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Understanding Macau novice secondary teachers' beliefs and practices of EFL writing instruction: A complexity theory perspective

Shulin Yu[a], Hao Xu[b,*], Lianjiang Jiang[a,c], Iris Ka Ian Chan[a]

[a] Faculty of Education, University of Macau, Macau, China
[b] National Research Centre for Foreign Language Education, Beijing Foreign Studies University, Beijing 100089, China
[c] School of Foreign Languages, Jimei University, Xiamen, China

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ABSTRACT

Despite a growing recognition of the importance of teacher beliefs and practices, those of novice EFL secondary teachers regarding writing instruction remains underexplored. Drawing on complexity theory, this article reports on two secondary teachers' beliefs and practices about writing instruction in Macau. Data were gathered through classroom observations, in-depth interviews and documents. The findings reveal two distinctive systems of beliefs and practices within the two cases, one being element-based and the other being process-oriented. Specifically, while the teacher of element-based beliefs experienced difficulties in enacting key elements of genre, audience, and feedback in practice, the teacher of process-oriented beliefs adopted a step-wise approach in instructional practice, which was nonetheless constrained by the school curriculum. These findings suggest that while the two cases were able to maintain internal coherence between their individual beliefs and practices, they experienced external constraints stemming from their curriculum and schools that led to dissonances in their beliefs and practices. The study calls for attention to the complex interactions among beliefs, practices and contexts and to how novice teachers develop their beliefs and practices systems regarding writing instruction within their situated contexts.

1. Introduction

Research on teacher beliefs and practices has proliferated in second language (L2) education in recent decades (Borg, 2015; Mao & Crosthwaite, 2019). Investigation of the interaction (e.g., connection and contradiction) between belief and practice helps to reveal teachers' strengths and deficiencies, and understand teachers' experiences, challenges, and difficulties in their professional development (Zheng, 2013). Although a number of studies have examined teacher beliefs and practices in various contexts, little research has focused on those related to L2 writing. In their systemic review of 272 empirical studies published in *Journal of Second Language Writing* over its first quarter century of publication, Riazi, Shi and Haggerty (2018) noted that L2 writing teachers have yet to be taken into the more prominent foci. Due to limited research on L2 writing teachers, it remains unclear how/why writing teachers' practices form, transform, fluctuate, and stabilize, especially in the early years of teaching (Borg, 2015; Lee, 2008; Yang & Gao, 2013). Specifically, the limited body of literature on L2 writing teachers' beliefs and practices has focused on university-based writing teachers in English as a second language (ESL) contexts (Ferris, 2014; Mao & Crosthwaite, 2019). Much less attention has been paid to

* Corresponding author at: National Research Centre for Foreign Language Education, Beijing Foreign Studies University, Beijing 100089, China.
E-mail address: xuhaokent@bfsu.edu.cn (H. Xu).

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novice teachers' beliefs and practices related to writing instruction in English as a foreign language (EFL) school contexts (Lee, 2017). Novice teachers, or early career teachers, are normatively known as "those that have completed a teacher education program and have less than three years full-time teaching experience" (Trent, 2016, p. 316). Different from those experienced expert or non-expert teachers, novice teachers are widely known for the complex dynamics they experience in beliefs and practices when start teaching in authentic contexts (Tsui, 2009). As research has revealed that teachers' beliefs are "contextualized," "complex," "dynamic," and "systematic" (Zheng, 2013), more information is needed to elucidate how writing teachers with limited teaching experience think, believe, and act in EFL school contexts. Such information is of significant value for professional development of novice writing teachers.

Given the complex nature of beliefs and practices (Borg, 2015; Fang, 1996; Lee, 2009), the present study aims to examine the beliefs and practices of two novice secondary EFL writing teachers from a complexity theory (CT) perspective. As a theory that addresses how systems form, adapt, and develop over time (Cochran-smith, Ell, Ludlow, Grudnoff, & Aitken, 2014; Peters, 2008) and emphasizes "non-linearity, unpredictability, mutual adaptation, co-evolution, dynamic interaction and self-organization" (Zheng, 2015, p. 28), CT has recently been suggested to be a particularly effective framework for understanding teachers' beliefs (Feryok, 2010; Zheng, 2013, 2015). While early research has used CT to capture the whole picture of teachers' beliefs and the relationship between teachers' beliefs, practices, and contexts (Zheng, 2013), little attention has been paid to novice teachers, whose beliefs and practices usually involve unique features that warrant further investigation. Informed by CT, the current study aims to advance knowledge of the complex relationships between novice L2 writing teachers' beliefs and their writing instructional practices in one EFL school context and seeks to offer practical pedagogical recommendations for L2 teacher educators, school policymakers and administrators so as to help novice writing teachers develop informed theories and practices of teaching EFL writing to secondary school students.

2. Conceptual framework

2.1. Understanding L2 writing teachers' beliefs and practices

Teacher belief generally refers to what teachers think, know, and believe about various issues affecting teaching, learning, and the roles and identities of teacher and learner (Borg, 2001). Teacher beliefs are usually regarded as evaluative, interpretive, and context-dependent (Zheng, 2015). They are consciously or unconsciously held by teachers and "serve as a guide to thought and behavior" (Borg, 2001, p. 186). In this study, L2 writing teachers' beliefs particularly refer to their beliefs in teaching L2 writing. As a context-dependent concept, L2 writing teachers' practices have been described as "all facets of second language writing instruction and assessments" (Zhu, 2010, p. 213) including the design of the writing curriculum, the teaching materials and writing tasks, the planning and implementation of teaching and feedback activities, and writing assessment.

Although research on teacher belief and practice has proliferated in recent decades, little research has focused on L2 writing teachers' beliefs and practices (Junqueira & Payant, 2015; Mao & Crosthwaite, 2019). The limited body of research on such beliefs and practices has focused on experienced teachers and indicated that beliefs affect teaching practices, but not in a monolithic manner given the complexity and malleability of teachers' cognition, which evolves across time and experience (Ferris, 2014; Junqueira & Payant, 2015; Lee, 2014). With a focus on in-class instructional approaches and feedback practices in L2 writing, these studies have also revealed that L2 writing teachers' beliefs and practices are shaped by individual and sociocultural factors like teachers' educational background, and learning and education experience along with institutional contexts and policies (e.g., Crusan, Plakans, & Gebril, 2016; Ferris, 2014; Lee, 2008, 2014). For instance, Lee (2008) investigated the written feedback practices of secondary English teachers in Hong Kong and found that the teachers' feedback primarily focused on the correction of linguistic errors, and that their practices were influenced by a number of factors such as their beliefs, knowledge, the examination culture, and "socio-political issues pertaining to power and teacher autonomy" (Lee, 2008, p. 81). Yang and Gao (2013) explored the beliefs and practices of four experienced university L2 writing teachers in China and found that the teachers' past experiences, perceptions of students' knowledge, and self-reflection accounted for the variation across their beliefs and practices. Yigitoglu and Belcher (2014) investigated the beliefs and practices of two ESL writing teachers in the United States and found that both L1 and L2 writing experiences were salient for the teachers' instructional decision making. Most recently, Crusan et al. (2016) surveyed 702 university ESL/EFL writing instructors in 41 countries and found that the teachers' linguistic backgrounds and workload-related contextual factors significantly affected their writing assessment beliefs and practices.

Although the aforementioned studies provide insights into L2 writing teachers' beliefs and practices, the majority were concerned with experienced writing teachers working with university students, and little attention has been paid to novice teachers working in non-tertiary educational contexts. More knowledge is needed regarding novice EFL school writing teachers' beliefs and practices relating to the various factors affecting writing instruction, including classroom activities, assessment practices, selection of writing topics and genres, design of writing tasks, and feedback. Compared with experienced teachers, novice writing teachers may be confronted with greater challenges and difficulties, and their beliefs and practices are likely to interact bi-directionally with experience and context. While early research (e.g., Tsui, 2003, 2009; Tsui & Ng, 2010) has documented how experienced expert teachers were able to integrate teacher knowledge into the teaching act and to exploit situated possibilities for student learning in the context of constraints by constructing local understandings of their work contexts, whether and how novice writing teachers manifest similar practices and beliefs remains underexplored. By providing a detailed account of novice writing teachers' experiences of teaching writing in EFL school context, it is hoped that researchers, teacher educators, and L2 writing teachers may gain a deeper understanding of the complex factors that shape novice writing teachers' beliefs and practices. Research into the distinct and unique

features of novice EFL writing teachers in schools would advance our theoretical and pedagogical understandings of L2 writing teachers and their teacher education (Hirvela & Belcher, 2007; Lee, 2017). Thus, the current study aims to investigate two novice secondary English writing teachers' beliefs and practices in the Macau EFL context from a CT perspective.

2.2. A CT perspective on L2 writing teacher belief and practice

CT addresses how systems form, learn, change, and evolve in a complicated, shifting reality (Cochran-smith et al., 2014), and emphasizes "non-linearity, unpredictability, mutual adaptation, co-evolution, dynamic interaction and self-organization for organizational life" (Zheng, 2015, p. 28). As a theory of "survival, evolution, development and adaptation" (Morrison, 2002, p. 6), CT has a strong explanatory power on how individuals and contexts shape and reshape each other within and across complex systems. In teacher education, a number of researchers have suggested that teachers' beliefs and the interaction among beliefs, practices, and contexts can be best understood through CT, which is able to capture the complex, dynamic, interactive, and contextualized features of teachers' beliefs and the complex relationships among beliefs, practices, and contexts (Feryok, 2010; Zheng, 2013, 2015).

From the CT perspective, systems refer to units or organic wholes that are made up of a series of things that are closely related to one another (Zheng, 2015). Complex systems are systems that comprise "different types of element or agent, which connect and interact in different and changing ways" (Zheng, 2015, p. 28). As such, complex systems are complex or heterogeneous, consisting of different elements or agents that simultaneously interrelate and interact with one another in a nonlinear manner. They change and evolve over time and normally do so nonlinearly, with discrepancies likely to exist between input and effects (Feryok, 2010; Zheng, 2015). They are contextualized and co-adaptive, consistently responding to and influencing other systems. Finally, they are open and self-organized at the same time. This means energy and influences can come into the systems (Cameron & Larsen-freeman, 2007; Feryok, 2010; Zheng, 2015); meanwhile, a system adapts to the environment by "reconfiguring itself and metamorphosing in order to survive," that is, it can self-organize (Peters, 2008, p. 20). By emphasizing heterogeneity, interconnectedness, openness, co-adaption, and nonlinearity, CT is able to capture the whole picture of teachers' belief systems, and it becomes a powerful tool for understanding teachers' beliefs and practices in specific contexts. With emphases on the dynamic interactions within and across systems, CT can explain "how the interacting parts of a complex system give rise to the system's collective behavior and how such a system simultaneously interacts with its environment" (Larsen-Freeman & Cameron, 2008, p. 1).

From the CT perspective, teachers' beliefs are conceptualized as a complex system in which the teachers' beliefs, practices, and contexts "are sets of interacting components while at the same time being complex systems themselves" (Zheng, 2015, p. 29). Researchers have generally agreed that a belief system comprises various substructures of beliefs, including professed and enacted beliefs, primary and derivative beliefs, and central and peripheral beliefs (Brownlee, Boulton-Lewis, & Purdie, 2002). These sub-beliefs are interrelated rather than independent from each other and they may interact and conflict with each other, making the belief systems even more complex (Zheng, 2013). This is particularly the case when the professed/espoused beliefs of novice teachers fail to be converted into enacted beliefs in practice. Zheng (2013) has thereby argued that the professed beliefs of teachers, including those novice teachers, should be distinguished from their implicit/enacted beliefs in practice so as to "elicit the interactive complexity existing between the two" (p. 336). Examining novice teacher beliefs and practices through the lens of CT can thus shed light on the "emergent patterns of interaction within and between levels of activity that would constitute an explanatory theory of teacher learning as a complex system" (Opfer & Pedder, 2011, p. 379) mediated by various individual, institutional, and sociocultural factors. A focus on the beliefs and practices of novice teachers can thus expand the existing research on experienced teachers' cognition from a CT perspective and provide empirical evidence regarding the application of CT in the field of teacher cognition, and reveal how novice teachers can be better supported when they start their instructional practices in authentic contexts.

3. Methodology

Informed by CT, a case study approach with a multiple-case design was adopted to address the following two research questions (Yin, 2009):

(1) What are the beliefs and practices of two novice secondary teachers concerning English writing instruction in Macau?
(2) How do the two writing teachers' beliefs, practices, and contexts interact with one another in the Macau secondary school context?

3.1. Context and participants

This study was conducted in secondary school context in Macau, one Special Administrative Region of China and a former colony of Portugal. Due to the laissez-faire approach to education by the Macau-Portuguese government during the colonial period (Mak, 2015), schools in Macau enjoy a high degree of autonomy in school policymaking, curriculum design, selection of textbooks, and teacher recruitment. After the handover in 1999, the Macau government introduced a range of plans, such as offering subsidies to private schools, and passing legislation to gain more power over educational issues. These pieces of legislation, particularly the Curriculum Framework for Formal Education of the Local Education System (2014) and Requirements of Basic Academic Attainments of the Local Education System (2015), have significant influences on English education in Macau, given that they regulate what to teach, how to teach, and how to assess each subject, including English.

Two English writing teachers, Teng and Chak (pseudonyms), both with one year of teaching experience, were selected to

participate in the present study through purposive sampling (Yin, 2009). Given that teachers' beliefs and practices do not happen in a vacuum but rather are embedded in broader historical, social, and cultural contexts (Borg, 2015; Cross, 2010), the second principle for selection was the sociocultural contexts of the participants. After screening the teachers according to their teaching experience, the researchers selected the two participants according to (1) their personal and educational backgrounds (e.g., with/without a degree in education, with/without overseas education, etc.) and (2) the schools at which they were teaching (factors such as the MOI of the school and the students' English proficiency were also considered).

3.2. Data collection and analysis

Data were collected from multiple sources: semi-structured interviews, classroom observations, and documents. Three semi-structured interviews were conducted with each teacher (1.5 − 2 h each time) over one academic semester. The interview questions focused on (1) the teachers' beliefs related to L2 writing, teaching writing, and feedback on writing to Macau secondary students; (2) the teachers' sociocultural contexts, particularly their educational backgrounds and past learning experiences and work contexts; and (3) the teachers' instructional and feedback practices and the reasons underlying their instructional practices. As such, the interview data were the main sources for exploring the teachers' beliefs and triangulated with the data collected from class observations and documents. To avoid misunderstandings, the language used for the interviews was the native language of the teachers: Cantonese. All the interviews were audio-recorded and conducted at places convenient to the participants, and then transcribed and translated by the third and fourth authors. In addition to the three interviews, several additional short interviews were conducted through instant messaging applications to obtain more information about the teachers' beliefs and practices.

In addition, the researchers observed three lessons (40 min for each lesson) from each teacher during the semester. The primary purpose of classroom observation was to investigate the teachers' actual in-class practices. Given the research focus of the current study, writing topics and genres, writing task design, teaching procedures, classroom activities/exercises/tasks, were the foci of observations, which could reveal how the two teachers planned and delivered writing lessons, and how they designed writing assignments and activities to facilitate student learning. The classes were not video-recorded for privacy reasons, but detailed field notes were taken. For the documents, all students' compositions along with teacher feedback, assessment rubrics, PowerPoint slides, textbooks, and handouts were collected. The documents could reveal the teachers' feedback and assessment practices, and the overall situation under investigation.

Both within- and cross-case analyses were conducted. The researchers analyzed the data case by case to provide a detailed description of each teacher. The reports for each case were compared and modified when necessary during the cross-case analysis. After that, the data were once again analyzed cross-case in response to the research questions. All of the interviews, classroom observation notes, and documents were coded and analyzed both deductively and inductively, and the process of analysis was iterative and recursive. The researchers carefully reviewed and coded the data to identify the themes. Through a recursive process of open coding, we allowed themes to emerge from the data and codes such as "element-based" and "step-wise approach" were used to categorize the emerging themes. We then compared and reduced the themes into major categories. Informed by our conceptual framework, the themes yielded from open coding were grouped into overarching categories such as "belief systems," "practice systems," and "sub-beliefs." We also adopted complexity theory as our analytical framework by emphasizing the holistic and interconnected nature of the teachers' belief systems. We explored teachers' beliefs by first identifying the content of the beliefs and this process yielded codes such as "beliefs about L2 writing," and "beliefs about feedback." Then we explored the relationship between different beliefs. After that, the classroom observation notes, student writing drafts, and assessment rubrics were thoroughly studied to identify characteristics of the genres, writing topics, and writing tasks along with the teacher's in-class instructional practices, feedback and assessment practices in relation to relevant literature on L2 writing, and the teacher's beliefs emerged from the interview data. Other documents, including the PowerPoint slides and textbooks, were also carefully reviewed to ensure the validity of the data. We then established relationships between the teachers' beliefs and practice by juxtaposing teachers' espoused beliefs, their practices in classrooms, and the beliefs that underpinned their practices with reference to the observed classroom activities.

Having completed the analysis of the teacher's beliefs and practices, the researchers reread the transcripts by focusing on the teachers' background and contexts. Codes that emerged included educational background, past learning experience, work context, and student and classroom settings. These codes were refined and revised during the coding process, with new codes added. For example, the code "past learning experience" was further divided into two: "experience in learning how to teach English writing" and "experience in learning English writing."

4. Findings

This section presents the findings case by case. A brief vignette for each case is first presented, followed by an in-depth illustration of the beliefs and practices of each case.

4.1. Case one: Teng

Teng was a novice teacher in her early 20s with one-year teaching experience when the study began. She was born and raised in Macau. Having completed her primary and secondary education in a local English-medium school, Teng went for her bachelor's degree in Education at a local university. Teng did not receive much systemic formal instruction in English writing, especially in secondary education, given that English writing had not been given much attention at the secondary school she attended (Teng,

Interview 2). During her undergraduate study, she took six courses related to L2 acquisition and teaching, in one of which the teaching of L2 writing was included.

Teng taught at a local English-medium girls' school. She was assigned two secondary English classes, one History class, and one Religion class. Each of these classes had around 20–30 students. She had 13 lessons (40 min for each lesson) per week. There was a prescribed syllabus and a set of teaching materials and textbooks for the teachers. The teachers had to follow the syllabus. Apart from Teng, there were two more teachers teaching Secondary 4: one newcomer with one year of teaching experience like Teng, and another teacher with five years of teaching experience. The more experienced teacher seemed to have more power in deciding the teaching content and the writing topic.

4.1.1. System of beliefs

System of beliefs refers to heterogeneity of belief systems. According to complexity theory, a heterogeneous system is comprised of multiple components with a large amount of structural variations (Zheng, 2013). The structural variation of teachers' belief system is manifested in the variety of the beliefs that the teachers held about L2 writing and in the interactions between different (sub) beliefs. In Teng's case, her system of beliefs was identified as consisting of different areas of beliefs, including beliefs about L2 writing, L2 writing teaching, and feedback.

4.1.1.1. Variety and accuracy in language use: Beliefs about L2 writing. The central beliefs Teng held about L2 writing are mostly about the language, which, in general, should be "beautiful," as shown in the following extracts:

> When you are writing, you need to write more beautifully … the words … the language … should be more beautiful … [In her own writing] I looked at the words that I used to see if there were any other more beautiful words that could be used. (Teng, Interview 1)

In Teng's beliefs, writing "beautifully" means achieving certain specific standards in terms of *variety* and *accuracy*:

> You will realize that your writing is actually not very beautiful, always using the same sentence pattern. And then, you may want […] to learn other sentence patterns. For English, you should also try to use some more beautiful words. (Teng, Interview 1)

In this excerpt, Teng's beliefs about "beautiful" language was explicitly related to her beliefs about the importance of having *variety* in syntax and vocabulary use. As for *accuracy*, Teng emphasized the importance of producing error-free texts:

> [Accuracy] is important [in writing]. If you are speaking, the mistakes that you make may be easily overlooked. But for writing, the mistakes can be easily identified because I can read it again and again … [The researcher: What if the error does not impede your understanding?] Even so, it is important, otherwise why do we need to learn grammar? (Teng, Interview 2)

It became clear that within Teng's belief systems of having "beautiful" language in L2 writing, there were two interrelated sub-beliefs about accurate use of diversified lexis and syntax. These two sub-beliefs form a coherent interrelation within Teng's belief systems in that they were both form-focused.

4.1.1.2. Genre, topic, and context: Beliefs about key elements for teaching L2 writing. Teng's beliefs about what teachers should incorporate into L2 writing teaching emerged as she commented on the relationship between classroom teaching and examination preparation:

> I think the *genres* and *topics* [researchers' emphasis] should be in line with public exams. If what you are learning is useless … uh … the students will lack motivation …They should know how to describe data or scenery. Emails, speech … [Besides topics that appear in public exams,] we [also] need to consider if the topic is practical, uh … common, if it's useful in the future. (Teng, Interview 3)

Teng referred to public exams to decide what needed serious instructional attention in her beliefs. The same concern about public exams applied to the choice of writing topics in classrooms, though with additional consideration to the practicality of these topics in students' future lives. The complexity of Teng's beliefs in selecting writing topics as instructional foci lay in the fact that such beliefs were also intertwined with her sub-beliefs about the importance of not only the high-stakes exams, but also the genres for students' prospective professions.

Besides genre and topic, another key element in Teng's belief system of L2 writing teaching was *context*, as she had learned and believed that context should be provided in writing tasks:

> I have learned how to design writing tasks. In a writing task, the audience should be specified, uh … you need to tell them: This is the audience. You need to let them know that they are writing for some purposes. Or … you can tell them … uh … you are writing for a newspaper and ask them to imagine the situation – what kind of words they should use. (Teng, additional follow-up interview)

As can be seen, Teng believed that many facets of context should be involved when designing a writing task, including audience, purpose, and situation. These beliefs were not only interrelated with her beliefs of what students needed most for their future, but can also be traced back to what she had learned in terms of designing writing tasks in her teacher education program, indicating a positive influence of her prior training on her espoused beliefs.

4.1.1.3. Teacher feedback on global issues vs. peer feedback on local issues: Beliefs about feedback in L2 writing. With reference to feedback in L2 writing, Teng believed that teacher feedback should focus on global issues such as content and organization and that local issues like grammar should be the focus of peer feedback. The extract below revealed her view:

> I think teachers' comments are […] useful … the overall comments. When I mark compositions, … I would tell them what to do to improve the content …(Teng, Interview 1)

Interestingly, Teng's belief in the long-lasting effect of teacher feedback on global issues coexisted with her disbeliefs in the effect of teacher feedback on local issues. For local issues such as grammar, spelling, and paragraphing, however, Teng believed that peer feedback seemed more feasible, though with certain ambivalence:

> I remembered my teacher had asked us to do peer check when I was a student…It was not very useful actually … sometimes, if your partner's ability is somewhat lower than yours, then the feedback he or she gives you may not be very useful. You may not agree with what he or she says. His or her feedback is not authoritative enough for you to make changes. (Teng, Interview 2)

According to Teng, compared to teacher's global feedback, peer feedback could focus on local issues, though with questionable validity due to her prior negative experience with peer feedback. These beliefs, although espoused/professed explicitly by Teng, turned out to be not directly translated into her practice, which is presented in the next section.

4.1.2. System of practices

Teachers' practices in L2 writing can also be considered as a system comprising of various activities in relation to selecting writing tasks and materials and giving feedback. In one of Teng's lessons, she taught graph writing which is descriptive in genre as required in International English Language Testing System (IELTS). The writing task was extracted from an IELTS guide book, based on which she organized most of her class. Fig. 1 below is a sample of the writing tasks.

Based on the observation of Teng's three lessons, we found that vocabulary, appropriate use of vocabulary in particular, was always the focus of her teaching. Teng started her first lesson by eliciting vocabulary items that were related to the writing topic. For instance, she first asked the students to give synonyms for "increase" and "decrease" based on their memory. After that, Teng distributed two sets of cards (one containing graphs and the other containing corresponding descriptions) to the class and asked the students to match graphs and descriptions in groups of four. Teng then spent 20 more minutes in discussing vocabulary items

Writing Task 1

You should spend about 20 minutes on this task.

The line graph below shows changes in the amount and type of fast food consumed by Australian teenagers from 1975 to 2000.

Summarize the information by selecting and reporting the main features and make comparisons where relevant.

Write at least 150 words.

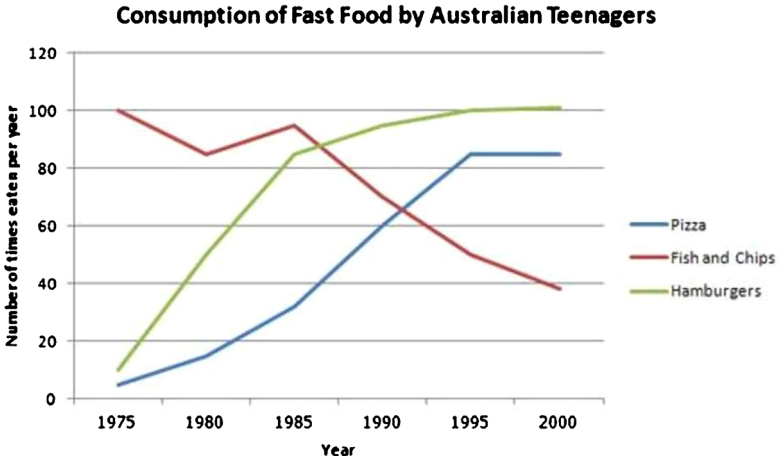

Fig. 1. A writing task sample from Teng's class.

(synonyms for "increase," "decrease," and "maintain;" adjectives such as "stable" and "steady;" adverbs such as "dramatically," "sharply," and "slightly") with the students before they did their writing independently. After the students had completed their writing, Teng gave them an incomplete written sample which contained some blanks and a word box, requiring the students to fill in the blanks with the vocabulary items from the word box. She then went through the answers toward the end of the class. Such practice was underpinned by and compatible with her beliefs of what was important in L2 writing instruction, i.e., manifesting variety and accuracy in word use. During an interview, Teng confirmed that she had an intentional focus on vocabulary teaching in the L2 writing class, because she considered vocabulary as the "heart" of this type of writing:

> I think vocabulary is the heart of this type of writing. It's very important. If you don't master those vocabulary items, it will be impossible for you to get high marks. (Teng, Interview 1)

As for feedback, Teng primarily focused on local issues such as vocabulary, grammar and word spelling. She marked all the errors related to grammar and spelling and selectively corrected them. Such feedback practice was evident in her written comments on the margin of students' writing:

> Try to use different verbs/words.
> "In" 1998, "in" 2000, not "on."
> Student's/students', not students's.

As can be seen from the above excerpts, Teng's feedback overtly focused on local issues such as vocabulary, grammar, and spelling in students' writing. This practice stands in contrast to her beliefs that teacher feedback should focus on global issues, but seemed to align with her espoused disbeliefs in the credibility of peer feedback. Nevertheless, Teng confessed that she would still engage students with peer feedback when she "had no time to give feedback" (Teng, Interview 2). This practice was more related to the contextual constraints rather than to her beliefs about peer feedback.

4.1.3. Within- and between-systems interaction

Analyzing the interaction of various beliefs within Teng's belief system, we found that her beliefs in relation to L2 writing, teaching L2 writing, and feedback concurred with each other, making an interrelated overarching system. An apparent feature of Teng's belief system is the hierarchical structure which encompassed various elements in a self-contained manner. Her *beautiful language* belief system about L2 writing, which was a central belief, was further supported by two sub-beliefs of *variety* and *accuracy*. Regarding teaching L2 writing, she believed in the importance of key elements such as *genre*, *topic*, and *context*. Her belief about feedback also showed a clear-cut distinction between the two specific elements, i.e., *teacher's global* feedback and *peer's local* feedback. In general, Teng's belief system was characterized by a network of elements that represent three dimensions – L2 writing, teaching L2 writing, and feedback.

Teng's practice system also showed this element-based characteristic. In classroom teaching, she focused on vocabulary as a key element; in giving feedback, she also focused on elements such as vocabulary, grammar, and spelling. These elements in the practice system connected with each other as they mostly represented local issues in L2 writing. However, her feedback practice, which focused on local issues, seemed to clash with her feedback belief, which advocated teacher feedback on global issues. This seemed to be a major difference between Teng's belief system and practice system. Such difference, however, did not seem to pose serious problems to Teng's teaching. Interestingly, problems occurred largely due to the difficulty she experienced in practices when enacting the various elements she valued. Although she made many efforts, she seemed less capable of getting them crossed to students:

> I think the process for learning English writing is that you need to practice more … um … and then through practice, you will realize that your writing is actually not very beautiful, always using the same sentence pattern. And then, you may want to start reading and to learn other sentence patterns. (Teng, Interview 1)

In this extract, Teng expressed her views regarding how to improve L2 writing, with particular reference to the key elements in her belief and practice systems (e.g., beautiful language, vocabulary). However, she only had some general ideas about the approaches to that end (e.g., "practice more," "read more," "novels are best") rather than concrete strategies to effectively promote the learning process. This absence of knowledge in her belief systems, which was possibly a reflection of her being a novice instructor in writing, made it difficult for her to enact her professed beliefs in practice, leading to a simplistic transfer of vocabulary teaching method (e.g., Teng's use of graphs/descriptions matching cards as previously shown) to the L2 writing teaching context. When asked her to describe her teaching approach to writing in practice, she narrated similar difficulties again:

> I think my teaching was in between process- and product-oriented approaches. I had a bit "process," that is, I involved some peer check … but it was not that much. Actually, I was taught to use this approach when I was a student teacher. But there was not that much time to do multiple drafts in reality. We also cared about the test. Students had to produce a product. (Teng, Interview 1)

Despite her professed beliefs in the efficacy of the process approach, which she had learned in her teacher education program, such beliefs did not convert into enacted beliefs for her practice. Pressed by the heavy workload and time constraint caused by the fixed syllabus and exams, Teng finally opted for "one-shot writing," although it was "a bit cruel" (Teng, Interview 1), rather than exploring "situated possibilities" for the process-oriented approach, as what experienced expert teachers may have done (Tsui & Ng, 2010).

4.2. Case two: Chak

Chak was a novice teacher in his early 20s. When the study began, Chak had been teaching for almost one year. He was locally born and raised, and completed his school education in Chinese-medium schools in Macau. He graduated from a local university with a Bachelor's degree in English. He took an EAP course, which also covered academic writing, for two semesters at university. Before he started teaching, Chak took no courses at university related to teaching. Chak taught at a mixed local Chinese-medium school. He was assigned two Secondary 2 English classes, with 26 students in one class and 31 in the other, and was also the class teacher of the latter. He taught 14 lessons (40 min for each lesson) per week. Additionally, Chak taught one English remedial class every Saturday for 80 min, which usually took him one to two nights to prepare for. The teaching content for the class was flexible and completely at Chak's discretion, but this was indeed the main source of stress for Chak, which may be due to his being novice. The class under investigation was a Secondary 2 class. Two teachers including Chak taught that grade. The other teacher had been teaching for more than 10 years. Chak had to discuss the teaching content with him/her, although the teaching materials, such as the PowerPoint slides, were not usually shared.

4.2.1. System of beliefs

The structure of Chak's system of beliefs was identified as comprised of three main areas of beliefs, i.e., beliefs about L2 writing, teaching L2 writing, and giving feedback on students' writing.

4.2.1.1. Achieving understanding through accuracy: Beliefs about L2 writing. Similar to Teng, Chak also believed in the importance of *accuracy* in L2 writing. He further differentiated errors related to content and ideas from those related to language and mechanics, the former of which he seemed to be more concerned about:

> Errors … it depends on whether the error is minor or major. For example, there may be typos…But if the typos do not impede my understanding, then for me they will be minor mistakes. But if you are writing off topic and use some very unreliable sources, then these errors will be major … (Chak, Interview 1)

As can be seen, the underpinning belief that supported Chak's emphasis on accuracy in L2 writing was that accuracy was fundamentally a matter of achieving *understanding*, thus resulting in his distinction between major errors (which hamper understanding) and minor errors (which do not). In other words, Chak's belief in accuracy was related to his primary belief in the dynamic communicative function of L2 writing rather than to the linguistic features in itself.

4.2.1.2. Two-draft stepwise teaching: Beliefs about teaching L2 writing. To Chak, teaching L2 writing involved two major components, i.e., idea development and writing skills:

> Teaching writing actually involves two parts. The first part is the theme… Students need to understand what they want to talk about in their writing, what the thesis is and how to organize their ideas in paragraphs. And then the second part is the writing skills, that is, how to write every sentence, every word, every phrase. (Chak, Interview 1)

In the above extract, Chak clearly described what he considered important in teaching L2 writing: the first "part" was *idea development in mind* by virtue of clarifying the writer's own intended message, generating a thesis, and establishing a layout; the second "part" was *idea development in action*, selecting words/phrases to produce sentences with the help of writing skills. Therefore, the connection between the two "parts," i.e., idea development and writing skills, was actually a sequence of processes rather than a set of elements. It is interesting to note that when Chak elaborated on the two "parts," he used the word "steps," which clearly revealed his belief in the process-nature of L2 writing teaching. Therefore, it would be appropriate to say that Chak believed in a need to adopt a *stepwise approach* when teaching L2 writing.

Chak's emphasis on the writing process was also reflected in his belief about how his stepwise approach should be implemented in classroom teaching. He believed that having students write two drafts was ideal for teaching L2 writing:

> I think two drafts are more effective. If it is one-shot writing, the students will not have chance to receive feedback and comments. It's not good. They can't really learn. … (Chak, Interview 2)

As shown in the above extracts, Chak's believed that a writing task can be effectively organized with a two-draft arrangement. This belief was consistent with his primary belief in the process-oriented nature of L2 writing. This belief can be attributed to his past experience in L2 writing:

> After I finished my writing, I would put it aside … when finish one draft, you need to put it aside and use another "new brain" to think about it and produce another draft. Your mind will be clearer. (Chak, Interview 1)

Being a novice teacher without formal training in writing pedagogy, Chak's private writing experience became his rationale for the two-draft arrangement in teaching writing as a process.

4.2.1.3. Teacher feedback as both standards and quality control: Beliefs about feedback in L2 writing. Chak did not seem to regard peer feedback as reliable and effective, because he was worried that students "may probably take something wrong as right." (Chak, Interview 1) The extract below further shows his doubt about students' ability to give high-quality feedback:

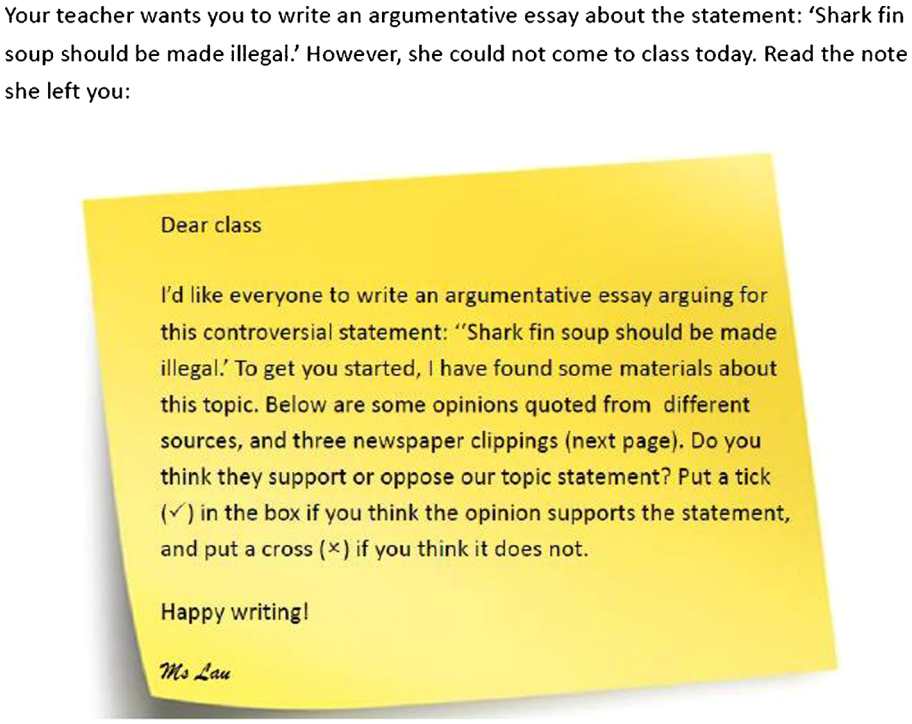

Fig. 2. Argumentative writing task in Chak's class.

> If they [students] are at similar levels, for example, even for the best students, they also make mistakes. Then … if the checking is done by them … there may still be some errors. You can't ensure that after their review, the errors will be eliminated. They will not be able to do it … (Chak, Interview 1)

Chak believed that the teacher should assume the role of quality controller in the process of peer feedback. He believed that the teacher was also a standard provider:

> Feedback helps students to know their errors and make correction more easily. On the other hand, it also tells students the teacher's standards for scoring. (Chak, Interview 2)

To summarize, Chak believed that teacher feedback should serve as both *standards* and *quality control* in the process of L2 writing teaching, particularly in the stage of revising. This belief system was related to his disbelief in students' ability to do peer feedback.

4.2.2. System of practices

Chak's system of practices was identified as comprising of his selection of writing tasks, materials and his feedback activities. In one of Chak's classes, he asked the students to write a 150-word argumentative essay on whether shark fin soup should be made illegal. Chak organized the lesson by referring to the textbook and the guidelines provided by the school. The writing task is shown in Fig. 2.

Our observation showed that Chak's teaching practice generally centered on idea generation and generic structure. At the beginning of the first lesson, Chak introduced the writing task, and asked the students to read the arguments in the textbook and judge whether they were for or against the opinion that "shark fin soup should be made illegal." After going through the answers with them, he asked the students to do two exercises in the textbook. The first one was to match the three sections of an essay (e.g., introduction, body, and conclusion) with corresponding descriptions; the second one was to classify phrases and expressions as appropriate to use in the three sections. Then the students discussed in pairs and constructed a mind map including seven components – the stance, argument 1, support 1 for argument 1, support 2 for argument 1, argument 2, etc. After that, some students shared their arguments by writing it down on the blackboard. Chak then discussed with the class on the merits and weaknesses of the arguments. Finally, Chak wrote an essay on the blackboard by himself to further demonstrate the generic structure. In the second lesson when the students had completed their first draft, Chak further emphasized the generic structure by spending approximately five minutes analyzing the structure of another sample written by himself.

As can be seen, Chak's practice in L2 writing instruction is characterized by sufficient scaffolding provided to his students by various mediational means such as individual exercise, pair work, and teacher-led collaborative modelling. Furthermore, these scaffoldings were directed to his central teaching purposes of idea generation and generic structure. Chak's intention to adopt these mediational means was also confirmed in his interview:

My focus was on the mind map and analysis of the written sample … The purpose of explaining the written sample was to tell the students what to include in each paragraph, and let them know, they need to follow the structure. (Chak, Interview 3)

As stated, Chak's practice in scaffolding seemed to be associated with his beliefs in the importance of idea development with generic structures, illustrating that his professed beliefs regarding idea and organization in L2 writing had been enacted in practice. Nevertheless, he appeared to engage his students with a reduced processed-oriented approach with his rigid two-draft arrangement, given his inability to cope with the course workload:

I know more drafts are better than two. But I think two drafts are enough. If you ask them to do too many drafts, both students' and my workload will be too heavy. (Chak, Interview 2)

In terms of feedback, Chak only gave feedback when there were problems and hence positive feedback was rare in his comments. Moreover, his critical comments were always straightforward and even blunt. Some examples are listed as follows:

This one is irrelevant.
The point is repeated.
Not a good topic sentence.
This paragraph does not have a good support.

It became clear that Chak's feedback practice was determined by a combination of his beliefs in content, idea development, and teacher feedback as standard and quality control. These different beliefs turned out to be consistent and co-existed in underpinning his practice and they seemed to be compatible with his primary beliefs about L2 writing objectives and the ways to achieve those objectives.

4.2.3. Within- and between-systems interaction

The various beliefs Chak had about L2 writing, L2 writing teaching, and feedback were mostly process-oriented. His literal emphasis on *accuracy* was fundamentally a manifestation of his belief in writing as a process of enhancing *understanding*. His espoused *two-draft stepwise teaching approach*, which entails idea development and writing skills, represented his belief in the teaching of writing process from *idea development in mind* to *idea development in action*. His assumed teacher roles of *standard provider* and *quality controller* in giving feedback revealed his belief in the teacher's active involvement in students' revising process.

Chak's practice system was internally coherent with most practices targeted at assisting the students in their writing processes. He instructed the students to formulate arguments and supports with a clear generic structure of "stance-argument-support;" he used both student models and teacher models to exemplify both the writing processes and the thinking processes that went in tandem; instead of providing a ready-made revised version, he encouraged the students to rethink the writing process through his feedback, though critical and blunt.

Based on the above analysis, we can conclude that Chak's belief system and practice system were both process-oriented, albeit with a somewhat reductionistic feature. Nevertheless, tension emerged as his systems of beliefs and practices interacted with the context of his teaching. Although the two systems coordinated well, the context posed certain constraints:

The curriculum is fixed … ah … In my case, if I want to teach some extra things, I may need one or two more lessons, but it was not allowed in terms of class time. (Chak, Interview 1)

This extract reveals that Chak's emphasis on the writing process in both his beliefs and practices seemed to be divergent from the "fixed" school curriculum. For a novice teacher, to exemplify and specify all the writing processes both in mind and in action turned out to be challenging as he naturally needed more class time for activities that supported his espoused beliefs. On the other hand, he did not seem to have strong faith in students' ability to reflect, collaborate, experiment, and improve on their own, and thus tried to incorporate all of the necessary processes into the time frame of his lessons. Therefore, it is the combination of tcurriculum constraints and his disbelieving attitude toward learner autonomy that led to such tension, rather than the clashes within or between teacher's belief system and practice system that we habitually regard as a major source of contradiction.

5. Discussion

In this study, using Complexity Theory (CT) as an analytical framework, we have delineated the cases of two novice teachers of L2 writing, Teng and Chak, in terms of their belief system, practice system, and pertinent interactions with contexts. Regarding the use of CT, Larsen-Freeman and Cameron (2008) have suggested that a good application should describe "the system, its constituents, their contingencies and also their interactions" while "teasing out the relationships and explaining their dynamics" (p. 237). This is what we have done, not only to tell the stories of Teng and Chak, but also to explore the value of CT as a tool for exploring the instructional lives of teachers. What CT contributed to the study was that it allowed us to show how the different components (i.e., beliefs about L2 writing, teaching, and feedback) of the two teachers' belief systems interacted with each other in dynamic ways, which in turn contributed to the complex features of their practice systems in situated contexts. As the findings show, these components were not in a linear consistent or contradictory relationship with each other. These findings contribute to the literature by demonstrating a need to avoid dualistic (e.g., either consonant or dissonant) or narrowly causal explanations when exploring the intertwined and complex relationship between teachers' (including novice teachers) beliefs and practices.

The use of CT in this study has also advanced research on novice writing teachers by revealing two distinctive systems of beliefs

and practices regarding L2 writing in secondary school contexts. Similar to other teachers in previous studies (Yang & Gao, 2013), the two novice teachers manifested different belief and practice systems about writing instruction. Teng's belief and practice systems had an element-based feature. For instance, the "beautiful language" belief, with its sub-beliefs about variety and accuracy, formed an important part of her belief system. Another example is Teng's L2 writing teacher belief, which consisted of sub-beliefs in key elements such as genre, topic, and context. The same applies to her beliefs about feedback on global and local issues. A similar element-based feature, i.e., distribution of instructional attention including intervention with regard to vocabulary, grammar, spelling, was also observed in her practice system, as has been previously shown. Chak differed significantly from Teng because his beliefs and practices were generally process-oriented. For instance, Chak believed in a two-draft stepwise approach in teaching L2 writing, which defined not only important issues (e.g., idea generation) to be addressed in the teaching process, but also how they should be addressed (e.g., having students write two drafts with feedback in between). The espoused processes in the belief system directly supported and enabled the functioning of the practice system, which strictly followed a similar process.

These findings present a detailed illustration of how the belief systems would give rise to the pertinent behavior in the practice systems and how the systems of beliefs and practices interact with its environment (Larsen-Freeman & Cameron, 2008; Zheng, 2013). Despite the fundamental difference between Teng and Chak regarding the nature of their belief and practice systems, the interactions inside the systems were quite homogeneous. In the case of Teng, her element-based beliefs were accompanied with similar element-based instructional practices when teaching writing in class, despite her self-claimed incompetence to fully implement what she believed to be important elements in teaching. As for Chak, his systems of beliefs and practices regarding writing instruction can be both characterized as process-oriented, with a two-draft arrangement in teaching writing as a way to enact his beliefs in a stepwise approach to writing instruction. However, due to contextual factors outside the systems (Chen & Xu, 2015; Larsen-Freeman & Cameron, 2008; Zheng, 2015), tensions were also observed in Teng's and Chak's cases. For instance, Teng experienced difficulties in getting her element-based teaching across to her students, who was definitely one crucial contextual factor that impacted her teaching. Her element-based practices, though mostly consistently with her beliefs, were found to clash with student-related and contextual factors outside her individual belief and practice systems.

While these findings reinforce the complexity of teachers' beliefs and practices, as what has been reported in early studies on experienced teachers (e.g., Lee, 2008; Yang & Gao, 2013; Zheng, 2013, 2015), the current study on the two novice teachers does suggest that being novice itself may have added an additional layer of complexity to L2 writing instructional practices. In contrast to findings on expert teachers in earlier studies (e.g., Tsui, 2009; Tsui & Ng, 2010), a prominent feature of the two novice teachers' practice system was their submissiveness (or compromise) to the contextual constraints arising from the high-stakes testing, the rigid curriculum and the centralized syllabus. Unlike experienced teachers, instead of creating "situated possibilities" (Tsui, 2009) for more productive student learning, Teng gave up her espoused beliefs in the merits of a process-oriented approach and took up one-shot writing as a more practical and "efficient" teaching method. Apart from the gap between what she had learned in her teacher education program and what she encountered in her classroom realities, her uncritical subscription to the exam culture and to the fixed curricula also explained a lack of being reflexive about her own preconceptions and practices. Similarly, although Chak was able to draw on his own writing experience to design his instructional focus and process, despite his lack of formal training in writing instruction, his "two-draft arrangement" seemed to be a rigid and reduced version of the process-oriented approach, given the perceived curricular constraints.

While it remains to be further explored when and how Teng and Chak would exploit the "situational possibilities" in their contexts and to develop their instructional expertise, there is no doubt that one-to-one relationship does not exist between novice teachers' beliefs and practices, as what is also the case even for experienced teachers (Mao & Crosthwaite, 2019; Zheng, 2013). Instead, for novice teachers, while it is likely for them to seek internal consistencies between their beliefs and practices, it turns out to be more challenging for them to adapt/convert their professed beliefs into enacted beliefs that underpin their practices within their contexts. As manifested by Teng and Chak in the current study, they seemed to overemphasize the constraints imposed by institutional structures such as the high-stakes testing culture and the fixed curriculum and this turned out to be the reason for Teng to give up her espoused belief in the process-oriented approach and opted for one-shot writing, which seemed to be more practical and effective in her practice system. Different from those expert teachers who can construct a dialectical relationship between context and their individual responses to it (Tsui & Ng, 2010), the two novice teachers in the current study seemed to fail to create synergy between the practices they had learned out and the practices they had localized in their classrooms. However, aligning with CT, the two novice teachers' abandoning some of their espoused beliefs in practice can also be considered a form of self-organizing belief and practice systems in response to changing situations and external constraints and stimulus (Peters, 2008), though not necessarily in a strategic and appropriate manner. Further research is needed to explore whether and how such self-organizational nature of the complex belief and practice systems can generate opportunities and challenges for novice teachers' transformation and development.

The findings also contribute to the literature by revealing a key difference that may exist between expert and novice teachers. While previous research (e.g., Tsui, 2009; Zheng, 2013) suggests that expert teachers tend to draw on their core beliefs when constructing local understandings of their work context, the current study indicates that for novice teachers, there seems to be no such clearly identifiable core-peripheral belief systems in guiding their practices. Instead, it seems that when confronted with contextual constraints (e.g., lack of time, exam pressure), novice teachers such as Teng tended to give up her beliefs in the efficacy/foci of teacher feedback and opted for peer feedback in practice despite her disbelief in its credibility. The importance of such findings is that it shows how novice writing teachers may let their peripheral beliefs or even disbeliefs become the beliefs that are enacted in practice, something that may be rarely practiced by expert teachers (e.g., Tsui, 2009). One possible reason may be related to novice teachers' incompetence to enact their core beliefs in authentic classroom context. It is also possible that novice teachers may be more susceptible to contextual constraints out of a self-perceived need to survive teaching in the early years of their career. While further

research is needed to explore whether and how novice teachers may negotiate their beliefs in contexts, the findings of the current study call for a need to conceptualize novice teachers' beliefs and practices as complex and unpredictable systems in constant formation rather than as systems with relatively stable core-peripheral structures (as may be the case for the more experienced teachers) preexisting before practices.

6. Conclusion and implications

In this study, we have explored two novice writing teachers' complex belief and practice systems by adopting a CT perspective. Before the implications of the study are presented, some limitations should be noted. While this study relied on data from the two participating teachers, future research should include more data sources, such as interviews with school management and students, to provide more insights into the interactions among teachers' belief and practice systems and context. A longitudinal case study approach (e.g., two or three academic years) could also be used to track the changes in novice teachers' belief and practice systems in the long run.

With a holistic and dynamic theoretical perspective, this study has identified different components of belief, explored interactions between the beliefs and extrapolate two patterns (i.e., element-based, process-oriented) by relating the beliefs to the two novice teachers' practices. This study not only contributes to an emergent research focus on L2 writing teachers in second language education, but also expands the previous research on teacher cognition by shifting the research focus from the more experienced to novice teachers. Such holistic exploration carries at least two insights. First, aligning with previous research on more veteran teachers' belief systems (e.g., Zheng, 2013), this study reinforces a need to avoid reducing the complex relationship between belief and practice to either consistencies or inconsistencies. Instead, research attention should focus on the intertwined and interactive features of teachers' (including novice teachers) beliefs and the pertinent impact of such interaction upon practices.

Second, this study carries important messages for novice writing teacher education. Previous research (e.g, Tsui, 2009; Zheng, 2013) suggests that when confronting with conflicts between beliefs and contextual constraints (such as exam requirement), the veteran teachers would develop an eclectic approach by adopting different principles from different approaches with reference to different teaching contexts. Such approach was not observed in the two novice teachers in the current study. Instead, the novice teachers in the study appeared to compromise by giving up what they believed in. This was particularly evident when Teng focused on local errors in her feedback practice although she believed that teacher feedback should be on global issues. An important message from this finding is that novice teacher beliefs tend to be more fragile and not resilient enough. There is thus an important need for novice teachers to take a critical and reflective stance towards their teaching beliefs and practices. To enhance their teaching effectiveness, novice writing teachers should reflect on their own teaching belief systems, including the sub-systems related to L2 writing, and observe their actual instructional practices by video-recording demo lessons, discussing their practices with more experienced L2 writing teachers, and conducting surveys among students. Going beyond the consistencies and inconsistencies between writing teachers' beliefs and practices, novice writing teachers should be aware of the complex nature of the interactions between their belief and practice systems and the specific educational and sociocultural contexts. Professional development workshops and seminars could be organized for new teachers to raise their awareness of the importance to examining their own beliefs and practices and the complex nature of their belief and practice systems.

Moreover, both the teacher participants in this study lacked systematic instruction and guidance related to teaching L2 writing to school students because the university programs they graduated from had not provided such courses, which posed contextual constraints on the development of their teaching belief and practice systems. Apart from the pedagogical content knowledge regarding L2 writing, student teachers should also be prepared with strategies to develop localized knowledge, skills, and techniques that focus on L2 writing instruction in the school contexts of constraints. In addition to positive support from school management, external mentors such as university researchers and teacher educators could provide appropriate scaffolding to help novice teachers to be more self-reflexive about their writing teaching beliefs and practices. Through regular exchanges of ideas and negotiation of meaning between teachers and external stakeholders, novice writing teachers could create more situated possibilities for more productive L2 writing instruction so as to enhance their belief and practice systems.

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Dr. **Shulin Yu** is Assistant Professor at the Faculty of Education, University of Macau, People's Republic of China. His research interests include second language writing and second language teacher education. His publications have appeared in *Language Teaching, Language Teaching Research, TESOL Quarterly, System, Educational Research Review, Teaching in Higher Education, Studies in Higher Education*, and *Assessing Writing*.

Dr. **Hao Xu** is Associate professor of applied linguistics at National Research Centre for Foreign Language Education, Beijing Foreign Studies University. His main research interests include second language acquisition and language teacher development.

Dr. **Lianjiang Jiang** is Associate Professor at School of Foreign Languages, Jimei University. He is also Postdoctoral fellow at Faculty of Education, University of Macau, Macau SAR, China. He obtained his PhD degree in English language Education at the University of Hong Kong. His research interests include second language writing, digital multimodal composing, and new literacy studies. His publications have appeared in *System, ELT Journal, Journal of Second Language Writing, Schools: Studies in Education,and Discourse and Communication*.

Ms. **Iris Chan** obtained her MEd degree from the University of Macau. Her research interests focus on second language writing.