Effecting Change in Teachers’ Epistemological and Pedagogical Beliefs about Vocabulary Learning and Teaching: The Role of Dialogic Reflection

Edsoulla Chung

Abstract
Despite its significance, the relationship between changes in teachers’ beliefs regarding specific aspects of language learning and teaching, and the developmental processes of such beliefs in relation to teacher reflection has remained under-researched. Accordingly, this paper reports the results of a case study that examined how two English language teachers who engaged in dialogic reflection on vocabulary learning and teaching experienced changes in their beliefs. Data collected from in-depth semi-structured interviews, teachers’ professional dialogues and reflective journals confirm the role of dialogic reflection in facilitating professional learning; reveal the diverse development processes of teachers’ epistemological and pedagogical beliefs; and highlight the complicated relationship between knowledge enhancement and belief change. Based on insights gleaned from the study, this paper provides practical suggestions for teacher development and directions for further research.

Keywords
epistemological beliefs, pedagogical beliefs, dialogic reflection, teacher change, vocabulary

Introduction
Beliefs not only determine how individual teachers organize and define various tasks and problems, but also dictate their behavior in the classroom (Xu, 2012). Obtaining a clear understanding of teachers’ beliefs is thus vital, in that it will help them determine the meaning of situations they encounter and, in turn, encourage them to think reflectively and embrace change when necessary. While empirical evidence has highlighted the contribution of dialogic reflection—the reflection that occurs when individuals seek to “challenge, explore, appropriate, and eventually develop their practice” through the use of dialogue (Haneda et al., 2017, p. 46)—to teacher development, relatively little attention has been paid to how it can help to develop teachers’ beliefs regarding specific aspects of language learning and teaching. Among different topics concerning language teaching research, how teachers’ beliefs about vocabulary learning and teaching can be developed may be one of the most important issues that deserves more attention. This is because vocabulary learning continues to pose considerable challenges for learners of English as a second or foreign language, despite its prominent role in language mastery. Accordingly, this article aims to address the problem by analyzing a qualitative study that examined how English language teachers’ beliefs regarding vocabulary learning and teaching changed because of their engagement in dialogic reflection. The study was situated in Hong Kong, where teachers were found to focus only on certain aspects of vocabulary knowledge and rely on a limited range of vocabulary teaching strategies because of their beliefs, thus failing to make pedagogical decisions that would be favorable for students’ vocabulary learning (Chung, 2018a). The exploration of the relationship between teachers’ epistemological and pedagogical beliefs regarding the language area and the processes involved in the development of such beliefs, offers valuable insight into professional development and enriches research on teacher education.

Understanding Teachers’ Epistemological and Pedagogical Beliefs
Teachers often hold various kinds of beliefs simultaneously (Levin, 2015), and teachers’ beliefs have been variously conceptualized, depending on their source and nature (Li, 2017).

1Hong Kong Metropolitan University, Ho Man Tin, Hong Kong
Corresponding Author:
Edsoulla Chung, School of Education and Languages, Hong Kong Metropolitan University, Ho Man Tin, Hong Kong.
Email: hychung@hkmu.edu.hk
Specifically, teachers’ epistemological beliefs—beliefs about the nature of knowledge and knowing/learning⁡ (Flores, 2001; Hofer & Pintrich, 1997; Schommer, 1994) and pedagogical beliefs—educational beliefs about teaching and learning (Johnson, 2009)—have attracted considerable scholarly attention, possibly because such beliefs can influence teachers’ understanding of the subjects they teach and how they teach them (Kukari, 2004).

One of the most complex aspects of research on teachers’ epistemological and pedagogical beliefs is the relationship between such beliefs and their relationship with practice. Based on Schommer (1990), who suggested that personal epistemology is a system comprising five independent dimensions—the structure, certainty, control, speed of knowledge acquisition, and source of knowledge—several quantitative studies have posited an association between teachers’ epistemological beliefs, pedagogical beliefs, and practices. For example, Chan and Elliott (2004) surveyed 385 prospective teachers in Hong Kong and identified a causal connection between their epistemological and pedagogical beliefs. They argued that the educational environment and academic practices in a given culture facilitate the development of epistemological beliefs, regardless of the teachers’ gender or field of study. Lee et al. (2013) gathered data from more than 1,000 junior secondary teachers in mainland China and examined the effects of such beliefs on the instructional practices of in-service teachers. They concluded that teachers’ epistemological beliefs can influence their classroom practices, both directly and indirectly, through their conceptions of learning and teaching. Their findings highlight the need for professional development that can improve teachers’ awareness of their beliefs. Irrespective of these studies, the relationship between teachers’ epistemological beliefs, pedagogical beliefs, and practices is, by no means, straightforward. Chai and Khine (2008) examined quantitative data gathered from 877 prospective teachers in Singapore through an online survey and found that teaching experience could influence their pedagogical beliefs, but not their epistemological beliefs. In a later study, Cheng et al. (2009) found that teachers may face conflicts between their epistemological and pedagogical beliefs due to situational constraints at work, which, in turn, may cause some confusion. While “beliefs about learning, teaching and knowledge are probably intertwined” (Hofer & Pintrich, 1997, p. 116), it is crucial to examine the relationship between teachers’ epistemological and pedagogical beliefs, explore how they are shaped by knowledge, and learn about the processes involved in teachers’ belief development to understand the significance of their beliefs for teacher learning (see, e.g., Li, 2017; Louw et al., 2016).

In the past few decades, researchers have paid considerable attention to how teacher education can influence the development of epistemological and/or pedagogical beliefs. Brownlee et al. (2001) reported that student teachers who kept reflective journals on course content developed more sophisticated epistemological beliefs and/or knowledge than those who did not, although making changes to epistemological beliefs can be a slow and difficult process. This corresponds to the ideas presented by other researchers, who emphasized the important role of explicit reflection in the development of teacher beliefs (Brownlee, 2004; Cheng et al., 2009; Lunn Brownlee et al., 2016). Chai et al. (2009) administered an online survey before and after a 9-month teacher education program in Singapore and examined the belief development of 413 prospective teachers. It was found that the respondents were inclined toward certain beliefs despite the significant changes in some of their epistemological and pedagogical beliefs due to the experience of tackling challenges during their teaching practicum. This suggests that teachers may revert to traditional teaching practices if they are not offered additional support. Given that epistemological and pedagogical beliefs can be resistant to change (Chung, 2018b; De La Paz et al., 2011; Peck, 2014), it is important to provide teachers with sufficient opportunities to reflect upon distorted or incomplete aspects of their assumptions to develop their beliefs and make informed decisions regarding their practice.

### Teachers’ Beliefs Regarding Vocabulary Learning and Teaching

Despite the existence of a large body of work on teachers’ beliefs, additional research is necessary for investigating teachers’ beliefs about vocabulary learning and teaching for two reasons. First, vocabulary development is fundamental to language mastery. Various studies have definitively established that vocabulary knowledge is associated with effective reading (Hu & Nation, 2000; Laufer & Ravenhorst-Kalovski, 2010; Schmitt et al., 2011), writing (Daller & Phelan, 2007; Kyle & Crossley, 2016; Lee et al., 2021), listening (Stæhr, 2010; Schmitt et al., 2011), and speaking (Hilton, 2008; Koizumi & In’nami, 2013; Uchihara & Saito, 2019). Second, the relevant literature has shown that vocabulary learning continues to pose considerable challenges for second and foreign language learners (Choi & Ma, 2015; Ma, 2009; Tang et al., 2016). This could be because language teachers often devote limited time to teaching vocabulary in class—thus neglecting the importance of using a richer instruction that will enable learners to develop holistic word knowledge—and fail to introduce strategies that contribute to effective vocabulary learning (see Nation, 2013 regarding different aspects of word knowledge and see Schmitt, 1997 for a range of vocabulary learning strategies that may foster vocabulary growth). If teachers’ beliefs influence their teaching and their students’ learning opportunities (Levin, 2015), it is important to explore possible ways to enhance teachers’ understanding of their own and alternative beliefs regarding vocabulary learning and teaching to effectively promote vocabulary development.
Surprisingly, few researchers have examined teachers’ beliefs about vocabulary learning and teaching, as well as the development of such beliefs. One such study, conducted by Gao and Ma (2011), elicited beliefs from 250 teachers in Hong Kong and mainland China. They identified four categories of vocabulary teaching beliefs and concluded that English language teachers in both locales should diversify their pedagogical activities to foster vocabulary learning. Similarly, Macalister (2012) examined vocabulary-related beliefs of 60 Malaysian prospective teachers and found that participants who held a range of beliefs about the role of vocabulary in language learning tended to neglect the teaching of useful or important expressions and vocabulary learning strategies in their imagined lessons. In a study on in-service English language teachers in Hong Kong, Chung (2018a) further suggested that teachers’ epistemological beliefs about the notion of a word and pedagogical beliefs about vocabulary instruction raised questions about their understanding of what could constitute lexical knowledge and vocabulary instruction. Teachers’ doubts about their ability to teach vocabulary effectively were also noteworthy, regardless of their teaching experience. Clearly, these studies indicate that further research on teachers’ beliefs about vocabulary learning and teaching is necessary for enhancing lexical development in the language classroom. Although there are no “right” or “best” ways to teach vocabulary, as best practices depend on the learners, targeted words and other contextual factors, teachers should nevertheless be aware of the potential influence of different pedagogical decisions on the development of learners’ lexical competence. Exploring the nature of the development processes underlying such beliefs can also enhance our understanding of professional learning (see, e.g., Cabaroglu & Roberts, 2000; Li, 2012; Yuan & Lee, 2014).

**Significance of the Study**

While the literature review has demonstrated the connection between teachers’ epistemological and pedagogical beliefs, as well as the significant role of reflection and teaching experience in facilitating the development of such beliefs, several issues merit additional attention. First, most researchers (e.g., Chai & Khine, 2008; Chan & Elliott, 2004; Lee et al., 2013) relied on a quantitative approach to examine the development of teachers’ beliefs through self-belief measurement. Further, explanatory and exploratory investigations have allowed for a deeper understanding of the complicated nature of belief development (see, e.g., Hoffman & Seidel, 2015; Louw et al., 2016). However, whether normative tools, such as the Likert-scale questionnaires, accurately capture an individual’s beliefs remains ambiguous. This study adopted in-depth semi-structured interviews and reflective writing to elicit teacher beliefs, since the beliefs under study in the existing literature were often identified by the researchers, rather than the participants. This allowed for in-depth explanation and exploration by enabling the participants to share their own ideas. Second, although the relationship between teachers’ epistemological and pedagogical beliefs has been acknowledged, few investigations have empirically examined the relationship between a change in those beliefs and their developmental process in relation to dialogic reflection, despite its huge potential for professional learning (Haneda et al., 2017; Hepple, 2012; Swanson et al., 2020). As suggested by Mann and Walsh (2017), a dialogic and collaborative approach to reflective practice should be promoted, as “professional development is fundamentally a social process” (p. 11). While written forms of reflection provide teaching practitioners with the necessary time and space to structure their reflections and make changes (Farrell, 2013), they may not be shown to others for professional exchanges (Rashid, 2018). In contrast, dialogic reflection allows professionals to participate in discourse with themselves and others, and shift between different forms of knowledge. This enables them to construct new knowledge and understanding through scaffolding and appropriation (Mann & Walsh, 2017). The conducting of data-led research and the investigation of teachers’ participation in dialogic reflection will enhance knowledge on professional development (Mann & Walsh, 2013). Third, most researchers investigating epistemological beliefs have adopted Schommer’s (1994) five epistemological dimensions to analyze the nature of such beliefs and corresponding changes in relation to teachers’ education, irrespective of the fact that such beliefs can be more fine-grained and associated with specific aspects of language education (Chung, 2018a). This paper, therefore, seeks to answer the following main research question: How do frontline teachers develop epistemological and pedagogical beliefs about vocabulary learning and teaching through dialogic reflection?

**Methodology**

This study adopted social constructivism as the framework of epistemology. From a social constructivist perspective, individuals develop varied and multiple subjective meanings of their experiences according to the specific contexts in which they work and live. These subjective meanings are “not simply imprinted on individuals” but are developed through “historical and cultural norms that operate in lives to individuals’ lives” and through “interaction(s)” (thus social construction) (Creswell & Creswell, 2018, p. 46). Accordingly, teachers’ beliefs are defined and operationalized as “any psychologically held understandings or propositions that are subjectively accepted as true by the individuals who espouse them despite recognizing the availability of alternative beliefs held by others” (Chung, 2018a, p. 500). Regardless of their conscious or unconscious nature, beliefs are closely associated with teachers’ thinking and behavior and are developed through the process of enculturation and social construction (Chung, 2018b). Given that beliefs
“cannot be directly observed or measured” (Pajares, 1992, p. 314), the research entailed two fundamental levels of interpretation. Specifically, the study primarily investigated the teacher participants’ interpretations of vocabulary knowledge, teaching, and learning through interviews, professional dialogues, and reflective entries. Further, a double process of interpretation was conducted because it was necessary for the researcher to interpret and comprehend meanings expressed by the teachers, and by using multiple data sources that were collected through an inductive analysis process.

Research Context and Participants

The study was conducted in a secondary school in Hong Kong, where students were expected to attempt the Hong Kong Diploma of Secondary Education Examination upon completion of their 6-year secondary education. This institution had a track record of participating in educational research, and its senior staff members were highly supportive of teacher development. Due to the English language teachers’ observations regarding their students’ lexical deficiencies and the perceived need to enhance their vocabulary teaching, the current paper’s author designed and conducted a program to enhance their ability to think critically through dialogic reflection and help them make informed decisions regarding vocabulary teaching practices.

Laura, Louise, Lydia, and Michelle (all pseudonyms) participated in the study. They were in-service English language teachers who had voluntarily joined the professional development program after receiving an open invitation. They were chosen to participate in the study because their self-reported willingness to communicate suggested that they might facilitate the formulation of a more comprehensive picture for analysis. In addition, teachers with a considerable range of experiences are likely to hold differing beliefs due to differences in primary education and teacher education (Chung, 2018a). The participants’ varying teaching experiences (i.e., 5–15 years) thus offered opportunities for exchanging ideas from multiple perspectives and facilitated reflection during the professional development program. Laura and Louise had 5 and 6 years of teaching experience, respectively, at the study’s commencement. Both were native Cantonese speakers who had received education in Hong Kong.

Over a 3-month period, the teachers participated in six professional development sessions involving the explicit discussion of beliefs and practices related to key vocabulary development topics: (1) the importance of vocabulary development and the notion of a word, (2) vocabulary in the English language classroom, (3) vocabulary instruction strategies, (4) vocabulary activities, (5) autonomous vocabulary learning, and (6) vocabulary assessment. The program was mainly guided by Brookfield’s (2017) work, which sought to draw teachers’ attention to distorted or incomplete aspects of their assumptions by using four perspectives: “autobiographical experiences”, “colleagues’ experiences”, “learners’ eyes”, and “theoretical literature” (p. 31). Figure 1 summarizes the research design.

The participants were asked to document reflective entries after each session and attend a review session where they shared the insights gained from the program. Unlike other forms of dialogic reflection, where the researcher and a more competent peer educator often facilitate the participant(s’) views and practices (see, e.g., Swanson et al., 2020), the program adopted a structured approach (Mann & Walsh, 2017) toward fostering reflection. The author facilitated the process to encourage the participants to jointly investigate shared problems regarding practice through collaborative inquiry (DeLuca et al., 2017).

Data Collection

Data were gathered from interviews, written reflections, and teachers’ professional dialogues in three phases over a 10-month period to create rich and in-depth descriptions of the participants’ belief development. Further, in-depth semi-structured interviews ($N=12$) were conducted, which lasted approximately 1.5 hours each. During each phase, these were
The participants provided informed consent. Ethical approval was granted by the institutional research ethics committee, and before the study’s commencement, ethical approval was sought for any data collection that might have involved teaching or other practices (see Appendix B for a sample). Finally, the interviews and reflective entries were analyzed through an iterative back-and-forth process was used for analysis. The process began with the identification of changes in teachers’ beliefs through interviews and reflective entries. To avoid any biases occurring because of preconceptions and a priori theoretical knowledge, the interviews and reflective entries were analyzed inductively using a grounded approach (Corbin & Strauss, 2008). A recursive process of coding (Punch, 2014) was undertaken to identify the participants’ beliefs about vocabulary learning and teaching; this was followed by the categorization and comparison of emerging beliefs across the data from the different study phases, to ascertain the categories of changes in each participant’s belief. The analysis mainly drew on Cabaroglu and Roberts (2000) framework to further examine the process of change in teachers’ beliefs (see Table 1).

The framework, which was developed based on the empirical data of a group of student teachers rather than in-service teachers, was chosen because it captured the complexity of

### Table 1. Summary of Processes Regarding Changes in Teachers’ Beliefs.

| Category                  | The process of belief change                                                                 | Example                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Awareness/realization     | Teachers become increasingly fully aware of a construct, idea, or process, which facilitates its acceptance in real teaching contexts. | “I am more aware of the important role recycling plays in vocabulary learning” (Laura, I-3). |
| Consolidation/confirmation| Teachers perceive a consistency between existing beliefs and newly presented information, which strengthens their existing beliefs. | “I think I find it more important to promote peer learning to facilitate vocabulary learning and teaching in class” (Louise, I-3). |
| Elaboration/polishing     | Teachers reconstruct their existing beliefs by using relevant knowledge and/or by connecting these with new input. | “I have got more sophisticated ideas about the notion of a word[. . .]. In addition to pronunciation and meaning, there could be many [other] aspects to be covered when teaching vocabulary” (Lydia, RE-1; I-3). |
| Addition                  | Teachers add new constructs to their existing beliefs, often by recognizing new information, to facilitate their perception of learning and/ or teaching. | “The notion of individualized testing to assess vocabulary is new to me” (Louise, I-3). |
| Re-ordering               | Teachers rearrange their beliefs based on their importance. | “I now think that vocabulary is more important than grammar. Without vocabulary, students can hardly express their ideas clearly” (Laura, I-2). |
| Re-labeling               | Teachers perceive no change in the construct or belief but adopt a new term for it.          | “I used to call it creative methods of vocabulary instruction, but I now call it mnemonics” (Louise, I-2). |
| Linking up                | Teachers establish a connection between different constructs or beliefs.                     | “Different activities can be conducted in class to promote autonomous vocabulary learning” (Laura, I-3). |
| Disagreement              | Teachers reject an existing belief and embrace a new one.                                     | “I used to be against the use of Chinese translation, but I can see the benefits of using it to teach vocabulary now” (Lydia, I-3). |
| Reversal                  | Teachers adopt a belief that falsifies the former belief. This can be considered as a more extreme form of disagreement. | “I used L1 translation to explain the meaning of some words more often” (Louise, I-2). |
| Pseudo change             | Teachers experience “false change” in their beliefs when they do not internalize the beliefs completely. | “L1 translation? No. It’s no good for me to use Chinese translation in class due to school policies” (Louise, I-3). |
| No change                 | Teachers report no apparent change or development in their beliefs.                         | “… I did say earlier that the Peg and Loci methods can be useful, but I can’t remember what these are” (Laura, I-3). |

Source. Adapted from Cabaroglu and Roberts (2000) and Yuan and Lee (2014).

carried out with individual participants. All interviews were audiotaped and transcribed verbatim for qualitative investigation (see Appendix A for different sample interview questions). Reflective writing, a well-established data source in qualitative research (Jasper, 2005), was also used to explore the participants’ belief development and identify the factors shaping them. Specifically, the participants were asked to write reflective entries within 2 weeks of each professional development session; these focused on insights they gained and how such insights might inform their vocabulary teaching or other practices (see Appendix B for a sample). Finally, teachers’ dialogues (approximately 15 hours) were audiotaped and transcribed to serve two major purposes: scrutinize the influence of dialogues on the participants’ belief development, and identify characteristics of individual teachers’ dialogic reflections that might have shaped such development. Before the study’s commencement, ethical approval was granted by the institutional research ethics committee, and the participants provided informed consent.

**Data Analysis and Strategies to Ensure Robustness**

Given the extensive sources of data, an iterative back-and-forth process was used for analysis. The process began with the identification of changes in teachers’ beliefs through interviews and reflective entries. To avoid any biases occurring because of preconceptions and a priori theoretical knowledge, the interviews and reflective entries were analyzed inductively using a grounded approach (Corbin & Strauss, 2008). A recursive process of coding (Punch, 2014) was undertaken to identify the participants’ beliefs about vocabulary learning and teaching; this was followed by the categorization and comparison of emerging beliefs across the data from the different study phases, to ascertain the categories of changes in each participant’s belief. The analysis mainly drew on Cabaroglu and Roberts (2000) framework to further examine the process of change in teachers’ beliefs (see Table 1). The framework, which was developed based on the empirical data of a group of student teachers rather than in-service teachers, was chosen because it captured the complexity of
belief development. Additionally, it has been adopted by several other researchers examining teacher development (see, e.g., Li, 2012; Yuan & Lee, 2014) and is highly relevant to the current study. Further, the analysis focused on identifying the factors that influenced changes in teachers’ beliefs through their participation in professional dialogues and reflective writing. The discourse functions—identified from the interlocutory moves of the professional dialogues (e.g., asking for opinion, experience sharing, expressing thanks, positive evaluation, and negative evaluation; see Tang & Chung, 2016) and the number of utterances in relation to Brookfield’s (2017) four critical lenses—were analyzed. Finally, all the qualitative data were reviewed to interconnect themes for each individual case and across different cases; this was followed by a comparison of the findings with extant literature to examine the research question.

Although it is impossible to completely avoid researcher bias due to the study’s interpretative nature (DePoy & Gitlin, 2016), various measures have been adopted to enhance its robustness. For example, approximately 30% of the coded interviews and professional dialogues were cross-examined by two research assistants. The coding consistency reached 95%, and the few disagreements were resolved through discussion. Data triangulation and a systematic qualitative interpretive approach ensured that the salient features of the case were manifested and that the data supported the conclusions. Member-checking was also employed to further bolster credibility. The participants were given the opportunity to read and comment on relevant parts of the reports to ensure an accurate description and reasonable interpretation of their data.

Findings

Although the data revealed several similarities amongst the teachers, the findings are presented case-by-case to provide an in-depth descriptive account of the two teachers’ belief development and their corresponding complexity. Due to the limitation of space, only salient features and verbatim quotes that were directly related to the research question are reported in the paper. The following codes are used to denote the data source: interviews (I), reflective entries (RE), and professional dialogues (PD). The number following each code indicates the chronological sequence in which the data were gathered. For instance, I-1 and I-2 refer to the interview data collected in Phases One and Two, respectively.

Case 1: Laura

Laura reported experiencing considerable change in her beliefs about the notion of a word; however, the same was not true for her beliefs about the aims of vocabulary teaching. The most considerable development was evident from her pedagogical beliefs about such teaching, particularly those associated with her realization of learners’ beliefs about autonomous vocabulary learning. Laura’s case is illustrative of how a change in one specific belief can trigger changes in the other types of beliefs.

Rejection of existing pedagogical beliefs about direct vocabulary teaching. One change in belief reported by Laura was related to the rejection of her prior beliefs about direct vocabulary teaching. Despite deeming such teaching to be important for covering target vocabulary in class (I-1), she expressed disagreement with the need to do so toward the end of the study and highlighted the importance of “mak[ing] guesses on their own” and “paying attention to their surroundings for vocabulary learning” (I-3). Specifically, Excerpt 1 demonstrates how Laura was inspired (line 12) by Michelle’s sharing of her experience using authentic examples to facilitate vocabulary learning (lines 3–11). Noticeably, Laura quickly related Michelle’s idea to independent vocabulary learning and expressed her interest in the topic by seeking further advice (lines 13–14).

| Excerpt 1 (PD-5) |
|------------------|
| **Lydia:**       |
| To me, it’s frustrating to see that most of our students simply rely on us to learn vocabulary. Perhaps authentic examples can be used to foster vocabulary learning! I was teaching the word triumph in one of my classes yesterday, and my students asked me its meaning. I told them the word means victory and asked if they know that there is a brand called Triumph that sells underwear. They asked me “Why?”; I told them “That is the question you should ask” [. . ]. Another shop that sells underwear is Undercover, and the word shares a similar meaning with spy. Why is it used? There are many more instances like these for us to teach English. Language is everywhere, but our students seldom learn vocabulary by paying attention to their surroundings. That’s inspiring! I do hope that our students can take the initiative to learn vocabulary on their own. Any other suggestions on how independent vocabulary learning can be promoted? |
| **Michelle:**    |
| I also use discovery strategies. Asking my students to guess the words, share their guesses, and discuss how they came to their conclusions may help. We should all think about how we can help our students learn independently, you know? This is what we call lifelong learning. |
| **Laura:**       |
| That’s inspiring! I do hope that our students can take the initiative to learn vocabulary on their own. Any other suggestions on how independent vocabulary learning can be promoted? |
| **Michelle:**    |
| I also use discovery strategies. Asking my students to guess the words, share their guesses, and discuss how they came to their conclusions may help. We should all think about how we can help our students learn independently, you know? This is what we call lifelong learning. |
According to Laura, she became aware of her students’ tendency to segregate English learning from their everyday life through peer reflection on the need to promote vocabulary learning (RE-4). This triggered her newfound belief that teachers should promote lifelong learning, thus allowing students to take ownership of their own vocabulary learning by encouraging them to guess the meaning of different expressions and drawing their attention to the use of vocabulary in their daily life (I-3).

**Excerpt 2 (PD-2)**

| 1 | Michelle | Louise and I think that we could enhance our students’ independent vocabulary learning skills by asking them to learn different expressions through the use of online dictionaries before coming to class. |
| 2 | Louise: | We can also use different games to help students develop their vocabulary. |
| 3 | Lydia: | Conducting vocabulary activities is important, as our students do not have a wide range of vocabulary. Perhaps we can ask our students to surf the net and find different expressions relating to a topic before class? |
| 4 | Laura: | I agree. I used to teach my students a lot of words in class. Yet I am now aware that vocabulary building is not just about introducing students to all the words they have to learn. Our students should play an active role in their learning. Asking them to look for different expressions and share them in class may help to create learner ownership. |
| 5 | Michelle: | Are there any other suggestions on how our students’ vocabulary learning can be consolidated? |
| 6 | Researcher: | Introducing different vocabulary learning strategies to students can be helpful. For example, literature suggests that we can help students learn vocabulary better by using mnemonic strategies and by asking them to use physical action or connect a new expression to a personal experience when learning a word. |
| 7 | Michelle: | As teachers, we have to be very creative. |
| 8 | Laura: | Thank you for all the suggestions! I do need to be more creative when teaching vocabulary. |

The excerpt reveals that Laura reflected upon her practice after considering her colleagues’ suggestions on ways to foster independent vocabulary learning. She admitted to teaching vocabulary directly in class (lines 8–10), expressed her gratitude toward the advice she received (line 21), and acknowledged the need to improve her lexical instruction by teaching vocabulary more creatively (lines 21–22). In the interviews, Laura highlighted that she refined her beliefs about the types of activities conducive to vocabulary development by linking them to autonomous learning. Specifically, she described how she had “consciously” asked her students to engage in pre-class preparation based on the realization that effective vocabulary learning constitutes “a lifelong process” of enriching one’s vocabulary bank (I-3), rather than the rote memorization of expressions or vocabulary exercises (RE-4). For example, she reported asking her students to identify expressions associated with Hong Kong’s culture by “surfing the net” (I-3) before class to aid their writing. She also adopted a “self-directed approach” toward vocabulary building by encouraging students to participate in vocabulary-sharing activities. These changes in beliefs and practice led her students to become “more interested in vocabulary learning” and more “active when answering questions” about vocabulary (I-3). She credited her students’ improved learning attitude and vocabulary use to the effectiveness of her promotion of autonomous vocabulary learning, which strengthened her realization about the significance of vocabulary development for learner satisfaction (I-3).

In addition, Laura reported the deliberate use of mnemonic strategies (e.g., helping students remember the word “discus” by telling them that a “discus looks like [a] biscuit”) (I-2). She also explained how her realization regarding the use of “creative” instruction strategies inspired her to teach the meaning of “bear market” and “bull market” by inviting her students to demonstrate ways in which bears and bulls attack their opponents—that is, by swiping with their paws and charging with their horns, respectively (I-3). Clearly, dialogic reflection enabled Laura to reflect on her vocabulary teaching, develop her beliefs, and improve her practice.

**Discovery of new vocabulary assessment concepts.** Lastly, vocabulary assessment also helped Laura express the changes...
in her pedagogical beliefs. As she explained in the final interview, her previous vocabulary quizzes “focused only on evaluating select vocabulary items” (I-3). However, later, she was inspired by a colleague to design assessment tasks that promoted learner autonomy. As shown in Excerpt 3, Laura provided positive feedback for the vocabulary activity proposed by Louise (line 7), acknowledged the idea’s novelty (line 7), and stated her intention to implement it in class (lines 8–9).

Excerpt 3 (PD-4)

1 Researcher: What do you think are some effective ways to test vocabulary?
2 Louise: Coming to the end of each unit, I often have a mini pair game with my class. I give them a game sheet [. . .]. There are only two questions on the paper (e.g., “List as many types of pests as possible” and “List as many ways of getting rid of insects as possible”). I then just give students five minutes and ask them to work in pairs.
3 Laura: This activity sounds great. It is something I have not considered before. I think I will try to see how this method can be used for assessing vocabulary knowledge.

As suggested by Laura, she devised a new assessment task that focused on students’ ability to describe various professions. The students were asked to recall the adjectives she had covered in a module on workplace communication. Those who cited expressions they had learned on their own were rewarded with bonus marks (I-3).

Case 2: Louise

Although Louise did not report any changes in her beliefs about the need for direct vocabulary teaching, she seems to have experienced development in various areas of her epistemological and pedagogical beliefs. What is interesting to note, however, is that Louise appears not to have translated her belief change into practice. Her case highlights the complexity of belief development as well as the need to reconsider the definition of “actual” belief change and various ways to achieve it.

Reconstruction of epistemological beliefs about the notion of a word and the role of vocabulary in language acquisition. Louise reconstructed her epistemological beliefs about the notion of a word and the role of vocabulary in second and/or foreign language acquisition. She cited five aspects of lexical knowledge—pronunciation, word parts, meaning, word form, and constraints on use—while explaining the notion of a word in the initial interview (I-1). She added three additional aspects in the final interview: concept and referents, collocation, and word associations (I-3). This reconstruction of beliefs through the addition of extra dimensions was confirmed by her remark that she had previously “mainly focused on word meanings and pronunciations” (I-2), thus neglecting the importance of other aspects of lexical knowledge (I-3). Excerpt 4 shows how Louise developed her understanding of vocabulary teaching through a professional dialogue that focused on the notion of a word and lexical instruction.

Excerpt 4 (PD-1)

1 Lydia: The table here with nine aspects of word knowledge makes me reflect on what is truly meant by “knowing a word.” It seems that our students only care about the meaning, pronunciation, and spelling of words.
2 Louise: Well, I focus on the teaching of word meanings and pronunciation in class. Is it a must for us to cover all nine aspects of word knowledge?
3 Laura: I’m not sure. But isn’t it worrying to see that most of our students neglect the importance of learning different parts of a word and understanding a word’s associations, for example?
4 Michelle: Some students have poor learning attitude and lack the motivation to learn vocabulary on their own. Perhaps we can help our students develop their curiosity about words by addressing different aspects of lexical knowledge?
5 Researcher: Talking about sparking learners’ curiosity, we may consider teaching words with multiple meanings. For example, the word right can be used to refer to correctness (as in right and wrong), direction (as in right or left), and moral principles (as in the right to freedom of speech and the right to protest). Asking students to think about the multiple meanings of a word can be challenging yet interesting.
6 Louise: True. I can now see why it is important to teach different aspects of word knowledge in class. Doing so may actually help stimulate our students’ learning interest and raise their language awareness.
Chung

As shown, Lydia asked what constitutes a word and stated her observation regarding students’ tendency to relate vocabulary learning with the mastery of only some aspects of word knowledge (lines 1–3). It is interesting to note that Louise instantly responded to Lydia by reflecting on her own practice and inviting other teachers to comment on the need to cover all nine aspects of word knowledge in class (lines 4–6). While Louise found it unnecessary, possibly because of her epistemological beliefs—that knowing a word should equal the mastery of its pronunciation, word parts, meaning, word form, and constraints on use (I-1)—her understanding of vocabulary teaching developed after some discussion (lines 6–18). Consequently, she concluded that teaching students different aspects of word knowledge can be conducive to their learning (lines 19–21). In the final interview, Louise’s comments indicated that her heightened awareness of aspects of word knowledge may have resulted in the development of her beliefs about the role of vocabulary: “I thought words were only . . . aids for understanding, and I didn’t think students would be interested in words themselves; but now, I think words themselves can be the motivation for students to understand the world” (I-3). Her remark regarding the significance of vocabulary to “cultivate language awareness and develop curiosity” (I-3) clearly highlights her elaboration of epistemological beliefs about the role of vocabulary in language acquisition.

Construction of pedagogical beliefs about the use of creativity to enhance lexical instruction. The changes in Louise’s beliefs were also reflected in her construction of pedagogical beliefs about the use of creativity to enhance lexical instruction. Excerpt 5 elaborates a case where the teachers worked collaboratively to explore the use of creative instruction strategies, such as the Loci method, to facilitate vocabulary learning and teaching.

Excerpt 5 (PD-5)

|   | Lydia: | Clearly, it is important for us to make good use of our creativity to promote vocabulary development. |
|---|---|---|
| 1 | Michelle: | The method of Loci. I think I have heard of it before. Loci means location. Right? |
| 2 | Laura: | Is it like having different rooms to store our memory? When we teach vocabulary related to illnesses, we can ask our students to imagine that they have entered a clinic and ask them to think about what they can see at different places so that they can enhance their memory of the related words. |
| 3 | Lydia: | Probably! I think I have used this strategy. Unit four is about traveling. When I taught my students, I told them that when they go traveling, they need to check in with their passport after arriving at the airport, enter the security screening and immigration area, and go to the departure lounge... |
| 4 | Michelle: | I suppose asking students to visualize the spatial environments can help them enhance the recall of information and vocabulary items! Interesting! |
| 5 | Louise: | I’ve never used this method [. . .]. I find this memory strategy impressive. It is surprising to learn that there are so many interesting ways to enhance vocabulary learning. I’ll try to apply them in class. |

Although Louise did not play an active role in examining the implementation of the Loci method with her colleagues (lines 1–14), she seemed to have benefited from the professional dialogue. She found the method “impressive” (line 15) and intended to enhance her lexical instruction by employing the different strategies discussed in the English language classroom (line 17). Reflecting on her experience with dialogic reflection, she wrote that she found it “inspiring” to explore consolidation strategies such as mnemonics, the Peg method, and the Loci method, as these “creative” methods of vocabulary instruction enabled teachers to enhance their teaching and helped students remember new vocabulary (RE-5). However, she admitted that she did not adjust her classroom practice to employ such strategies during the school year (I-3). Louise used time constraints as justification for not incorporating the strategies in her vocabulary teaching (I-3), claiming that their adoption would have required “a lot of preparation time”. However, one cannot deny the possibility of her unfamiliarity with the strategies, which may have caused her hesitation toward adopting them. In the interviews and reflective writing, she repeatedly emphasized her unawareness of the strategies prior to the professional development program.

Elaboration of beliefs about vocabulary assessment. In addition to the shift in her beliefs about lexical instruction, Louise also elaborated on her beliefs about vocabulary assessment. Before participating in the professional development program, she stated that lexical knowledge should be assessed through dictation and quizzes (I-1). Later, however, she
noted that she was “impressed by the idea of individualized testing in which students can develop learner autonomy” (RE-6). In Excerpt 6, the teachers shared their own understanding of individualized testing and explored its usage to assess vocabulary knowledge (lines 1–9). Clearly, Louise was fascinated by the assessment method (line 10) and suggested that it can be conducted in the form of peer testing (lines 10–11).

Excerpt 6 (PD-6)

| Line | Michelle: | Lydia: | Louise: | Laura: | Michelle: | Lydia: | Louise: |
|------|-----------|--------|---------|--------|-----------|--------|---------|
| 1    | Individualized testing is rather new to me. What is SPCMF? | S means sentence? | P means [word] parts? | C means collocation? | Right. But how can individualized testing be used to assess vocabulary? | I am not sure, but I guess each learner can give us a list of ten words that he or she has been working on, and we can then quickly write a letter [S, P, C, M, or F] next to each word to assess word knowledge? | Amazing! This assessment method is new to me. I suppose this can be done in a form of peer testing. |

By linking vocabulary assessment and learner ownership, Louise gradually recognized the importance of peer testing (I-3): “assessments are no longer confined to teacher-student interaction” (RE-6). Although Louise asked individual students to share their output with the whole class after completing a vocabulary learning task and instructed them to evaluate one another’s work, she admitted to not adopting individualized testing to assess students’ vocabulary, as she preferred not to introduce a new form of assessment toward the end of the academic year (I-3).

Discussion

This study not only emphasizes the need for teachers to reflect on issues concerning vocabulary teaching (e.g., the notion of a word, use of vocabulary activities, and creative instruction strategies) to promote vocabulary learning and meaningful vocabulary assessment development, but also supports extant findings on reflective practice for teacher development (Haneda et al., 2017; Hepple, 2012; Swanson et al., 2020) and provides evidence on the role of dialogic reflection in facilitating professional learning. As shown, dialogic reflection provides teachers with the opportunity to participate in discourse with themselves and others (Mann & Walsh, 2017). In the current study, teachers’ engagement in dialogic reflection enabled them to share ideas, understandings, and teaching experience, which heightened their awareness of their own and alternative beliefs and/or practices. This facilitated the co-construction of new knowledge and understandings as well as the formulation of plans to improve the effectiveness of learning and teaching. Furthermore, this study revealed a range of processes of change regarding the epistemological and pedagogical beliefs of participants based on Cabaroglu and Roberts’ (2000) framework. This result is consistent with the findings of other studies on teachers’ belief development (e.g., Li, 2012; Yuan & Lee, 2014). However, closer examination of the data shows considerable differences between the developmental processes associated with the two belief categories and the complexity of the belief change.

Diverse Development Processes of Teachers’ Epistemological and Pedagogical Beliefs

Changes in the two teachers’ epistemological beliefs—broadly associated with the realization, consolidation and expansion of their existing beliefs—differed from the development of their pedagogical beliefs, which was concerned with other processes, including addition, linking up and disagreement. With respect to the former, both the teachers consolidated their beliefs about the importance of vocabulary development and developed their beliefs about the notion of a word following their realization of the importance of different aspects of lexical knowledge. It is also noteworthy that one teacher acknowledged the elaboration of her epistemological beliefs about the role of vocabulary development by providing details on how vocabulary learning can help cultivate language awareness and enhance curiosity.

As noted, the development of the teachers’ pedagogical beliefs was more sophisticated than that of their epistemological beliefs. As Kumaravadivelu (2001) explained, language pedagogy must be “sensitive to a particular group of teachers teaching a particular group of learners pursuing a particular set of goals within a particular institutional context embedded in a particular sociocultural milieu” (p. 538). Given the particularity of language pedagogy, teachers’ pedagogical beliefs are shaped by a range of factors that may change over time, including students’ perspectives, institutional policies, and social expectations (Chung, 2018a). It can thus be argued that such beliefs are more susceptible to change when teachers gain a better understanding of the teaching context. By contrast, the development of teachers’ epistemological beliefs, which is concerned with the nature of knowledge and knowledge acquisition, is related to the
The former contributed to the latter. As noted above, Louise's experiences translated into her pedagogical beliefs about the need for direct vocabulary teaching and implementation of vocabulary activities. When Laura translated these pedagogical beliefs into practice, she observed the role of students in learning vocabulary by “becoming teachers” and “taking responsibility”. Her positive experience contributed to the development of her epistemological beliefs about the role of vocabulary development in fostering learner satisfaction. Additionally, Louise stated that she had elaborated on the epistemological beliefs about the notion of a word and cited aspects of lexical knowledge that were not mentioned in the initial stage of the study. It is particularly interesting to note that she also highlighted the need to cover all the nine aspects of word knowledge proposed by Nation (2013) in the context of an English language classroom, although she had referred to only some of those aspects in the first interviews. It thus seems reasonable to suggest that the development of teachers' epistemological beliefs about the notion of a word may contribute to the change in their pedagogical beliefs about the teaching of lexical knowledge.

In general, the research results support other researchers' propositions (e.g., Brownlee et al., 2001; Hofer & Pintrich, 1997): epistemological beliefs, which are related to the characterization of knowledge and knowledge acquisition, can guide teachers' thinking about teaching. While it has been suggested that epistemological beliefs can be conceptualized as “the philosophical basis for teaching and learning” (Kukari, 2004, p. 107), this study's results demonstrated their materialization through pedagogical beliefs, thus providing further evidence for the highly complex nature of teachers' belief development.

**Relationship between Enhanced Knowledge, Belief Change and Teachers' Practice**

The participants' comments revealed the complex relationship between belief development and knowledge acquisition. The former contributed to the latter. As noted above, Louise reported her limited awareness of aspects of word knowledge such as collocation and word associations prior to the professional development program, but reconstructed her beliefs about the notion of a word and the role of vocabulary in language acquisition due to a better understanding of lexical knowledge. Laura and Louise's reconstruction of their beliefs about vocabulary assessment after learning about the concept of individualized testing (Nation, 2013) is also noteworthy. Both teachers noted that they were impressed by the method's ability to monitor individual learners' vocabulary learning progress, which prompted them to reconstruct their beliefs about their vocabulary assessment design.

While it is not particularly surprising that learning new ideas and knowledge contributes to belief development, this study raises intriguing questions about teachers' professional learning. The results suggested that the introduction of fresh teaching ideas does not necessarily trigger belief development or change in practice. For example, both teachers expressed keen interest in memory strategies, such as the Peg and Loci methods presented in Schmitt's (1997) taxonomy of vocabulary learning strategies during the professional development session; however, they did not actually use them to teach vocabulary. Further, Laura failed to consolidate her beliefs about the strategies, remarking, “I can't remember what these are,” whereas Louise explained that she had not adopted them because they required careful planning, and she was hindered by time constraints.

While the reason for lack of change in beliefs and practices despite the introduction of new ideas remains open to interpretation, it has been noted that professional development activities may be of limited use to teachers in the absence of follow-up support to ensure progressive knowledge gains (Wilson & Berne, 1999). Beliefs can be extremely subjective (Kagan, 1990); therefore, the context is important. Education in Hong Kong is examination-oriented (Chung, 2018a) and focuses on academic attainment rather than creative teaching; hence, the participating teachers may have intuitively considered this study’s discussed strategies as unsuitable for the learning culture of their schools. This may explain why they rejected their potential use in their own classrooms. Furthermore, it appears that changes in teachers’ beliefs may stem from their improved understanding, but their perception of the usefulness of new information plays an important role in the developmental process. It is also worth considering how “actual” belief change should be defined and how it can be translated into practice.

**Conclusion and Implications**

This study’s results have significant implications for teacher development. For example, they provide evidence to support the promotion of critical reflection amongst teachers through structured self-reflection and collaborative enquiry. If teachers can be supported to develop metacognitive awareness of
their beliefs and practices, then they may become reflective practitioners able to develop their beliefs about knowledge and knowledge acquisition by thinking critically about the pedagogical beliefs they enact in practice, or vice versa, thereby making informed decisions that may improve the quality of education. Accordingly, initial teacher education and professional development programs should provide prospective and frontline teachers with opportunities for personalized and collaborative learning. Rather than a top-down, didactic approach to teacher development, in-depth discussions that promote critical reflection on epistemological and pedagogical beliefs, as well as alternative perspectives should be encouraged. Questions can also be provided in order to prompt critical reflection to prepare teachers to examine their own and others’ perspectives and thus embrace change. Activities that promote deep processing and consolidation of knowledge are recommended.

Finally, further studies should examine the impact of change in teachers’ beliefs on students’ actual learning. Although the accounts of the participating teachers in this study provided interesting insights into how dialogic reflection can foster belief development, these teachers had volunteered to join the professional development program because of the perceived need to improve their students’ vocabulary learning; this implies that other types of teachers, such as those who may have been less motivated to participate in professional development programs or uninterested in vocabulary teaching, were excluded. Given that school-based staff development activities are perceived as a valuable complement to conventional event-based professional training in Hong Kong and elsewhere, one fruitful direction for further research would be to explore how different subject teachers engage in and benefit from dialogic reflection on their beliefs about complex educational issues.

Appendix A. Sample Interview Questions.

1. What role do you think vocabulary knowledge plays in the learning of English as a second or foreign language?
2. To you, what is meant by “knowing a word”?
3. What are your views on vocabulary teaching?
4. What do you think are the most important issues concerning vocabulary instruction?
5. What kinds of vocabulary knowledge do you think English teachers should or should not teach in secondary classrooms?
6. What should teachers consider when choosing vocabulary items to be taught in class?
7. What should teachers consider when designing in-class vocabulary development activities?
8. What materials should teachers use to foster vocabulary learning and teaching?
9. How should teachers assess their students’ vocabulary knowledge and use?
10. What do you think teachers should do to promote autonomous vocabulary learning?
11. Do you think you have changed your views on vocabulary learning and teaching since we began? If so, can you describe those changes to me? What about your practice?
12. Are there any other comments you would like to make regarding vocabulary learning and teaching?

Appendix B. A Sample of Teachers’ Written Reflections.

RE-4 Laura’s Reflective Entry on Activities for Vocabulary Teaching and Learning

To me, vocabulary activities, like games and video-watching, are essential. Vocabulary learning should not be just about memorising the spelling, knowing the meaning, doing gap-filling worksheets, and cramming a list of vocabulary from their textbook, as the intensive exercises and quizzes can only help train students to be “machines for exam”. If students learn with pleasure and enjoyment, they tend to remember the knowledge better. However, it’s quite saddening to find from the survey that some students see vocabulary activities a waste of time. Perhaps it’s the packed learning schedule and high-stake assessments that discourage students to learn vocabulary with pleasure. Or perhaps they fail to relate vocabulary learning to their real-life communication and usage. Some students want to have fun while learning but they are simply too stressed. There has to be give and take in language classrooms. When dictations and quizzes are unavoidable in our current curriculum, I’ll continue to strike a balance between fun vocab activities and consolidation exercises.

Establishing learning objectives is important, but I would avoid relating their learning purposes mostly to examinations. I always believe that students must see the needs and purposes of learning vocabulary. It’s not about learning vocabulary for getting higher marks in assessments or examinations. They should understand the benefits of knowing more words and how their learning is made useful and meaningful in their life. As teachers, we should always communicate with students why their learning is important, and always relate their learning to real-life usage.

There are lots of useful enhancement activities that are introduced in the session. Yet different students have different preferences and learning styles. Language teachers can therefore observe their students’ needs and plan activities that suit their classes the most. Reconceptualising is a good strategy that I’ll try to use more in my daily teaching. It’s especially useful when teaching words of multiple meanings.
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Ethics Statement

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ORCID iD

Edsoulla Chung https://orcid.org/0000-0001-8480-7992

Notes

1. The terms “epistemological beliefs” and “epistemic beliefs” have been used interchangeably in research on beliefs (e.g., Chai, 2010; Chai et al., 2009; Chai & Khine, 2008). To avoid confusion, the former is used throughout the paper because it is commonly used to refer to beliefs about the nature of knowledge and knowing/learning (see, e.g., Flores, 2001; Hofer & Pintrich, 1997; Schommer, 1994). In this definition, knowing means knowledge acquisition and is the same as learning (Chan & Elliott, 2004).

2. Similar to other researchers (e.g., Chai, 2010; Cheng et al., 2009), Chan and Elliott (2004) used the term “conceptions about teaching and learning”, which is defined as teachers’ beliefs about the preferred ways of teaching and learning. Pedagogical beliefs were similarly defined in the present study.

3. According to DeLuca et al. (2017), the seven characteristics of collaborative enquiry for teachers are as follows: (i) Relevance, student learning guides enquiry; (ii) Collaborative, teacher enquiry is a shared process; (iii) Reflective, actions are informed by reflection; (iv) Iterative, progressive understanding grows from cycles of enquiry; (v) Reasoned, analysis drives deep learning; (vi) Adaptive, enquiry shapes practice and practice shapes enquiry; and (vii) Reciprocal, theory and practice are dynamically connected (p. 69).

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