undertook in her daily work, such as the administrative, research, teaching, and supervisory roles, which led to insufficient time and energy for the EAP writing course. The role occupying most of her time was that of school dean with abundant affairs and meetings, leaving no time for "monitoring students' online self-learning effects and students' participation in the activities, providing individual feedback (e.g., to the research topic)" (First interview), and "informal communication after class...the individual tutorial" (Second interview). She said, "If I were merely a teacher, I could spend more time and energy developing my instruction" (Third interview). Hence, she schemed to cooperate with other teachers, forming a team to advance this course, which was nevertheless troublesome because "they were occupied as well" (Second interview).

With limited time and no support from others, Flora could only explore and advance the course herself. However, enacting some innovations or plans for further development was not feasible. For example, she intended to refine the mini-videos and apply them to a course construction project; she also desired to compile a textbook for this course. She longed to reconstruct the course with the project-based teaching method. As listed, plenty of ideas emerged in Flora's mind, but their actualization entailed more time, energy, and support from

the institution.

4.3.2.5 Summary of Flora's case

To sum up, Flora developed her EAPWT expertise by starting from an unfavorable initial condition, being ill-prepared with insufficient knowledge and experience, when she received no formal and systematic training in terms of EAPWT. Flora proactively accepted the teaching work in 2018 as her first time instructing an EAP course. She tentatively explored her way of course design and delivery with previous experience in EFL teaching and academic practices. However, she still felt challenged in the first two rounds of teaching.

Then the two attractor states were triggered: progressive problem-solving in refining EAPWT while gaining more knowledge and experience; and obtaining routine and adaptive expertise but lacking self-efficacy. These states indicated three processes of EAPWT expertise development as follows: (1) from being ill-prepared to be equipped with the integrated knowledge base and relevant experience; (2) from being unsure teaching trials to partially routinized teaching; (2) Reaching teaching fluency and flexibility but seeking ongoing teaching adaptations.

To illustrate, in 2020, the program accreditation for the English teaching major in Flora's school worked as a stimulus, activating the transformation of her teaching and assessment. The course goals, design, and delivery were refined systematically to meet the English teaching major graduation requirements, that is, building consistency between assessment and teaching to match specified course goals and objectives. Meanwhile, Flora constructed online teaching resources and explored blended teaching with flipped classroom design because of the institutional encouragement of adopting technology-integrated teaching and the influence

of the COVID-19 restrictions. Moreover, Flora was willing to learn and experiment with something innovative. In addition, the students' negative comments on teaching pushed Flora to reflect on the possible issues, along with her sense of commitment as a teacher and her sincere care for students. In 2022, the teaching was transformed to be more student-centered, while Flora tentatively implemented the flipped-classroom design.

During the developmental process, Flora was confident about managing course content and believed that she achieved fluency in knowledge explanation with the familiarity of relevant theoretical knowledge and specialized academic practices in educational research. However, Flora was unsatisfied with the current effects and was still exploring a more effective teaching implementation method. She maintained the state of being adaptive and open-minded for new trials. As Flora described, she even intended to experiment with a project-based approach and rearrange the course content for the next round of teaching. Meanwhile, she needed to break personal and environmental constraints to make further expertise development, such as balancing different roles at work to spare time and energy for course reform and teaching refinement and seeking support from colleagues to build the teaching team.

4.3.3 Kade's Case

Kade's EAPWT journey was intermittent. The journey started in 2010, lasted for two years, and stopped in 2012 when he went abroad to pursue his doctoral degree. In 2016, he temporarily helped another teacher teach this course for one semester and then left again. In 2019, he finally returned and continued EAPWT each autumn semester. Kade readjusted and adapted his teaching to the new contexts whenever he restarted the journey. Meanwhile, the development of EAPWT expertise was not consistent and linear. The following parts depict the dynamism of the developmental process and how the enhancement of EAPWT expertise components informs the changes (as illustrated in Table 4.3) Kade experienced or made.

Table 4.3

Changes Kade made or experienced

Teaching times	Semester	Changes in teaching content arrangement	Changes in teaching resources and the usage	Changes in teaching methods and classroom implementation	Changes in assessment and feedback	Emotional changes
The first two rounds	Autumn semester in 2010 and 2021	Eight themes related to academic writing process and norms (e.g., Overview of academic paper writing, Subjects and topics, Thesis and thesis proposal, Collection and evaluation of sources materials, and Note-taking)	Mainly relying on one textbook	Lecturing the content of each theme in the textbook and giving examples of some points	Not much attention to the value of assessment and feedback	Feeling challenging to teaching EAP writing
The third round	Autumn semester in 2016	Supplementing the content concerning genre features to raise students' genre awareness	Adding some paper samples for genre analysis	Inserting sample text analysis in class	The same	Being under huge pressure and sad, being perplexed by students' passive learning attitudes

The fourth and fifth round	Autumn semester in 2019 & 2020	Course overview and the linguistic features of academic writing, moved onto the preparation of thesis writing (i.e., Choosing a research topic, Research methods, Research design and research proposal, Collecting and working with sources), writing a thesis (i.e., Literature Review, Introduction, Methods, Discussion, /Conclusion, Citations and references, and Abstract and Acknowledgement)	Accumulating more literature (e.g., books and papers) related to EAP writing and L2 writing pedagogy, especially the acknowledged textbooks and guidebooks edited by scholars both in China and elsewhere, critical evaluating the existing relevant textbooks	Genre approach, in-class writing workshops (students writing in class, followed by peer review, self-assessment, teacher feedback, and revision), small exercises for enhancing students' comprehension, group work for students to exchange ideas before writing, starting to use one online platform called Fanya to facilitate his teaching	Attempting assessment and feedback strategies such as involving the students to set their own learning goals, assess their peers and their own writing, and regulate their learning process	The same
The sixth round	Autumn semester in 2021	The same	The same, but increasing the difficulty of exercises for English majors	The same, but adjusting the amount and difficulty of in-class exercises, the extending the workshop time, and adding specific exercise or deleting the ones too easy for the students	Portfolio assessment, mid-term writing tasks accounting for 20% of the final score and final reflective writing for 50%, students' weekly assignments comprising small exercises (e.g., sentence paraphrase or correcting writing errors) and writing practices (e.g., paragraph writing), selecting the best two scores from the six times of assessing the assignments constituting 30%	The same, gaining a sense of frustration but not giving up, being struggled and confused, but gaining a sense of self-fulfillment for the positive teaching outcomes
The seventh round	Autumn semester in 2022	The same, adding more time for Literature Review (up to three weeks) and Citations and References (up to two weeks)	The same, and building online teaching resources and scheming for the textbook edition	Online or blended teaching mode; Coordinating three online platforms (i.e., Tencent Meeting Room, Fanya and Xuexi Tong), redesigning some online individual activities	The same	The same, being bittersweet

4.3.3.1 The initial condition: Being ill-prepared with not sufficient knowledge and experience

At the very beginning, Kade felt the EAP writing course to be challenging. First, it was a new course for him and required considerable work to prepare the teaching compared to repeating the old ones when he had yet to obtain systematic training in EAP writing and writing instruction. Though he was an experienced EFL teacher with L2 writing teaching experience, he still needed to figure out how to teach this course. Second, the course was demanding for the seniors, who “possessed few understandings about research and little knowledge of writing” (First interview). Moreover, the students did not take the course seriously, even though it was designed to facilitate their thesis writing. They merely intended to perfunctorily complete the work when “they were faced with multifaceted pressure to find jobs or to apply for further graduate study” (First interview). Therefore, the seniors were reluctant to participate in class and slacked on their homework, leading to unsatisfactory teaching effects. Kade depicted, “I was under huge pressure and sad when the course did not exert substantive effects on students’ thesis writing, which was still problematic as other colleagues (the supervisors) complained” (First interview).

Moreover, Kade experienced multiple rounds of restarting the EAP writing course when he felt unprepared for the insufficient knowledge and experience regarding EAPWT. To illustrate, in 2010, Kade proactively applied to teach the EAP writing course when the former teacher retired, mainly out of his interest in writing pedagogy. At that time, Kade followed the previous teacher, who compiled a textbook dividing the course content into eight themes related to the academic writing process and norms, such as Overview of Academic Paper Writing, Subjects and Topics, Thesis and Thesis Proposal, Collection and Evaluation of Sources, and Note-Taking. This content arrangement lasted for two academic years. In 2012,

he went abroad for doctoral study, so the course was handed over to another teacher. In 2016, Kade came back and restarted teaching this course. At that point, he supplemented the content concerning genre features to raise students' genre awareness with the eight themes, which he had gained a preliminary understanding of while abroad. After one semester, Kade left again and continued his study until 2019. In the autumn semester of 2019, he returned, and a teacher was in charge of the EAP course for English majors, but none for teaching students with English as their second major, so Kade initiated his EAPWT for this student group in 2021. Unlike the 16 lessons for English majors, the EAP writing course for English as the second major consisted of 32 lessons lasting eight weeks. Along with changes in students' majors and the teaching time duration, Kade had to reconsider the course design. In the whole process, Kade was occupied with surviving the new teaching contexts with changed students and teaching hours, that is, keeping renewing his contextualized knowledge.

4.3.3.2 The attractor state one: Progressive problem-solving in refining EAPWT while gaining more knowledge and experience

Kade had been struggling with the problem of seeking effective ways to improve teaching effects, but he did not halt at the safe choices and resorted to progressive problem-solving. He analyzed the situation critically: "The present struggles and confusions were mainly because my knowledge of students lagged; I was exploring re-familiarizing the students, the course, and writing teaching activities" (Second interview). In his view, as long as he accumulated more experience and expertise, when "he was more familiar with the tools and the students, became assured of the course and activity goals and the operational effects, and could quickly select the proper ways to instruct the target students" (Second interview), he would better manage the EAPWT.

Due to the intermittent teaching experience and unstable teaching contexts, Kade made macro- and micro-teaching adaptations and explored effective teaching. Before 2019, Kade followed the instructions set by the former teacher, who edited the textbook for the EAP writing course. From 2019 to 2022, he did not follow the teaching constructed by the previous teacher of the EAP writing course with more knowledge and experience related to EAPWT. Kade progressed with the writing instruction by encompassing more detailed thesis elements and teaching them in depth after learning more about EAPWT. He stated, “I did not follow the previous mode owing to the self-reflection and self-learning in the past years” (First interview).

In 2019, Kade stopped relying on one textbook and read dozens of textbooks or guidebooks to reconstruct the course content. The new agenda began with introducing the course overview and the linguistic features of academic writing. Then it moved on to preparing the thesis (i.e., choosing a research topic, research methods, a research design, a research proposal, and collecting and working with sources). After that, it focused on writing each thesis component (i.e., literature review, introduction, methods, discussion, conclusion, citations and references, abstract, and acknowledgments). Lastly, it ended with a writing assignment and a final check. The refreshed arrangement retained the instruction of the primary skills required to prepare for writing the thesis and placed more stress on the writing process, indicating Kade’s knowledge of the process writing approach. As illustrated above, Kade kept adapting to the new teaching contexts and made macro teaching adaptations (e.g., the teaching content arrangement) when the students and teaching hours changed.

In 2021, Kade was invited back to teach EAP writing to English majors. Since the teaching hours were the same and he was unfamiliar with the current students, Kade maintained the

selected course content as a continual trial. However, the class time for each week was altered from four lessons to two, leading to a different time arrangement for each session. In 2022, he continued opening this course for English majors. Based on his knowledge gained in the previous years of students' needs and difficulties, he rearranged the time duration of each session. Significantly, Kade added more time for the literature review (up to three weeks) and citations and references (up to two weeks). As he explained in class, "In the previous semester, the students had conveyed their difficulties in writing a literature review... similar to the application of citations and references, so that we would spend more time on them" (Classroom observation, 2022). The accumulated contextualized knowledge supported Kade in refining the course implementation.

As for better preparing the teaching materials, Kade moved away from reliance on one textbook in the first two rounds of teaching EAP writing. In 2016, Kade searched for more papers and selected some as samples for students to analyze the genre features because of the interest in the newly learned concept of genre awareness. More exercises were prepared as assignments for the students to practice after class. By 2020, he had accumulated more systematic knowledge about students' writing development in doctoral study. He had read more literature (e.g., books and papers) related to EAP writing and L2 writing pedagogy, mainly the acknowledged textbooks and guidebooks edited by scholars in China and elsewhere.

Apart from knowledge accumulation, Kade critically evaluated the advantages and disadvantages of the existing relevant textbooks. For instance, "the content was organized well, but it lacked writing practices, particularly those targeting language" (Second interview). Kade selected some exercises from a well-known international guidebook. Even with the

conciseness and clarity of this book, the exercises were mainly aimed at graduate students, so he foraged for other updated EAP writing textbooks addressing undergraduate students' writing problems. Even for the undergraduates, Kade noticed that some exercises were not suitable for English majors and that the materials were designed for first-year university students. Accordingly, Kay explained, "I had to adapt the exercises and pick the ones most suitable for undergraduate English majors" (Second interview).

The above-described changes in course content arrangement and teaching material selection occurred along with the development of Kade's theoretical learning about EAP and L2 writing, the adaptation to the changed teaching hours and targeted students, the familiarity of students' learning difficulties and needs, his critical reflection on the multitudinous textbooks, his persistence in seeking better solutions, and his sustained passion for self-learning and self-improvement. EAPWT expertise components worked together to support course design and delivery refinement. Reciprocally, being devoted to course development pushed the components to interact and motivated Kade to develop his teaching expertise when he proactively renewed and enriched his knowledge and experience.

Kade's teaching methods had also developed with the refinement of the course design, owing to her accumulated knowledge and experience closely relevant to EAPWT. In the previous three rounds of teaching EAP writing (i.e., 2010, 2011, & 2016), he mainly followed the prior prestigious professor's instruction, "lecturing the content of each theme in the textbook and giving examples of some points" on account of the textbook limitation and lack of EAPWT experience (First interview). In 2016, regardless of the same teaching method, Kade attempted to insert sample text analysis in class to raise students' genre awareness.

Before 2019, Kade did not pay much attention to the value of assessment and feedback in the course. However, after years of systematic learning and researching L2 writing and teacher feedback during the doctoral study, he intentionally integrated formative assessment into the genre approach in EAPWT. In 2019, this course thoroughly implemented the genre approach and “learning by writing” (First interview) activities. Notably, he designed an “in-class writing workshop” (First interview), when the students were offered time to write in class, followed by peer review, self-assessment, teacher feedback, and revision. Meanwhile, he attempted strategies such as involving the students in setting their own learning goals, assessing their peers and their own writing, and regulating their learning process. For instance, before learning a new lesson, the students were given a website to type down three to four personal learning objectives. At the end of the class, they were required to tick which objectives had been achieved.

Kade recounted his rationale of “aiming to transform the students’ passive learning without learning goals into an active thinker and promote their self-regulated learning” (First interview) based on the knowledge of formative assessment. Kade recalled, “these concepts were those I was interested in and had researched, shifting my understanding about L2 writing pedagogy, so I embarked on new trials in classroom instruction” (First interview). Kade’s attempt to integrate assessment and feedback into students’ writing processes was influenced by his experience in doctoral study. His Ph.D. research aimed to study L2 writing teachers’ classroom assessment, so he read much literature regarding formative assessment in this systematic learning process.

In 2021, Kade completely transformed course assessment into “portfolio assessment” (Third interview) with his increased knowledge concerning formative assessment. In particular, he

not only arranged midterm writing tasks accounting for 20% of the final score and final reflective writing for 50% but also assembled students' weekly assignments comprising small exercises (e.g., sentence paraphrasing or correcting writing errors) and writing practices (e.g., paragraph writing). Furthermore, Kade only graded the writing practices up to six times and selected the best scores for each student to constitute 30% of the final score. In the meantime, he strove to provide written feedback for each writing assignment and encouraged the students to revise the drafts accordingly. In the process, the assignments, feedback, scores, and the students' drafts were piled into each student's portfolio. Kade affirmed the benefits of portfolio assessment:

Students' progress and changes could be explicitly manifested by employing the portfolio assessment; the scores reflected their devotion to the course, not merely relying on the accomplishment of the final writing production (e.g., a literature review or a proposal in the past). (Third interview)

In other words, the new assessment design was fairer, "avoiding the inaccuracy of one-time evaluation and comprehensively apprehending the students' writing problems and advances" (Third interview). In addition, it served students' learning. Kade stated, "It stressed students' learning process, guiding them to take responsibility for their learning, that is, to regard each writing as a stage indicating their competence and progress" (Third interview).

Kade was confident about the new assessment design given the solid theoretical foundation he grasped in the relevant literature proving its effectiveness. Moreover, he noted that the students also accepted it in this course. However, Kade was not content with the quality of his feedback in 2021. In his opinion, he could not provide more individualized feedback because he only managed general comments during teaching with a large class size; his biggest class comprised 69 students. Sometimes the written feedback after class was delayed by the heavy

workload of completing feedback for 153 students. Kade was concerned that “I did not sense a prominent positive effect on the students’ learning as expected” (Third interview). To tackle this issue, Kade invited another teacher to teach this EAP writing course in 2022, taking charge of three classes, so he could focus on two small classes with around 30 students and offer more timely and targeted feedback. This indicated Kade’s firm belief in the value of teacher feedback, to which he paid little attention before his doctoral learning.

Additionally, communications with the schoolmates (e.g., the other doctoral students in the same office room) were perceived to “widen the horizon” (First interview) of L2 writing teaching. For instance, one was studying how to facilitate students successively producing genre awareness, and the other was adopting an ecological perspective to examine students’ writing competence development. The combination of formal systematic learning and informal communication shaped Kade’s belief in activity design in this course. As Kade reflected, “My biggest change was to highlight two things in class, being student-centered and learning-centered” (First interview). Accordingly, when designing teaching activities, Kade stressed that he would deliberate more on the specific effects brought to students’ learning by the activities, such as what knowledge was to be increased and what competence was to be enhanced. In contrast, he had in the past only vague ideas about how to make students interested and engaged, but “lacked systematization of the scattered ideas without a clear direction of teaching development” (First interview). Kade further explained:

When I transformed my perspective on students and their learning angles, I always pondered what the students could acquire from the activity and in what ways. I started associating my teaching with students’ learning goals (First interview).

In particular, Kade implemented some activities based on what he learned during his doctoral

study. For instance, he arranged group work for students to exchange ideas before writing. While enacting group work, Kade composed a framework for discussion, guiding the students to discuss in specific directions with a clear focus and noting down the opinions they absorbed from others. He mentioned, “I was aware of the issue of unstructured group work a long time ago, that is, weighting form over content with no clear guidance and structure” (First interview). Nevertheless, Kade did not furnish any solutions to the disorder until he researched teachers’ discussions and devised a template to illustrate the necessary steps. He was inspired to transfer this to students’ discussions to enhance its effectiveness. In the delineated example, Kade applied what he knew from the past years of learning and research experience to his EAPWT. He appreciated the specialty training in the L2 writing field, which enabled his writing instruction to become “more systematic and equipped with assorted tools to improve the teaching efficiency, such as the process approach and the ways of feedback” (First interview). In Kade’s view, knowledge of L2 writing and L2 learners’ writing development mattered because:

The teacher without systematic learning of L2 writing might teach this course mainly according to his past learning experiences, implementing activities like sample analysis, translation, or setting writing assignments without detailed feedback, causing limited student progress in writing. (First interview)

4.3.3.3 The attractor state two: Obtaining routine expertise and self-efficacy in actualizing teaching beliefs

After Kade’s persistence in exploring more effective teaching for the EAP writing course, he expressed his confidence in the course design and main teaching procedures. Kade had experienced a fresh start in 2010, 2016, 2019, and 2021, constantly striving for new trials or adaptations to the context. In 2022, he began to fix the primary course content and teaching

methods (e.g., process writing and genre approaches). He assumed that, after a few rounds of trials, some activities (e.g., peer review and in-class writing workshops) might also be “routinized” (Second interview). However, the adjustment of classroom activities and teacher explanations continued. Kade reflected:

Sometimes my teaching design was idealized, but it did not work well in actual operation, so I persisted in adaptations during teaching practices by paying close attention to students’ states concerning their motivation, competence, interests, attitudes, numbers, and past experiences. (Second interview)

Even if Kade presumed that “there was much progress to be made regarding my EAPWT with a self-score around 70 out of 100” (Third interview), he gained “a sense of self-fulfillment” (Third interview). He felt content, as he had actualized some of his teaching beliefs and ideas in the exploration process. Mainly, Kade’s EAPWT still produced positive outcomes. For instance, the students who followed the instruction and revised the writing drafts had progressed in thesis writing. The course survey distributed before and after the course in 2021 revealed that students’ genre awareness and knowledge had somewhat improved. In particular, “I know the purpose of academic writing” witnessed 30% growth after the course learning, similar to the statement “I know what information should be addressed in my graduation thesis” (Third interview).

Being bittersweet, Kade still affirmed that he became “a mature writing teacher with insights, competencies, means for further development, and a strong sense of identity” (Third interview). The self-efficacy in his current teaching originated from the systematic learning and training from his doctoral study concerning L2 writing teaching and EAP writing, the vision and goals of expertise development in his mind, the ceaseless pursuit of advancing the

course and instruction, and continuous self-learning and reflection. As Kade said, he was passionate about “being a lifelong learner and keeping self-updated” (first interview). These components constituted Kade’s routine expertise, which supported his fluent teaching.

4.3.3.4 The attractor state three: Continually developing adaptive expertise with motivation for changes

Even Kade routinized his teaching with fixed teaching content and some frequently-adopted activities, he kept modifying his classroom implementation with the ongoing development of adaptive expertise. For instance, Kade adjusted the weekly in-class exercises in classroom teaching based on the students’ performances and his constant reflections. He said, “I always reflected on the problems in previous instructions when I planned my weekly teaching to make corresponding adaptations in subsequent lessons” (Second interview). Thus, the workload of lesson planning was heavy for him due to “the progressive planning process” (Second interview) from 2019 to 2021. In 2022, although the primary course content and teaching activities had been maintained, and the workload was lighter than the first few teaching rounds, Kade continued to adjust the exercises. He underscored, “What I designed for the students to practice was based on my assumption and prediction, and the exercises would target their situations after I was familiar with the actual effects after one semester” (Third interview). For instance, in 2022, Kade added more exercises concerning the synthesis of information in the literature review, the arrangement of passage structure, and the logic and cohesion problems Kade identified in the students’ writing. Meanwhile, he deleted the ones that had become too easy for the students.

In addition to the transformations caused by his ongoing self-reflection, Kade adapted his teaching in response to the school’s requirements promoting the use of online teaching tools.

In 2020, he was required to adopt an online teaching platform to manage the class for such things as attendance records, setting in-class interactions, and assigning homework, which increased his work for uploading materials and setting activities ahead of time. Regardless, he endeavored to make use of the platform. For instance, he tried to engage the students in doing online peer reviews by randomly assigning a peer's work to them. However, managing 153 students on that platform was still challenging when he was unfamiliar with the functions and tools. Kade merely tried a few functions but encountered operational problems. For example, when the students uploaded their writings onto the platform, he had to download each of them; after he completed writing the feedback in their word files, he needed to re-upload each. This process cost him more time than simply collecting students' word files or hard copies. Even though Kade was troubled by the online platform, it stimulated his interest in integrating information technology into his teaching. He wondered about "finding an integrative platform for teaching, learning, resource sharing, and interactive community sharing" (Third interview).

Correspondingly, although he still needed to locate a multi-functional platform for the EAP writing course, he started combining two online platforms to realize his instructional ideas. In 2022, when he was required to conduct online teaching because of the new wave of the pandemic, it could be observed that Kade alternated between the two platforms accompanying the screen-share of the teacher's PowerPoint. For instance, initially, the students signed up for a platform called Xuexi Tong. Then Kade led the students to review what they had covered the previous week with the PowerPoint slides shared in the Tencent Meeting Room. After the teacher's explanation, the students were asked to open Xuexi Tong to review how to write a coherent and cohesive paragraph by filling in the four blanks. The results were measured spontaneously while each student completed it, after which Kade

offered further explanations.

Afterward, Kade emphasized the main tasks in this course: weekly lectures, practices, and readings before or after class. The students could refer to the resources uploaded to platform B. Later, the learning objectives of new lessons were introduced, and Kade started explaining the first point regarding the linguistic features of academic writing. Along with his explications about each feature, he opened a platform called Fanya to present more examples in an organized form. After elaboration, he invited the students to do a small exercise, choose verbs from the list to replace each verb in italics to reduce the informality of the sentences, and then type down the answers in the chat box of the online meeting room. After three exercises, the students were directed to open Xuexi Tong again to revise two sentences, further applying the knowledge of linguistic features of academic writing.

As delineated above, the two teaching platforms were switched while the instruction proceeded in the online meeting room. Kade differentiated the utilities of each tool: Xuexi Tong for students' writing practices, Fanya for sharing teaching resources, and Tencent Meeting Room for teacher instruction with PowerPoint slides and small exercises for conceptual comprehension. He shared his worries about the chaos caused by platform switching in the informal talk after class. However, the procedure progressed smoothly in class, indicating Kade's better control and technology integration into EAP writing classes.

In developing the EAP writing course and classroom instruction, Kade was still unsure about how to change the students' negative state regarding their motivation and attitudes. The unsatisfactory teaching effect on students' learning attitude also pushed Kade to further examine his current teaching.



Till 2022, Kade had been perplexed by the students' passive learning attitude. He gained "a sense of frustration" (Second interview) from the unsuccessful implementation of carefully designed activities. For example, he pointed out that the students' in-class writing was protracted, so the follow-up steps, such as peer reviews or self-revision, could not be executed. Even for the peer review task, some students laughed at it and used the time for casual chatting. The peer feedback was general and superficial. Then Kade simplified the peer work, leading them to learn from their peers, and provided more guidance (e.g., the criteria and template). However, Kade noticed that the students generally responded passively to him. In class, when there were few students' responses, he had to continue teaching, not "letting the class chill" (Second interview), which gradually made the instruction "stuck with the lecturing mode" (Second interview). After that, the students' reactions caused his doubts about the activities, "whether on earth the students enjoyed them or not; and whether they were helpful for learning" (Second interview). Hence, Kade felt frustrated and "did not dare to experiment with some innovative activities to involve the students more, when I might lose control of the class for I could not predict the results and the time would sometimes overrun" (Second interview). He was hesitant about whether he should "turn back to safe choices, which he had performed several times and was clear about the effects" (Second interview).

Nevertheless, Kade did not cease adapting his teaching to students' situations because he was firm in dedicating himself to EAPWT and research with motivation for changes (e.g., his passion for teaching and research, his care for students' gains, and his proactive attitude for self-updating). For instance, the problems identified in the textbooks pushed Kade to reflect that "all the textbooks could not completely address our students' learning difficulties and take their features into consideration (in the second-tier universities), so the effect was less

than satisfactory” (Third interview). With self-reflection, his increased practical knowledge prompted him to devise a textbook for this course. In 2022, Kade began to plan for the textbook edition when he was notified of the annual project application for textbook compilation. In other words, Kade consciously associated teaching with research, which promoted his EAPWT expertise development. First, he could integrate his theoretical and practical knowledge to improve the pertinence of the textbook to English majors in second-tiers universities; second, he was willing to explore the associations of the theories in EAP or L2 writing field, such as genre approach/analysis and functional grammar, with the textbook usage; third, he regarded it as a learning process regarding teaching resource development, for example, combining online resources, handouts, exercises, and teaching activities to construct “a stereoscopic textbook” (Third textbook).

Furthermore, Kade also reflected on further advancing his feedback by clarifying and specifying the focuses and goals of each assignment and feedback. He pinpointed his problematic habit. Kade could not help correcting all the errors and mistakes regarding grammar, language usage, and structure in students’ writing, which not only increased the workload but also overlooked the connections between the instruction, assignment, and feedback. He intended to set clear objectives for teacher feedback and use it to better facilitate his instruction and students’ learning in the following teaching round.

In sum, when Kade’s routine and adaptive expertise developed in progressive problem-solving and adaptive teaching, his adaptive agency (e.g., setting goals, self-reflection, and self-regulation) would help him seek continual expertise improvement if he was willing to change.

4.3.3.5 The constraints on Kade's teaching expertise development

The students were resistant and reluctant to commit to learning this course was the main constraint that demotivating Kade. Some passively participated in the classroom activities and perfunctorily wrote the assignments. However, the problem was more related to the program settings and the faculty environment. In Kade's view, setting this course in the final year was improper when other things over-occupied students (e.g., preparing for graduate study applications or job hunting). He proposed to move it to the fourth or fifth semester, but this was rejected by many other teachers, who "were not aware of the significance of EAP writing due to their lack of understanding" (Third interview). In the revised curriculum in 2021, some even suggested decreasing the teaching hours to 16 lessons instead of 32. At Kade's and several teachers' insistence, the original arrangement remained.

Kade also proposed to develop a series of writing courses, enhancing the coherence of the courses. For instance, Kade believed that the current problem was that in the EAP writing course, he had to spend much time changing students' perceptions about writing, helping them construct the conceptualization of writing, and supplementing some basic knowledge, which was overwhelming and missed the original focuses of this course. To tackle this issue, writing courses at lower grades could help establish some preliminary comprehensions and essential skills for EAP writing, ameliorating the pressure of this course. Moreover, he advised that some other courses might provide more opportunities for students to engage with academic writing, such as assigning course papers, but other colleagues directly rejected this. Hence, although Kade asserted that "the joint efforts could improve students' writing competence and attitudes" (Second interview), it was demanding to "foster and forge consensus in the faculty, where most teachers did not understand the necessity of making such a large-scale reform" (Second interview). The EAP writing course was "marginalized in

the curriculum system with low status” (Third interview).

To summarize, the attitude of the faculty and the teachers influenced the course status and its setting, which “were extrinsic factors out of a teacher’s control” (Third interview).

Accordingly, Kade could only develop his teaching expertise “under external limitations and frames” (Third interview).

4.3.3.6 Summary of Kade’s case

In a word, Kade started teaching the EAP writing course with an unfavorable initial condition, being ill-prepared with insufficient knowledge and experience. In 2010, 2011, and 2016, Kade felt challenged to teach EAP writing even though he was experienced in EFL teaching. As a novice EAP teacher, he followed the previous teacher’s course design and main teaching activities. In 2016, he attempted genre analysis while gaining some knowledge of the genre approach, but he still retained the teaching mode constructed by the prior teacher. From 2019 to 2022, Kade encountered a series of changes in teaching contexts (i.e., the altered teaching hours, different student targets, and the new demands from the institution). Therefore, he experienced a long journey of progressive problem-solving in exploring effective teaching with regard to course design, teaching material preparation, teaching methods, and classroom implementation. Afterward, Kade obtained routine expertise with the accumulated knowledge and experience and manifested self-efficacy in actualizing his teaching beliefs (i.e., being both student-centered and learning-centered) in EAPWT. The above attractor states could also embody the following developmental processes for enhancing EAWT expertise: (1) from being ill-prepared to being be equipped with the integrated knowledge base and relevant experience; (2) from unsure teaching trials to partially routinized teaching; and (3) reaching teaching fluency and flexibility while still being open to new trials.

To illustrate, the theoretical knowledge of EAP and L2 writing teaching was accumulated during these years of doctoral study, which served as the stimulus to trigger transforming Kade's teaching and assessment to be more systematic. After that, Kade's unremitting pursuit of self-development and continuous learning worked as the intrinsic motivation, along with his care for students' learning and passion for teaching. He was motivated to keep reflecting on the teaching issues and progressively seek better solutions. He extended his knowledge of EAPWT by reading relevant papers and books outside of formal learning. Since 2020, the main course content and teaching activities had formed routines. However, the target students and the teaching hours changed in 2021, and Kade made teaching adaptations accordingly to motivate students better and satisfy their needs. His contextualized knowledge had been repeatedly renewed. In 2021, Kade finally gained self-efficacy, believing in his competence in the course teaching.

Nevertheless, he still struggled with changing students' negative learning attitudes, so the constant teaching trials were executed. In 2022, the institutional requirement and the influence of the pandemic acted as another stimulus for him to transform again, starting to build online teaching resources and exploring online teaching activities. After that, the adaptive state was provoked when a new situation occurred. The online teaching mode still needed improvement for Kade, who would continue the progressive problem-solving in exploring effective teaching in unexpected new teaching contexts.

In the process, Kade endeavored to overcome his negative emotions, such as confusion, frustration, and sadness, for being unable to change students' resistance and reluctance to learn the EAP writing course. He proactively searched for continuous learning opportunities

(both formal and informal ones) to break the personal constraint. Meanwhile, Kade realized that the next step for teaching expertise development was to overcome the institutional constraints (e.g., setting a series of writing courses before the EAP writing course and building a teaching team) and change his colleagues' perceptions of writing courses to encourage joint efforts to change students' learning attitudes and improve their writing competence.



4.3.4 Mia's case

The development of Mia's teaching expertise was reflected in dynamic changes during six successive rounds of the EAPWT from September 2019 to September 2022. As she reflected, "The teaching advanced along with the refinement and problem-solving to newly identified problems at each round" (Third interview). The initial conditions for Mia were unfavorable and challenging. She was a novice at teaching academic writing to doctoral students and was newly recruited to the university. Then she started the self-organizing process to improve her teaching. With many constraints and opportunities, the different aspects of her teaching expertise have evolved non-linearly. The changes emerged regarding teaching content arrangement, teaching resources, material usage, teaching methods and classroom implementation, and her emotions. By 2022, Mia's EAPWT had been routinized to some degree, and her teaching expertise system had reached a state of dynamic stability. The changes Mia made or experienced are illustrated in Table 4.4. Along with the changes, Mia's EAPWT expertise developed in a dynamic manner, which is explained in the following parts.

Table 4.4

Changes Mia made or experienced

Teaching times	Semester	Changes in teaching content arrangement	Changes in teaching resources and the usage	Changes in teaching methods and classroom implementation	Changes in assessment and feedback	Emotional changes
The first round	Autumn semester in 2019	General genre writing (e.g., argumentation, exposition, and narration)	Teacher prepared materials mainly referring to one textbook	Genre approach, dialogic teaching, sample analysis, in-class writing practices (sentence or paragraph writing and revision), peer review, limited classroom discussion	Written corrective feedback for all students' homework, whole class oral feedback for the assignments, in-class immediate oral feedback, final paper-pencil exam	Being nervous and anxious as a novice

The second round	Spring semester in 2020	The first half of the semester: paragraph writing, essay writing (comparison & contrast, cause & effect, process); The second half: paper writing	Teacher prepared materials referring to several textbook and dozens of papers	The same	Written corrective feedback for all students' homework about paragraph and essay writing, selecting one group of around ten students from one class to provide individual teacher feedback (40-50 in total) each week, whole class feedback for the assignments, students writing each part of a paper after the teacher's instruction with no teacher feedback, peer feedback in class, final paper for teacher assessment and feedback	The same
The third round	Autumn semester in 2020	The same	Teacher prepared materials + students' shared materials (e.g., group presentation Power-Point slides, drafts of the published papers)	Students' raising questions for each part, group presentations for paper analysis and answering the raised questions, more open and spontaneous discussions	Adding the final paper-pencil exam as required by the institution	Being fulfilled with students' positive feedback, being struggled with the problem of satisfying students' diverse needs
Break	Spring semester in 2021	Break				
The fourth round	Autumn semester in 2021	Adding a session of paper publication	The same way, but keeping renewed the sample papers and students' shared materials	The same	The same	The same
The fifth round	Spring semester in 2022	The first four weeks: paragraph writing, essay writing (process) The left weeks: paper writing	The same	The same teaching methods and activities, better classroom management (e.g., specifying requirements for group presentation, using an online document-sharing platform to gather students' reflections and questions as attendance check, not completely following the Power-Points, flexibly linking students' sharing back to her instruction)	The same	Teaching with ease, being tranquil in mind

The sixth round	Autumn semester in 2022	The same	The same	Online teaching and blended teaching mode because of the pandemic	The same	The same
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4.3.4.1 The initial condition: Being theoretically prepared but lack of teaching experience and practical knowledge

In 2019, Mia had just completed her doctoral study and was employed by a technical university in China. The academic writing course for non-English doctoral students was assigned to her naturally when the previous teacher retired. She was recruited because of Mia's academic background (Ph.D.) and experience researching and teaching L2 writing. When Mia assumed responsibility for this course as a novice teacher, there was no clear guidance from the school but a brief introduction about the textbook and the syllabus from the retiring teacher. Mia explained, "I just followed that teacher to teach the genres like argumentation, exposition, and narration. I knew nothing as a new teacher, so I did not venture to be too innovative" (First interview). Therefore, though she had acquired basic knowledge of EAP and L2 writing teaching, she was confused and nervous as a novice teacher for her lack of teaching experience and practical knowledge in the very beginning. Mia was puzzled about what and how to teach this course, for this was her first time teaching EAP writing.

As a newly recruited teacher, she was also unsure about the institutional requirements. Mia described her state helplessly: "What could I do in that situation? I was new and inexperienced. I knew nothing, and no one instructed me" (First interview). In addition to asking for guidance from the previous teacher, Mia once approached other teachers teaching similar courses related to EAP writing, but "the teachers just indirectly rejected my proposal of observing their lessons to learn from them. They said there was no need to refer to their teaching and told me to teach in any way I liked" (First interview). With no support, Mia

initiated her exploration journey of teaching this course in her way.

In the meantime, Mia admitted that she lacked confidence and felt anxious in the first two years of instructing this course. She said, “I was nervous in the early stages because of the high expectations of the course, the students, and myself” (Third interview). For the course results, Mia stressed that “in the past, I was anxious and wondered why students still could not write in the right way after I had explained many times” (Second interview).

However, she later converted to comforting her students when they were upset about their academic writing competence. She stated, “When students told me they were still unable to master the skills, I told them it was fine to realize and comprehend their writing issues simply” (Second interview).

Since it was stressful to hold the high expectations, Mia altered her initial idea of facilitating students to write papers and publish, to a more practical one, causing less tension in class. Regarding herself, initially, Mia expected herself to be responsible for all the knowledge teaching, enabling all the students to write a complete paper by applying what she taught. Mia recalled, “I intended to make myself appear to be professional at the very start, but I gradually admitted my drawbacks” (Third interview). Mia endeavored to cover the instructions about domain knowledge and writing strategies. However, she felt it was too challenging and stressful to act like a professional in front of students with diverse backgrounds. At the beginning and the second round of teaching, she provided lectures about each section of an article paper, discussing what and how to write. Students were mainly involved in sample analysis. Unexpectedly, Mia encountered problems in teaching practices beyond her knowledge and experience. For example, she never knew a paper could be

complete without depicting research methods, but that was the case in math. She admitted:

I still could not satisfy all students' needs, such as students majoring in Maths, who could not do article analysis concerning each part as they only wrote an introduction and the argumentation to report their research (First interview).

First and foremost, the pressure was rooted in Mia's limits, "the deficiency of subject-matter knowledge and the limited teaching resources" (Second interview). Second, the stress arose from the students' backgrounds. Some students initiated their doctoral studies after work, and several had even obtained assistant or associate professor status. Moreover, a wide span of students' ages varied from the twenties to the fifties. As a newly-graduated Ph.D. student and a novice teacher with no academic writing teaching experience, Mia was always afraid of not appearing authoritative in the students' eyes or of teaching something wrong.

4.3.4.2 The attractor state one: Progressive problem-solving in refining EAPWT while gaining more knowledge and experience

Mia had set her goal for EAPWT as catering to students' diverse learning difficulties and needs since she identified the most challenging problems as lying with the highly heterogeneous classes of students from various majors, varying ages, and different working and researching backgrounds. Getting to know the students (i.e., gaining more contextualized knowledge) was the primary reason for Mia's decision about the new teaching arrangement. Meanwhile, it was the way to identify problems in EAPWT. After communicating with students, Mia noticed that the teaching content did not meet students' needs to learn how to write research papers. Therefore, she substantially altered the course syllabus in the following two rounds (semesters) of teaching. Carrie rearranged the teaching content and refocused teaching in the two halves of the semester. In the first half of the semester, she aimed for

basic writing skills training from paragraph writing to essay writing, concentrating on process writing, comparison and contrast, and cause and effect essays. Mia justified the specific selection:

On the one hand, these writing skills were closely related to academic writing; on the other hand, they could help the students lay the foundation for following up on more challenging studies due to their relatively low language proficiency. (First interview)

In the second half of the semester, Mia decided to instruct the essential parts of research papers, such as Abstract, Introduction, Literature Review, Methods, and Discussion, following students' suggestions.

What is more, after the first round of teaching, she gradually identified students' writing problems, including elementary language use or grammatical issues, such as not using conjunctions or connectives, fuzzy logic of subordinate sentences, and monotonous sentence patterns, which required more teacher guidance. In addition, Mia noticed the vast diversity of students' writing levels, though generally, her students in this course received lower scores than average in the entrance English exam for graduate students. She described, "Some students could not write a clear sentence, but some had published several papers in up to seven or eight publications, and I needed to reckon with both" (First interview). Therefore, the primary teaching content was fixed with the two sessions of training: basic writing and research paper writing. However, the detailed arrangement for each session was not anchored. One reason was the change in weekly class duration, shifting from two to three 45-minute lessons from the fifth round; the other was that the basic writing training could not be directly applicable in the follow-up research paper writing, as the students in their written reflections pointed out after the course. She noted the problem:

No matter how much I had instructed the students on how to write (in the basic writing

training), they still could not directly apply the strategies in their paper writing, which did not match their needs, thus compromising the teaching effectiveness. (Second interview).

Accordingly, Mia decided to maintain the sections on paragraph writing (quickly leading students into English writing and dissolving their difficulties with paragraph cohesion), process essay writing (applicable in IELTS or TOEFL exams and describing the methods in papers), and research paper writing. Gradually transferring from paragraph and essay writing to research article learning, this arrangement was perceived to alleviate the students' pressure of writing English papers given the relatively low English writing levels for the majority of students. Meanwhile, leaving more time for paper writing satisfied the students' needs for direct learning transfer. Mia remarked that this arrangement was acknowledged by the students, especially the ones with lower language proficiency:

Before taking this course, the students who had yet to publish any papers found it challenging to complete one sentence in English, let alone a full paper. In the end, they perceived a sense of achievement (revealed in the written reflections) after they managed to compose the whole paper to some degree. (First interview)

Mia's progressive problem-solving was evidenced by how she refined the teaching material preparation. After the first and second teaching rounds, Mia realized that the students came from divergent majors, making one-fit-for-all teaching materials inappropriate. Mia stressed:

I found the same short essays for students to analyze (in the first half of the semester) due to the reading difficulties of the majority. Nevertheless, what I prepared for them concerning research articles (in the second half) was ineffective due to their disciplinary differences. (First interview)

Therefore, Mia started collecting teaching materials from students' work from the third round

of teaching. For example, she mentioned using resources from the students' PowerPoint slides to facilitate her instruction and knowledge explanation. A particular example came in the fifth round of course teaching. Mia was impressed by a student's explanation of how to write the methods part, using scrambling eggs with tomatoes as an analogy. She appraised it as a more attractive and vivid means to facilitate students' comprehension. Henceforth, she adopted this analogy as the warm-up to the Methods session. Mia guided the students in a class to discuss the procedure of making this dish. Divergent ideas were elicited from the discussion, such as the step of washing and cutting tomatoes, the place of origin, the variety, and the features, which were congruous with the property description in science and engineering domains concerning various materials. Mia highlighted, "Compared to students' presentation, I manipulated this analogy differently as a lead-in in the next class, setting an atmosphere of lively discussion, which the students genuinely enjoyed" (Second interview).

Another trial was that Mia required each student to select two or three research papers from their disciplines, so they could analyze and revise these articles in class to avoid her sample selection being inappropriate. In addition to students' self-selected papers, their paragraph and essay writing texts were later processed as teaching materials in class. Mia assessed and provided detailed feedback for one group from each class (four classes in total), covering 40 to 50 students' writing each week. While assessing students' writing, she picked samples with typical writing problems, such as paragraph cohesion, structure, and language issues, to invite the students to comment in class. Moreover, she categorized the problems and selected several sentences or paragraphs, especially the tricky ones, to engage students to revise these writings. This kind of teaching material, generated by students, was meaningful and engaging. Mia stated, "The students were highly devoted and actively participated in this practice because the materials and mistakes stemmed from their peers or themselves, which provoked

emotional resonance” (First interview).

Consolidating the idea of searching for teaching materials from the students, Mia also asked for some students’ multiple drafts of their published papers to demonstrate the significance of the revising process for publication and the possible mistakes in academic writing. In particular, it was observed in the sixth round of EAPWT when teaching how to write the introduction; the students were required to read the first draft of one paper published in 2022 concerning all-climate electronic vehicles and express their overall feelings about the writing. After grasping the general idea about the introduction content, they were assigned the revision tasks in groups for diverse paragraphs. Then each group was invited to share their significant revisions. Mia showed the authors’ second draft, edited by the supervisor afterward, so that the students could compare the differences between their revisions and the supervisor’s. After that, Mia presented the third draft, proofed by the proofreading company, highlighting the primary corrections to remind the students to pay attention to language problems. The paper she selected had many revisions in language usage and few modifications to content and structure, indicating the significance of language. As Mia emphasized, she hoped the students could grasp that “the high-quality papers were repeatedly revised, and the language usage matters” (Second interview), which she also practiced in paper writing. Mia could excogitate the above ways to engage students in producing teaching materials with their writing and teachers’ feedback because she was equipped with theoretical knowledge of L2 writing assessment and feedback during her doctoral study.

The above instructional changes were successfully made by Mia’s acute observation of students’ learning problems and her reflection, which enhanced her contextualized knowledge. Mia described, “I would reflect on the teaching issues regularly before or after teaching”

(Second interview). When Mia realized her limitations concerning subject-matter knowledge, she searched for possible solutions. First, she adjusted her perceptions of her roles. Mia underscored, “I did not need to be an expert in their areas, but I should know the relevant knowledge to some degree” (Third interview). In order to acquire domain knowledge, she, for one thing, learned from students’ group presentations and consulted some students about her lack of understanding of the subject knowledge encountered in reading. For another, she emphasized that she would read more than ten papers in science and engineering domains while preparing the instruction for each session. Mia stressed, “I was not confident in the first two years as I did not know enough about students’ majors, and I held no teaching resources” (Second interview). Although Mia searched online for relevant papers, comprehension difficulties made finding the right ones too challenging, so she sought help from the students, especially those with rich publication experience.

Moreover, Mia conceived an innovative way to solve the problem of her knowledge limitation: transforming the teacher-led instruction to one built on students’ sharing in the third round. Specifically, she redesigned the teaching and learning activities. Despite the group presentation, she invited the outstanding students to help verify her comprehension and analysis of the papers related to the science and engineering domains. Also, Mia asked for students’ recommendations about useful academic software and their drafts of the published papers to be adopted as teaching materials. Due to Mia’s honesty and modesty, the students were willing to share their resources. Mia recalled, “Several students were sending me their paper drafts each year to be used as teaching resources” (Third interview), indicating their trust in and support for their teacher. In addition to the students’ sharing, Mia shared her writing strategies, tools, and personal experience with her students in class. For example, she shared the database, the applications, and the software she had adopted to search for and manage literature. Mia also narrated her writing experience in her doctoral study: “I once

wrote a long literature review for my thesis, but my supervisor stressed that there was no need to show your knowledge in this area, so I only needed to cite the ones related to your study” (Class observation in October 2022). Progressively, she better handled the problem that she was unfamiliar with subject-matter knowledge and built a close relationship with her students through intensive communication when they co-constructed the class.

With the accumulated knowledge in these domains, Mia provided more detailed examples in class. For instance, she listed more domain-related resources (e.g., the commonly used databases and the applications for literature searches) in the teaching PowerPoint slides. In the teacher’s explanation, when discussing the writing of the discussion part with the students in class, Mia not only explained the general features but also mentioned exceptions in some disciplines, such as papers in math or computer science, which featured a short discussion part but long method descriptions. Mia’s illustration indicated her familiarity with the domains instead of “being the absolute layperson” (Second interview), strengthening her teaching’s credibility and enhancing her self-efficacy.

In addition to being equipped with more subject-matter knowledge and teaching samples, Mia was more competitive in academic writing from 2019 to 2022 with her unrelenting effort in researching, reporting, and publishing due to self-interest and career development pressure. The accelerating research interest in academic writing consolidated her attitude toward facing challenges in the course: “regarding the difficulty of teaching this course as an opportunity to learn, for I intended to research in academic writing” (First interview). Mia conducted a study investigating doctoral students’ plagiarism issues in the sixth round, which was also plugged into the literature review session. This illustrated Mia’s intention to associate her teaching with her research, which reciprocally boosted the advancement. For example, her successful

publishing experience enabled her to integrate more publication-related knowledge and strategies into the course. She even added a session for submitting papers to journals starting in the autumn semester of 2021.

4.3.4.3 The attractor state two: Gaining self-efficacy in EAPWT with enhanced routine expertise

With her familiarity with the students and her strengths and weaknesses, Mia supposed that her students could be in charge of solving subject-knowledge-related problems in paper writing. She also helped them enhance general academic writing competence. That is, she obtained a clear vision of EAPWT. Mia described the new understanding of her self-positioning:

I was assured of my roles. I was more responsible for raising students' awareness of their common language problems in EAP writing and facilitating them to neaten and comprehend the general structure and language features. (Second interview)

Cooperating with the students, Mia gradually affirmed her role as “a critical friend” (Second interview) and “a facilitator” (Third interview) instead of the teacher. Mia tackled the pressure issue due to the shift in perceptions about the roles. One strategy was being honest with her students about her strengths and weaknesses. Mia recalled, “I just told them I did not know their areas, and all I could do was to share ideas from my experience to introduce them to the general requirements of English academic writing” (Mia, First interview). Mia's second strategy was to increase the credibility of her teaching by explaining the theoretical foundation of the teaching design, indicating her specialty in English writing and writing instruction, and sharing the objectives for activities and tasks beforehand to motivate the students to engage and cooperate in the following semester.

Thirdly, she transformed the stress into motivation to seek learning opportunities owing to her proactive attitude toward self-updating. Regarding students' diversity as teaching resources instead of "the burden" (Second interview), Mia transformed her teaching "from running the whole show to fostering students' self-regulation and engagement" (Second interview) to make the class enjoyable and relaxing for the students and herself. Mia stated, "I handed over authority (about the domain knowledge) to the students who knew more in their research fields" (First interview). Through teacher-student interactions, she began to use her knowledge of students, i.e., their strengths. For instance, when she was informed that some students had already published seven or eight papers, Mia commented with humor, "Great. I got it, and I would often call your names to share in class" (First interview).

Receiving students' positive feedback and perceiving enjoyment in teacher-student interactions, Mia gained self-efficacy in her current course design and teaching implementation. She kept her teaching methods of encouraging students to share and encouraging dialogues and mutual communication in class. In addition, the activities of getting students to analyze and revise their peers' and their own writing had been continually implemented in class from the first round of teaching to the sixth round due to Mia's firm belief and knowledge about writing teaching. As she shared, "My Ph.D. supervisor was an expert in researching teacher feedback (in writing teaching)" (First interview). Under her supervisor's influence and her research in this area, Mia resolved the teaching design and implementation of process writing, peer review, and corrective feedback, revealing a solid theoretical knowledge base. Despite her rationale for these activities, Mia recounted the students' positive reactions. Through the exercises of evaluation and revision, Mia asserted that the students could actively reflect on their writing issues, which "left them with a deep

impression and engaged them the most” (First interview).

Mia gradually anchored the teaching content and main classroom activities and formed teaching routines while adhering to the teacher-student co-constructed teaching mode. Mia stabilized her teaching in the fifth round, encompassing diversified content and training for students at different levels, indicating her routine expertise. Unlike the previous rounds, she struggled with the balance difficulty:

I felt a demand to balance the significant differences among the students. If I leaned toward the students at lower levels, the students at higher levels would feel bored; however, if I catered more to the higher-level ones, the lower-level students could not keep pace.

(Second interview)

When asked about the current state in the third interview (before the sixth round of teaching), Mia portrayed her teaching fluency and flexibility, signaling her state of “teaching with ease” (Third interview). She highlighted that she could effortlessly select teaching content based on students’ sharing and performance. She could link the students’ ideas back to her instruction at any point, not strictly following her prepared instruction but encouraging more open discussions in class. Moreover, when she was told to open a new course without specific guidance, she could quickly pinpoint the proper course design without nervousness. This quick adaptation was attributable to “nurturing the self-exploration process of developing the EPA writing course” (Third interview).

Overall, Mia grew to be tranquil in mind, that is, “with no ups and downs, no negative emotions, but equanimity” (Third interview). The stable emotional state was owing to Mia not only being familiar with the students and the teaching context but also that her current

teaching practices had accomplished the course goals and embodied her teaching belief of “meeting the students’ needs to the fullest extent” (Third interview).

With the accumulation of teaching experience, Mia’s enactment of the classroom activities had continuously improved with holistic and fluent use of the integrated knowledge base (both theoretical and practical) in terms of EAP-related knowledge, L2 writing teaching, formative assessment, and classroom management balancing teacher control and students’ self-exploration. For instance, Mia managed the classroom teaching more skilfully. As revealed in the second interview and observed in the fifth and sixth rounds of course teaching, Mia used an online document-sharing platform to gather students’ reflections on their learning gains or questions for the next group presentation at the end of each session. It was also employed as a way of checking attendance. This strategy was derived from Mia’s combining her instructional need for students’ feedback and prompting their active participation with the school’s demand for enhancing students’ attendance management. That is, Mia could make full use of the contextualized knowledge to satisfy her teaching needs. She commented, “It at least required each student to raise some questions, unlike the previous semesters, when I just conceived this idea but did not carefully ponder the implementation” (Second interview).

In addition, starting from the fifth round, Mia’s classroom management skills improved, as evidenced by optimizing the organization of the group presentation task. In particular, she required students to specify their work division to improve the fairness of scoring each student instead of the whole group and by providing more detailed requirements for the presentation content, such as adding personal experience. For example, to increase students’ interest in other students’ sharing, Mia provided specific requirements about their article

selection for group presentations, such as being published in the last two years and in high-quality journals to be updated and worth reading.

4.3.4.4 The attractor state three: Continually developing adaptive expertise with motivation for changes

With the gained routine expertise, Carrie stabilized her teaching. However, with a proactive attitude for self-updating, she regarded the refinement of EAPWT as a learning opportunity, so she did not simply repeat the teaching routines. Mia highlighted, “I guessed I would still make minor adjustments in my instruction in consequence of the habit of adaptation even though I possessed no energy and momentum for dramatic teaching reforms” (Third interview). The minor changes were naturally followed with the contextual changes and her adaptive teaching highlighting formative assessment activities in class. For instance, Mia taught four classes with different students in the autumn of 2022, adapting the management each time. Moreover, she persisted in providing written corrective feedback to selected students’ writing and collecting novel writing problems from the students. Though Mia retained the peer review activity in class, the students’ comments and revisions, her feedback, and their discussion were improvised and spontaneously generated.

The improvised and adaptive teaching could be continually observed, indicating the ongoing promotion of adaptive expertise. In the second interview after the fifth round of teaching, Mia exemplified it as “developing on-the-spot adaptation capability” (Second interview). In the earlier two years, Mia assumed that “I could not instruct students without following the content of the prepared PowerPoint” (Second interview). Moreover, fearing the students’ unexpected answers, she would only raise open questions outside of her specialty. However, being more experienced and after accumulating more domain-related examples, Mia stressed

that she could quickly pick up the information produced by the students and hooked up back to her points or instruction. Mia elaborated her changes:

I could not wholly follow my PowerPoint to teach in class, switching quickly to the part related to students' discussion ... Now I accepted students' divergences and knew more about the disciplined writing features, I could link up to my instruction. (Second interview)

In daily practice, Mia continuously involved the students in class instead of a teacher lecturing all the time. Therefore, she spontaneously reacted to the unpredictable students' talking, sharing, and behaviors, especially those out of her plan and presupposition, pushing her to improvise and adapt, developing her adaptive expertise. For instance, when Mia explained what and how knowledge to her students, she did not directly lecture about it but started by asking about students' experiences and knowledge about the concepts. Then she gradually led them with the scaffold of progressive questions based on their reactions and summarized with her explanations. Alternatively, Mia introduced the idea first. The students would deepen their understanding through hands-on practice such as small exercises (e.g., ordering, matching, filling in the blanks, and sentence correction), sample analysis, paragraph revision, and essay writing from individual work to group work. To deepen students' comprehension, she pushed them to think about why with further questions, such as analysis, evaluation, and explanation. The instruction extended with the rounds of teacher-student dialogues.

Dialogic teaching was observed as the main feature of Mia's classroom instruction indicating her adaptive teaching practice and adaptive expertise. Mia's dialogic teaching was featured with successive questions and her strategic classroom management. This was observed at the beginning of the class when the students needed more time for group discussion. She

encouraged them several times, yet the students were still reluctant to talk, so Mia stopped the discussion and initiated a whole-class discussion. Also, she rephrased the questions “what makes a good literature review?” and “what process do you go through to write a literature review?” to “what is meant by ‘the literature’?” and “what kind of material or literature can be credible and authoritative?”. This shift indicated Mia’s notice of the students’ difficulties in answering the previous ones, thus eliciting more of the students’ knowledge about literature to scaffold them to respond to the more challenging ones. In addition, when introducing literature, Mia provided specific examples from computer science and sought confirmation from the students, showing her knowledge about the subject domains.

It was also observed that Mia once (in the fifth round) raised the question of what advantages and disadvantages existed in writing long or short about the future direction in the Discussion session. She asked several students to share their opinions, and they expressed their confusion in explaining the further research direction with a long paragraph. The students thought writing with three introductory sentences was concise and powerful. Then Mia explained to the students that, in humanities domains, one paragraph was needed to carefully specify what and why the limitations exist to provide rationales for possible future directions; otherwise, the reviewers would question why the proposed directions were significant to address in future studies. Mia commented on the activity:

This discussion illustrated the writing differences in diverse disciplines. I did not know what exact questions to ask my students, which were naturally generated along with the flow of the discussion. My students were getting used to the follow-up ‘why’ questions I frequently asked to push them to think deeper. (Second interview)

Another example could show Mia’s fluent class control and flexible teaching when students

asked questions about the following paper writing session when completing one session's learning, which their peers would answer in the subsequent week in class. Mia reflected that a writing teacher inspired the question-raising activity as her Ph.D. research participant to get students to take responsibility for their learning. The assigned group presentation task particularly responded to questions raised by the whole class when the students freely formed groups. The preliminary requirements for group demonstration set by Mia comprised an explication of the presenters' understanding of a specific part of research paper writing (e.g., Introduction, Methods, Discussion), the analysis of two samples from the fields of both humanities and science, and the responses to the classmates' questions raised in advance. By doing so, Mia found that not only did the students explicate the knowledge better than her, but also they helped solve her problem of hardly comprehending the materials in unfamiliar domains such as chemistry, physics, and maths. This alteration could "cover more students' diversified needs" (Mia, First interview).

Meanwhile, Mia's teaching efficiency was improved. After absorbing the information provided by students, Mia redistributed her time teaching knowledge explanation by skipping overlapping parts and highlighting the ones unmentioned by the student groups in her PowerPoint slides. Furthermore, Mia manifested her fluency in applying "the dialogic teaching" (Mia, Second & Third interview) in class. Instead of being "spoon-fed" (Mia, Second interview), Mia and the students discussed warmly in class. As she mentioned, the students commented, "The learning just happened spontaneously during the process of constant question-answer dialogues" (Second interview). Mia stated, "This form of communication helped externalize the students' implicit knowledge regarding paper writing, where they were encouraged to reflect on and share their reading and writing experience (Second interview).

In addition, implementing various activities was another way Mia enhanced her adaptive expertise. For example, after Mia introduced the knowledge of subordinate conjunction, the students accomplished the listed exercises:

- (1) Underlining the example sentences and identify the pattern;
- (2) Choosing the appropriate independent clauses;
- (3) Connecting sentences with coordinating conjunctions;
- (4) Finding the run-on sentences and comma splices in the paragraph;
- (5) Teacher-leading paragraph (students' own writing) analysis and identifying the common writing mistakes;
- (6) Paragraph revision in groups (revising their classmates' writing selected by Mia)

Mia intentionally directed the students to analyze the writing problems concerning content. When the first student identified a language issue, she acknowledged it and asked him about the content. As the first student did not identify it, Mia called another student to decode the text, comparing it with what they had learned regarding process essay writing. The dialogues in class were improvisational, but Mia fluently managed the instruction with the explicit teaching goal of facilitating the students to locate the content problems and consolidate their comprehension of the feature and purpose of process essay writing.

Except for the teacher-student interactions, the students worked in groups to conduct presentations, discussions, and peer review tasks. Peer review was a representative case displaying how the teacher and students co-adapted to each other. Mia offered a short training for the students to conduct peer review, for instance, explaining assessment criteria, providing peer review forms and strategies, and demonstrating with examples. After peer feedback and

revision, Mia invited the individual student or groups to share in class. Mia arranged peer review tasks in paragraph writing, process essay writing, and abstract writing. For instance, Mia assigned paragraphs selected from the students' writing assignments to different groups, which could be co-revised directly in the word document shared online. After group revision, Mia guided the class to read and comment on each paragraph, later showing her revisions to compare. In the process, Mia mainly adopted Chinese to explain the revisions. Moreover, she listened to the group's comments and affirmed their revisions. Under Mia's appraisal and encouragement, this group accomplished their revision. When providing feedback to each group's revision, Mia displayed her language fluency with immediate and accurate judgment on students' writing. Furthermore, when she offered instant feedback for students' abstracts, it demanded her fluency in academic writing, familiarity with domain knowledge, and high-level language proficiency. However, as for the domain knowledge part, if Mia did not know, she consulted her students.

The class became flexibly controlled by Mia even when new problems emerged, showing her adaptive expertise and enhanced classroom management skills. She stressed, "I could handle any incidents in class" (Second interview). For instance, due to the COVID-19 pandemic, the university required her to adopt blended teaching for the course in the middle of the autumn semester in 2022. She taught in the classroom while opening an online meeting room. However, she encountered a technical issue when the PowerPoint slide in the meeting room froze while teaching. She did not panic but told students to use another platform called Chunyu temporarily to follow the PowerPoint slides and continued her teaching. Mia admitted that "it was common to encounter technical problems not exerting too much influence on my teaching" (Informal talk after class). It was why she fixed the problem during the break.

In addition to teaching, Mia was more strategic in assessment and feedback. At the second round of teaching, assignments had been altered since the course content was changed to be connected to research paper writing as requested by students. For the general genre writing part kept for basic writing skill training, Mia selected part of students' homework for written feedback to save time and reduce the workload. She needed to assess 40 to 50 assignments each week, providing individual feedback and summarizing the shared writing problems. For the research paper writing part, students were required to write each session (e.g., Introduction, Literature Review, Methodology) after her instruction. No individual feedback was provided, but Mia used class time for peer review and whole-class feedback. Therefore, students could keep revising their writing along with peer feedback and self-reflections until they handed in the whole paper. The assessment practice was supported by Mia's theoretical knowledge of formative assessment and practical knowledge of balancing her time and students' need for teacher feedback.

All in all, the above illustrations show that Mia reached the state of possessing both routine and adaptive expertise (Hatano & Inagaki, 1984). That is, she could confidently handle the EAPWT and manifest both teaching fluency with settled routines and flexibility with innovation for tackling new situations and challenges. Especially when most of the course design and teaching implementation was routinized and stabilized, Mia insisted developing her adaptive expertise continually as part of her professional development.

4.3.4.5 The constraints on Mia's EAPWT expertise development

First, the school-level constraint limited her further implementation of formative assessment in EAPWT. Initially, due to the freedom of course design, material selection, classroom

instruction, and the absence of guidance, she carried the illusion of being unencumbered by administrative requirements. However, she encountered an executive problem concerning assessment arrangements. With the formative assessment design, Mia did not set a final paper-pencil examination for the course. However, in the third round, she thought the assessment form was flexible in arranging, so she kept the formative design. As Mia considered, “I made such design because I always told my students not to learn this course for it was a compulsory one. They could use my course to prepare at least a draft for publication”(First interview). Approaching the semester end, she was informed to submit some files concerning course assessment to the graduate school and required to add one final examination. However, she had elaborated the assessment and teaching schedule to her students initially, who were unsatisfied with the sudden change of assessment form. They were informed at short notice to prepare for the exam and felt annoyed, particularly during the pandemic, with two even making negative comments in the course evaluation. Mia explained, “I was still unfamiliar with the school’s policy and rules at that time with no guidance” (First interview).

Moreover, the immutability of the assessment arrangement kept frustrating her in the following rounds of course teaching. Mia submitted a formal application to remove the final paper examination for this course later, as requested, but that, too, was rejected. She was confused and stated, “I had proposed it several times in the previous years, even in the latest department meetings. Then I was suggested to write the application, which the graduate school did not approve. What else could I do?” (Third interview). When Mia renegotiated with the dean in the autumn semester of 2022, she was told to wait because “the other EAP writing course for master degree students had just reformed the course assessment. The school needed to observe the effects before extending to other courses” (Third interview).

Consequently, she was disappointed by the school-level decisions and helpless to make further changes in terms of course assessment.

As for the course assessment as critical feedback to teaching, the current institutional requirement of a final examination strongly contradicted Mia's beliefs about the proper assessment of writing courses. She shared her insistence on formative assessment design in the EAP writing course:

Would it not be better to use students' production as the course assessment rather than the paper exam? The final examination could not provide any positive backwash effect on teaching and learning because the primary purpose was to grade students. (Third interview)

Faced with this policy constraint, Mia adapted her strategy to cope with the assessment arrangement avoiding students' complaints. First, she explained to the students about the time of the final exam, "the earlier, the better, in case of accidents" (Classroom observation, October 2022), since the examination was once postponed due to the pandemic. Second, she consulted the school and applied for both the online and offline exams to be spared administrative constraints so she could flexibly arrange the exam later.

Coupled with frustration about the fixed assessment requirements, Mia felt that "I hit a bottleneck in the course development" (Third interview), along with contradictory feelings in her mind. On the one hand, she was pleased with the latest course design and teaching enactment. In particular, with the continuing self-exploration of more effective teaching for this course, after five rounds of teaching practices, Mia asserted that "the teaching content and materials were closely connected to the students' needs and backgrounds and the teaching activities had been routinized at least for the time being" (Third interview). The students'

evaluation scores for this course had increased from 91 to 96, showing a steady improvement in Mia's EAPWT. In written reflections, students specified their gains, including academic genre awareness and knowledge, overlooked writing problems, writing process strategies (e.g., planning and multiple revisions), and obtaining new writing and thinking habits, which reflected the achievement of the teaching goals. Mia commented, "It evidenced that I was suitable for teaching this course" (Third interview).

On the other hand, Mia expressed her concerns about the authenticity of the students' comments in the written reflections since "the doctoral students always showed respect for their teachers, who might give positive comments out of politeness or honoring the teacher's 'Mian zi' (face and prestige)" (Third interview). Accordingly, Mia was unsure about the students' sayings of their significant gains from this course. She highlighted the need for more feedback from other resources:

I still lacked standards for exemplary teaching in this course except for grasping ideas from students' feedback and comments. Nevertheless, what else could be used to make evaluations for teaching effects? Moreover, how much could students' evaluations be trusted? (Third interview)

In addition, other constraints for further course development would allow Mia "simply to maintain the status quo" (Third interview). One constraint was her other roles. Mia had shouldered more and more responsibilities since 2021, leaving her less time and less energy for fixing problems in this course. She became a mother in the spring of 2021, and her baby needed much company for the first two years. She was assigned as the head of the doctoral education department in the autumn spring of 2022, in charge of administrative work (e.g., managing other teachers' work and recruiting new teachers). Meanwhile, she was responsible

for the daily operation of the writing center as the director. Moreover, she had arranged to open a new course in the autumn semester of 2022. All this crammed each of her weeks, quite apart from her need to conduct research and pursue publication for her career development. Mia admitted, “I was too tired. I did not have the energy to canvass the issues in the course” (Third interview).

4.3.4.6 Summary of Mia’s case

In sum, Mia’s teaching expertise development started with the unfavorable initial condition of being theoretically prepared but lacking teaching experience and practical knowledge. Then Mia’s EAPWT expertise system experienced three attractor states: (1) progressive problem-solving in refining EAPWT while gaining more knowledge and experience; (2) gaining self-efficacy in EAPWT with enhanced routine expertise; and (3) continually developing adaptive expertise with motivation for changes. Along with the teaching expertise development, Mia’s EAPWT expertise advanced with the following processes: (1) from being a puzzled novice to being more confident in teaching; (2) from more fixed teacher control to more flexible classroom management; (3) from unsure teaching trials to obtaining teaching fluency and flexibility.

To illustrate, Mia was puzzled and unsure about both course design and classroom implementation in the beginning as a novice teacher, so she made the safe choice to follow the preceding teacher’s teaching in the EAP writing course. The initial condition in 2019 was not favorable for Mia to handle the situation because she was inexperienced and young while teaching this course was demanding as it related to subject knowledge from other domains (e.g., math and engineering), and students were from different majors with varying experience of research and academic writing with a large age range. Meanwhile, she lacked

self-efficacy in managing the course teaching although she was theoretically prepared with the knowledge of EAP writing and L2 writing teaching and the experience of academic practices. However, the stimuli (e.g., students' feedback, her reflection on the course orientations, and her perceptual change) pushed her to make teaching trials and reforms. In the beginning, she tried to play the role of authority, leading to huge pressure for her. Then she changed her perception about her role as a critical friend facilitating students' learning who reciprocally learned from each other. Her teaching was then transformed to be more student-centered, engaging students as teaching resources and self-regulators when her perception changed in 2020. Mia practiced adaptive teaching, adjusting teaching activities, adopting student-centered teaching, and implementing formative assessment tasks. Mia kept adapting her instruction to meet better students' diversified needs (e.g., changing teaching content, engaging students to produce teaching materials related to their learning, inviting students to share in class, and using formative assessment to refine teaching).

In 2021, Mia started to repeat the course design and delivery, and the main parts of her teaching were routinized, as Mia was familiar with teaching contexts and fluent in course enactment. The teaching routines and fluency resulted from Mia's teaching expertise development when the components interacted. In particular, Mia's problem-solving skill was progressively exercised when she explored varying solutions to handle issues caused by students' diversity and her insufficient subject-matter knowledge. She improved her subject-matter knowledge from the informal learning experience, i.e., personal readings and communicating with her students. She decided to learn from students' sharing when her contextualized knowledge increased with more EAPWT experience.

Along with accumulating knowledge of students and teaching contexts, Mia gained more

understanding of students' domain-specific knowledge, especially the disciplinary genre and language features. Compared with the beginning, she was only familiar with research paradigms and academic genre features in the Humanities and Social sciences. Meanwhile, she shifted her research interest into EAP courses, so she was passionate about building teaching-research nexus and thus obtained more EAP-related knowledge and academic practice experience. Moreover, with more teaching trials, her practical knowledge of EAPWT was enhanced, such as classroom management, relationship-building, and adaptive teaching.

She gradually gained self-efficacy in teaching this course as she described herself as a suitable teacher with both fluency and flexibility. During the EAPWT expertise development process, she enacted her adaptive agency to tackle challenges, constantly self-reflecting to refine teaching and adjusting her emotions. Accordingly, she became more fluent and flexible in teaching this course; that is, she reached the state of teaching with ease in 2022. After rounds of teaching practices, she was confident and felt more competent when she knew more about the course content, students, and the teaching context.

During the process, Mia's intrinsic motivation was the main factor facilitating her EAPWT expertise development. To illustrate, the factors encompassed her commitment, sincere care for student learning gains, passion for building research-teaching nexus, enthusiasm for self-updating, willingness for continuous learning, and resolution to continually work as both a researcher and a teacher in universities. All in all, the components of EAPWT expertise interacted and worked holistically to support Mia in reforming and developing the course design and delivery. Reciprocally, the components such as experience, knowledge, and progressive problem-solving were enhanced. Meanwhile, Mia's motivation for changes and adaptive agency was the driving force to prompt the self-organization of the EAPWT

expertise system and the interactions among the components.

However, Mia felt she had reached the bottleneck for further expertise development. Based on Mia's self-evaluation regarding the course design and teaching effects, she believed that students' diverse learning needs could be somewhat satisfied. However, Mia was not sure about their real learning gains even though students provided positive feedback after completing the course, marked Mia high in teacher evaluation forms, and wrote positive comments in students' written self-reflection. However, she questioned the authenticity of their feedback, worrying that they acted politely by saying affirmative comments, but she could obtain no other resources of feedback. In other words, the institution failed to provide formative feedback for teacher evaluation to facilitate their teaching expertise development except for students' evaluation scores. Another constraint was the institutional policy concerning the unchangeable requirement of setting the final paper exam for the course. In addition, the constraint arose from herself: the difficulty of managing different roles in daily work (i.e., teaching, researching, and administrative work) and life (e.g., being a new mother).

Chapter 5: Discussion

5.1 Chapter introduction

This chapter interprets the findings using a two-stage research design: semi-structured interviews for 12 participants, and follow-up case studies for four of them lasting one or two academic years. After analyzing the interview data from Stage One, I categorized five components of EAPWT expertise system: experience, the integrated knowledge base, progressive problem-solving, motivation for changes, and adaptive agency, which encompasses multiple sub-components and sub-classes of the sub-components, indicating the system's multi-leveled structure. The components were found to interact with each other showing the complexity and self-organization of the system. After analyzing the case study data, the dynamic processes of developing EAPWT expertise were unearthed by specifying the initial conditions and altered attractor states. The improvement of expertise components was depicted to provide rationales for the emerged changes regarding course design and delivery, assessment, and feedback, and emotions. Moreover, the factors stimulating the changes and the constraints on EAPWT expertise development were also explored. Combining the findings from the two stages, an ecological model of EAPWT expertise development is proposed. The significance of these findings are also discussed with reference to relevant literature.

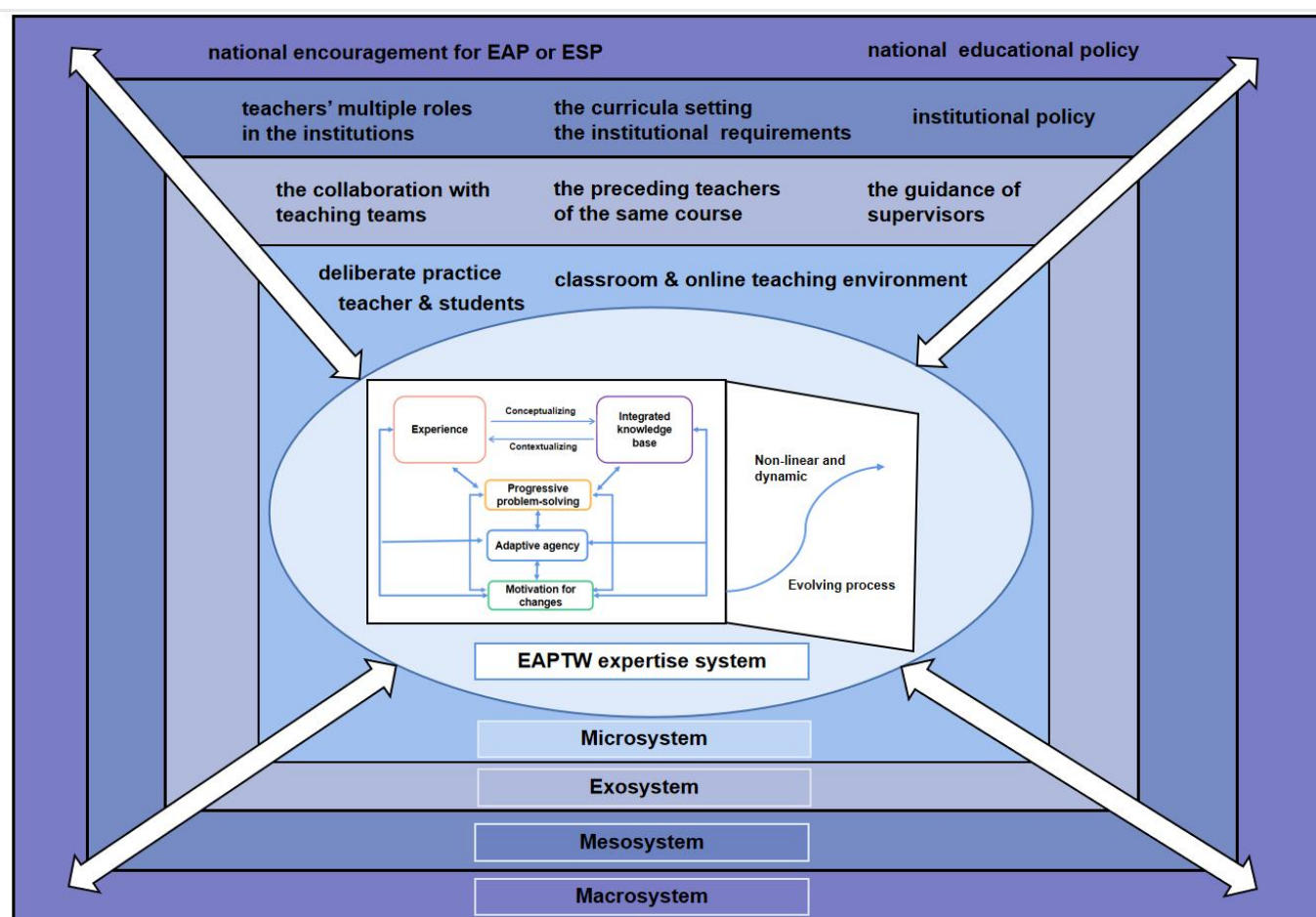
5.2 The ecological model of EAPWT expertise development

Combining the findings from the components and dynamic process sessions, the ecological model of EAPWT expertise development (as seen in Figure 5.1) is proposed. It highlights the multi-leveled and interacting components of the EAPWT expertise system, the dynamics of the system's development, and the influences of multilayered environmental systems in the

tertiary-level EAP writing teaching context. This model can shed light on the complexity of the EAPWT expertise system and the dynamism of its evolvement, extending our theoretical understanding of EFL teacher expertise when teaching EAPWT at the tertiary-level in China. More details about the model are explained in the following sections.

Figure 5.1

The ecological model of EAPWT expertise development



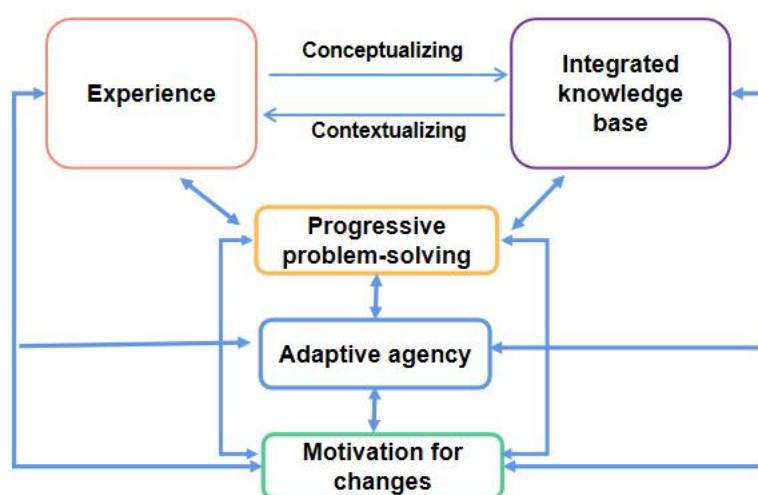
5.2.1 The multi-leveled and interacting components of the EAPWT expertise system

Echoing previous studies concerning the attributes or components of teacher expertise in relevant contexts (e.g., expertise of EFL teachers, writing teachers, and EAP teachers), this

study confirms its multifaceted feature (Lee & Yuan, 2021; Tsui, 2009), and provides more details about the multi-leveled components and their continual interactions by proposing a heuristic, contextualized, and systematic model on the complexity of the EAPWT expertise system (as seen in Figure 5. 2). The interactions are summarized as follows: (1) motivation for changes and adaptive agency activating other components; (2) conceptualizing experience to knowledge and contextualizing knowledge into experience; (3) progressive problem-solving with other components working in synergy.

Figure 5.2

EAPWT expertise system



5.2.1.1 Motivation for changes and adaptive agency activating other components

Motivation in the study was found to encompass two sub-components: affection and enterprising attitude. Affection corresponds to the affective dimension of writing teacher expertise proposed by Lee and Yuan (2021), encompassing sub-components of a sense of commitment and passion. However, in this study, passion was contextualized to teaching and academic practices, that is, the participants' passion for being teachers and researchers

prompted their intensive and deliberate practice as the requisite for acquiring expertise (Ericsson et al., 1993). This finding confirms the function of teaching-related enjoyment or enthusiasm (Frenzel et al., 2009) for sustaining teachers' dedication. Affection for students and passion for teaching supported the participants (e.g., Carrie, Flora, Hallie, Jose, Kade, Linda, and Mia) who were persistently dedicated to EAPWT for the genuine joy, delight, and fulfilment gained from exerting a positive influences on students, instead of giving up in the face of contextual constraints.

More importantly, the findings revealed that motivation for changes functions as the driving force for seeking teaching expertise, underlining the adaptive aspect of the participants' EAP writing teaching in recognition of the complex and changeable social contexts (Sorensen, 2017). According to Shulman and Shulman (2009), having motivation reveals teachers' willingness for learning and self-development. The participants endeavored to adapt to their new roles changing from EFL teachers teaching other English courses to EAP writing course teachers while encountering challenges because of their lack of experience or knowledge and inappropriate course settings. Even teachers with years of EAP writing teaching experience (e.g., Carrie, Flora, Hallie, and Kade) were still not fully satisfied with their teaching efforts; thus, they explored new teaching methods.

The findings from the cases indicate that being committed teachers, researchers, and academic writers motivated the participants to face challenges. As mentioned in findings, the participants encountered interconnected problems in the EAPWT context, revealing the constraints of the course setting and demands caused corresponding issues (e.g., the students' lack of learning motivation and negative learning attitudes, the overloaded course content, and the mismatch between the teachers' specialties and the students' diverse backgrounds).

As emphasized, the complexity of teaching is reflected in the ill-structured problems (Mansour, 2009). Particularly in the four cases, the sense of commitment to being a teacher and the sincere care for students' learning gains motivated the participants to continually adjust their teaching and refine their instruction to deal with the problems. As Lee and Yuan (2021) asserted, genuine care for student learning was central to expert writing teaching. However, this study further elaborates how teachers' sense of commitment supported their progressive problem-solving. In particular, the participants devoted their time and energy to reforming or refining their instruction in response to the new educational policy or teaching innovations by experimenting with novel theories or technologies, even when their course design and teaching had stabilized.

Moreover, the participants chose to embrace the new educational policy and novel environmental requirements or changes instead of resisting or neglecting them, due to their proactive attitude, i.e., their open-mindedness and yearning to update and develop themselves which reflected their sense of commitment and passion for teaching and researching.

Attitudinal components in teaching expertise have been less explored by previous studies, but they can still shed light on why teachers persist in expertise development (Tsui, 2003). Some participants (e.g., Carrie, Flora, Gerald, Hallie, Kade, Linda, and Mia) highlighted their life-long learning disposition regarding themselves as "life-long learners" (e.g., Flora, Kade, and Linda). They strove to refresh their knowledge and skills, thus regarding EAPWT, the novel situation, and the challenges encountered as a learning opportunity. Owing to their continuous willingness to learn, some participants (e.g., Lisa, Jose, and Quinn) took the initiative to seek continued professional learning opportunities, both formal and informal, enriching their academic learning experience and contributing to their EAP writing and writing teaching knowledge base. Some of them (e.g., Carrie, Jose, Kade, Linda, Lisa, and

Mia) deliberately associated their research interests with the course teaching and read more publications in the area. The findings show that strong motivation could stimulate interactions among other components and promote the self-organization of the EAPWT expertise system, revealing system dynamism (Larsen-Freeman & Cameron, 2008).

Furthermore, the findings reveal teachers' motivation was closely related to their professional vision providing both short-term and long-term development goals. The short-term goals were more related to the standards of effective teaching in the teachers' minds, that is, their visions of good EAPWT were constructed by experience and integrated into their knowledge base. When the teaching effects turned unsatisfactory, the participants (e.g., Flora and Kade) tended to make efforts to reform their teaching. The long-term goals were more connected to the teachers' career visions. Carrie said she strengthened her academic practices (conducted research and writing for publication), and professional learning, all of which centred around the EAP field and tasks related to becoming a successful scholar. Hallie was also a case illustrating how having a clear career direction and firm beliefs could motivate her to concentrate on research, teaching, and learning in her specialized field with passion and perseverance. As Hallie suggested, to develop teaching expertise it is pivotal to "be firm about your direction, dedicate yourself, and be patient" (Interview). Lee and Yuan (2021) claimed that professional visions serve as a crucial component of writing teacher expertise. As Shuman and Shulman (2009) stressed, the accomplished teacher can be ready with clear visions of their work.

The participants with steadfast professional development goals manifested the intentionality of agency (Bandura, 2001), by becoming agents, "not only planner[s] and forethinker[s], but motivator[s] and self-regulator[s] as well" (Bandura, 2001, p. 8). For example, Carrie, Flora,

Kade, and Mia continually reflected on their teaching issues, reformed, refined their teaching, and regulated their negative emotions when encountering obstacles while adapting to new issues in EAP writing teaching to seek better outcomes. The findings show that adaptive agency (Goodwyn, 2019) enables EAP teachers to turn challenges into self-development activities. These ideas are similar to Bereiter and Scardamalia's (1993) notion that seeking expertise is the journey of pursuing "expert careers" (p. 11) for the long run, when the motivation for changes and adaptive agency pushes teachers to work at the edges. Motivation for changes work as the engine of the expertise systems, while adaptive agency functions like the command to set goals and control the direction of system advancement.

In sum, the findings not only reveal the significance of motivation for change and adaptive agency as the non-cognitive components of teaching expertise, but also imply that, if the teachers associate their long-term professional development goals with the EAP/ESP or L2 writing teaching field, they can become dedicated to EAPWT expertise development. The findings also provide a contextual explanation for how components work in synergy to bring emergent features for system advancement (de Bot, 2017).

5.2.1.2 Conceptualizing experience to knowledge and contextualizing knowledge into experience

Studies have frequently adopted the terms regarding teacher knowledge, such as "subject-matter knowledge," "pedagogical content knowledge," and "conditional knowledge" proposed by Shulman (1986, 1987), indicating theoretical and practical aspects (Tynjälä, 2008). Although the present study adopted Tynjälä's (2008) classification of teacher knowledge, the findings revealed sub-components in EAPWT context. The interaction between knowledge and experience, which facilitates our understanding about both the

complexity and dynamism of the EAPWT expertise system was a particular focus. That is, experience was conceptualized as the participants' knowledge base and knowledge was contextualized in experience.

The participants' past academic learning, practice, and teaching experience was conceptualized to become their integrated knowledge base for teaching EAP writing. The identification of three types of experience provided a better understanding of how experience functions in teaching expertise because previous studies have suggested the length of teaching experience matters (e.g., Berliner, 2004; Bereiter & Scardamalia, 1993), but they did not specify what experience consisted of or explore other varieties besides teaching experience. As identified in this study, theoretical/conceptual knowledge entailed EAP-related knowledge, L2 writing and writing teaching approaches, technology-integrated teaching approaches, and formative assessment and feedback knowledge. As for experiential/practical knowledge, the participants stressed the need for academic writing and research skills, contextualized knowledge (knowledge of their students and teaching context), adaptive teaching embodying student-centered and learning-centered teaching beliefs, classroom management skills, assessment and feedback strategies, and teacher-student relationship building skills.

Comparing these findings to the TEAP Competency Framework (BALEAP, 2008, 2022), the present study focuses more on course design and delivery, the central activities of an EAP teacher, revealing distinct features of EAPWT. In particular, the study highlights theoretical knowledge about L2 writing and that writing teaching approaches are beneficial for EAPWT. As shown in the findings, some participants (e.g., Carrie, Kade, Lisa, and Mia) arranged various writing practices and writing strategy instruction in their course to help students

apply EAP-related knowledge into their own writing. They mentioned the adoption of process writing approach or genre approach. Some participants (e.g., Carrie, Kade, Linda, and Mia) highlighted formative assessment activities such as peer review, self-assessment, and self-revision of multiple drafts, which were typical L2 writing classroom activities indicating their awareness of associating teaching and learning with assessment and feedback. Kade systematically implement portfolio assessment in the EAP writing course. Therefore, the mastery of L2 writing and writing teaching approaches may be a distinct component of EAPWT expertise. The findings also indicate the need to integrate technology into teaching approaches and strategies, which is not encompassed in TEAP Competency Framework (BALEAP, 2008, 2022), perhaps reflecting new realities triggered by the pandemic.

Conceptualizing experience to knowledge. The findings reveal how experience was conceptualized into the teachers' knowledge base. To illustrate, the academic learning experience prepared the participants for learning about the theoretical/conceptual knowledge, what EAP writing is, and how to teach it. This finding is in line with Chen and Goh (2014), who stressed that learning experiences significantly influence teacher knowledge. However, this study further distinguishes between the influences of formal and informal learning experiences regarding research and academic writing as it relates to teachers' knowledge of EAPWT. The participants collectively stated that most of their formal and systematic academic learning experiences were within doctoral or post-doctoral programs, i.e., within EAP writing courses and focused academic practice. After their formal learning, linguistic theories (e.g., genre knowledge and Systemic Functional Grammar Theory) and writing teaching approaches (e.g., genre and process writing approaches), were implemented in the course design and classroom instruction. As Linda claimed, the teachers lacking systematic learning about theories may misunderstand and distort the usage of theories in teaching,

which cannot be mastered during short-term training or fragmentary informal learning. For example, Carrie transferred her EAP writing course learning experience into her current practical knowledge of EAPWT, e.g., she learned how to organize the course content, design learning materials, and she came to consider the teaching methods she experienced as effective.

The participants did not reach agreement on the necessity of equipping EAP writing teachers with subject-knowledge, which was mainly learned informally through teaching EAP writing courses. When the teachers possessed more subject knowledge, it was considered helpful for classroom teaching as it increased students' learning interest when teachers' displayed knowledge was closely related to their majors (Quinn). This knowledge deepened their EAP writing instruction (Carrie) and enhanced their instructional confidence (Mia). In contrast, some participants suggested that EFL teachers could simply focus on general genre features in EAP writing classes without necessarily having subject-matter knowledge (Hallie & Lisa). One proposal from Lisa was that EFL teachers should focus on teaching discourse features, which could develop disciplinary discourse knowledge for a domain akin to translation with a specialized direction, instead of teaching subject-matter knowledge. When teaching methodology, which is highly dependent on subject-matter knowledge, the participants suggested subject teachers or other scholars specializing in the related domain do this, (e.g., Carrie and Lisa); alternatively, students themselves should summarize their own domain features (e.g., Hallie and Mia). These findings indicate the teachers considered both EGAP (generic academic skills across disciplines and domain) and ESAP (teaching EAP for a particular disciplinary discourse) (Cai, 2019; Dudley-Evans & St John, 1998).

However, EFL teachers in the study were unprepared for ESAP. They familiarized themselves

with disciplinary discourse only through informal learning regarding subject-matter knowledge. Moreover, apart from the genre approach, no other EAP teaching approaches were referred to among the participants, which reveals that although teachers started to consider EAP, they were lacked systematic training for EAP teaching, which underscores the central concern about EAP teachers in China (Li & Ma, 2020).

Regarding assessment and feedback, formative assessment was preferred by the participants who collected students' assignments and regular performance in class as part of students' course scores. The participants' learning experience concerning L2 writing teaching and writing teaching experience helped conceptualize their knowledge of conducting assessment and feedback in their EAP writing courses. During the courses, some participants (e.g., Carrie, Jane, Jose, and Linda) conducted sporadic formative assessment activities, such as peer review and self-revision, based on their previous informal learning about formative assessment. Only two participants (Kade and Mia) who had been involved in researching EFL writing and writing teaching since their doctoral study deliberately and systematically applied practices based on writing assessment theories (e.g., teacher corrective feedback, formative writing assessment, and portfolio assessment) to design their courses and facilitate both teaching and learning.

Due to a heavy workload of teacher feedback in EAP writing courses, however, the participants resorted to practical strategies. For example, Gerald and Quinn did not have time for individual teacher feedback for their large classes so they used online tools to score and provide automatic correction and feedback. Carrie and Hallie trained teaching assistants to provide written feedback for each student, alleviating their workload, while Mia selected part of her students' writing to mark and provide feedback for each assignment. As demonstrated

above, the participants' knowledge base concerning assessment and feedback was more related to formative writing assessment, which requires more systematic learning.

Furthermore, similar to the other research in the L2 writing field, it is challenging to fully implement formative assessment due to the dominance of summative assessment culture in schools in China (e.g., Guo & Xu, 2021; Lee & Coniam, 2013; Zhao, 2018).

Regarding practical knowledge about research and academic writing, the participants continually applied what they had learned into their practice (i.e., academic writing, research-related, and publishing experience) enabling them to become experienced researchers and writers. "Deliberate practice" (Ericsson et al., 1993) enhanced their research-related and academic writing skills, which are regarded as indispensable parts of EAPWT expertise. As Davids et al. (2010) noted, not only does the time spent on practice matter, but also activities should be focused on the ones most beneficial for strengthening essential abilities. As Lisa claimed, EAPWT is composed of "multiple skills" related to research and academic writing in English, ranging from topic selection, literature search and review, data collection and analysis, and composing the reports. These skills enabled the participants to avoid giving mechanical lectures on theoretical knowledge while showing their students how to perform well academically.

Another important finding is that the participants with doctoral study experience (e.g., Carrie, Hallie, Jose, Kade, and Mia) tended to dedicate themselves to academic activities owing to the formation of fundamental academic competence and habits of mind gained from their formal and systematic academic learning. For example, Carrie, Jose, Kade, and Mia especially adhered to the research-teaching nexus by transforming their EAP writing courses into a research site and reforming or refining their course teaching by drawing on the research

findings. In the meantime, their own academic competence was advanced with intensive practices. Conversely, some participants without formal and systematic academic learning experience (e.g., Jane, Lisa, and Quinn) were more concerned about their publications due to their lack of confidence in their academic competence and lack of an institutional ethos of pursuing academic development. Thus, the findings not only reveal the significance of deliberate practice, but also show what practices matter for EAPWT expertise.

Regarding the conceptualization of teaching experience, the findings show that the closeness and consistency of knowledge and experience facilitates knowledge transfer in EAP writing courses. According to Crusan et al. (2016), teachers' linguistic background and teaching experience affects their assessment knowledge and classroom instruction. In present study, the novice EAP writing teachers were not beginners in teaching but possessed years of teaching experience in EFL or L2 writing, which influenced their preferences for teaching methods and facilitated their classroom management in EAPWT. For example, the experienced writing teachers (e.g., Kade, Jose, and Quinn) handled the EAP writing courses with more focus on the writing process and writing strategies. In contrast, those with little writing teaching experience concentrated more on knowledge comprehension and writing products (e.g., Flora, Gerald, and Lisa).

The findings also show that the consistency of the EAPWT experience across similar student groups enhanced the contextualized knowledge of the teaching content, students, and context. As revealed in other studies, teaching expertise is highly contextualized containing domain-specific features (e.g., Dimitrova et al., 2021; Ropo, 2004). The findings also showed that the domain-specific features are not only related to subject-matter knowledge, but also connected to teachers' contextualized knowledge. Carrie and Mia were vivid examples

manifesting their teaching fluency after five rounds of teaching EAP writing to students with similar backgrounds. Flora affirmed that she could teach the course content and flexibly rearrange it because of her six years of EAPWT experience. However, when teaching contexts change, even expert teachers manifest less expertise (Tsui, 2005). In the study, Hallie expressed great confidence about teaching the course to graduate students from any major due to having over 10 years' teaching experience; however, she found it troublesome to join the teaching team teaching EAP writing to undergraduates in 2023 because of the need to re-familiarize herself with the administrative paper work and students' situations.

Self-regulatory knowledge included meta-cognitive and reflective skills (Tynjälä, 2008). The findings showed that the meta-cognitive components of self-reflection and self-adjustment interacted when the participants reflected on other components of EAPWT expertise system. This also indicates the participants' adaptive agency (Bandura, 1989; Cited by Code, 2020). Specifically, the participants reflected on the instructional problems and teaching effectiveness. They conducted self-reflection after each class or at periodic intervals. Some (e.g., Carrie, Flora, and Kade) wrote self-reflections to evaluate their teaching and analyze the ineffective teaching activities after teaching, while some (e.g., Carrie, Flora, Kade, Jane, Jose, and Mia) reflected on their instruction after feedback from students or colleagues and decided to make further adjustments or continue teaching the parts receiving positive comments. This indicates that feedback on the participants' teaching effectiveness and instructional problems were limited to students' comments and self-reflection. As Mia suspected, the only feedback from students' evaluation also constrained further teaching development. For better evaluating teaching effects, Jose suggested using research methods (e.g., collecting quantitative data) to measure the teaching effects, which brought her assurance and more ideas for teaching refinement. Thus, self-reflection may lead to better problem-solving.

After continual self-reflection, the participants enacted self-regulation to seek solutions, increase teaching effectiveness, expand their knowledge base, and sharpen their skills for academic practices and teaching. Studies (e.g., Farrell, 2013; Weng, 2021) have highlighted critical reflection as a fundamental means for teaching expertise development. As Winkler (2001) observed, teachers' reflection stitches teaching experience and knowledge together. However, teachers' self-regulation has been neglected in previous research. The study findings show that the participants reflected and monitored whether their experience and knowledge in action could adequately support their EAP writing instruction. For example, the participants (e.g., Lisa, Jose, and Quinn) identified their lack of academic experience or theoretical knowledge base; thus, they actively took both informal and formal opportunities for self-improvement. They also conducted self-regulation to solve instructional problems and adapt their teaching. The findings especially stress the participants' emotional regulation despite their teaching adaptations. The adjusted their teaching when the students commented negatively on the EAPWT (Flora), or when the teachers themselves were concerned about their career promotion or trapped by heavy administrative work (Carrie, Flora, and Mia). Notably, few studies have associated teacher emotional regulation with the components of teacher expertise.

Contextualizing knowledge into experience. The knowledge enacted in the participants' EAPWT was found to be contextualized in their teaching experience and accumulated for future teaching in similar contexts. the Contextualized knowledge concerning the knowledge of students and teaching contexts was related more to the participants' instructional decisions and classroom teaching, which were gained from their teaching experience. For example, among the linguistic theories, genre knowledge was considered most relevant to EAP writing;

however, selecting specific genres to teach depended on the contextual requirement and the target students. The amount and depth of knowledge instruction depended on the students' reactions and teaching effects, which varied in each round of teaching practice.

Similarly, conducting formative assessment was constrained by the context. For example, even though Quinn stressed writing practice, the students were reluctant to revise their writing assignments and write new drafts because they were occupied by other courses. It was not practical for Quinn to provide more teacher feedback to large classes (with around 50 students each). Kade encountered a similar problem. The students resisted peer review in class, so he had to simplify the procedure of peer assessment and feedback to simple peer sharing and reduce the peer work, even though he believed in the power of formative assessment, which requires student involvement in peer work and self-revision. This contextualized knowledge could be transformed to the participants' teaching experience because although the students changed at each round, the major points could be anticipated. As evidenced in Carrie's, Flora's, and Mia's descriptions, they consistently taught EAP writing courses to specific groups, which increased their familiarity of the content, students and teaching contexts and facilitated the enhancement of their teaching efficiency. For instance, they could teach fluently without using PowerPoint slides, quickly comment on students' discussions, and link back to their teaching points. In other words, theoretical knowledge interacting with practical and conditional knowledge (Shulman, 1986, 1987) was integrated into their knowledge base and became part of their experience. Accordingly, schema of EAPWT in certain contexts are accumulated, so teachers can automatically recall them when teaching and thus manifest teaching expertise.

As for pedagogical knowledge, the findings revealed that no unified teaching methods were

adopted by the participants; however, they flexibly chose student-centered and learning-centered teaching. In previous research, scholars (e.g., Hosseini et al., 2017; Shulman, 1986) have focused on identifying the details of pedagogical knowledge. However, in the present study, the participants transformed their pedagogical knowledge to their EAP teaching experience using multiple methods to embody their student-centered and learning-centered teaching beliefs. That is, the previous pedagogical knowledge was selected and adapted for the EAPWT situations, indicating the participants' adaptive expertise (Hatano & Inagaki, 1984). As Kade supposed, implementing student-centered and learning-centered teaching beliefs guided him to use adaptive teaching methods. Hallie and Flora also tried out diverse methods to improve their teaching effectiveness. The key was to adapt to students' needs and teaching contexts.

Despite the variety of ways to teach EAP writing courses, the participants believed that it was advantageous to engage students in self-exploration, self-regulation, and peer support, empowering them to take responsibility for their learning instead of the teachers controlling everything in class. The students were encouraged to share their experiences and knowledge, which could supplement the teachers' knowledge deficiency, especially regarding their insufficient subject-matter knowledge and unfamiliarity with the research methods in their students' domain (Carrie, Hallie, & Mia). Being learning-centered, students and the teacher (Carrie) worked together to achieve learning objectives that promoted students' active participation and self-organization of their own learning. The students thus assumed responsible and improved the classroom atmosphere instead of passively listening to the teacher's (Flora) lectures. This finding contradicts conclusions from a study on EAP writing program effectiveness conducted by Vitta et al. (2019), which suggested that teacher-led teaching is more conducive to lower proficiency students while student-led teaching is more

suitable for higher proficiency students. The present study challenges the idea of regarding teachers as authorities in EAP courses, while suggesting that teacher-student collaboration can be more effective for both teaching and learning EAP writing.

Building teacher-student relationships has been less explored in EFL teacher-expertise studies but has been found to be particularly significant in the EAPWT context. The participants admitted that it was challenging for both the teachers and the students in the EAP writing courses. The teachers made arduous efforts to create “an encouraging and student-friendly learning environment” (Carrie) conducive to students’ free sharing in class (Carrie, Kade, Jane, Linda, and Mia) by frequently comforting students who complained about the difficulties (Carrie and Flora), or strengthening teacher-student bonds during after-class communication (Kade, Jose, & Mia). As Carrie further elaborated, the familiarity and proximity between the teacher and students eased the co-adaptation process, which reduced students’ learning anxiety. Because of the teachers’ insistence on student-centered teaching and their affection for students, they were willing to make effort to build relationships with students.

5.2.1.3 Progressive problem-solving with other components working in synergy

As for problem-solving, the participants shared their strategies to identify areas where they had instructional problems, such as class observation, collecting feedback from colleagues and students, self-reflection, and using research methods to measure teaching effects. As Jose and Mia experienced, research methods for problem-identification were more objective and reliable, provoking more ideas for solutions. Using all means, they were sensitive to novel issues that continually emerged during EAP writing instruction and kept looking for effective solutions. Their search was in line with the idea of progressive problem-solving (Bereiter &

Scardamalia, 1993).

The study reveals that participants' progressive problem-solving developed along with other teaching expertise components working in synergy. For example, improper course setting led to students' low learning motivation and negative attitudes, and the magnification of students' diversity. As some participants (e.g., Carrie, Flora, Kade, and Lisa) suggested, setting EAP writing courses for freshmen who lacked knowledge and experience of research and academic writing, or for seniors who were about to graduate and devoted more attention to their future studies or job search, was problematic. Moreover, the writing courses during the four-year undergraduate study were not systematically arranged and closely related, so they failed to effectively enhance students' basic writing competence (Kade) or prepare them well for the higher-level academic writing learning (Carrie). Therefore, participants found it troublesome when students negatively reacted to their instruction and did not prepare well enough. Student diversity due to majors from various disciplines mixed into the same class led to difficulty in preparing materials (Lisa) although some teachers' instructional arrangement satisfied students' diverse needs (Carrie and Zac). The mismatch between the participants' specialties and students' domain-specific requirements caused by the course setting increased the teachers' pressure (Mia) and decreased teaching efficiency (Carrie, Lisa, and Mia). These findings accord with Mansour (2009) who found teaching is complex in ill-structured problems; they also implies that problems in teaching are interconnected as well, which amplifies the complexity.

To better solve the primary and interconnected problems mentioned above, the participants continually adapted their teaching to students' diverse needs and learning situations. That is, the findings indicate teachers' adaptive expertise co-develops with progressive

problem-solving, because experts continuously reinvest their mental resources for novel issues and was not confined themselves to well-learned routines (Bereiter & Scardamalia, 1993; Holyoak, 1991; Loughran, 2019; Opre, 2015; Schwartz et al., 2005). In line with Tsui's (2003) idea of "problematiz[ing] the unproblematic" (Tsui, 2003, p. 267), the findings confirm that the teachers treated the problems as situated opportunities for teaching expertise development. For example, participants added language training sessions for students' outstanding writing issues (e.g., Kade, Jose, and Mia), adjusted teaching materials based on students' reactions (e.g., Carrie, Quinn, and Mia), or adapted their instruction and homework considering the students' learning pressures (e.g., Carrie and Kade). As Carrie, Kade, Hallie, and Flora stressed, although the course and instruction became stable after years of refinement, they would keep making minor adaptations in their care for students while updating their knowledge concerning EAP or writing teaching.

Secondly, the participants wielded their contextualized knowledge in awareness of contextual constraints to avoid conflicts between their teaching and policy requirements. That is, the participants' instructional decisions were contingent on balancing between their thoughts and realities. For instance, participants disagreed on the time and energy spent on instructing research methods. Flora and Lisa devoted more time on guiding students to conduct research because of their students' lack of understanding about research and the curriculum's demand that students master research methods. They also provided extra tutorials. To advance their teaching expertise, since they possessed no formal and systematic research training, they increased their practical knowledge by reading and attending relevant short-term training sessions (e.g., lectures, conferences, or seminars).

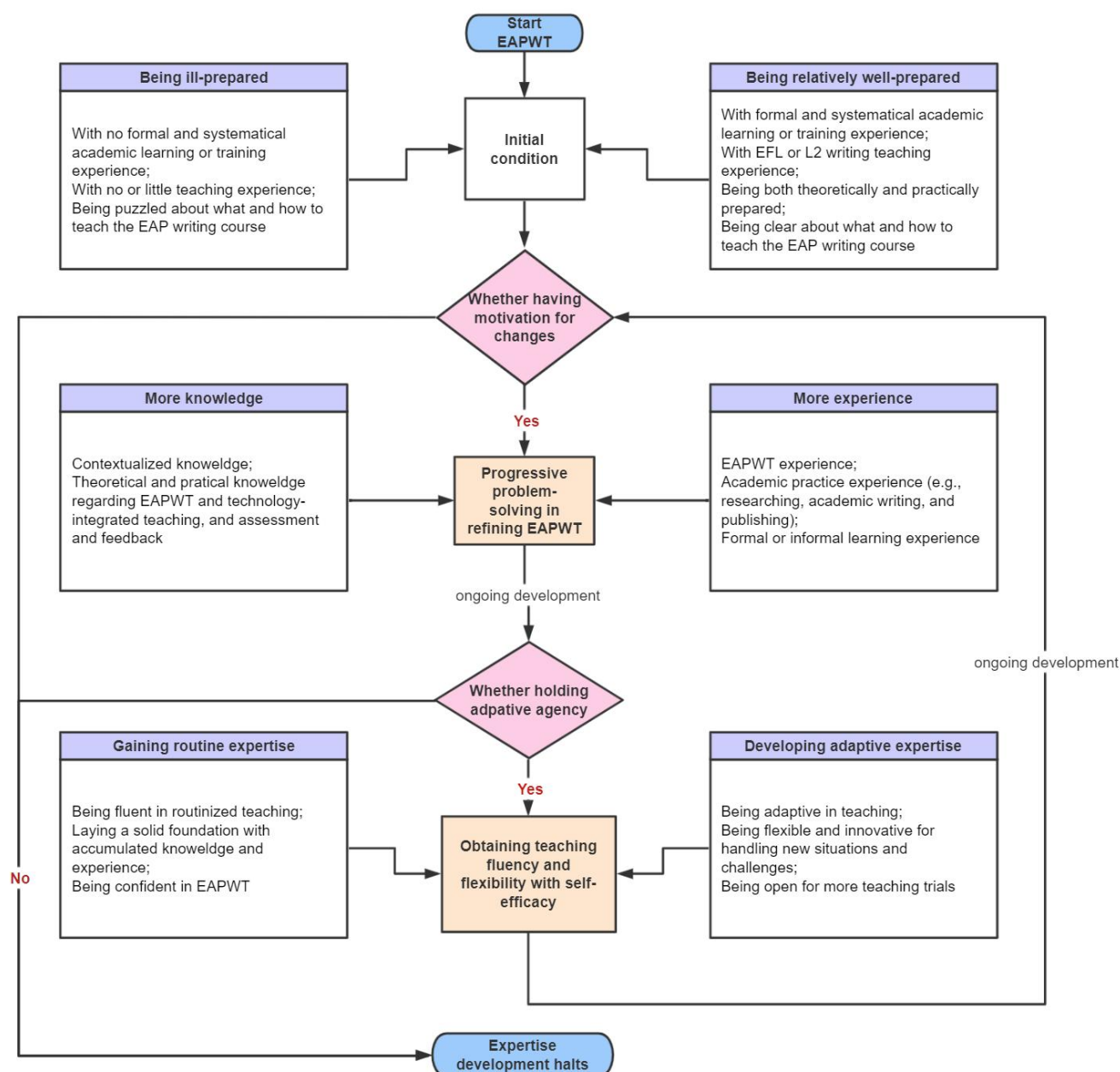
Carrie, Hallie, and Mia questioned their expertise in teaching the domain-specific research

methods, assuming the course focus to be academic writing and language training. Considering students' needs and learning interests, when instructing the methodology part, the participants explored different ways to ensure teaching quality. Carrie divided students into groups of the same discipline, adopted student-centered teaching methods, and encouraged students to share in groups and support their peers' views. She actively communicated with the school to separate students from different research disciplines (i.e., linguistics, literature, and translation) or involve teachers from other disciplines because her specialty was linguistics. Hallie and Mia invited students to co-teach the methodology by involving students as teaching resources, realizing learning-centered teaching.

In summary, for progressive problem-solving, the findings indicate that the participants did not avoid or neglect problems but actively explored solutions because of their motivation for teaching expertise development, their self-regulation for making teaching changes, and by synthesizing their experience into their knowledge base, which aligns with Bereiter and Scardamalia's (1993) notion of progressive problem-solving.

5.2.2 The dynamism of EAPWT expertise development

By identifying the four participants' instructional and personal changes during rounds of EAPWT, the study conceptualizes the dynamic features of their EAPWT expertise developmental processes as illustrated in Figure 5.3, which illustrates how the CDST framework reveals teacher professional development. The non-linear and dynamic process will be delineated in the following parts.

Figure 5.3*EAPWT expertise developmental processes***5.2.2.1 The diverse initial conditions of EAPWT expertise development**

In this study, the four participants underwent different journeys developing EAPWT expertise from varying starting lines. Mia had just transferred from being a full-time doctoral student to a tertiary-level teacher when she started teaching the EAP writing course. Unlike Mia, Carrie, Flora, and Kade were not novice teachers when starting EAPWT, but possessed more than 10 years of EFL teaching experience and so conformed to the definition of experienced teachers. However, none of them had taught EAP courses or had been trained for EAPWT before.

As for knowledge preparation, although Mia and Carrie had no EAP-related teaching training, they had completed formal and systematic academic learning during their doctoral studies. Therefore, they were theoretically prepared with EAP-related knowledge and had intensive academic practice (e.g., researching and academic writing). The research on L2 writing teaching and teachers equipped Mia with a solid theoretical knowledge base to employ in EAP teaching, such as teacher corrective feedback, process and genre writing, and formative writing assessment and feedback. However, Mia felt anxious in the first two rounds of teaching because she lacked guidance and support and had difficulty handling students' diversity as a novice teacher, even though she was theoretically prepared. Carrie, however, was experienced in EFL teaching and knowledgeable about EAP writing after obtaining her PhD degree. Moreover, she had undertaken an EAP writing course during her doctoral studies, which served as an example for her teaching, so she could transfer this learning experience to her EAP writing teaching by using similar teaching materials and imitating the teaching method. Therefore, she could manage the EAPWT. Compared with Mia and Carrie, both Kade and Mia were relatively ill-prepared in the beginning because they lacked both theoretical knowledge of EAP writing and L2 writing and academic learning and training experience.

The initial conditions for the four participants were typical of the current situation of EFL teachers initiating teaching EAP courses in universities in China. Teachers with doctoral degrees are more theoretically and practically prepared for the course, but without EAPWT training, they can only resort to past learning experience. Without a sound theoretical basis and formal academic training, teachers with general EFL teaching experience also feel challenged to handle the course content. As Li and Ma (2020) observed, EAP teachers are inadequately prepared. Few of them have received formal training for EAP instruction (Li et al., 2020).

5.2.2.2 The varying developmental processes of EAPWT expertise development

As evidenced in previous studies, teaching experience does not guarantee teaching expertise (Tsui, 2005), but is an essential prerequisite (Berliner, 2004). However, how teachers transfer experience to teaching expertise in a specific context is still under-researched. This study specifies the dynamic process of teachers accumulating their teaching experience and explains how experience interacts with other components to promote teaching expertise development.

To illustrate, Mia taught her course for each semester to doctoral non-English majors from the autumn semester of 2019 (with one semester break for maternity leave), while the other three participants did not undergo such consecutive and frequent teaching practices. Carrie (from 2018) and Flora (from 2018) repeated the EAPWT course every academic year for undergraduate English majors. Therefore, with shorter time, Mia gained similar rounds of EAPWT experience. Comparatively, going through similar teaching times as Mia's, Kade's EAPWT experience was non-consecutive (2010, 2011, 2016, 2019-2022) and divergent (from targeting English majors to English as second major, and then back to English majors). This

prolonged sequencing allowed him to effectively identify the teaching mode to a specific group and make teaching adaptations, such as changing both course content arrangement and teaching methods. Therefore, the findings imply that consistency of EAPWT experience targeting similar group of students is particularly beneficial for accelerating teachers' transformation from novice to experienced in certain teaching contexts.

The findings show that the state of being experienced was not stable or fixed. For instance, Carrie, Flora, and Kade were experienced teachers at the very beginning but found that their past teaching experience could not be applied to the new course teaching because of the distinct features of the EAP writing course and the students' backgrounds. As described, the course was theory-laden concerning EAP-related concepts and genre knowledge and skill-demanding, requiring research and writing skills. For instance, as Flora claimed, she was still exploring teaching methods effective for students to apply the theories or skills into their own practices, even though she herself had mastered the course content after five years of EAPWT. She had attempted online teaching since 2019 because of the pandemic, developed more online resources in 2021, and fully implemented blended teaching only in the spring semester of 2022 indicating her inexperience in the new teaching mode. Accordingly, she went through the process of being an experienced EFL teacher, a novice EAP writing teacher, a more experienced EAP writing teacher, and a novice once again in exploring a new teaching mode.

Kade experienced a different process for his intermittent EAP teaching and constantly changing teaching targets. He seemed to maintain the state of being a novice to some degree in 2010, 2016, and 2019 when he re-initiated EAPWT. The starting lines between Carrie and Mia were comparatively different since Carrie was much more experienced in teaching than

Mia. However, after similar rounds of EAPWT for the same student groups, they were both satisfied with their current instruction and gained self-efficacy in their teaching. This finding thus confirms the non-linearity of expertise development even from being novice to being experienced, which conflicts with the linear progression proposed by Berliner (1988, 2004).

The non-linear developmental processes were evident when the participants' teaching expertise moved from one attractor state to another. The study summarizes the attractor states (Hiver, 2015) the participants mainly went through: progressive problem-solving in refining EAPWT and obtaining teaching fluency and flexibility with self-efficacy.

The former was triggered when the participants enacted transformation or a succession of transformations (i.e., dramatic changes) for their EAP writing course design or delivery due to various stimuli. Then different stimuli for changes emerged, such as self-reflection, students' feedback and comments, systematic academic learning, institutional requirements, the national policy, and the epidemic outbreak. The participants' motivation for changes was found to be both the influential factor and the key component of EAPWT expertise triggering the interactions amongst other components for expertise development. The teachers endeavored to refresh or expand their knowledge and enrich their experience for exploring better ways for solving teaching problems and refining their EAPWT.

Conforming with Bandura's (2001) and Code's (2020) findings, teachers are motivators and self-regulators as well. Their self-regulating motivation influences their decisions whether they are facing challenges or not, making effort or not, and persevering or not when encountering drawbacks and failures. All four participants held strong motivation for change on account of affective and attitudinal factors, such as sense of commitment, sincere care for

students, passion as teachers and researchers, and being proactive for self-improvement. They thus actively explored teaching refinement and progressively solved problems. As Tsui (2003) explained, expert teachers “problematize the unproblematic” (p. 267) when they spend time analyzing and correcting teaching issues and maximize opportunities for teaching expertise development. The findings further show that if teachers maintain motivation for change, they are prone to seek self-development opportunities through progressive problem-solving even though they have not become experts.

The findings also reveal how knowledge and experience interact and transform while teachers are dedicated to progressive problem-solving in EAPWT refinement. Along with gaining more EAPWT experience, the participants obtained more contextualized knowledge (i.e., knowledge of students and the teaching contexts) and practical knowledge of EAPWT, technology-integrated teaching, assessment, and feedback strategies. However, this knowledge did not increase simply with more teaching experience. As scholars (e.g., Schön, 2017; Winkler, 2001) have found, teacher reflection stitches teaching experience and knowledge together. In the case studies, the participants paid particular attention to students’ learning needs, critically analyzing their strengths and difficulties, proactively approaching students for feedback and sharing, and they reflected on possible ways to better facilitate students’ learning. All of them adopted periodical self-reflection to refine their EAPWT. In line with Sternberg (2001), both direct instruction and extensive reflective practice can help teachers develop their teaching expertise.

The findings further show that teachers’ knowledge gains not only benefit from accumulated teaching experience, but also from engagement in progressive problem-solving along with increased academic learning and practice. In accordance with Ding and Campion (2016),

without training, both experienced and inexperienced teachers are advised to resort to informal learning opportunities (e.g., personal readings about EAP, training and social communications in workshops, seminars, or conferences). When the participants realized their knowledge insufficiency and incapability of further refining EAPWT, they continued to pursue new learning opportunities outside of school. Flora, for example, continued to learn informally to improve her theoretical knowledge of EAPWT and technology-integrated teaching approaches.

Carrie and Mia had completed their PhD studies before teaching the EAP writing courses and were more theoretically prepared in the beginning compared with Flora and Kade. Then later, they updated their EAP-related knowledge. Kade's case especially illustrates the influence of formal and systematic academic learning for knowledge renewal and teaching refinement. He pursued a doctorate while he intermittently taught the EAP writing course. With the accumulation of theoretical knowledge concerning EAP and L2 writing, he reformed his teaching by integrating the genre approach and formative assessment into his courses. Carrie, Mia, and Kade intentionally integrated the teaching-research nexus under the influence of their formal academic training, which enhanced both their academic competence and their habit of academic practice. Meanwhile, they still explored teaching approaches and methods through informal learning and teaching trials informed by new knowledge and information because there was no formal training of EAPWT offered to them. In this way, the findings show that not only was formal academic learning experience crucial for EAP teachers, but also that formal teacher education was beneficial (see Riazi et al., 2020).

After persevering in progressive problem-solving in refining EAPWT, the findings show that teachers moved to another attractor state, obtaining teaching fluency and teaching fluency

with self-efficacy if they possessed adaptive agency. A similar trend shared by Carrie, Kade, and Mia was to routinize their major course design or teaching activities after reforming and adjustments in subsequent rounds of teaching. Specifically, they obtained routine expertise (Hatano & Inagaki, 1984) to some degree. For example, they highlighted their fluency in knowledge explanations and classroom management. They gradually balanced teacher control and student self-exploration in class and handled unexpected incidents. They also made minor changes in their teaching practice after routinization when new situation emerged, enhancing their adaptive expertise (Hatano & Inagaki, 1984). As some researchers (e.g., Croskerry, 2018; Mees et al., 2020) highlighted, adaptive expertise manifest comparative advantages when teachers with complex working environments and changeable working needs.

Moreover, this study especially specified the participants' adaptive teaching practices indicating their adaptive expertise, which are correlated (Xiang et al., 2022). The teachers implemented their student-centered and learning-centered teaching beliefs. They added or reduced teaching materials based on students' levels and reactions; they encouraged students' sharing and active interactions in class; and they employed formative assessment activities to adjust their teaching focus. They were open to new challenges or requirements in various teaching contexts, such as the sudden shift to online teaching mode caused by the pandemic. As evidenced in the study conducted by Johnson et al. (2020), teachers shifted the teacher-centered teaching to a student-centered and dialogic one with the teaching expertise development. That is, teachers' adaptive teaching embodying student-centered teaching beliefs can be viewed as the manifestation of teaching expertise development.

However, this study further shows that even when teachers manifested certain degree of

routine and adaptive expertise in EAP writing teaching, they still lacked confidence in the teaching effects. After rounds of EAPWT refinement, Carrie and Mia were especially satisfied with the current course design and delivery based on their self-evaluation with their accumulated knowledge and experience and students' positive comments. They expressed self-efficacy in managing EAPWT. In comparison, Flora and Kade were less confident because of the gap between their self-evaluation and students' feedback. They believed that their course design was suitable for their students and they had endeavored to involve students in class with multiple teaching activities. In their course surveys, the students also revealed some learning gains from their courses. However, both were not satisfied with their teaching. Kade was disappointed by students' unchanged negative attitudes. Flora was upset that the students could not apply their learning in their literature review writing assignments, and they gave her relatively low scores on her teaching. This finding raises questions for the current criteria selecting expert teachers (Akbari & Yazdanmehr, 2014; Palmer et al., 2005), such as using students' learning outcomes, because teachers' teaching effects may be influenced by other factors (e.g., students' learning motivation) beyond the teachers' control.

Another significant finding about the expertise development process is that the setbacks in EAP writing teaching would still push teachers to go on self-development if they held adaptive agency and motivation for changes. Though Bandura (2001) stressed efficacy beliefs decide whether failure serves as a motivator or a demotivator, Hammerness (2006) believed that the discrepancies between the visions and performance can motivate the teachers to learn. For example, Kade would insist on the current course design with portfolio assessment and main teaching activity as in-class writing workshops. He believed that to solve students' low learning motivation, he needed to collaborate with other teachers and resort to the institutional help. He intended to refine his teaching activities to raise students' learning

interests in the following round of teaching. As for Flora, she was still unsure about her teaching efficiency so she tried to make both macro teaching adaptations (e.g., reconstructing teaching content and reforming teaching approach to be project-based) and micro ones (e.g., encouraging more students' engagement in the process).

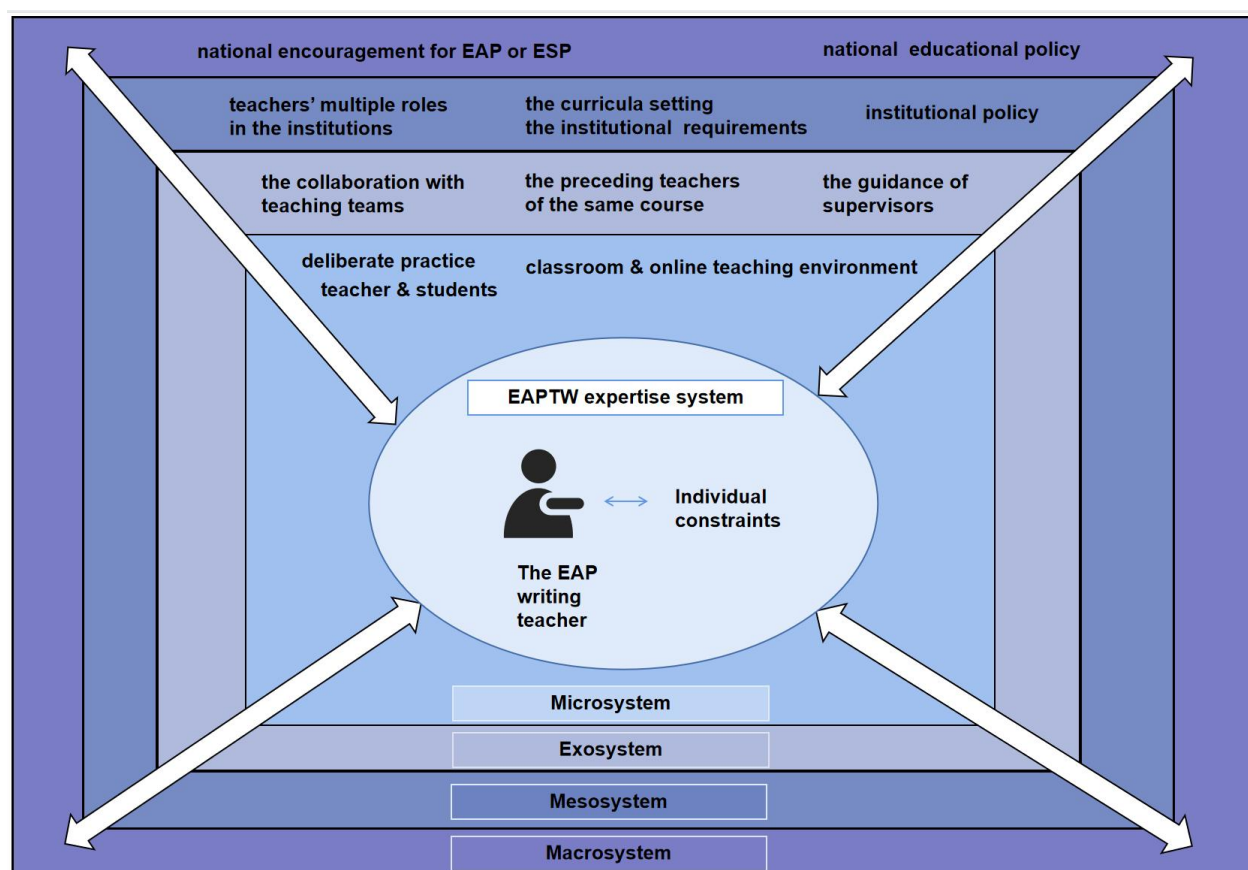
The above findings show that adaptive expertise is not developed out of routine expertise (Carbonell et al., 2014), but advances along with acquiring routine expertise, which is an everlasting state if teachers intend to develop their teaching expertise. The participants' adaptive expertise was further developed when they were not satisfied with their teaching effects and when they realized the gap between their visions of EAPWT and the students' perceptions and the actual teaching effects. In line with Weng and McGuire's (2021) findings, teachers' adaptive expertise can be developed through critical reflection and the exercise of agency. Hammerness (2006) also observed that moderate discrepancies between one's vision and performance might motivate one to learn. Accordingly, the findings further supplement this idea: when teachers' vision of EAPWT matches teaching outcomes, their teaching tends to remain stable with teaching routines; when there are discrepancies, teachers use their adaptive agency, setting goals, reflecting on problems, and regulating themselves to cope with the challenges and develop adaptive expertise (Goodwyn, 2016, 2019).

The study does not conclude that teachers' EAPWT expertise develops from moving one attractor state to another one. In contrast, the findings reveal that the developmental process is iterative, and even when teachers obtain teaching fluency and flexibility with self-efficacy, they can continually return to progressive problem-solving to further refine EAPWT under their motivation for change. Therefore, the process is dynamic and unpredictable. As Larsen-Freeman and Cameron (2008) described, the changes of attractor states can be gradual

and consistent, but they can also be abrupt and startling. Similarly, Kostoulas and Lämmerer (2020) contended that “a large perturbation, such as a professional crisis or a major transition, might lead to a radical restructuring of the system” (p. 95). For example, Carrie applied for her post-doctoral studies to pursue another path of professional development when she was repeatedly frustrated by the job promotion policy in her university, but her EAPWT would stop at the end of 2022. She turned the environmental constraint into a new opportunity for self-updating. Through post-doctoral learning experience, her EAP-related knowledge and academic competence was further developed. If she restarted teaching EAPWT, she was assumed to be more well-prepared and would continue refining EAPWT. However, the future development is not able to forecast unpredictable environmental changes.

5.2.3 The positive and negative influences of multilayered environments

The proposed model integrates the EAPWT expertise system into environmental systems described in the ecological system (Bronfenbrenner, 2005), an evolving theoretical framework which sheds light on the environmental influences on human development emphasizing the interactions between process, person, context, and time. Bronfenbrenner (1979) claimed the environment incorporates embedded systems: the microsystem, mesosystem, exosystem and macrosystem. The study demonstrates the multilayered environmental systems as illustrated in Figure 5.4.

Figure 5.4*The multilayered environmental systems*

For developing EAPWT expertise, the participants were found to break their individual constraints, such as inadequacy of knowledge and experience, the limitations of time and energy, and the uncertainty about the roles of being EAP writing teachers and the correct way to instruct EAP writing courses.

For EAP writing teachers, the microsystem concerns deliberate practices, interpersonal relationships, roles, and the physical environment, all of which directly influence their teaching development. As for deliberate practices, the findings reveal that the key to

acquiring or developing EAP writing expertise is to interweave the components of teaching expertise in the same direction. The interactions of the components reflect self-organization and produce emergent features in the system, i.e., the synergistic effects of the components (de Bot & Larsen-Freeman, 2011; van Geert & van Dijk, 2015). For instance, as Carrie stated, she held a clear professional vision concerning EAPWT and her long-term career goal to become an expert in the EAP field and a distinguished scholar. In line with her professional vision, her experience (teaching, learning, and academic practices) and knowledge base were both developed while she increased her EAPWT experience. Meanwhile, she was highly motivated to learn which reciprocally enhance her knowledge and skills, improving her EAPWT effectiveness. Overall, she manifested self-efficacy about the course design and delivery and her teaching fluency and flexibility regarding her development of EAPWT expertise. Even when the teachers were not capable of stitching the components in line with each other, the findings show that the continual teaching refinement for specific groups was effective for expertise development. Besides teaching, the teaching-research nexus was also essential. As emphasized by scholars, both the amount of practice and the most relevant activities are critical for expertise acquisition (Côté, Baker, & Abernethy, 2007).

The findings show that the participants perceived that formally learning how to research and write academically was more effective than informal learning. This result contradicts research on developing expertise in sports or music, where successful players receive little systematic training (Araújo et al., 2010). The possible reason was that the participants regarded formal learning as doctoral or post-doctoral studies in which they could be dedicated and focused on learning and practicing research and academic writing skills. However, in their daily work, they were distracted by many responsibilities and roles, constraining them from being concentrated on the relevant learning and practice. Even when they pursued informal learning

or training opportunities (Lisa and Quinn), the scattered learning was not efficient for enhancing their academic competence or helping them fully comprehend the theories (e.g., Linda). Nevertheless, whether the learning was formal or informal, with persistent efforts, it was found to be helpful for teaching expertise development.

As for the critical teacher-student relationship, it was considered influential because of the student-centered teaching and the teachers' sincere care for student learning. In other words, the development of EAPWT aligned with the teachers' beliefs, affection, and teaching practices. To illustrate, the participants were motivated to actively collect feedback from the students about their teaching. The teachers tried to build rapport with the students by creating a friendly, encouraging, and supportive learning environment while being willing to provide extra assistance after class. The teachers regarded themselves as critical friends or the ones who could communicate equally and learn mutually with students instead of being like authorities. This relationship-building has been little explored in studies concerning teacher expertise; however, my findings show that teacher expertise entails practical knowledge of teacher-student relationship-building and establishing an encouraging learning environment.

The classroom and online teaching environment has been found to influence EAPWT expertise development. The findings indicate that the large class size was not conducive to the implementation of interactive teaching and formative writing assessment activities. As Kade stressed, he was unable to monitor students' group work and communicate with individuals in the classroom holding more than 60 students, even when he deliberately arranged activities of peer review and self-revision in class. Similarly, most of participants (e.g., Flora, Gerald, Kade, Quinn, and Zac) in stage-one of the study said that the large student numbers prevented them from providing written feedback on students' assignment.

Accordingly, the participants adopted varying strategies to deal with the feedback issue, such as reducing writing practice, relying on automated feedback and scoring, using peer feedback, or collaborating with teaching assistants. Therefore, the interaction with environmental constraints pushed teachers to develop their practical knowledge concerning classroom teaching and teacher feedback.

As for the online teaching environment, the findings revealed that teachers at the tertiary level inevitably encounter new issues caused by remote teaching during the pandemic area, let alone EFL teachers teaching EAP writing courses. For instance, Carrie, Kade, Flora transformed face-to-face teaching activities to the online version using multiple platforms. However, online class interactions were impeded by students' closed cameras and muted microphones, which brought new challenges. Therefore, the new requirements from online teaching motivated them to reflect on the inefficiency of adopting previous ways of teacher-student interactions and activity implementation and expanded their knowledge of technology-integrated teaching.

The mesosystem extends the relationship between one or two microsystems. The study identified other microsystems directly influencing the participants' expertise development. First, collaboration with teaching teams brought positive effects. Jose highlighted the insights from the colleagues who observed her classes and raised questions provoking her deep thought about her teaching rationales. They voluntarily formed an informal teaching group and were passionate about teaching. Lisa actively worked with two teaching teams – one EFL teachers' group and one of mixed subject-teachers and EFL teachers. She prepared and discussed the EAP writing course design and instruction with the EFL teachers' group; meanwhile, collaboration with subject teachers gave her a different perspective about EAP

course construction. Lisa stressed her gains from working with a teaching team encompassing both language and subject teachers. Her comprehension and knowledge about EAPWT were renewed and she reorganized her teaching content accordingly. Carrie, Flora, and Kade also expected to build an EAPWT team for additional course development and share workload.

Most of the participants, however, did not acknowledge the influence from their colleagues regarding teaching expertise development. This finding contradicts Fitzpatrick et al.'s (2022) finding emphasizing peer mentoring, observations, and shadowing as helpful sources of professional development. As Jane highlighted, the communication between colleagues was limited to their daily work and life implying that the academic or instructional communication helped expertise development more than casual social interactions. Some teachers (e.g., Carrie and Mia) mentioned they received little guidance and facilitation at the initial stage of EAPWT. They simply mechanically followed the preceding teachers who passed the basic course information to them, which increased their anxiety and decreased their teaching efficiency. Mia mentioned that her colleagues rejected her request for observing their classes.

Some participants (e.g., Carrie, Jose, Kade, and Mia) claimed that their supervisors stressed the importance of caring for students and being dedicated to an academic career, which helped them broaden their career vision for long-term professional development. This guidance continually inspired them in their academic work and daily communications. Accordingly, the findings reveal that collaboration and promotive guidance can be beneficial for teachers' expertise advancement when teachers can find the community, the group, or the person sharing insights.

The exosystem comprises the processes (e.g., practices and interpersonal relationships) between two or more settings, which could indirectly influence EAPWT. In the study, the exosystem refers to the institutional environment, which became unfavorable rather than supportive. For example, the curricula in the program, especially the inconsistent writing course design exerted a negative influence on the development of EAPWT expertise. As Kade and Carrie claimed, basic students' writing competence and the conceptualization of English writing were not prepared well before students entered the higher-level EAP writing course. Even for the EAP writing course itself, the course setting was perceived as improper. For freshmen, they lacked knowledge and skills preparation for learning EAP writing; as for seniors, they were occupied with graduation, job hunting, and pursuing further study opportunities; therefore, they lacked motivation to learn; some were not even required to write a thesis for graduation. Mia's case especially revealed that the fixed institutional requirements for summative assessment and final exams prevented the full implementation of formative assessment in EAP writing, which frustrated the teachers after rounds of negotiations.

Another important finding regarding the exosystem was the participants' other roles that both expedited and restrained the teachers' EAP writing expertise development. For example, the participants felt they needed to show leadership in their institution or teaching teams. Flora and Hallie both felt committed to being pioneers in teaching innovations and refining EAP writing instruction. However, their heavy administrative work and multiple roles both in and out of school prevented them from being focused on teaching. This unveils the struggle between developing EAPWT expertise and the reality of teachers' working conditions. That is, the former highlights the dedication teachers had towards EAPWT expertise development which entailed intensive practice and persistence with significant time investment, while the

latter reveals the heavy workload brought by having multiple courses, administrative work, and other distractions. This finding conforms with some scholars' notion that teachers' professional development is integrated into their work lives resulting in altered instructional methods (Dennis & Hemmings, 2019; Girardet, 2018). As Merson (2000) discovered, more time is required for teachers to cope with increased teaching work and administrative duties, so they have less time for collaboration and professional development. Therefore, developing teaching expertise also raises questions about the nature of teachers' careers and their work experiences (Forde & McMahon, 2019).

The macrosystem can be described as the broad socio-cultural context for EAP writing teachers. As Hayashi (2022) noted, expertise development is related to the changes caused by wider social, political, and cultural settings. More and more EAP courses, especially EAP writing courses, have been offered in colleges and universities due to the national emphasis on improving tertiary-level students EAP competence (Ministry of Education, 2020; The National Advisory Committee, 2020). This situation conforms with the development of ESP, as Hallie stressed, which has been disdained recently compared to the prevalence and emphasis on linguistics, literature, and translation in teaching and research. Lately, the national policy has veered to ESP field accompanied by the promotion of English-medium-instruction in tertiary-level education. Accordingly, some participants (e.g., Carrie, Lisa, and Mia) had shifted their research interest and future professional development to EAP or ESP. Furthermore, the educational policy has influenced the teachers' course content arrangement and instruction. For instance, tertiary-level courses are required to integrate ideological and political education. The large-scale reform makes EAP writing courses without exception. When teachers respond to national policy requirements, their teaching expertise may develop in a new direction with more refinement in teaching.

To summarize, as Bronfenbrenner (e.g., Bronfenbrenner & Morris, 2006) claimed, expertise development corresponds to concerted interaction (i.e., the process) between the individual and the multi-systems in the environment over varying timescales. For EAPWT development, teachers need to enhance the interactions between expertise components and especially develop the ones closely contextualized with EAP writing. The EAPWT expertise system evolves with the components' self-organizing interactions. Simultaneously, teachers can strengthen the deliberations on the interactions with various levels of systems in the environment to further promote their teaching expertise development. More interactions make it more difficult to foresee the changes (de Bot & Larsen-Freeman, 2011; Larsen-Freeman, 2015). As evidenced in the findings of the study, the developmental processes were non-linear and dynamic due to the interactions between the components and between the teachers and the multilayered systems in the environment.

5.3 Summary

In this chapter I have discussed the findings and related them to existing studies on EAP, EFL, and L2 writing teacher expertise. The components constituting the EAPWT expertise system are multifaceted and multi-leveled with sub-components for each dimension as reported by other studies forming a complex system, which expands our understanding of EAP writing teacher expertise at the tertiary-level education in China. Some components were found to be closely related to EAP or L2 writing and the writing teaching field, indicating the cross-disciplinary nature of EAPWT expertise. For example, in the EAP field, a good understanding of genres and research-related academic writing skills are recognized as essential. The mastery of subject-matter or disciplinary discourses is more controversial. Regarding L2 writing, the study highlights the genre and process writing approach, formative

assessment, and teacher feedback, which have been widely researched but not related to EAPWT expertise constituents.

Another important finding is that the interactions were specified to delineate the self-organization of the system, which has been seldom noted in previous studies. For instance, the study identified the interaction between experience and knowledge, highlighting the inter-transference strengthened by teacher reflections and progressive problem-solving in refining EAPWT. Moreover, the findings showed that the system components function with different roles facilitating their self-organization, which enriches our understanding of the use of CDST in teaching expertise research. Notably, motivation for change and adaptive agency served as the intrinsic driving forces for changing other components, with which teachers were willing and prepared to enact for teaching expertise development. Experience was shown to be both a resource for and a component of teaching expertise, which facilitated knowledge renewal and accumulation. As for progressive problem-solving, which was regarded as the core of EAPWT expertise, it worked as a means of developing EAPWT expertise, reciprocally being developed as the expertise system evolved. In this way, the study with the identified the multiple roles of the components and their interactions, which explains the complexity of developing teacher expertise.

The study also answers the call of scholars to explore the teacher expertise development process by identifying the four participants' differentiated developmental paths in tandem with their diverse initial conditions, and different ways of repeating the two attractor states (i.e., progressive problem-solving in refining EAPWT and obtaining teaching fluency and flexibility with self-efficacy). This finding not only expounds the non-linearity and dynamism of the EAPWT expertise developmental process, but also provides another explanation of

teacher expertise development in addition to the staged view (Berliner, 1988, 2004). The study also explains how teaching expertise development can be evidenced and manifested by teachers' multiple changes in course design and delivery, changes in assessment and feedback strategies, and the adjustment of emotions. These factors can contribute to practical implications for EFL teachers developing their teaching expertise in daily their teaching work. Overall, the study proposes the ecological model of EAPTW expertise development with the integration of the EAPWT system and the multilayered environmental systems, which exemplifies the innovative synthesis of CDST and Bronfenbrenner's theory of ecological systems.



Chapter 6: Conclusion and implications

6.1 Chapter introduction

The chapter summarizes the significant findings from the two-stage research design. The first important finding concerns the main components and sub-components of the EAPWT expertise system and their interactions. The second relates to the different expertise development processes among the four participants and the changes they made or experienced. Moreover, the stimuli triggering the changes and constraints for EAPTW expertise development are identified to show the teacher-environment interactions. After restating the critical findings, this chapter explains the study's contributions with respect to theoretical and practical implications. The chapter ends by explaining the limitations of the present study and making recommendations for future studies.

6.2 Summary of significant findings

After analyzing 12 EFL teachers' interview data, the study identifies the central components and sub-components of EAPWT expertise and their interactions to form a complex and dynamic system. First, the study fills in the research gap to classify teacher experiences related to EAPWT expertise, that is, academic learning experience (both formal and informal), academic practice experience, and teaching experience concerning EFL teaching, L2 writing teaching, and EAP writing teaching. The findings stress that the interconnections and consistency of these experiences facilitate EAPWT expertise development, which provides new insights for researchers studying expertise and experience by considering teachers' lives and histories.

Second, in line with previous studies (e.g., Lee & Yuan, 2021; Tsui, 2005), an integrated knowledge base is pivotal. Contrarily, the study specifies the knowledge base in EAP writing

teaching context and explores the multi-levels of the constituents. The participants highlighted theoretical/conceptual knowledge encompassing EAP-related knowledge (i.e., genre knowledge), subject matter knowledge (or disciplinary discourse), declarative knowledge of L2 writing and writing teaching approaches, technology-integrated teaching approaches, and assessment and feedback knowledge. As for experiential/practical knowledge, they stressed the need for academic writing and research skills, contextualized knowledge (knowledge of students and teaching contexts), adaptive teaching methods, technology-integrated teaching strategies, the balance of teacher control and students' self-exploration in classroom management, assessment and feedback strategies, and teacher-student relationship building skills. As listed above, these components reflect domain-specific features of EAPWT expertise, filling the research void of exploring the constituents of EAP teacher expertise.

Third, the study describes the three main problems perplexing the participants in EAP writing teaching, that is, the improper course setting, students' low learning motivation and negative attitudes, and the mismatch between teachers' specialties and course demands, which reveals the real issues encountered by EFL teachers transferring from teaching general English or other English courses. Moreover, the teachers' persistence in exploring better solutions for the identified problems promotes their teaching expertise development, which corresponds to the promotion of progressive problem-solving.

Fourth, the other two components reflect the non-cognitive aspects of teaching expertise, responding to the call for more studies taking the sociocultural stance (e.g., Hatano & Oura, 2003; Li, 2020; Stewart, 2006). In particular, the component of motivation is contextualized at the tertiary-level EAP writing teaching, which can be further categorized into two groups:

affection (i.e., sense of commitment, sincere care for students, passion as teachers and researchers) and proactive attitude for self-updating (i.e., being open-minded and continuous learning). The last component, adaptive agency, is less mentioned by previous studies in the teacher/teaching expertise research field but acts as an indispensable part of EAPWT expertise. It is further categorized into three sub-components, including professional visions regarding visions of EAP writing teaching and long-term career visions, deliberate self-reflection on teaching issues, and self-regulated abilities (i.e., self-regulating behaviors and emotions), which proffers more comprehension of the relationship between adaptive agency and teacher expertise.

The components' interactions were analyzed and described in the study: (1) motivation for changes and adaptive agency activating other components; (2) conceptualizing experience to knowledge and contextualizing knowledge into experience; and (3) progressive problem-solving with other components working in synergy. The findings explain how the EAPWT expertise system is developed through self-organization. In other words, the study discovers how the components advance within these interactions. If EFL teachers possess these components and intentionally promote the three routes of interactions, their transfer to EAP teachers can be facilitated and accelerated.

In view of the results from the case studies, the dynamic developmental process of EAPWT expertise was encapsulated. Unlike the staged model defining teaching expertise development as a linear process (e.g., Berliner, 1988, 2004), this study highlights the non-linearity and dynamism of the developmental process. To illustrate, the initial conditions for the four participants were different. Mia was a novice teacher, but Carrie, Flora, and Kade were experienced in EFL teaching before initiating EAP writing teaching. Compared with Carrie

and Mia possessing doctoral degrees, Flora and Kade seemed less equipped with theoretical and practical knowledge of EAPWT. Then, when all four participants held strong motivation for changes and adaptive agency, two attractor states (Hiver, 2015) were triggered: progressive problem-solving in refining EAPWT and obtaining teaching fluency and flexibility with self-efficacy. As evidenced, the states might be repeated, and the participants maintained the state of being adaptive in course delivery even after they had routinized the course design and main teaching procedures. Furthermore, they might dramatically reform their teaching and transform it into a new mode due to their new learning and the unsatisfactory teaching effects. The changes participants made or experienced were described in detail to illustrate the diversity and non-linearity of the participants' expertise development.

What is more, factors promoting the instructional changes were summarized as well: the perceptual change from being teacher-dominated to being student-centered and learning-centered, the contextual diversity and changes, the participants' accumulated experience and knowledge, and more experience with EAPWT. The adjustment of mental states (i.e., emotional regulation) was especially identified in this study, which has been neglected by previous studies but indicates expertise development from an emotional aspect.

In addition, the study probed the individual and environmental constraints for EAPTW expertise development. The former comprised the teachers' knowledge limits regarding subject matter knowledge or disciplinary discourse knowledge and their multiple roles and tasks. The latter contained administrative constraints, insufficient feedback for teaching effects, and the students' uncontrollable situations being easily influenced by other environmental factors. These can explain why expertise development sometimes halts during

teachers' daily work, revealing the influence of social and cultural factors.

The teaching expertise that developed over time was unpredictable due to changeable social contexts and working conditions. However, the study underscored that the teachers' intrinsic motivation for changes and adaptive agency would support them in seeking ongoing self-development, maintaining the dynamism of EAPWT expertise development.

6.3 Contributions and implications

The study extends our understanding of EFL teacher expertise by contextualizing it in EAPWT at the tertiary level in China, shedding light on the multi-leveled and interactive components and the developmental process using a two-stage qualitative research design. The findings have potentially significant implications due to the theoretical and practical contributions. **Theoretically**, the study's main contribution is proposing an ecological model of the EAPWT expertise development model encompassing the EAPWT expertise system and other environmental systems. The study does not provide an exhaustive list of expertise components or a guidebook for EAP writing teacher professional development; however, it tentatively combines empirical qualitative data with CDST and EST to explore the complexity and dynamics of the EAPWT expertise system and expertise development. The findings supplement previous studies on teacher expertise, acknowledging its complex, adaptive, and dynamic nature (e.g., Lee & Yuan, 2022; Yuan & Yang, 2021). However, these studies have only revealed the multi-faceted dimensions or attributes without further classification, indicated the interactions without specification, and identified the influential factors without tracing the developmental process. Therefore, the present study fills a research void by systematically examining teacher expertise constituents and their interactions, which unveiled changes experienced in the evolving process and factors

facilitating and impeding expertise development.

Accordingly, the study supplements the current research that has used CDST as a framework to explore system constitutions involving processes by utilizing it in teaching expertise development and EAP context at tertiary level education, which has been more frequently used in learning development. The study thus responds to the call for more teacher/teaching expertise research from a sociocultural perspective (e.g., Sorensen, 2017) by viewing it as a process instead of an end state (e.g., Tsui, 2003, 2005). Meanwhile, the study extends our knowledge of teacher expertise in EAP writing contexts. It exemplifies the systematic usage and innovative combination of CDST and ecological systems theoretical frames by exploring the complexity of expertise constituents and the dynamism of the development process.

Practically, it provides insights for future EAP or EAP writing teachers regarding teaching expertise development. It also suggests ways for teacher educators to design contextualized EAP writing teacher training programs, and for institutional leaders to recruit teachers for EAP writing courses and facilitate EFL teachers' transformation in their institutions, with the identification of multi-leveled EAPWT expertise components and the specification of the components' interactions, the clarification of changes and influential factors in the developmental process, and the summary of teacher-environment interactions for expertise development.

To illustrate, the study provides references to EAP writing teacher preparation and continued professional development. When EFL teachers transfer to be EAP teachers, especially EAP writing teachers, they may encounter novel challenges in the new teaching context, such as deficiencies in subject-matter knowledge from non-English domains, a lack of systematic

training of EAPWT, difficulties handling course content that requires both theoretical and practical experience, and students' negative learning attitudes and low motivation.

Suggestions for future EAP or EAP writing teachers to address these challenges and expedite their capacity in their new role follow below:

(1) Transforming challenges into opportunities

Teachers should acknowledge the value of EAP writing courses at the tertiary level by acknowledging the prospect of the EAP or ESP fields in a new era where Chinese universities are required to increase their international and academic influence. Job promotion at the tertiary level demands the ability to conduct research projects and publish the results, which can be strengthened by constantly refining one's EAPWT. Therefore, great opportunities for professional development hide behind the challenges of undertaking teaching work in EAP courses, especially when EFL teachers transfer from teaching general English.

The findings also suggest that EAPWT expertise can be facilitated by aligning teaching with research and the career vision of becoming both accomplished teachers and researchers or scholars. A clear long-term career goal can help teachers update their knowledge and skills through continuous learning and regulate their negative emotions caused by short-term drawbacks.

(2) Being focused and strengthening the interacting teaching expertise components

The study identified EAPWT expertise components in detail, which can help EFL teachers understand the direction of self-development. The findings suggest that EFL teachers adopt practices most relevant to EAP writing courses, such as deliberate refinement of EAPWT and intensive academic practices (i.e., researching, academic writing, and publishing). Teachers

should also explore various teaching methods and strategies for implementing student-centered and learning-centered approaches to be adaptive and flexible. During the process, teachers are advised to change their perceptions of themselves as authorities and instead look upon themselves as co-learners and critical friends. The study highlights these strategies because, in EAP writing courses, students and the teacher are under pressure because of the content difficulties. Presumably, students may not only benefit from student-centered and learning-centered teaching with a supportive and encouraging learning atmosphere, but the teachers can also be released from the pressure of being in charge.

Furthermore, the findings imply that intensifying the interactions among the teaching expertise components facilitates expertise development. These interactions include 1) motivation for changes and adaptive agency activating other components; 2) conceptualizing experience to knowledge and contextualizing knowledge into experience; and 3) progressive problem-solving with other components working in synergy.

Thus, the findings suggest that the following measures are possibly conducive to teachers' self-development. First, EAP writing teachers are recommended to maintain motivation by thinking about their sense of commitment and passion for teaching and research, being open-minded, and seeking continuous learning opportunities to realize their professional visions. Second, they should constantly reflect on teaching issues and individual states and resort to self-regulation in learning, teaching, and academic practice. Third, they needed to theorize experience into conceptual or practical knowledge and apply it to teaching practices. Such knowledge should be contextualized by experience and stored for future use. EAP writing courses entail a solid theoretical foundation and practical experience. Fourth, teachers are advised to be adaptive and dedicated to progressive problem-solving in refining course

design, delivery, assessment, and feedback. Meanwhile, do not be afraid of failure but continue to search for and attempt new methods or solutions. Even when encountering obstacles, turn them into milestones, similar to the attitude of turning challenges into opportunities.

(3) Being patient and persistent

Teaching expertise development requires dedication and persistence because progress is nonlinear. Sometimes teaching problems are efficiently solved, but more novel issues can emerge. Teaching becomes mature, fluent, and effective after rounds of exploration and refinement. However, more problems occur, and instruction can become ineffective due to unexpected events. Therefore, teachers need to be patient and persistent and gradually accumulate knowledge and experience. They should also take the initiative to change their course design, make teaching adaptations, and refine assessment and feedback. In sum, the study accentuates the adjustment of teachers' mental states, endeavoring to manage negative emotions and reaching a state of teaching at ease.

(4) Enhancing interactions with the multilayered environments

The expertise development relies on person-environment interaction. The awareness of multi-systems (micro-, meso-, exo-, and macro-) in the environment can help teachers realize that developing EAPWT is not a task fulfilled by themselves, but rather, variables influence it in divergent environmental systems, such as collaboration with teaching teams, the institutional atmosphere for academic development, the other roles performed in daily life, and the national policy. Distinguishing the facilitators and constraints can help teachers build or seek a stimulating and inspiring environment. For example, they can actively collaborate with teachers from diverse backgrounds, prioritizing work from divergent roles and keeping

focused on the tasks most connected to EAPWT, participate in curriculum reform in the institution, and align their personal development with the national policy orientation.

The third contribution of the study is to offer **suggestions for EAP teacher educators and administrative leaders** at tertiary-level institutions. Based on the findings, the study proposes principles for the training design for EAP teachers or EAP writing teacher educators:

(1) Motivating the trainees first

EFL teachers need to be informed about the value of becoming EAP writing teachers in China and the benefits EAPWT has on self-development and students' future preparation. Teacher trainers should also increase their self-efficacy in handling this course content and instruction through an awareness that teaching expertise is trainable and can be improved through deliberate practices and accumulation. The study implies that the sub-components work holistically to stimulate motivation concerning commitment, affection, passion, career vision, and yearning for self-development and continuous learning. Motivation is the key to activating other teaching expertise components, such as pursuing academic learning and training experience, enhancing theoretical and practical knowledge, continually developing EAP writing courses with progressive problem-solving, and maintaining self-reflective and self-regulation throughout the process.

(2) Incorporating the core components into the training content

The EAPWT expertise system provides a framework for teacher trainers to design the core training content, especially the essential experience and knowledge elements, and offers trainees a checklist. Such a detailed illustration can reveal a concrete image of what the trainees need to focus on for improvement. The elements identified in the study were

contextualized in EAP writing in terms of experience and knowledge related to both EAP and L2 writing. They include EAP-related knowledge concerning linguistic theories such as systematic functional grammar, genre knowledge and awareness, disciplinary discourses, theories of genre and process writing teaching approaches and pedagogical strategies, research and academic writing skills and strategies, technology-integration teaching approaches and strategies, and formative assessment and teacher corrective feedback. These elements can enlighten teacher trainers' scheduling and serve as comprehensive content for the trainees.

(3) Promoting the trainees' self-exploration

The study reveals that the introduction of components of teaching expertise is not to provide an exhaustive list, for they can be updated and altered when contexts change. Teacher training should concentrate on demonstrating how the EAPWT expertise system evolves over time through person-environment interactions. Pre-service teachers must be shown the need for self-exploration to compose their expertise systems within their ecological systems. They can make effective professional development plans suitable for their situation based on their self-construction. In other words, the training need not follow a rigid competence list; instead, trainees can be informed about possible changes they can make regarding course design, course delivery, assessment and feedback, and adjustment of their mental state.

Moreover, the study has practical recommendations for institutional administrative leaders who select or recruit teachers for EAP writing courses. If the teachers possess more EAPWT expertise components and can enact more component interactions, they may be more suitable and qualified to teach EAP courses. That is, the candidates may have the following characteristics:

(1) Experienced EFL teachers, especially those experienced in L2 writing teaching

The study showed that both EFL and L2 writing instruction involves EAP writing instruction. An experienced EFL teacher can quickly adapt to new classroom teaching and overcome the nervousness of being a novice EAP writing teacher. Being familiar with teaching L2 writing influenced the participants' perceptions about the nature of EAP writing courses; i.e., they tended to focus on writing strategies and language training with various writing practices. Therefore, experienced L2 writing teachers should be appropriate candidates.

(2) EFL teachers with systematic formal academic learning experience (especially with a doctoral degree)

The study recommends selecting teachers with doctoral or post-doctoral experience; they are not only equipped with solid theoretical foundations and academic competence but also inclined to prioritize follow-up academic practices in daily work and build a teaching-research nexus. The teaching, learning, and academic practice loop benefits long-term expertise development.

(3) EFL teachers with experience in academic practice concerning research, academic writing (especially in English), and publishing

The study shows that academic practices can enhance the teachers' academic competence and increase their confidence in handling the course content and the credibility of their instructions to students. Furthermore, practical skills and strategies can make their teaching more concrete instead of adhering to textbooks.

(4) Being highly motivated and self-regulated in developing EAPWT expertise

Passion is the original motive for long-term teaching expertise development. The sense of

commitment can assess motivation, affection for students, passion for teaching, related career vision, and yearning for self-improvement and continuous learning. Teachers can self-evaluate using specific events to explain their evaluations for each element. For example, dedication to course development and classroom instructions, exploring new teaching methods, openness towards newly encountered problems, and the self-regulation of continuous learning (to follow up the trends in EAP and L2 writing) can be an indication of their strong willingness to make an effort for EAPWT expertise development.

(5) EFL teachers with a solid base of theoretical and practical knowledge regarding EAPWT

The teachers' accumulated knowledge was found to be intertwined with their teaching actions. The study indicates some related knowledge essential for EAPWT, which can function as a reference, containing the following: theoretical/ conceptual knowledge (e.g., theories underpinning and featuring their course design and instruction, especially genre knowledge concerning assorted academic writing types, subject-matter knowledge/disciplinary discourse, systematic knowledge of formative assessment and feedback), and experiential/practical knowledge (e.g., academic writing and research skills, contextualized knowledge with knowledge of students and knowledge of teaching contexts, knowledge of technology integration, and assessment and feedback strategies). The findings suggest that teachers with an integrated knowledge base of L2 writing teaching and assessment and content knowledge of EAP writing, especially L2 writing teaching approaches and formative assessment, can quickly manage the course.

Moreover, the study advocates that institutions should create a reassuring and supportive environment. For teachers without formal academic training, institutions should arrange a

series of informal but systematic training sessions before they start teaching EAP courses instead of having scattered lectures or seminars. Even for teachers with formal academic learning experience, guidance to familiarize themselves with teaching contexts and pedagogical techniques is still essential for novice teachers with either EFL or EAP teaching experience.

Institutional policy orientation and administrative support should also be considered. Whether the institution attaches great importance to teachers' academic competence, teaching, or other administrative work, it can influence their professional development direction. If the institution lacks an academic atmosphere, the teachers can hardly benefit from internal communication with colleagues. When associating EAP writing courses with other courses to build a consistent course series, joint efforts are required between teachers and the institution. In addition, team building and course development necessitate teachers' time, energy, and money, so rigid curriculum requirements hamper the freedom of instructional reform.

6.4 Limitations and future research recommendations

The study is not without limitations. The models proposed are preliminary because of the modest sample of participant EAP writing teachers. Time and contextual limitations, such as my small social network and the EAP teachers' changing situations due to the pandemic, caused constant adjustments to the research design. Although I endeavored to involve participants with diverse backgrounds, the number of those teaching EAP writing for more than ten years was inadequate, leading to incomplete findings about the perceptions and experiences of this group of teachers. For instance, except for the genre, process-writing, and project-based approaches, no other teaching theories related to EAP teaching had been uncovered in the study.

Moreover, I missed the opportunity to track participants' ongoing expertise development with 15 years of EAPWT experience. Therefore, future studies should engage more participants with longer years of teaching experience to explore whether they will approach an expertise ceiling and what continual development processes they have undertaken. Furthermore, due to the time limits, although four cases were followed in one or two academic years, future longitudinal studies should extend the period to explore further changes and the development of teaching expertise.

The study has tentatively compared the perceptions and practices of participants with differentiated teaching experiences; however, the comparison can be extended to more aspects. Future research should also make more detailed and systematic comparisons with larger sample sizes, for instance, by comparing EAP writing teachers with diverse teaching experiences (e.g., one to five years, six to ten years, 11 to 15 years, 16 to 20 years, and more than 20 years) and teachers teaching different levels of students (e.g., undergraduate students, master's degree students, and doctoral students). Besides, the comparative studies can focus on participants teaching in diverse class settings (e.g., single-majored or multi-majored classes, large or small, and online or offline) or collaborating with or without subject teachers in other domains. In other words, the study indicates that many questions remain unanswered concerning EFL teachers' EAPWT expertise constitution and development, which large-scale quantitative studies and in-depth qualitative research can further explore.

In addition, the study highlights teacher-environment interactions when teachers make social interactions and break varying environmental constraints to develop teaching expertise. It is valuable to find out the social relationships (e.g., teacher-student, teacher-colleague, and

teacher-supervisor) and multiple roles (teachers, researchers, leaders, and other life roles) function as facilitators or constraints in EAPWT expertise development. More research attention can be paid to these sociocultural factors in teaching expertise to respond to the advocacy of more related studies in divergent social and cultural contexts.



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Appendix 1: The interview protocols for Stage One

一、與學術英語寫作教學有關的經歷 Experience related to EAP writing teaching

1. 您是怎麼開始教授學術英語寫作課程的？

How did you become an EAP writing teacher?

2. 之前有哪些相關的學習和工作經歷？

What relevant study and work experience do you have?

二、學術英語寫作課程教學的發展歷程 The development of EAP writing course design and teaching

1. 學術英語寫作課程的日常教學工作包含哪些？

What daily work do you have regarding EAP writing?

2. 課程設計和教學（課程性質、課程目標、課程重點、內容安排、授課形式、教學活動、回饋與考核等）是怎樣發展起來的？經歷了哪些主要的變化？為什麼發生變化？

How do you develop EAP writing course design and instruction (course type, goals, focus, content organization, teaching methods, activities, feedback and assessment, etc.)? What are the major changes? Why did the changes happen?

3. 您覺得這些變化帶來的效果怎麼樣？依據什麼來判斷的呢？

What are the effects of these changes? How do you evaluate the effects?

3. 請您分享一下在教學發展過程中，有哪些印象深刻的成功的教學事例。

Please share the impressive successful teaching events during the developmental process of EAP writing instruction.

4. 在教學發展的過程中您遇到了哪些挑戰和困難？是怎麼解決的？

What challenges and difficulties have you encountered during the process of during the developmental process of EAP writing instruction? How did you solve them?

三、學術英語寫作教師教學專長 EAP writing teaching expertise

1. 您有通過哪些途徑來發展學術英語寫作課程的教學？

What ways have you sought to develop EAP writing instruction?

2. 您覺得發展學術英語寫作課程教學的過程，給您自身帶來了哪些改變？

What changes you think have been brought to yourself during the developmental

process of EAP writing instruction?

3. 概括來看，您覺得您是什麼樣的學術英語寫作教師？

In summary, what kind of academic English writing teacher do you think you are?

4. 您覺得目前可以勝任這門課程的教學嗎？過去哪些經歷、您自身的哪些知識和能力、個人特點支撐（support）您這門課程的教學？

Do you feel that you are currently competent to teach this course? What past experiences, knowledge and abilities, and personal characteristics support you in teaching this course?

5. 在以下教師角色中，您是如何評價自己目前的狀態的？（facilitator, assessor, planner, resource developer, information provider, and role model）您覺得教授學術英語寫作課程的老師，還有其他的角色嗎？

How would you rate your current status in the following teacher roles? (facilitator, assessor, planner, resource developer, information provider, and role model) Do you think there are other roles for teachers who teach academic English writing courses?

6. 您希望自己成為什麼樣的學術英語寫作教師？您的個人發展目標是什麼？

What kind of academic English writing teacher do you want to be? What are your personal development goals?

7. 您覺得一名成功的/專業的學術英語寫作教師需要具備哪些特質（知識技能品質等）？具體體現在？

In your opinion, what characteristics should a successful and professional EAP writing teacher? What do they embody in?

8. 您覺得自己多大程度具備這些特質？哪些方面還需要進一步提升？還需要哪些支持？

To what degree do you think you possess these characteristics? What aspects do you need further development? What support do you need?

Appendix 2: The interview protocols for Stage Two

一、新學期課程基本情況 Basic information about the course in the new semester

1. 本學期學術英語寫作面向的學生是？一個班多少人？幾個班？多少課時呢？

Who are the students for whom Academic English Writing is offered this semester? How many students in a class? How many classes? How many class hours?

2. 這學期課程目標有哪些？基於什麼設定的呢？

What are the course objectives for this semester? On what basis are they set?

3. 主要教學內容、教學模式、教材、主要教學活動、回饋和考核方式這些是如何確定的呢？

How are the main teaching content, teaching methods, teaching materials, main teaching activities, feedback and assessment methods determined?

二、預期和現狀 Expectations and current situation

1. 前面提到的課程情況與上一個教學年相比有哪些變化呢？為什麼做出調整？

How has the situation of the course mentioned earlier changed compared to the previous academic year? Why have adjustments/adaptations been made?

2. 對新學期的教學，您覺得哪些方面會有信心開展得比較好？信心的來源？哪些會比較有挑戰？

What aspects of teaching do you feel confident that you will be able to do better in the new term? What are the sources of confidence? What will be more challenging?

3. 就開學以來的情況來看，您覺得學生的狀態如何？之前設計的課程和教學實施方案目前進展如何？有沒有未預料到的情況出現呢？有的話您是如何應對的呢？

How do you feel about the state of the students since the start of the school year? How is the curriculum and teaching programme that you designed so far progressing? Have there been any unforeseen situations? If so, how have you dealt with them?

4. 您對於目前的教學效果滿意嗎？請結合具體事例分享一下。

Are you satisfied with the results of your teaching so far? Please share some specific examples.

5. 您覺得是什麼因素主要影響了目前的教學效果？

What do you think are the main factors affecting the effectiveness of the teaching so far?

6. 下一步準備做出哪些調整呢？為什麼？

What adjustments do you plan to make next? Why?

Appendix 3: Codes for teaching expertise components

Name	Experience	Theoretical/ Conceptual knowledge	Experiential/Practical knowledge	Progressive problem-solving	Motivation for changes	Adaptive agency
Lisa	Research and publication experience Cooperative teaching with diverse teaching groups; Intentionally attending EAP training	Genre-moves; Discourse analysis; EAP-meta discourse; Project-based teaching approach	Full skill (e.g., research methods, literature search, and writing skills) EAP writing techniques (IMRD-MRDI); Making associations with other courses; Step-by-step guidance for students' learning and research; Individual tutorials; Guiding students to critically analyze samples and imitate the writing	Self-confusion about what should be instructed; Students' lack of understanding and experience; Students' diverse backgrounds; Teacher's lack of publication	Doubting the duties and professional boundaries of language teachers in EAP writing course; Actively finding professional development direction; Be openminded for new learning	Researching in EAP field; Self-study as a EAP teacher; Keeping learning and updating EAP related knowledge; Reflecting on the self-identity in teaching EAP writing
Linda	Doctoral and post-doctoral experience	Systematic functional grammar; Discourse analysis; Reading to learn and learning to write; Cognitive linguistics; Critical thinking framework; Theories in linguistics, sociology, psychology; The cross-disciplinary integration	Designing the course based on students' backgrounds and needs; Implementing various theories in classroom teaching (e.g., systematic functional grammar and critical thinking) Classroom management (e.g., time management); Facilitating students' exploration and inquiries in class; Guiding students to deconstruct and reconstruct the subject-specific academic texts; Guiding students to critically analyze paper samples and peers' writing with clear rubrics; Academic practices	Student's low learning motivation; Students' templated bad writing habit; Seeking ways to develop systematic writing curricula with the integration of Systematic Functional Grammar	Enjoyment in teacher-student co-construction; Passion for teaching	Keeping updating knowledge and expanding horizons; Being aware of teachers' roles
Jose	Many teaching awards with long years of EFL teaching; doctoral learning experience	Synthesis writing	Generative dialogues and immediate feedback in class; Guiding students' peer feedback and self-revisions; Reading large amount of literature	Students' writing logic issue (e.g., lack of coherence); Students' templated writing habit; Persisting on seeking solutions for students' writing issue (i.e., logic problem)	Caring for students' actual improvement; Research interest in writing process; Sense of achievement and enjoyment from helping students learn; Modelling for students	Expecting to become a distinguished scholar like my supervisor; Being clear about goals for professional development; Seeking informal teaching-research communications with other colleagues
Gerald	long years of college English teaching	Academic writing norms, procedure, and requirements; Subject knowledge; Outcome-based teaching approach; Flipped classroom	Cooperation with other teachers for course construction; Utilizing multiple online platforms to monitor students' learning; Classroom management (e.g., students' involvement and time management); Guiding student's exploration in class; Systematic and detailed student assessment and evaluation	Ensuring all students' involvement; Too many learning tasks to accomplish and limited class time	Inspiring others; Holding optimistic attitudes; Being passionate; Willing to try something new; Full confidence in teaching any course	Strong ability of making adaptations
Jane	Systematic academic training experience (e.g., getting a PhD degree); Informal learning (e.g., attending lectures and consulting colleagues) Blended teaching experience; Publication experience	Flipped classroom; Theoretical knowledge about academic writing (e.g., topic selection and literature review)	Constructing online teaching resources; Utilizing online platforms for class interactions; Providing detailed written feedback for each assignment; Adapting students' emotions; Multiple teaching methods; Being close to students with many communications	How to stimulate students' motivation; Ensuring the accuracy of teaching content; Teacher's lack of publication	Caring for students; Regarding teaching EAP writing as an opportunity for self-improvement	Expecting to get a PhD degree; Intentionally seeking informal learning opportunities (e.g., attending lectures, consulting colleagues)
Zac	Experience in academic writing and research; EFL writing teaching experience (e.g., teaching writing strategies and arranging writing practice and feedback)	Academic norms; Theories in linguistics; Knowledge about writing teaching	Adapting the teaching content to students' needs; Adjusting activities and assignments to students' situations; Utilizing the online platform for feedback and interaction	Miscellaneous teaching content including advanced writing, thesis writing, and business practice report); Students' low learning motivation; Conflicts between personal belief and the curriculum requirements; Lack of confidence in the effective teaching methods; Seeking more effective teaching methods	Preparing students for their future academic study	Keeping self-improvement on academic writing and research; Reflecting on teaching content and teaching methods in the EAP writing course
Hallie	ESP teaching and researching experience	learning-centered teaching; Domain specific register and discourse; Theories in applied linguistics, EAP, ESP fields	Flexible teaching methods; Empowering students to share in class; Strategically providing written feedback; Implementing innovative teaching methods; Creating real situations for academic communications	Students' complaints about too many assignments; Teacher's lack of subject knowledge; Keeping exploring teaching methods and refining teaching	Care and love for students; Passion for ESP; Willing to jump out of the comfort zone	Firm belief and career-long devotion in ESP; Being clear about the language teachers' identity in ESP field; Pioneering in new teaching methods and leading other teachers; Updated literature reading
Quinn	Writing teaching experience; Publication experience; Systematic academic training (PhD thesis writing)	Blended teaching and learning; Better with ESP background; Accumulating more knowledge, broader and more in depth	Utilizing online platforms to manage students; Adapting the textbook and involving students as teaching materials; Engaging students to share in class; Computer-assisted writing and AI writing techniques; Selecting and Adapting teaching content to students' backgrounds	Difficult to provide feedback in large class; Conflicts between personal belief and the real teaching situation	Hoping to bring changes to students and being helpful; Using the serious attitude to influence students; Curiosity of learning new things and new technologies	Planning to get a PhD degree; Self-challenging by learning cross-disciplinary knowledge; Keeping self-updating (e.g., utilizing technologies to facilitate writing teaching and attending lectures)

Mia	Academic writing and publication experience; Writing teaching and research experience; Conducting EAP related research;	Corrective feedback; Genre approach; Process writing; Academic literacy	Building teaching corehence and enlhpasizing connections of the sessions; Adapting teaching content to students' needs; Sythesizing various teaching resources (e.g., EAP related and domain-specific papers, students' writing, and students' presentations) Comforting students; Co-constructing the course resources with students; Empowering students in class; Engaging students to share in class; Encouraging class inquiries; Classroom management (e.g., balancing lecturing and class discussions); Guiding students to critically analyzing and evahuating textual samples and peers' writing; Strategically providing written feedback; Activating relaxing classroom atmosphere; Providing immediate feedback in class; Assessing students' writing and selecting proper ones for teaching; Balancing teaching content and school requirement in assessment design; Utilizing online tools; High English language proficiency	Students' diverse backgrounds; Teacher's lack of subject knowledge; Conflicts between personal belief and the summarive assessment requirement; Students' incapability of transferring learning into their academic practices; Keeping refining the course and teaching; Enhancing students' self-regulation instead of teacher doing all the work; Better satisfying students' needs	Making students transfer learning into their academic practices; Satisfying students' needs; Pursuing perfection; The consciosness of being a teacher; Interest in researching and teaching EAP writing; The connections between different professional roles; Regarding challenges as learning opportunities	Becoming a competent teacher and researcher; Reflecting on the teaching issues and collecting feedback from the students; Self-exploring; Trying to achieve personal standards for good teaching; Adjusting perception on self-identity in teaching EAP writing
Kade	Teacher training experience; Academic writing and research experience; Conducting research or projects on EAP writing	Genre approach; Theories on EFL students' writing development; Formative assessment and feedback; Enhancing students' self-regulated learning; Systematic perceptions about EFL teaching; Blended teaching and learning	Synthesizing multiple teaching resources(e.g., textbooks and papers); Applying portfolio assessment in the course; Implementing learning by writing and in-class writing activities; Adjusting teaching content, activities, and assignments to students' situations; Designing and Adapting in-class writing practices to solve students' specific learning problems; Adjusting teaching activities according to students' emotional response; Building teaching corehence and enlhpasizing connections of the sessions; Utilizing online platforms for interactions, class activities, and assignment; Online writing technolouges	Students' negative attitude to EAP writing learning and low learning motivation; Students' lack of conceptual understanding about academic writing and research; Trying ways to change students' learning attitudes; The concern about the teaching effectiveness; Conflicts between personal belief and the teaching reality	Interest in writing teaching; Interest in researching teacher feedback and writing teaching; Regarding new challenges as learning opportunities; Regarding teachers as life-long learners; Believing in the significance of EAP writing and the possibility to improve students' writing competence	Being continually dedicated into research and teaching; Reflecting on the teaching effects and issues; Belief changes (to be both student-centered and learning-centered); Adjusting negative emotions
Carrie	Academic writing and publication experience; Conducting resaeach on the EAP writing course; EAP writing learning experience	Genre approach; Knowledge about academic writing	Synthesizing multiple teaching resources(e.g., textbooks and papers); Making associations with other courses; Being familiar with students' learning difficulties and actual levels; Adapting teaching materials and teaching focusesto students' situations; Encouraging diverse interactions in class; Classroom management; Enacting various activities and practices in class; Guiding students to critically analyzing and evahuating textual samples and peers' writing; Encouraging students' self-exploration and peer work; Maintaining active and encouraging classroom atmosphere; Specifying and sharing teaching objectives to students; Scaffolding students' learning; Providing immediate feedback in class; Strategically providing written feedback after class; Assessing students' writing and summarizing students' problems for teaching; Utilizing online platforms for classroom interaction and assignments	Students' diverse backgrounds; Students' lack of knowledge and experience of EAP writing; Unable to control students' devotion; Keeping refining the course and teaching; Better satisfying students' needs	Pursuing perfection; Seeking continual professional development; The consciosness and commitment of being a teacher; The coherence of the professional roles; Teacher's devotion influencing students' attitude; Modelling for students; Sense of fulfillment; Interest in researching EAP writing; Being willing to make changes and handling new situations	Becoming an expert in EAP field; Life-long dedication into academic career; Reflecting on the teaching issues; Collecting feedback from the students; Self-exploring the course refinement; Consulting other colleagues for subject-matter knowledge; Adjusting personal emotions from the work presssure; Keeping self-updating and self-enrichment
Flora	Experience of teaching EFL pedagogies and researching teacher education; Successful research and academic writing experience; Informal learning experience (e.g., attending conferences, personal reading, and learning online resources)	Flipped classroom; Blended teaching and learning; Projected-based teaching	Adapting teaching style based on students' feedback; Adjusting teaching content and activities to students' situations; Synthesizing multiple teaching resources; Selecting and constructing online teaching and learning resources; Monitoring students' online learning effects; Constantly checking students' learning problems and difficulties; Communicating with students and comforting them; Making teaching activities, assessment and assignments in line with course goals; Guiding students' discussions in class; Guiding students to critically analyzing and evaluating textual samples; Encouraging students to think and reflect; Blancing teacher lecturing and students'talk; Utilizing the online platform to facilitate class interactions and group work; Providing individual tutorials; Being familiar with the research process of educational research	The concern about the teaching effectiveness; The students' negative comments on the teaching; Students' weak foundation; Unsure about students' devotion; Concern about the effeciency of assignments; Finding better teaching methods; Changing students' attitude; Keeping refining course design and teaching, and the assessment process	Care and love for students; The consciosness of being a teacher; Sense of commitment as a leader; Willingness to make changes and innovations; Regarding teaching EAP writing as a self-improvement opportunity; Passion for teaching ; Pursuing perfection	Reflecting on the teaching issues; Seeking informal learning opportunities (e.g., attending conferences, reading, learning online); The balance of being strict with and close to students; Self-adjustment after receiving students' negative feedback and relatively low teaching evahaiton scores

Appendix 4: Adaptive Practice Indicators for classroom observation

1. The teacher modifies learning goals in response to formative assessment.
2. The teacher modifies their instructions during the lesson to increase learning opportunities.
3. The teacher negotiates assessments with students, ensuring these are aligned with learning goals.
4. The teacher uses formative assessment to differentiate their responses to individual students.
5. The teacher prompts students to discover key concepts through responsive open ended questions.
6. The teacher prompts students to express their thinking and used this as a springboard for learning activities.
7. The teacher uses a thinking routine to prompt deeper exploration of concepts or skills.
8. The teacher prompts students to demonstrate open-mindedness and tolerance of imaginative solutions to problems.
9. The teacher provides a synthesis of class generated ideas.
10. The teacher links, when appropriate, lesson concepts to larger disciplinary ideas.
11. The teacher provided imaginative suggestions to increase learning opportunities.
12. The teacher demonstrates flexible pacing of lesson in response to student learning needs.
13. The teacher demonstrates responsive use of literacy/numeracy interventions.
14. The teacher creates groups of students based upon formative assessment.
15. The teacher modifies homework in response to lesson progress.

Loughland, T., & Alonzo, D. (2019). Teacher Adaptive Practices: A Key Factor in Teachers' Implementation of Assessment for Learning. *Australian Journal of Teacher Education*, 44(7), 18–30. <https://doi.org/10.14221/ajte.2019v44n7.2>

Appendix 5: Research approval



25 March 2021

Mrs XIANG Xiaoting
Research Postgraduate Programmes
Graduate School

Dear Mrs Xiang,

Application for Ethical Review <Ref. no. 2020-2021-0303>

I am pleased to inform you that approval has been given by the Human Research Ethics Committee (HREC) for your research project:

Project title: EFL Teachers' Expertise in Teaching EAP Writing at Tertiary Level in China

Ethical approval is granted for the project period from 1 May 2021 to 1 May 2023. If a project extension is applied for lasting more than 3 months, HREC should be contacted with information regarding the nature of and the reason for the extension. If any substantial changes have been made to the project, a new HREC application will be required.

Please note that you are responsible for informing the HREC in advance of any proposed substantive changes to the research proposal or procedures which may affect the validity of this ethical approval. You will receive separate notification should a fresh approval be required.

Thank you for your kind attention and we wish you well with your research.

Yours sincerely,



Patsy Chung (Ms)
Secretary
Human Research Ethics Committee

c.c. Professor CHOU Kee Lee, Chairperson, Human Research Ethics Committee

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Appendix 6: Information consent

THE EDUCATION UNIVERSITY OF HONG KONG THE DEPARTMENT OF ENGLISH LANGUAGE EDUCATION

CONSENT TO PARTICIPATE IN RESEARCH EFL TEACHERS' EXPERTISE IN TEACHING EAP WRITING AT TERTIARY LEVEL IN CHINA

I _____ hereby consent to participate in the captioned research supervised by Professor Mingyue Gu, Dr. Baohua Yu & Dr. Rui Yuan and conducted by Xiaoting Xiang, who are students of the department of English Language Education in The Education University of Hong Kong.

I understand that information obtained from this research may be used in future research and may be published. However, my right to privacy will be retained, i.e., my personal details will not be revealed.

The procedure as set out in the **attached** information sheet has been fully explained. I understand the benefits and risks involved. My participation in the project is voluntary.

I acknowledge that I have the right to question any part of the procedure and can withdraw at any time without negative consequences.

Name of participant

Signature of participant

Date

INFORMATION SHEET

You are invited to participate in a project supervised by Prof. GU, Mingyue, Dr. YU, Baohua & Dr. YUAN, Rui and conducted by Xiaoting Xiang, who is the student of the department of English Language Education in The Education University of Hong Kong.

The introduction of the research

This research is to explore the nature of the expertise in EAP writing instruction and how EFL teachers in Chinese universities develop their expertise in teaching EAP writing. The participants will be around 15 EFL teachers who are likely to share their experience and thoughts about the development of teaching expertise EAP writing courses. All participants are to take one semi-structured interview (1-1.5 hour) individually about their course design, their self-conception, and the perception about EAP writing teaching expertise. Four of them will be followed longitudinally, being interviewed multiple rounds and being observed in class.

There will be no potential risks of the research. Your participation in the project is voluntary. You have every right to withdraw from the study at any time without negative consequences. All information related to you will remain confidential, and will be identifiable by codes known only to the researcher.

The results will be published in some educational journal or presented in some academic conference to a larger audience. However, the pseudonyms will be used to protect the participants' privacy. The consent form is also used to get their permission to publish the results.

If you would like to obtain more information about this study, please contact Xiaoting Xiang at telephone number [REDACTED] or my supervisors Prof. GU, Mingyue [REDACTED] / Dr. YU, Baohua [REDACTED] / Dr. YUAN, Rui [REDACTED].

If you have any concerns about the conduct of this research study, please do not hesitate to contact the Human Research Ethics Committee by email at hrec@eduhk.hk or by mail to Research and Development Office, The Education University of Hong Kong.

Thank you for your interest in participating in this study.

Xiaoting Xiang
Principal Investigator



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