



Faculty of Education

PhD in Education

Dialogic education, historical thinking and epistemic beliefs: a design-based research study of teaching in Taiwanese classrooms

This dissertation is submitted for the degree of Doctor of Philosophy

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Abstract

The study reported in this dissertation explored: (1) teachers' use of dialogue to facilitate students' historical thinking and (2) the trajectory of historical personal epistemology through a design-based approach. Empirical evidence emerging in previous decades has acknowledged that good quality classroom dialogue could have a positive impact on students' learning. Through dialogic teaching, it has been argued that teachers could probe and promote students' higher thinking skills. However, how dialogue is being used in history classes as well as the cultural context of dialogic education in East Asia was a salient gap in current research. The first research aim was to explore both teachers' and students' epistemic beliefs regarding the domain of history, which has been largely neglected in this field of study. The aim of this research was also to propose a new perspective on dialogic education that might not only bridge the dichotomy of the monologic and dialogic forms of teaching, but also address the pedagogical dilemma in history education raised by the latest Taiwanese national curriculum reform. Finally, another major aim of the research was to design a teacher professional development programme to change teachers' epistemic beliefs and their teaching practice towards dialogic history education for promoting historical thinking.

Adopting the notion of design-based research, a teaching professional programme was designed and administered throughout the one-academic year to 7 high school teachers. Three students of each participating teacher were chosen for semi-structured interviews to explore their personal epistemology, which were later analysed with an innovative discourse analysis method: Epistemic Network Analysis (ENA). Data concerning classroom dialogue was collected from monthly class observations and then analysed with a reconceptualised coding framework adapted from the Teacher's Scheme for Educational Dialogue Analysis (T-SEDA, Hennessy, et al., 2021) and an observational instrument for historical thinking (Gestsdóttir, et al., 2018).

In regard to personal epistemology, the findings reported a mixture of results with only a few students seeing a significant change in their epistemic beliefs after the programme. However, a pattern-based model for analysing historical epistemic beliefs reported from this study, has been generated resulting in four major patterns of beliefs being identified. In terms of classroom dialogue, the results found a positive increase in teachers' use of dialogue. A hybrid form of dialogue informed by current dialogic theories synthesised with Confucianism and Taoism allowed dialogue to transgress away from the dichotomy of structural forms of monologue and dialogue was also put forward and characterised from the analysis. The contributions of this present study are discussed in terms of theoretical, methodological and practical uses.

Declaration

This thesis is the result of my own work and includes nothing which is the outcome of work done in collaboration except as declared in the Preface and specified in the text. I further state that no substantial part of my thesis has already been submitted, or, is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. It does not exceed the prescribed word limit for the relevant Degree Committee

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Chapter 1 Introduction

*I, Zhuang Zhou, dreamt that I was a butterfly,
a butterfly flying about, feeling that it was enjoying itself.
I did not know that it was Zhou.
Suddenly I awoke, and was myself again, the veritable Zhou.
I did not know whether it had formerly been Zhou dreaming that he was a butterfly,
or it was now a butterfly dreaming that it was Zhou.
But between Zhou and a butterfly there must be a difference.
This is a case of what is called the Transformation of Things.
(Zhuangzi, *The Adjustment of Controversies*, 369-286 B.C.)*

With an academic background in history and teacher education in Taiwan, I have always battled between two perspectives in history education. One perspective centres on a traditional approach for teaching substantial concepts, as in a transmission of historical knowledge (Lee, 2005), whereas the other focuses on teaching second-order concepts, or historical thinking, to use a more popular term (Hsiao, 2009; Lee and Ashby, 2000; Lin, 2020; Seixas, 1996, 2017; van Drie and van Boxtel, 2008, 2018; Wineburg, 2001). With a new national curriculum reform in 2021 in Taiwan, this tension between traditionalists and progressionists has only accelerated, with an entanglement of the complex social and political identities concerning Taiwan and China (Yang, 2020). There is certainly no perfect single solution to address such issues; however, throughout my own educational research journey (short but almost pilgrimage-like) from MPhil to PhD study at Cambridge, I have found the concept of dialogic education quite intriguing and even practical for addressing the current unsolvable struggle between traditionalist and progressionists in Taiwanese history education. However, it is undeniable that sociocultural and educational contexts need to be considered when exploring and promoting dialogic education in Taiwan. In my personal experience as a student and, later, a history teacher in Taiwan, one unique form of talk in classroom has constantly grabbed my attention, one that is neither monologue nor dialogue but, in a way, both. In this PhD research, one major aim is to conceptualise this form of talk and then provide possible solutions to address the issue mentioned above.

One rationale of this research comes from the research gap in the field of dialogic education. Empirical evidence emerging in recent decades has acknowledged that good-quality classroom dialogue can positively impact student learning (e.g., Alexander, 2004; Boyd and Markarian, 2011; Cazden, 2001; Hennessy, Warwick, and Mercer, 2011; Howe and Abedin, 2013; Littleton and Mercer, 2013; Wegerif, 2007). Two recent large-scale studies have identified that some aspects of dialogue are related

to learning gains (Alexander, 2018; Howe, Hennessy, Mercer, Vrikki, and Wheatley, 2019). Through dialogic teaching (Alexander, 2004), teachers can probe and promote students' higher-thinking skills (Wegerif, 2018), which resonates with the idea of 'second-order concepts' in historical thinking and reasoning (HTR; Lee and Ashby, 2000; Seixas, 1996, 2017; van Drie and van Boxtel, 2008, 2018; Wineburg, 2001). To connect these two ideas, van Boxtel and van Drie (2017) argue that, based on Wegerif's (2013) notion of dialogic space, teachers could open up and broaden the use of dialogue to stimulate students' HTR. In this sense, they advocate a future involving dialogic history education. Nonetheless, the paucity of empirical study in this area (i.e., dialogue in history education) remains significant and requires further investigation.

Another main rationale for my study concerns the limited research on epistemic beliefs toward history as a discipline. In the sense of psychological research, epistemic beliefs are an individual's beliefs about the nature of knowledge and the process of knowing (Hoffer and Pintrich, 1997). The term 'epistemic beliefs' is also referred to as 'epistemological beliefs' (Schommer-Aikins, 2002), 'epistemic cognition' (King and Kitchener, 1994), 'epistemological reflection' (Magolda, 1992), and 'personal epistemology' (Perry, 1970). The interest of research on epistemological beliefs in recent decades has been domain-general. Moreover, when researchers have tried to explore domain-specific epistemic beliefs, most have been dedicated to the domain of science (Bell and Linn, 2002; De Corte, Eynde and Verschaffel, 2002; Elder, 2002). Very limited research has discussed the domain of history; however, as Wineburg (2001) points out, to facilitate pupils' historical thinking in the classroom, it is crucial to identify their epistemic beliefs towards history beforehand (see also Hsiao, 2009). Maggioni, VanSledright, and Alexander (2009) also argue that it is essential for researchers to address and identify teachers' epistemic beliefs first in order to change their teaching practice afterwards.

For this research project, I conducted design-based research (DBR; Bakker, 2018) in which teacher professional development (TPD) was employed to address the three theoretical perspectives mentioned above – dialogic education, historical thinking, and epistemological beliefs – within a Taiwanese context. With the latest curriculum reform, teachers are encouraged to adopt a more innovative pedagogical approach to foster students' historical thinking as prescribed in the curriculum goals for high school history education (NAER, 2018). Therefore, I collaborated with teachers in the sense of 'community of inquiry' (Jaworski, 2006; Hennessy et al., 2011) to explore, jointly, the possibilities of adopting a new pedagogical approach (i.e., dialogic pedagogy) in this context. Chapter 2 presents an integrative literature review (Torraco, 2016) that summarises, critiques, and synthesises representative literature on the topic.

Additionally, the review identifies and resolves inconsistencies (the research gap) in the literature and provides new perspectives on the topic. A conceptual framework of the hybrid dialogue proposal is supplied based on Wegerif's (2011) concept of dialogic space and synthesised with Confucianism and Taoism (Yin and Yang), which are two major philosophical underpinnings of the Taiwanese sociocultural context. Research questions and the research aims are also presented at the end of Chapter 2. In Chapter 3, a detailed discussion on the proposed methodology (DBR) is presented with the elaborated design process of the TPD in this research. The methodological considerations (e.g., data collection and data analysis) concerned with exploring teachers' and pupils' historical epistemic beliefs and classroom dialogue are also discussed. The analysis of personal epistemologies with the use of epistemic network analysis (ENA, see Shaffer, 2017) are presented in Chapter 4 to answer the first overarching research question on this topic. In the next chapter (Chapter 5), the second research question related to analysing classroom dialogue is addressed using an adapted coding instrument to provide quantitative (i.e., frequency counting) and fine-grained qualitative analysis. All the analysis is informed by the design of DBR. Chapter 6 contains an overall discussion of the major findings and how these findings are in line with or distinct from previous studies. In the final chapter (Chapter 7), the limitations, contributions, and future implications are discussed.

The goals of this study were threefold. The first research aim was to explore both teachers' and students' epistemic beliefs regarding the domain of history, which has been neglected in this field of study. The second goal aimed to reconceptualise the notion of dialogic education in Taiwan. As mentioned above, the notion of dialogic education was revisited and explored due to cultural differences. The aim of this research was then to propose a new perspective on dialogic education that might not only bridge the dichotomy of the monologic and dialogic forms of teaching, but also address the pedagogical dilemma in history education raised by the latest national curriculum reform. Finally, another major aim of the research was to design a TPD programme to change teachers' epistemic beliefs and their teaching practice towards dialogic history education. A detailed description regarding designing TPD is presented in the next chapter. After professional development (PD) was employed, post-interviews and observations were conducted to explore any arising changes in three parts: (1) the change in teachers' epistemic beliefs and practice; (2) the change in students' epistemic beliefs; and (3) the degree of these changes. The effectiveness of TPD is also assessed.

Chapter 2 Literature Review

In this chapter, I first discuss two theoretical perspectives for dialogic education as the foundation for reconceptualising dialogic education with the Taiwanese tradition of Confucianism and Taoism. A conceptual framework for hybrid dialogue for this research, based on the model of Yin and Yang in Taoism, is also presented. In the second section, there is an overview of different historical thinking models, followed by a discussion on domain-specific epistemic beliefs in history. The final section focuses on the theoretical background of TPD and how it informed the design of TPD employed in this study. Moreover, a contextual background of current Taiwanese national curriculum reform is discussed to provide important insights for the research context. Based on these, at the end of this chapter, I present the research questions and research aims for this study.

2.1 Educational dialogues

2.1.1 Two approaches to understand educational dialogues

A broad body of research has attempted to identify the benefits of applying classroom dialogues in scaffolding students' thinking (e.g., Alexander, 2004, 2018; Howe and Abedin, 2013; Boyd and Markarian, 2011; Cazden, 2001; Jones and Chen, 2016; Littleton and Mercer, 2013; Michaels and O'Connor, 2015; Wegerif, 2007; Wells, 1999; Wells and Arauz, 2006). However, the definition of dialogues remains an ambiguous concept that could refer to various phenomena in educational research.

From a broad perspective, dialogues can be the interactive exchange of utterances between people. Nonetheless, the question of how dialogues become 'dialogic' is crucial yet debatable and deserving of more discussion. To unpack the various definitions of 'dialogic', searching existing literature provides two levels of definitions. The first level concerns the epistemological perspective of dialogues, which is discussed broadly in a substantial body of research. Dialogues are considered a form of 'shared inquiry' and help students and teachers collaboratively construct knowledge (e.g., Alexander, 2004; Mercer, 2000). This view is in contrast to teacher-led monologues, in which education is a mere knowledge transition from teachers to pupils (i.e., authoritative voice, see Bakhtin, 1981; Scott and Mortimer, 2005; Skidmore, 2010, 2019). This notion emphasises that the education should be conducted 'as a dialogue about matters' in which knowledge is explored 'in the context of joint action and interaction' (Wells, 1999, p. 58). The same position is taken by Alexander (2004) to develop the concept of 'dialogic teaching', and Dawes, Mercer, and Wegerif's (2004) project on Thinking Together, exploring the positive effect of 'exploratory talk' in

primary schools.

To distinguish the difference between dialogue and monologue further, Bakhtin (1981) presents an example of teacher–pupil dialogue in the classroom (Lyle, 2008; Skidmore, 2010). He describes a scenario in which a teacher who possesses knowledge dominance transmits this absolute truth to students who are ‘ignorant of it and in error’ (Bakhtin, 1981, p. 88). In this situation, the asymmetrical relationship between teacher (the authority) and pupil causes the monologic discourse in which ‘polyphony’ or ‘multi-voice’ is impeded in the classroom. In contrast, in a dialogic discourse, students are encouraged to present their multivoice in the dialogue and even to challenge the practice of asymmetrical power generated from monologic discourse (Lyle, 2008; Skidmore, 2010). Similarly, in Nystrand et al.’s (1997) study, the abuse of monologic discourse employed in classroom led to learners having low learning motivations and discouragement.

The monologic style (Lyle, 2008) that teachers tend to apply in class consists of what Sinclair and Coulthard (1975) call the ‘IRF’ structure (Initiation/ Response/ Feedback). In a tripartite series, first, a teacher initiates (I), usually with a question, which then stimulates a student or the whole to respond (R), and finally the teacher provides some follow-up feedback (F). The asymmetrical relationship between a teacher and whole class is enhanced by the predominant practice of IRF structure, which allows teachers take control of ‘epistemological dominance’ (Alexander, 2004; Mortimer and Scott, 2003). Similarly, Alexander (2004) points out that whole-class teaching in a monologic approach consists of a basic ‘repertoire’ of three teaching-talk types (p. 30): rote, recitation, and instruction (or exposition), all of which dominate significantly in classroom talks. Thus, a more authentic dialogue is relatively little delivered in class.

However, despite the criticism of the IRF structure in class, Wells (1999) argues that more dialogic IRF exchanges occur when a teacher can create another question in response to students’ answers in the feedback to keep the dialogue open. This idea was developed by Rojas-Drummond (2000), who proposed the notion of ‘spiral IRF exchanges’, suggesting a series of IRF exchanges in which the role of feedback opens up the next exchange. Hence, the dialogic space remains open, with knowledge being co-constructed by the mediation of educational dialogues (Rojas-Drummond, Mercer, and Dabrowski, 2001; Rojas-Drummond, Torreblanca, Pedraza, Vélez, and Guzmán., 2013; Wegerif, 2007). A similar account of ‘dialogic’ is in Alexander’s (2001, 2004, 2020) concept of dialogic teaching, in which he highlights the highly interactive, sociocultural perspectives of talk for probing and extending students’ thinking, as well as advancing their learning and understanding (see Table 2.1; also see Alexander, 2004,

p. 38, for more details).

Table 2.1 The five principles of dialogic teaching. (Alexander, 2004, p.38)

1. Collective	Teachers and children address learning tasks together, whether as a group or as a class, rather than in isolation.
2. Reciprocal	Teachers and children listen to each other, share ideas and consider alternative viewpoints.
3. Supportive	Children articulate their ideas freely, without fear of embarrassment over 'wrong' answers as they help each other to reach common understandings.
4. Cumulative	Teachers and children build on their own and each other's ideas and chain them into coherent lines of thinking and enquiry.
5. Purposeful	Teachers plan and facilitate dialogic teaching with particular educational goals in view.

The conceptual framework behind this definition is heavily underpinned and influenced by Vygotskian theories (1978), who put forward a theory highlighting the impact of social interaction, including the use of tools (e.g., pencils) and signs (e.g., language), for individual development (Lourenço, 2012). Language, in particular, mediates the interpretation of knowledge shaped by its social and cultural context (Bruner, 1990; Lyle, 2008). Consequently, how dialogues in classroom enhance or constrain the intellectual development of learners is central to Vygotskian theories of language and learning (Mercer, 1995). Vygotsky claims that true education occurs in a 'zone of proximal development' (ZPD) in which individual potential development is steered through 'adult guidance, or in collaboration with more capable peers' (Vygotsky, 1978, p. 86). This idea indicates that good thinking is primarily found in social interactions, and only later 'internalised' or appropriated by individuals (Wegerif, 2018). This concept of language and learning has later been the subject of substantial literature investigating the cognitive benefits of peer collaboration (e.g., Johnson and Johnson, 2017; Slavin, 1995) and peer tutoring (e.g., Topping and Ehly, 1998).

Building on Vygotsky's ideas of how society, culture, and historical context influence all learning, Bruner (1984) claims that the idea of ZPD is 'a fusion of the idea of collectivism and of the role of consciousness' (p. 94), suggesting that such a form of knowledge construction shapes not only knowledge itself, but also collective consciousness (see also Wertsch, 1985). Bruner (1984) then proposes the notion of 'scaffolding' to express that children's learning only occurs if an appropriate social interactional construction (e.g., support of an adult) is provided (Foley, 1994). The sociocultural approach of studying educational dialogues is, then, heavily grounded in

Vygotskian developmental psychology and Bruner's notion of scaffolding (e.g., Brown and Palincsar, 1989; Cazden, 2001; Mercer, 1995; Mercer and Dawes, 2008; Mercer and Littleton, 2007; Wertsch, 1985). Moreover, to expand the notion of ZPD and scaffolding, Mercer and Littleton (2007) introduced a concept called the 'intermental development zone' (IDZ) to explain educational activity in which a teacher and a student jointly create and negotiate a shared 'communicative space' (p. 21). This sociocultural strand of dialogic education has led to a few promising large studies on the empirical evidence for a positive relationship between educational dialogue and pupils' academic performance. For instance, a large-scale study (Howe et al., 2019) exploring the effect of teacher-pupil dialogue on pupils' curriculum mastery found some forms of dialogue (e.g., 'elaboration' and 'querying') were positively associated with academic performance (e.g., SAT) as long as students participated actively and extensively. Elaboration was also positively associated with pupils' learning attitudes. Another large-scale randomised-control trial (RCT) study conducted by Alexander (2018) examined the effect of an intervention on promoting dialogic teaching in UK with 5000 Year 5 (Fourth Grade) students and 208 teachers. The results reveal that students in the intervention group were two months ahead in English, mathematics, and science tests of their control group counterparts.

Matusov (2009) argues that conventional educational practice is designed to reduce the epistemological gap between teachers and students by making the students' (the ignorant) consciousnesses more in line with the teacher's (the educated). However, no matter how the formation of knowledge is viewed (e.g., transmission of knowledge, co-construction of knowledge, scaffolding knowledge), the dialogues in such a context are never genuinely dialogic, even being 'anti-dialogic' (p. 3). For a true educational dialogue, Matusov (2007, 2009) suggests an ontological perspective rather than one situated in an epistemological category in which dialogue is viewed as an end in itself (Sidorkin, 1999; see also, Marjanovic-Shane et al., 2019 for the idea of critical ontological pedagogical dialogue). In dialogue, the gap of consciousness is constantly 'transformed' but never 'reducible' since the gap 'defines the dialogue' (Matusov, 2009, p. 5). Moreover, to realise a genuine 'dialogic pedagogy' instead of 'pedagogical dialogue' (Nesari, 2015; Skidmore, 2010) in class, teachers should regard themselves as the primary learners in both pedagogical and epistemological terms. Teachers should be ignorant in the sense of being unafraid to 'suspend the certainty of their own knowledge' and to explore it with students again; thus, the knowledge is never stable or existed (Matusov, 2009, p. 6). In this sense, both teachers' and students' consciousnesses should be equally considered as they seek information from and with each other (Bakhtin, 1999; Skidmore, 2010). Skidmore (2010) concludes that dialogic

pedagogy could promote ‘pupils’ autonomous abilities to engage in literate thinking’ (p. 292). Echoing this notion, Matusov (2009) suggests that, ‘dialogic has important consequences for education’, in which dialogues should not be considered a pedagogical approach (instrumental approach) just to make teaching and learning more effective, but also as an ontological approach concerned with ‘the dialogicity and humanity’ in education (pp. 3 and 6).

This ontological perspective views dialogue as ‘a way of being’, and Wegerif (2020) suggests that engagement in dialogue not only concerns co-construction knowledge, but also ‘a way to change ourselves and to change our reality’ (p. 11). Researchers with this perspective have focused on various strands of research topics that usually involve self-identity (e.g., Brown, 2004; Sidorkin, 1999), the transformation of reality (Wegerif, 2007; Kennedy, 2014), and critical pedagogy inspired by Freire’s (1971) political interpretation of dialogic education (e.g., Flecha, 2000). Influenced by Buber’s (1952) concept of ‘I-Thou’, which highlights the intersubjectivity in relationship between each individual, a Europe Commission-funded project called DIALLS (Dialogue and Argumentation for Cultural Literacy Learning in Schools), led by Fiona Maine (2018), aims to promote children’s cultural literacy to help them develop cultural awareness, empathy for others, and argumentation through pupils’ engagement in classroom dialogue (Maine and Vrikki, 2021; Maine, Cook, and Lähdesmäki, 2019).

Although the idea of true dialogic pedagogy may be inspiring and exciting, I am concerned about the practicality and radicality when applied in real educational settings. First, if a teacher constantly displays ‘ignorance’, the students might start to question his or her teaching profession. Second, teaching is a goal-orientated practice that has its own curricular goals prescribed in a national curriculum. Such endpoints of education, in Matusov’s (2009) term, are ‘anti-dialogical’ (p. 3) since a genuine dialogue could never happen if a participant knows its endpoint in advance. However, I argue that a true dialogue could still take place within such a context and seek the middle ground between the dichotomy of viewing dialogues in epistemological and ontological perspectives, as well as avoiding structural differences between monologue and dialogue, a hybrid perspective of dialogue.

2.1.2 Reconceptualising dialogic education: The hybrid dialogue bridging Western dialogic perspectives and Taiwanese tradition of Confucianism and Taoism

The notion of ‘hybrid dialogue’ is borrowed from the term ‘hybridity’ in British historian Peter Burke’s work *Cultural Hybridity* (2009) and grounded in Wegerif’s (2011) idea of ‘dialogic space’. Burke (2009) argues that the metaphor of hybridity of

culture indicates that all cultures are involved in one another. No culture is single and pure because all are hybrid and heterogeneous (see also Said, 2012). Moreover, to adapt the concept of dialogue in the context of Taiwan, where the culture has been heavily influenced by Confucianism and Taoism (Clart and Jones, 2013; Hui, 2018; Jochim 2003; Lee, 2013; Nisbett, 2004), the notion of hybrid dialogue has also been developed and underpinned by the Confucian tradition of dialogue (Chen, 2002; Guan, 2012; Li and Wegerif, 2013; Mou, 2015) and Yin and Yang principles in Taoism (Ames, 1986; Kirkland, 2004; Poon and Poon, 2020).

The 'Confucian education' has often been viewed as the mere reproduction of knowledge through mindless rote-learning and teacher-centred lectures with little learner participation (Ballard and Clanchy, 1984; Li and Wegerif, 2013; Watkins and Biggs, 1996, 2001). However, more recent research has reconceptualised such misconceptions toward Confucian-heritage learning culture (Biggs, 2001; Chen, 2002). For instance, Watkins and Biggs (1996, 2001) challenged the Western perception about Confucian education using empirical evidence that, with this particular style of education, learners in East Asian countries outperformed their Anglo-European counterparts in mathematics, science, and conceptual understanding. This phenomenon has been referred to as the 'Chinese Paradox' (Watkins and Biggs, 1996, 2001). Other research has found that nonverbal participation in classrooms is due to the Confucian tradition of inner silent reflection (Starr, 2012). Similarly, aligned to notion of inner reflection, Li and Wegerif (2013), via a careful examination of The Analects (「論語」), found a written text containing Confucius's philosophy composed by his pupils. Confucius was a dialogic educator teaching through dialogue. In addition to the surface structure in The Analects being dialogue in its formality (question – answer form), Confucius also emphasised teaching through dialogue and teaching as the facilitation of pupils' self-development and self-reflection. For example, in the chapter entitled *Shu Er* (「述而篇」, a chapter about Confucius's philosophy and beliefs for education and learning), responding to the pedagogical method, the Master states,

I do not open up the truth to one who is not eager to get knowledge, nor help out any one who is not anxious to explain himself. When I have presented one corner of a subject to any one, and he cannot from it learn the other three, I do not repeat my lesson. (子曰：「不憤不啟，不悱不發，舉一隅不以三隅反，則不復也。」; Confucius, 1893, 7: 8, translated by Legge).

Such a claim about education highlights the importance of students self-motivation to learn, as well as how teachers can scaffold to co-construct knowledge with pupils with

explicit and implicit demonstrative instruction. Regarding acquiring knowledge, Confucius explicitly connected dialogue with knowledge acquisition by stating that, 'If you want to learn the knowledge, then you have to ask' (「欲能則學，欲知則問」《尸子•處道》). From the epistemological point of view, Confucius put forward the idea that humans interact with the world with confusion and acquire knowledge from other beings in the surroundings. Therefore, the search for one's identity occurs on an ontological level, on which confusion and exploration transform into a linguistic form of questioning and inquiring (Chen, 2002; Guan, 2012).

However, the notion of 'dialogue' may be broader than the simple structural form of teacher-led questions and student-response answers (i.e., IRF pattern) from Confucius's perspective. First, in *The Analects*, the dialogue is often led by students' questions and followed with the Master's responses, which would then invite more questions from pupils. The whole dialogue would become a demonstration of inductive thinking to generate more concrete concepts from the general and abstract ones. For instance, one pupil (Yan Yuan) asked about the notion of 'virtue' (「仁」), the Master responded, 'To subdue one's self and return to propriety, is perfect virtue (「克己復禮為仁」).' The student then asked for pragmatic guidance to practise virtue, to which the Master said: 'Look not at what is contrary to propriety; listen not to what is contrary to propriety; speak not what is contrary to propriety; make no movement which is contrary to propriety (「非禮勿視，非禮勿聽，非禮勿言，非禮勿動。」).' The whole discussion was then closed by Yan's response to self-reflection regarding his own deficiency in virtue (Confucius, 1893, 12: 1, translated by Legge). Such discussion might not seem dialogic in the sense that in a genuine dialogue there should not be predefined answers or goals (Matusov, 2009). Nonetheless, Guan (2012) argues that from a broader cultural and temporal context, Confucius's monologue was introduced to engage his pupils in long-term, shared dialogue within a cultural tradition.

Highlighting the notion of long-term dialogue, Wegerif (2011) proposes an idea of 'dialogic space' based on Bakhtin's (1981) notion of the 'Great Time', which states that the inside of dialogue is not bound by time and space. This point is the reason, for instance, the twentieth-century Russian philosopher Bakhtin could engage in a 'dialogue' with the ancient Greek philosopher Socrates when reading his work. In the term 'dialogic space', the 'space' itself is a metaphor rather than a fixed physical space where ideas resonate together, sometimes provoking new ideas and insights. Wegerif (2011) then argues that the aim of dialogues is not just a way for a learner to understand the world, but also about 'a way of being in the world' (p. 182), in which self is identified not with a fixed image but with the process of dialogue. Once the participants

are involved in the dialogic space, dialogues are constantly evolving and shaped by the 'infinite other'; that is, a 'potentially emerging voice within all dialogues' (Wegerif and Yang, 2011, p. 313). The entangled shared thinking generated from a true dialogue means it is no longer possible to differentiate whose voice belonged to whom (Merleau-Ponty, 1968, cited in Wegerif, 2011) as the phenomenon of cultural hybridity; a hybrid of thinking is then born. Moreover, the idea of dialogic space also suggests the presence of cultural and virtual voices embedded in a long-term dialogue shared within humans (Bakhtin, 1981), which Oakeshott (1960) refers to as the 'Conversation of Mankind' (cited from Wegerif, 2020, p. 20). These cultural voices represent traces of all the ways where they have been used (Bakhtin, 1981; Hartog, 2005). Such dialogue could appear an externally fixed and static authoritative voice but allows learners to enter with living voices to understand new things (Wegerif, 2013).

Although the 'dialogic space' is a metaphor, Wegerif (2011) argues that it is not merely an idea but a plausible hypothesis that could serve as a new explanation to understand how people think. Highlighting the purpose of education, Wegerif (2013) also suggests that it should not only be about the transmission of knowledge, but also ways of being. Combined with Vygotskian theories (e.g., ZPD) and Bakhtin's claims, this hybrid form implies that learning to think is not just by learners internalising words, but also by 'appropriating cultural voices with personalities and histories' (Wegerif, 2019, online). This possible alternative developmental sequence in learning to think goes beyond the dichotomy between epistemological and ontological perspectives. Wegerif (2011) states that the essence of the theory of dialogic education for learning to think is the following: 'to learn to think is to become dialogue with others; to learn to think well is to become dialogue with the Infinite Other' (p. 189).

To move away from the dichotomy between monologic and dialogic surface structure (Boyd, 2015) and epistemological and ontological perspectives, Wegerif (2018) proposes the chiasm theory for dialogic theory, underpinned by Merleau-Ponty's concept of the 'chiasm' (1968), which implies the reversibility of a subject and an object. 'I see the world: the world sees me' is an example by Merleau-Ponty to demonstrate the transcendence perspective between inside-out and outside-in. In alignment with this concept, the notion of Yin and Yang in Taoism also suggests a transcendent, reversible essence between two opposite but compatible ideas (Fang, 2012).

Yin and Yang represent two opposites that stem from the same source, such as nonexistence and existence, black and white, low and high, voiceless and voiced, and

in this context, monologue and dialogue (Poon and Poon, 2020). There are four main principles within Yin and Yang theory: opposition, interdependence, mutual complementarity, and mutual transformation (Yang, 1996, p. 152). In *Tao Te Ching* (「道德經」), a fundamental text for Taoism written by Lao Zi (4th century BC), Lao Zi points out that each member of a pair of two opposite elements derives its meaning from the other and can achieve completion only through the other. This state represents the quality of the interdependence of oppositions. Moreover, the state of such contrasting, opposite elements does not remain static but is constantly ‘waxing and waning’ (Wei, 1996, p. 152). As explained in the text:

So it is that existence and non-existence give birth the one to the idea of the other; that difficulty and ease produce the one from the other; that length and shortness fashion out the one the figure from the other; that (the ideas of) height and lowness arise from the contrast of the one with the other; that the musical notes and tones become harmonious through the relation of one with another; and that being before and behind give the idea of one following another. (「故有無相生，難易相成，長短相較，高下相傾，音聲相和，前後相隨。」 *Tao Te Ching* (1:2) Translated by Legge).

The text above also argues that the opposites transform into each other and are mutually complementary to each other. Similar to the idea of chiasm in dialogic theory (Merleau-Ponty, 1964; Wegerif, 2018), Yin and Yang symbolising monologue and dialogue depicts how these two concepts are co-emerged, accompanied, and contradicted but harmonise each other (see also Hui, 2016 on the discussion of relational thinking based on Yin-Yang; Poon and Poon, 2020), as illustrated in Figure 2.1, which depicts the theoretical framework of this research. The white area represents Yang, the dialogue; and the black, Yin, illustrates the concept of monologue. However, inside the dialogue, the embedment of the existence of monologue is vital to form a genuine dialogue (Bahktin, 1991), and vice versa. The intertwined space of monologue and dialogue creates a dialogic space in which hybrid dialogue is born.

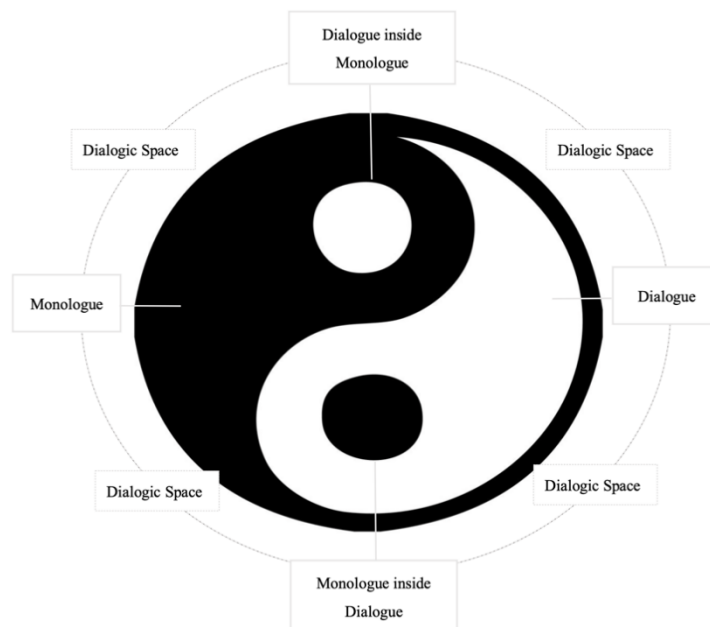


Figure 2.1 The theoretical framework of the study.

Viewing dialogues from such a hybrid perspective could provide this present study with a flexible, holistic, and dynamic approach (Hui, 2016) to analyse classroom dialogues on two levels, which would also be grounded in a Taiwanese cultural context. The first level concerns the present theoretical framework investigating how a more interactive and short-term temporal form of dialogue (Mercer, 2008), of hybrid dialogue, could facilitate pupils' higher-order thinking (i.e., HTR, see Lee and Ashby, 2000; Seixas, 1996, 2017; van Drie and van Boxtel, 2007, 2018; Wineburg, 2001). Regarding the second level, the examination focuses on how the long-term shared dialogue about historical knowledge, a synthesised perspective from Wegerif (2020) and Confucian tradition (Li and Wegerif, 2013; Guan, 2012), is delivered and scaffolded by teachers using hybrid dialogue and inducted by the short-term temporal dialogue of the first level. Furthermore, how dialogic space (Wegerif, 2011) opened up and how personal epistemic beliefs were interaffected from an ontological viewpoint (Wegerif et al., 2019) were also the focus of the research.

2.2 Explore learners' historical thinking

2.2.1 *The nature of history as a discipline*

Historical thinking is a widely suggested 'standard' in the goal of history education across the Western world and now in Asian countries (Keirn and Martin, 2012; Hsiao, 2009). However, a clear definition of historical thinking remains uncertain due to researchers' and history educators' varied beliefs and perspectives about the purpose of history in school. These controversies reflect one fundamental question: *What is history?*

(Lévesque and Clark, 2018). On the one hand, any attempt to answer this question would be impractical in this review as the complexity of this topic is beyond description. Nevertheless, the answer to this question might provide more insights into the exploration of historical thinking.

At the end of the nineteenth century, influenced significantly by scientific development, some scholars (e.g., Ranke: *wie es eigentlich gewesen*, meaning ‘how things actually were’) advocated the rigorous use of historical texts (primary source) as the only evidence for building up historical knowledge (Marwick, 2001). The goal of objectivity became the main purpose of history education and historical research, in which teaching history merely entails the transmission of the facts about the past (Wineburg, 2001). However, a few issues were raised to question this scientific method applied to history. Windelband, a nineteenth-century German Neo-Kantian philosopher, argues there is a fundamental and irreducible methodological difference (*‘logical difference’*) between history and the natural science. Sciences such as mathematics and physics aim to produce general laws (*‘nomothetic’*), whereas the goal of other sciences, such as history, is to explore a unique and singular individual (*‘idiographic’*; Windelband, 1894, p. 291). Another German philosopher, Wilhelm Dilthey, suggests that historians are part of their own research; hence, their own beliefs and perspectives toward historical texts inevitably shape the construction of historical knowledge (Marwick, 2001). Similarly, criticising the conception of history as scientific, Trevelyan (1913) argues that ‘history is not a scientific deduction, but an imaginative guess at the most likely generalisations’ (p. 9).

A ‘new’ history began to develop in the twentieth century, which included the American New Historians (e.g., Fredrick Jackson Turner), the Annales School in France, and the new social history in Britain. Highlighting the interpretations of historical sources, this new trend of historical research significantly impacted history education and was accompanied by empirical research in historical thinking (e.g., Schools Council History Project 13–16), in which knowledge about facts is distinguished by second-order concepts such as evidence, accounts, cause, and empathy (Lee and Ashby, 2000; see also Lee 2005, pp. 41–60, for a more detailed description of the components). These works have had a significant implication: history in school is no longer considered a ‘national narrative’ about memorising factual information about the past (substantive concepts) but a *discipline* about the way historians *do* history by employing second-order concepts (*procedure concepts*; Lévesque and Clark, 2018, p. 121). That is to say, the nature of this discipline can be viewed as follows:

a specific activity of enquiry into evidence surviving from the past, with a view to

finding out in the context of chronology and by a process of rethinking past thoughts and emotions, what particular events happened, and why change occurred. (Schools Council, 1976, p.22)

The idea of teaching *procedure concepts* has its root in Bruner's (1960) notion of the 'structure of the disciplines' and Hirst's (1973) work on 'forms of knowledge'. Bruner (1960) argues that the aim of education is not to teach conclusions generated by experts in each subject, but about their forms of inquiries. He points out that fundamental ideas are more important than the accumulation of detailed information. If a clear context of the broader fundamental structure of a discipline is not provided, then teaching a specific subject would be 'uneconomical' (1960, p. 31). Hence, it is crucial to understand the fundamental ideas of a discipline. Building on this idea, Hirst (1973) explores academic disciplines as forms of knowledge. In highlighting the fundamental forms of knowledge, Hirst (1973) suggests that all forms of knowledge exhibit four characteristics (see Table 2.2).

Table 2.2 Four characteristics of knowledge forms. (Hirst, 1973)

1.	A set of <i>distinctive concepts and key ideas</i> , such as 'monarchy'.
2.	Distinctive ways of relating these concepts and ideas- the ' <i>syntax</i> ' of natural languages.
3.	Characteristics ways of <i>use evidence to warrant the knowledge claim</i> ; for example, historians use historical texts to empathize and reconstruct interpretations.
4.	Distinctive <i>forms of inquiry</i> , such as paleography in historical research.

A large research project, the School Council History Project 13–16 (SCHP, founded at the University of Leeds, 1973) heavily drew on Hirst's 'form of knowledge'. With approximately 60 participating high schools, a three-year curriculum was designed and conducted with an emphasis on the nature of the discipline and historical inquiry. Shemilt (1983), the evaluator of the project, analysed the data collected from the postinterviews with students (from both the research and control groups) and presented the 'four general models' of historical thinking development, from Level 1 to Level 4 (see pp. 5–13 for a detailed description of the four levels). In each conceptual stage, students perform different levels of historical thinking, in which the students from the project group generally performed better than those from the control group (e.g., at the highest level, 68% of project students versus 29% percent of the other group).

Although the above study yielded some in-depth insights into adolescent historical thinking, Wineburg (2001) argues that it failed to explain changes in a practical sense. *What do teachers do when the class is filled with Level 1 students? What do teachers*

do to improve students' level of historical thinking? Moreover, in response to some teachers' misconceptions toward historical understanding and the nature of history, Shemilt (1983) simply suggests that they 'need to familiarize themselves with the project philosophy and objectives' (p. 16). Criticising Shemilt for missing the point, Wineburg (2001) points out that the key question here are: 'How do we alter teachers' deeply held beliefs about history?' and 'Can we *alter* them?' (p. 44).

More criticism concerned the need to teach historical thinking in history education (Chen, 1999; Zaccaria, 1978). Some have argued that students find it difficult and arduous to be required not only to understand history as a non-fixed story but also to shift to multiple perspectives and interpretations according to their approaches of analysing the primary sources (Duquette, 2015). Other history educators believe that the concepts of historical thinking are too sophisticated and unnecessary for students to grasp since not all wish to become academic historians (Elton, 1991; Lévesque, 2008).

Responding to these critics, Lee (2014; also Lee and Ashby, 2000) argues that the emphasis on second-order concepts does not imply the reduction of the value of teaching substantive concepts in history. Furthermore, the goal of this new history education was never intended to produce miniature historians (Lee, 2011; Lévesque and Clark, 2018). Shemilt (1983) contends that the approach 'should be the liberal one' that enables learners to 'make sense of and to see the value of history' (p. 16). In line with this notion, Thompson (1984) synthesises the debate between the memory-history tradition based on the acquisition of factual historical knowledge and the 'new history' focused on historical thinking (pp. 172–173):

Perhaps the concept of the 'new' history should be broadened out from a concentration on procedures and methodology into an approach that recognises the importance of studying the past in 'new' ways, ways whose basic concern is to develop students' understanding of the response to the position of people in the past ...

2.2.2 Historical thinking as an unnatural thinking act

Thinking, in general, could refer to the skills a person uses to solve a problem, either well-defined problems or ill-defined ones (see Kahney, 1993, for more details), by employing prior knowledge or experience. Holyoak and Morrison (2005) suggest that, in addition to problem-solving skills, thinking can also express belief, a kind of foresight, or even a judgement. Kuhn (1991) argues that these general skills are independent from domain-specific knowledge.

However, acquiring domain-specific knowledge could impact the performance of

thinking (Novick, 1988; also, see Leinhardt, Beck, and Stainton, 1994 for research on novices' and historians' reasoning about historical texts). Based on this concept, historical thinking (note that some scholars refer to it as *historical reasoning*, see van Drie and van Boxtel, 2008), or thinking historically (Lévesque, 2008), means the need to apply not only general thinking skills, but also various domain-specific knowledge, such as using historical heuristics related to the meta-concepts of history.

Highlighting the difference between scientific and historical thinking, VanSledright and Brophy (1992) suggest that due to the lack of an 'experiential knowledge base' from 'experiential contact' with the physical world, learners find it difficult to construct information regarding 'developing historical understanding' (p. 841). Moreover, van Boxtel and van Drie (2018) point out that the implication of cause-and-consequence reasoning is different in cases of scientific thinking and historical thinking. In the sciences, causal relationships are carefully controlled and tested by manipulating one variable at a time. However, in history, establishing cause-and-consequence relation takes 'coherence, complexity of the historical explanation, [and] clarity of argumentation drawn on historical facts' (p. 150). Paul (2011) further concludes that the epistemic system of history cannot be easily determined because it differs from a variety of scholarly practices.

Unlike VanSledright and Brophy (1992), Lee (2005) argues that it is the exposure to everyday experience used by students to make sense of everyday life that leads to learners' misconception about history. Hence, Lee (2005) proposes the idea of a 'counterintuitive' approach to historical thinking, expressing how historians really *do* history. In correspondence with this notion, Wineburg (2001, 2010) argues that unlike other thinking skills, historical thinking is not a 'natural process' or an automatic 'psychological development'; instead, it is an 'unnatural' achievement in which students learn how to attain a balance between the 'familiarity and strangeness' of history and that historical thinking takes on greater importance in the aims of history education.

To unpack the characteristics of historical thinking further, Lee (2005) addresses six concepts of second-order concepts from the discipline of history: *time*, *change*, *empathy*, *cause*, *evidence*, and *accounts* (see pp. 41–60, for a more detailed description). Similarly, Seixas (1996, 2017) puts forward the six elements of historical thinking in terms of the structure of the discipline of history, which also involves highlighting the tensions and difficulties that students may encounter in applying historical thinking, namely *historical significance*, *primary sources evidence*, *continuity and change*,

historical perspective-taking, ethical dimensions, and cause and consequence (see also Seixas and Morton, 2013).

Integrating the works mentioned above with empirical studies on high school and precollege students (aged 15–18), van Drie and van Boxtel (2008; 2018) propose a framework to analyse learners' historical reasoning. The framework comprises six components: (a) asking historical questions, (b) using sources, (c) contextualisation, (d) argumentation, (e) using substantive concepts, and (f) using meta-concepts. Table 2.3 illustrates a brief comparison of three models of historical thinking. Do note that this comparison does not by all means indicate the concepts described in these three different models are identical in parallel. These six elements constitute criteria for examining how students describe, compare, and interpret historical phenomena by 'asking historical questions, contextualizing, and making use of substantive and meta-concepts of history' (2008, p. 89). Moreover, these components are shaped by each student's background knowledge, higher-order thinking skills, and epistemological beliefs (van Boxtel and van Drie, 2018).

Table 2.3 The comparison of three models of historical thinking.

Concepts	Lee (2005)	Seixas (1996, 2017)	Van Drie and van Boxtel (2008, 2018)
Using sources	<ul style="list-style-type: none"> ● Evidence: The use of evidence is what makes history become possible. However, students tend to fail to distinguish the use of primary and secondary sources as well as detect the bias in historical sources. 	<ul style="list-style-type: none"> ● Primary sources evidence: Teachers and students need to understand the three elements (text, context and questions) of primary sources. These elements could cause problematic tensions for dealing with primary sources. 	<ul style="list-style-type: none"> ● Using sources for Argumentation: Students are able to select, interpret, and corroborate information from sources to answer given questions or provide evidence to support the arguments as well as to consider the evaluation of sources.
Notion about time	<ul style="list-style-type: none"> ● Time: The sense of time allows students to not only process historical events in order and duration but also understand the link with the ideas of the historical period. 	N/A	N/A
Notion about continuity	<ul style="list-style-type: none"> ● Change: The concept of change in history presupposes two other ideas, state of affairs and theme, both of which give students a better understanding in viewing changes not as a single event but as an episodic, intentional and long-scale process. 	<ul style="list-style-type: none"> ● Continuity and change The continuity and change is a fundamental epistemological assumption of the historical discipline. The connection and continuity between past and the present is also in a sense of 'discontinuous'. 	<ul style="list-style-type: none"> ● Using meta-concepts: One of the aspects of using meta-concepts is to consider it as the application of discipline- based heuristics, which could be helpful for students to describe processes of change and continuity.
Substantive knowledge	<ul style="list-style-type: none"> ● Accounts The notion of historical account is similar to that of evidence. However, unlike with evidence, students tend to focus on particular facts, with the focus on how students view historical narratives and interpretations of historical texts. 	<ul style="list-style-type: none"> ● Historical significance: The problem of substantive knowledge is what counts as historical significance for students to learn. This problem arises from the infinite, inchoate nature of the past itself. 	<ul style="list-style-type: none"> ● Using substantive concepts: If a learner is not capable of using substantive concepts in historical reasoning, he/she cannot extract the concepts to organise information or use them to describe or explain historical phenomena.

Historical empathy and perspective	<ul style="list-style-type: none"> ● Empathy: Empathy in history is not about understanding people's minds in the past but in achieving an empathetic understanding of the ideas we 'entertain' that are very different from our own. 	<ul style="list-style-type: none"> ● Historical Perspective-Taking: Historical perspective-taking is shorthand for the impossibly difficult question of how we can understand the minds of peoples who lived in worlds so different from our own. 	<ul style="list-style-type: none"> ● Contextualisation: Students are able to describe, explain, compare, or evaluate a historical phenomenon and situate it in a temporal, spatial and social context.
Causation	<ul style="list-style-type: none"> ● Cause: Students should treat causes as networks of the various events involved instead of regarding causes as discrete events where one result linearly affects another. 	<ul style="list-style-type: none"> ● Cause and consequence: Explaining 'causes' thus must include both the structures and conditions which were inherited from the past. Students should not only locate the causes of irrational decisions but also identify rational motivations for actions. 	<ul style="list-style-type: none"> ● Using meta-concepts: The other aspect of using meta-concepts also refers to explanations of historical events – in particular, causal explanations.
Other	<i>N/A</i>	<ul style="list-style-type: none"> ● The ethical dimension: These issues include: (1) the problem of judging actors and actions from the past, (2) dealing with the past crimes and injustices whose legacies we live with today, and (3) the memorial obligations that we in the present owe to those who made sacrifices from which we benefit. 	<ul style="list-style-type: none"> ● Asking historical questions: In historical thinking, the ability to ask, recognise, and answer historical questions is one of the competencies underlying historical thinking and could serve as an engine for historical reasoning.

2.2.3 *Dialogues in history class*

I have discussed some important theories about educational dialogues and historical thinking. As Wegerif (2004, 2011) argues, teaching general thinking skills can be conceptualised as an induction into the practice of dialogue across differences. However, *is this the same case when teaching historical thinking?* As discussed at the outset, the benefits of educational dialogues regarding improving learners' mathematics performance and scientific reasoning skills have been widely acknowledged in recent decades, whereas few have paid attention to the performance of historical thinking in history class. Hence, in this section, highlighting the language used in history class, I examine the difficulties in teacher–pupil dialogues regarding improving historical thinking, and I explore the link between the use of language and its effect on historical understanding in class.

The linguistic difficulties of this discipline pose a crucial obstacle for studying talk in history class (Berti, 1994; Edwards, 1978; Husbands, 1996). As Lee (2005) points out, students use everyday experience and common language to make sense of the past, an idea that resonates with Husbands (1996), who argues that the lack of specialist language causes problematic understandings about the past. Pre-existing perceptions about the meaning of historical discourse derived from everyday language make learning history fraught with uncertainty. For instance, one common word is 'revolution' in historical discourse, which has various meanings in cultural, social, temporal, and geographical contexts. Teachers and students might construe meanings in different ways. Hence, it is important for teachers to deal with the existing preconceptions of the students first, before teaching them how to think historically in a shared dialogue (Hsiao, 2009; Lee, 2005). A further aspect of historical discourse is the language of the 'organising principles' of history (Husbands, 1996, p. 35), such as the language of time, the concept of causation (see Sansom, 1987 for the four stages of cognitive and language development in history), and the language for historical interpretation. All of studies above suggest that the linguistic difficulties in history also present an interpretive and epistemological obstacle for students when describing and understanding the past; one that is also inseparable from the way we know and interpret about the past (Husbands, 1996).

Consequently, these difficulties affect the way teachers use talk in scaffolding history, including historical understanding and historical thinking. Husbands (1996) points out that teacher–pupil dialogue is often more monologic than dialogic due to the imbalance of relations in terms of epistemological position and self-identity. Questions formed with such an asymmetrical position of authority are often used by teachers to elicit

pupils' knowledge but also often fail to open up genuine dialogue. Aligned with this concern, Wood (1992) argues that teachers ask questions that students already know the answers to, whereas very limited time is dedicated to pupils thinking through ideas. Such questions fail to provoke and motivate pupils' historical thinking (John, 1994).

Dealing with such questioning difficulties in history class, Levine (1981) suggests that questioning should act as a 'way for learners to articulate their doubts, or as a means to resolve those doubts' (cited in Husbands, 1996, p. 93; also see Wineburg, 1991 for the difference between how historians and history teachers use questions for historical enquiry). To highlight the potential of classroom talk to scaffold learners' historical thinking and historical understanding, Husbands (1996) argues that the emphasis of questioning in class should be shifted in two ways. First, the original concern with outcomes in teachers' questioning should be switched to a concern with processes and ideas. This transition aims to distinguish between those types of classroom questions largely about process, ways of learning, and how teachers want pupils to reach 'interpretive understandings' (p. 94).

The second transition concerns how questions are developed and formulated. As Levine (1981) and McGill (1988) promote the idea of exploratory talk being deployed more in history class (see also Mercer and Wegerif, 1999 and Mercer and Dawes, 2008 for more description about children's exploratory talk), Husbands (1996) also argues for the productive use of classroom talk in which questions are carefully developed under appropriate circumstances. Husbands (1996) then provides several teaching techniques for organising opportunities for pupils' talk in history class (see Table 2.4). By employing these approaches, pupils are provided with a dialogic space in which they can contribute their own thoughts and respond carefully to classroom questions, which could deepen their historical thinking. In other words, as Husbands (1996) states, students could, thus, be in 'a position of strength rather than disadvantage' (p. 96).

Table 2.4 Organising opportunities for talk in history class (Retrieved from Husbands, 1996, p. 95).

Jigsawing	Students are placed in 'expert' group which examines different aspects of a given topic. They are then recognized into home groups so that each home group can draw on the 'expertise' of one of the 'experts'.
Rainbow groups	Groups are asked to discuss different aspects of a topic and are then grouped, by number, into new groups. Each new group is made up of representatives of every original group.

Speaking documents	Pupils are given original or simplified versions of a historical document and discuss what might have happened before or after the document. Then, turn it into a storyboard.
Playing experts	Pupils are given a role of an expert: historian, archaeologist, curator, archivist, etc and they have to describe the given document about how it could be used in an interesting display/reconstruction.
Commentaries	Using newsreel footage without commentary, or photographs, pupils must devise a commentary.
Hotseating	Teacher/child researches a historical figure and is then interviewed by the rest of the class about their actions/beliefs.
Cooperative activity	Any small group activity in which pupils have to collaborate to produce a presentation/product.

Adopting Wegerif's (2013) notion of dialogic space, van Boxtel and van Drie (2017) apply terms such as 'opening up', 'deepening', and 'widening' the dialogue to the practice of teaching history to suggest that, with these approaches, teachers can create dialogic space for collaborative historical thinking, exploring historical topics, and debating historical issues (see pp. 580–584, for examples). Highlighting the role of the teacher, Havekes, van Boxtel, Coppen and Luttenberg (2017) describe three strategies that teachers could employ to guide foster student historical thinking in a classroom discussion:

- (1) focusing on knowing history to broaden student thinking;
 - (2) focusing on doing history to deepen student thinking;
 - (3) integrating both knowing and doing history to enhance student historical thinking.
- Moreover, the idea of dialogic space also suggests the presence of cultural and virtual voices embedded in a long-term dialogue shared within humans (Bakhtin, 1981). The cultural voices represent the traces of all the ways the voices have been used (Bakhtin, 1981; Hartog, 2005). Such dialogue can appear externally fixed and a static, authoritative voice but allows learners to enter with living voices to understand new things (Wegerif, 2013). The goal of history education then shifts to prepare students for a more sophisticated critical investigation and analysis of the evidence of the past. With such competence, students could be 'critical and educated citizens' in this demanding and highly changing world (Lévesque, 2008).

2.3 Epistemic beliefs about the nature of history and history education

2.3.1 Theoretical models of personal epistemology

Epistemic judgements are part of people's everyday life, especially when we encounter new information (Hofer, 2004a). From a philosophical perspective, epistemology is

concerned with ‘the origin, nature, limits, methods and justification of human knowledge’ (Hofer, 2004b, p. 47). However, from a psychological and educational perspective, research focuses on personal epistemology or epistemic cognition by exploring how an individual ‘develops conceptions of knowledge and knowing and utilizes them in developing understanding of the world’ (Hofer, 2002, p. 4). Since such beliefs do not necessarily function at a conscious level (Brownlee et al., 2001), any approaches attempting to investigate epistemic beliefs pose certain conceptual and methodological issues. However, a quick sketch of the history of this field is helpful for this research to build on.

The foundation of personal epistemology studies can be traced to Perry’s (1970) longitudinal work on Harvard students, which culminated in a developmental scheme of the ‘abstract structural aspects of knowing and valuing’ (p. 14) in college students. After a series of open-ended interviews with nearly 150 first-year undergraduate students over 10 years, Perry (1970) created a scheme for intellectual and ethical development in nine positions normally clustered into four sequential categories (Moore, 1994; Hofer and Pintrich, 1997): *dualism*, *multiplicity*, *relativism*, and *commitment within relativism* (see Table 2.5 for description). Although the results of this work were later criticised for not being representative enough – white, elite, male college students educated at Harvard during the 1950s – it provides a strong starting point for future work to explore how an individual’s personal epistemology develops and the role it plays in intellectual development (Moore, 2002).

Table 2.5 Perry’s scheme of personal epistemology development (Retrieved from Hofer and Pintrich, 1997, p. 91)

Categories (positions)	Description
Dualism (1and2)	Dualism represents an absolutist view of the world: right-or-wrong/ black-or white. The truth/ knowledge is possessed by the authorities, who convey it to the learner.
Multiplicity (3and4)	This category represents a modification of dualism with recognition of diversity and uncertainty. Authorities who disagree haven't yet found the right answer, but truth is still knowable. By Position 4, dualism is modified again; areas in which there are no absolute answers are outside the realm of authority. An individual at this position is inclined to believe that all views are equally valid and that each person has a right to his or her own opinion.
Relativism (5and6)	Position 5 is the watershed of the scheme, as individuals make

	the shift from a dualistic view of the world to a view of contextual relativism that will continue, with modifications, through the upper stages. A major shift is in the perception of self as an active maker of meaning. At Position 6 individuals perceive knowledge as relative, contingent, and contextual and begin to realize the need to choose and affirm one's own commitments.
Commitment with relativism (7 to 9)	The final positions, 7 through 9, reflect a focus on responsibility, engagement, and the forging of commitment within relativism. Individuals make and affirm commitments to values, careers, relationships, and personal identity. Developments in the upper positions are described by Perry as more qualitative than structural, and are not marked by formative change. Although proposed as part of the scheme, these positions were not commonly found among college students.

Building on Perry's (1970) scheme, Magolda (1992) attempted to quantify students' ways of thinking via a survey entitled *The Measure of Epistemological Reflections*. He surveyed 101 college students (approximately half were female) and conducted open-ended interviews. The epistemological reflection model contains four ways of thinking: *absolute knowers*, *transitional knowers*, *independent knowers*, and *contextual knowers*, which is in line with the four categories in Perry's scheme (see Magolda, 1992 for a detailed description of the model). In this study, reporting the gender-related reasoning patterns in the first three ways of thinking, Magolda (1992) filled the gap of lack of diverse samplings identified in the preceding work. Thus, the work still invites critics regarding the lack of students from diverse cultural backgrounds and socioeconomic status.

To expand Perry's work, King and Kitchener (1994, 2001) studied the epistemic assumptions that emphasise reasoning. Based on a series of studies over 15 years, built around four open-ended problems, with high school students and adults, they proposed a reflective judgement model: a seven-stage developmental model that focuses on epistemic cognition to explore the way people 'justify their beliefs about ill-structured problems' (King and Kitchener, 1994, p. 13). Within the model, there are three levels of epistemological development: *pre-reflective* (Stages 1, 2, and 3), *quasi-reflective* (Stages 4 and 5), and *reflective* (Stages 6 and 7). As illustrated in Table 5, paralleled with other models, the stage of reflective thinking cuts across several positions and yields an elaborate specification of dimensions of epistemic cognition to Perry's (1970)

scheme. However, although the use of hypothetical ill-structured problems allows researchers to investigate what individuals' perceptions and resolutions would be, it tells little about how students' epistemological beliefs arose from actual experiences (Hofer and Pintrich, 1997). Moreover, there are some limitations of this study due to the high requirement of trained raters to conduct the reflective judgement interview. Furthermore, in common with other studies mentioned above, the lack of racially and culturally diverse samples, as well as gender differences, is problematic regarding credibility.

To address these methodological issues, Kuhn (1999) proposed a study regarding how people reason with everyday ill-structured problems and included a broader sample of subjects in terms of differences in age, gender, and educational background. She then reports three categories of epistemological beliefs evidenced in the interviews: *absolutist*, *multiplist*, and *evaluative*, which are aligned with Perry's and Magolda's positions (see Table 2.6). Although the study is notable because its sampling strategy is more inclusive than previous studies, the model fails to provide a clear definition of the elements that form epistemological theories.

Table 2.6 Different models of epistemological beliefs development

Intellectual and ethical development (Perry, 1970)	Epistemological reflection (Magolda, 1992)	Reflective judgment (King & Kitchener, 1994)	Argumentative reasoning (Kuhn, 1991)
Positions	Epistemological perspectives	Reflective judgment stages	Epistemological views
Dualism (<i>Position 1 and 2</i>)	Absolute knowing: Believing in the absolute and certain knowledge which is held by the authorities	Pre-reflective thinking (<i>Stages 1, 2, and 3</i>): In these stages, knowledge is viewed as certain, simple and no need for justifications. But at the Stage 3, a recognition of temporary uncertainty appears.	Absolutists: Knowledge is certain and absolute. Individuals are also highly certain about their own beliefs.
Multiplicity (<i>Position 3 and 4</i>)	Transitional knowers: Beginning to accept the uncertainty in knowledge and knowing that the authorities do not have all the answers	Quasi-reflective (<i>Stages 4 and 5</i>): The growing understanding of uncertainty of knowledge and everyone is entitled to their own opinions. Although individuals at these stages could form their own opinions, a well-evidenced argument is not yet present.	Multiplists: Individuals deny the certainty of knowledge and highly skeptical about expertise. This position is marked by "radical subjectivity." Every opinion is equally valid and valuable.
Relativism (<i>Position 5 and 6</i>)	Independent knowers: Questioning the source of knowledge and value their own opinions as equally valid		Evaluative: Although they also believe in uncertainty of knowledge, they understand that different opinions can be compared and evaluated with certain criteria to generate a more convincing conclusion.
Commitment within relativism (<i>Position 7, 8 and 9</i>)	Contextual knowers: Constructing personal perspective of knowledge by judging evidence in context	Reflective (<i>Stages 6 and 7</i>): Knowledge is uncertain but contextual. Opinions are critically evaluated and justified with evidence.	

The models mentioned above share similar assumptions and illustrate similar trajectories of development. The second approach for understanding personal epistemology was proposed by Schommer-Aikins (2004), who adapted items from Perry's (1970) survey to design the Epistemological Beliefs Questionnaire, in which five dimensions are included: *structure*, *stability*, *source of knowledge*, and *control and speed of knowledge acquisition*. This study, in contrast to previous research, focuses on independent beliefs and proposed a model of epistemic beliefs as a continuum rather than stages or positions (Hofer, 2001). The four factors in the model are characterised as follows (Schommer-Aikins, 2004): *Certain Knowledge* (knowledge is certain or evolving); *Simple Knowledge* (knowledge is isolated bits of information or highly inter-related concepts); *Quick Learning* (learning occurs in all-or-nothing situations or as a gradual enterprise); and *Fixed Ability* (intelligence is fixed or incremental). The significant contribution of the study is not only to provide researchers with a thorough paper-and-pencil instrument, but also allow them to explore the relationship between epistemological beliefs and an individual's learning more explicitly.

In contrast to either developmental models or independent belief models, Hofer and Pintrich (1997) proposed an alternative model of epistemology theories, one that consists of four dimensions: *certainty of knowledge*, *simplicity of knowledge* (clustered into the area of 'the nature of knowledge'), *source of knowledge*, and *justification of knowledge* (clustered into the area of 'the process of knowing'). Although these beliefs are central to Perry's (1970) scheme, they 'appear more as outcomes of the core beliefs and dimensions' (Hofer, 2001, p. 361). Moreover, many traditional models of personal epistemology that are subject-general vary little, depending on the subject matter (Schommer and Walker, 1995). However, this alternative approach (Hofer and Pintrich, 1997; Hofer, 2001, 2002) to epistemological theories argues that different subjects have inherent differences epistemologically. Hence, individuals might hold different epistemic beliefs about different disciplines (Hofer, 2001). Building on Hofer and Pintrich's (1997) work, attention towards discipline-specific personal epistemology has turned mostly to the domains of maths (e.g., De Corte, Eynde, and Verschaffel, 2002) and science (e.g., Bell and Linn, 2002). However, very little research has focused on the discipline of history (Maggioni et al., 2009), which is discussed in the following section.

2.3.2 Epistemic beliefs about history as a discipline

As Wineburg (2001) suggests that historical thinking is an unusual act, the question arises as to whether epistemic beliefs account for its strangeness, and to what extent, historical thinking links with personal epistemology of history as a discipline? From a developmental psychological perspective, Wineburg (2001) implicitly hints at the

relationship in the following statement: *‘Therefore, to postulate that students believed in a single “correct answer” helps explain why they did not qualify their answers or compare the pictures with the written documents’* (p. 83).

Wineburg argues that the one of the main reasons students (novices) cannot approach historical texts in the same way as historians (experts) do is because students normally hold simple and fixed epistemic beliefs about the nature of history. Hence, they tend to refer to historical sources as ‘textbooks’ and attempt to find the true answer within. Similarly, in VanSledright’s (2002) study of fifth graders’ epistemic stances, he suggests that an appropriate instruction for acquainting students with the heuristics of historical investigation could have a beneficial effect regarding developing a more sophisticated justification of historical knowledge among students. However, he also warns of the danger of moving from ‘naïve trust to widespread suspicion’ (VanSledright, 2002, p. 49) if teachers fail to provide careful guidance and sufficient scaffolded instruction. Aligned with this warning, Bain (2009) cautions that deepening students’ understanding about the constructed nature of history could provide some students with a productive scepticism, yet others with cynical relativism.

The research mentioned above, combined with other studies on personal epistemology (e.g., Kuhn, 1991; King and Kitchener, 1994; Perry, 1970), offered Maggioni et al. (2004) some insights regarding the further explicit exploration of the connections between epistemic beliefs and historical thinking. After examining the measurement issues of employing pencil-and-paper instruments, such as in written interviews (Wood and Kardash, 2002) adapted from the reflective judgement interview (King and Kitchener, 1994), Maggioni et al. (2004, 2006, 2009) developed a questionnaire entitled, *The Beliefs about Learning and Teaching of History*, to provide ‘a domain-specific, easy to administer, and objectively scorable measure’ (p. 180). The questionnaire consists of 21 items, on which students express their views on a six-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree), and later analysed with an exploratory two-factor analysis. As illustrated in Figure 2.2, Factor 1 serves as a proxy for beliefs in the objective aspect of historical knowledge, whereas Factor 2 is a proxy for beliefs in its subjective aspect. Four epistemic profiles were identified: *dichotomous thinkers* (who believe ‘the unmediated nature of historical knowledge accompanies a view of history as prevalently subjective’); *naïve realist* (characterised by ‘the belief in a perfect correspondence between the past and history’); *relativist* (whose emphasis is on ‘the subjective nature of historical knowledge’ but ‘the historical method is not deemed an effective tool to deal with problems of conflicting or missing evidence’); and *criterialist* (referring to the attempt to ‘search for the best explanation through the

patient weaving together of the best evidence and the best argument available’; Maggioni et al., 2004, pp. 186–187).

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Figure 2.2 Four epistemic beliefs in historical thinking. (Retrieved from Maggioni et al., 2004.)

Despite some limitations, such as the lack of diverse sampling (only primary school teachers at Fourth and Fifth Grade), the study provides an articulate framework of a domain-specific measure of epistemological beliefs and further understanding about developing historical thinking. Moreover, the results suggest an important pedagogical implication that, to advance both teachers’ and students’ development of domain-specific epistemic beliefs, explicit instruction and exposure to the heuristics of history (as historians) is needed (Maggioni et al., 2004). However, in their study, details regarding how the intervention of TPD concerned with the change of epistemic beliefs should be conducted is fairly limited.

Building on Maggioni et al.’s (2004, 2009) work on domain-specific epistemic beliefs, and integrating van Drie and van Boxel’s (2008, 2018) framework of historical thinking, Havekes et al. (2012) proposed a conceptual framework regarding how ‘the epistemic stance of students interacts with the segments of knowing and doing history’ (p. 75, see Figure 2.3). In this framework, three epistemic stances are identified and characterised: *copier stance* (referring to students who believe an exact copy of the past can be produced); *borrower stance* (students understand that the past cannot be copied exactly and requires using sources to reconstruct, but they also believe that a fixed procedure of doing history is possible); and *criterialist stance* (students not only ask critical questions and engage with historical sources to construct the past, but also understand that both knowing and doing history are not fixed but debatable). These three stances are intertwined and interaffected with all other elements of knowing and doing history.

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Figure 2.3 Conceptual framework for fostering active historical contextualisation by students (Havekes et al., 2012, p. 75).

The study suggests that to scaffold students' learning in historical thinking and move them from lower stances (i.e., copier and borrower stance) to the criterialist stance, teachers should 'challenge the historical knowledge of the students by creating a cognitive incongruity' and 'stimulate substantiated considerations' (Havekes et al., 2012, p. 83; see also Limon, 2002). Moreover, the research supports viewing the classroom as discussions, which are 'useful tools to make the thinking of the students visible' (Havekes et al., 2012, p. 86). However, regarding teachers' responses to students' ideas, an appropriate balance concerning the degree of evaluation of students' answers must be created (see Chin, 2006 for 'responsive questioning'). If a teacher evaluates students' answers too much, such as critique, students tend to stop thinking and, thus, might fall back to the *copier stance* in an attempt to find the 'correct answer'. On the other hand, if no evaluation is offered by teachers, students might think 'anything goes', which is an extreme relativist stance (Maggioni et al., 2004).

Taken together, it is clear that to engage students in historical thinking, their epistemic beliefs in history should be changed to a sophisticated stance (e.g., *criterialist stance*; Wineburg, 2001; Havekes et al., 2012; Maggioni et al., 2004). However, more issues remain unclear: *How do teachers identify and change students' existing epistemic beliefs? Furthermore, how can teachers do so if they themselves are still in lower epistemic beliefs stages?* As Maggioni et al. (2004) suggest, professionally developing both preservice teachers and in-service teachers may become the fundamental solution to these problems. Agreeing with this notion, in the next section, I briefly discuss how the Teacher Development Programme might be helpful regarding the three topics of dialogic teaching, historical thinking, and epistemic beliefs.

2.4 Teacher Professional Development

The discussion above suggests it would be beneficial to develop learners' historical thinking through the appropriate use of classroom dialogues to change epistemic beliefs regarding history. Thus, teachers are inevitably at the centre of reform, for they must carry out the demands of applying different pedagogical approaches in the classroom (Garet, Porter, Desimone, Birman, and Yoon, 2001). However, as Wineburg (2001) proposes, the concern is that history teachers' existing preconceptions and epistemic beliefs about history might affect their philosophy towards teaching (see Havekes et al., 2012; Maggioni et al., 2004; VanSledright et al., 2004; 2014).

Moreover, teachers' attitudes and competence towards dialogic teaching may vary, which could affect the efficacy of dialogic teaching. For instance, Corden (2009) points out that teachers might not have had the chance to experience dialogic teaching when they were students themselves, nor received systematic training in this approach during their preservice training programme (see Sedova et al., 2016). Hence, a designed TPD programme for using dialogic teaching for scaffolding learners' historical thinking might provide the answer to these issues. In the following section, I briefly discuss previous research on PD for dialogic teaching and historical thinking, which again, compared with PD for maths and science teaching, the paucity of literature on history teaching is significant (see Avalos, 2011 for a 10-year review).

2.4.1 Teacher professional development for teacher change

The essence of TPD is 'teacher change' (Guskey, 1985; Clarke and Hollingsworth, 2002). Clarke and Hollingsworth (1994) further identify six perspectives on teacher change: change as *training*, as *adaption*, as *personal development*, as *local reform*, as *systemic restructuring*, and as *growth* or *learning*. In this sense of change, both Fullan (1982) and Guskey (1986) proposed models to recognise the process of PD for teacher change. Although Fullan's (1982) model (see Figure 2.4) describes the linear chain of the implicit purpose of teacher in-service programmes, Guskey (1986) argues that changes in teacher beliefs and attitudes are more likely to occur following significant evidence of students' learning outcomes (see Figure 2.5).

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Figure 2.4 An implicit model of the purpose of teacher professional development.

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Figure 2.5 Guskey's model of the process of teacher change (Guskey, 1986, p. 7)

However, such linear models have been challenged for failing to capture ‘multicausal, multidimensional and multicorrelational’ processes (Opfer and Pedder, 2011, p. 394). Therefore, based on Guskey’s model, a further model is provided by Clarke and Peter (1993), and was later revised by an international research group, to highlight the nonlinear nature of TPD (see Figure 2.6). This interconnected model suggests that four domains (i.e., the personal domain, the domain of practice, the domain of consequence, and the external domain) are inter-reflected and inter-enacted by each other, which highlights that change could take place in any domain, enabling individual teachers to grow via multiple pathways instead of a single linear route (Clarke, 1988; Clarke and Hollingsworth, 2002).

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Figure 2.6 The interconnected model of professional growth (Clarke and Hollingsworth, 2002, p. 951)

To explore the effectiveness of TPD further, Garet et al. (2001) identified three core features and three structural features with significant positive effects on teachers’ growth, based on a large-scale study employing a national sample of 1,027 mathematics and science teachers. The core features are (1) focus on content knowledge; (2) opportunities for active learning; and (3) fostering coherence with other learning activities. The results indicate these core features played a more vital role in the effectiveness of TPD than the structural features did, which are (1) the form of the activity (e.g., workshop vs. study group); (2) collective participation of teachers (e.g., from the same school, grade, or subject); and (3) the duration of the TPD. All these

features inform my own model for a TPD programme.

2.4.2 Changing epistemic beliefs towards a dialogic history education

In relation to PD for dialogic teaching, a seven-year programme conducted by Wells and Arauz (2006) examined the use of open discussion in class. Nine teachers were involved and made regular recordings of their own teaching, which were later used as material for self-reflection and group discussion in workshops. However, the results indicate that while this type of discussion increased, the proportion of these sequences remained low. In Snell and Lefstein's (2011) PD, video-recordings of teachers' teaching practice were employed for discussion in workshops. The researchers found a pattern of an increase in open-ended questions in class.

Pehmer, Gröschner, and Seidel (2015) also designed a TPD programme to improve classroom dialogues through the use of video as a reflective tool. However, the focus of this programme later turned to students' learning process and self-regulation. Sedova, Sedlacek, and Svaricek (2016) not only used video-recordings of teaching practices, but also recordings of group discussions in workshops to provide rich data. Questionnaires and tests were distributed to students to collect their responses. The study findings suggest that the programme instructing teachers on the specific skills of dialogic teaching could positively impact the change of the nature of student talk in classroom.

Highlighting the improvement of dialogic teaching incorporated with educational technology, Hennessy, Dragovic, and Warwick (2018) suggest that a cluster-based ambassador-led TPD model is 'sustainable and workable' (see also Hennessy, Warwick, and Mercer 2011; Hennessy and Warwick, 2013). Moreover, Hennessy and Davies (2019) address some features of dialogic teaching that could be more easily changed during the course of TPD being implemented, such as the frequency of using open/authentic questions by teachers, the increase in the use of reasoning words by students (Mercer et al., 2004), and using metacommunicative moves (van der Veen, de Mey, van Kruistum, and van Oers, 2017). Similarly, by emphasising the deployment of the concepts of the dialogic approach in PD for dialogic teaching, Vrikki, Warwick, Vermunt, Mercer, and van Halem, (2017) designed a continuing teacher training project, complementing the use of Dudley's (2013) model for lesson study (LS), to investigate the effectiveness of the dialogic moves that most reliably seemed to lead to teacher learning (see Figure 2.7). The results indicate the significant possibilities to design a protocol to analyse the connection between the content and structure of teacher's spoken dialogue and their learning processes. However, other studies have had limited success

in promoting dialogic teaching through TPD. For instance, following a one-year TPD programme, Lefstein and Snell (2013) found that despite the increase in openness of teachers' questions, other features, such as the nature of students' contributions, did not change substantially or sustainably.

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Figure 2.7 Combination of three theoretical perspectives (Vrikki et al., 2017 p. 212)

Regarding TPD for teaching historical thinking, studies have largely paid attention to certain teaching techniques that could prompt students to think historically (e.g., Seixas and Peck, 2004; Stahl, 2000; Reisman and Wineburg, 2008). However, very few have focused on how to teach teachers to employ these approaches successfully in history class (see De Groot-Reuvekamp and van Boxtel, 2018; also, van Boxtel and van Drie, 2018 on explicit teaching to support historical reasoning). For instance, the aim of the project Reading Like a Historian (RLH), founded by the Stanford History Education Group (SHEG), is to engage students in historical inquiry, in which they learn how to think historically using a series of primary sources (Wineburg et al., 2011). However, no official teacher trainings were conducted to deliver this innovative pedagogical approach. In the evaluation of this project, the foci are all on the students' performance in historical thinking (Reisman, 2012). The main problem of these studies, I argue, is the implicit assumption that all the participant teachers are capable of fully transforming their beliefs and practices to this new teaching approach successfully. Based on the models of PD discussed above, both changes in teacher practice and beliefs are essential for change in student performance. Hence, it is reasonable to address this salient research gap concerning with the approach for delivering TPD in this study.

Research on teachers' personal epistemic beliefs and teaching practice has focused on preservice teachers' beliefs about knowledge (e.g., Gill, Ashton, and Algina, 2004). For instance, Sinatra and Kardash (2004) found that the epistemic beliefs of preservice teachers could be used to predict their openness to new metaphors of teaching. Brownlee, Purdie, and Boulton-Lewis (2001) investigated how preservice teachers'

personal epistemology changed during the course of the one-year teaching programme, and they proposed a conceptual framework (see also Brownlee and Berthelsen, 2006). Highlighting the role of teachers' epistemic beliefs and motivations, Patrick and Pintrich (2001) emphasise the need for beliefs to be challenged and openly discussed. Regarding domain-specific epistemic beliefs in history, Bouhon (2009, cited from Voet and Wever, 2015) characterises three types of teacher beliefs: (1) *exposition-recital*, considers transmitting historical knowledge as the main purpose of instructions; (2) *discourse-discovery*, focuses on knowledge acquisition and the training of historical thinking; and (3) *apprenticeship-research*, builds historical consciousness and an understanding of historical research. Similarly, McCrum (2013) divides history teachers into two broad categories: *teacher-centred* and *pupil-centred*, which can result in different preferences for pedagogical instruction (Voet and Wever, 2015).

Drawing on the literature, VanSledright and Reddy (2014) proposed an interventional TPD for prospective history teachers to influence their epistemic beliefs. The intervention consists of a series of sessions (14), in which epistemic beliefs about history are explicitly introduced, and a set of teaching-learning strategies designed to reveal prospective teachers' epistemic beliefs and open them up for consideration and discussion. To explore their trajectories of epistemic beliefs, the Beliefs about History Questionnaire (Maggioni et al., 2004) was employed, as well as interviews. The results indicate that some of the preservice teachers remained unaffected by the course, whereas others changed dramatically due to the difficulty of 'working out a successful coordination between themselves as knowers and what can be known about the past through its remaining objects' (VanSledright and Reddy, 2014). However, the study fails to provide a detailed explanation regarding how the interventional TPD could be improved, since the programme played a crucial role in the research.

Overall, the review reveals that only limited research has paid attention to addressing teachers' epistemic beliefs (Maggioni et al., 2004, 2009; Nespor, 1987; Wilkinson et al., 2017) before implementing a new pedagogical approach in class (Corden, 2009; Garet et al., 2001). As suggested by Wineburg (2001), the concern is that history teachers' existing preconceptions and beliefs about history might affect their philosophy towards teaching history. Therefore, I argue that a fundamental change in teachers' epistemic beliefs is essential for a sustainable change of practice (Guskey, 1985; Clarke and Hollingsworth, 2002). Moreover, in a special journal issue of research on dialogic theories, Ritella and Ligorio (2019) also call for future study on how 'dialogical approaches will be able to inform educational practices and impact educational change' (p. 2). Hence, in this research, to fill the gap between practice and theories, I conducted

a DBR study in Taiwanese high schools, first to explore teachers' and students' epistemic beliefs, and then to implement an intervention as a form of PD. The concepts of dialogic education and HTR were introduced to teachers, and I collaborated with teachers in the sense of 'community of inquiry' (Jaworski, 2006; Hennessy et al., 2011) to explore jointly the possibilities of adopting new pedagogical approaches in the Taiwanese context.

Figure 2.8 illustrates the proposed framework of TPD, which is based on Fullan's (1982) model, synthesised with Guskey's (1986) model of PD design and the concept of the nonlinear, interconnected model proposed by Clarke and Hollingsworth (2002), to highlight epistemic beliefs in the personal domain. The project also highlights the importance of identifying teachers' epistemic beliefs as starting points to explore the degree of change in teachers' teaching practice and students' beliefs after PD is implemented. Moreover, the inner circle in the diagram illustrates the combination of three theoretical perspectives (i.e., epistemic beliefs, dialogic education, and historical thinking; Vrikki et al., 2017), which are embedded inside the entire project.

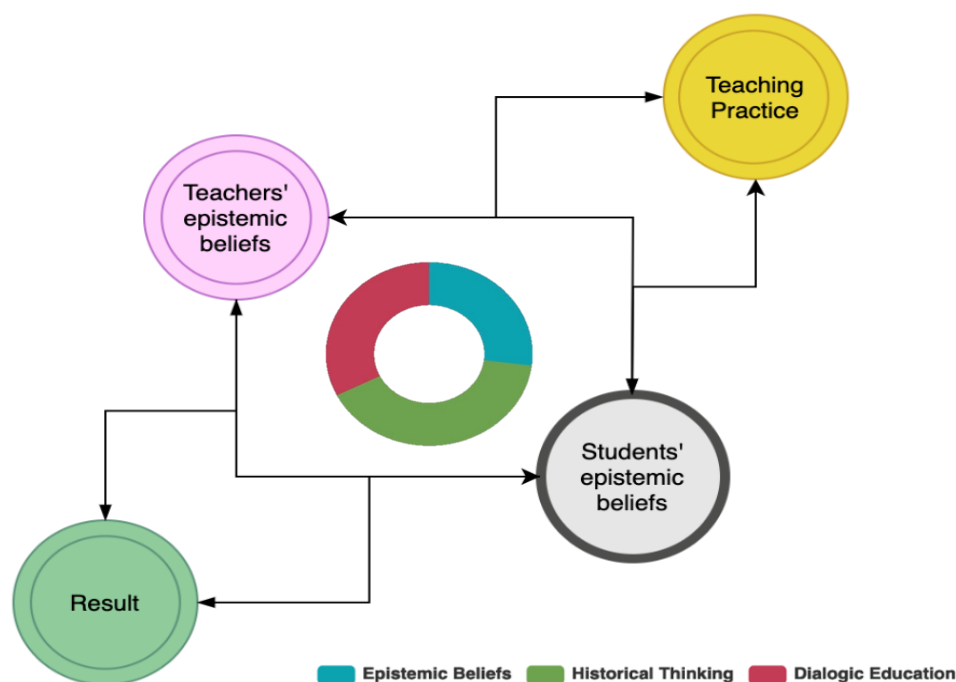


Figure 2.8 The teacher professional development design for the present study.

2.5 Understanding Taiwan as the research context: the ongoing dialogue in history education

2.5.1 History education as a moral education from traditional Chinese context

Taiwan, despite being politically independent from China, has a shared and inherited traditional Chinese culture. Throughout Chinese history, discussion of the nature of history and the purpose of history has largely been by the ruling class, as they believed history could be consulted for politics. In the Zhou Dynasty (1046–256 BCE), the historian and politician Zhou Gong (周公) proposed a plan for history education for emperors to learn from the mistakes from previous dynasties to consolidate the empire. Holding Zhou in esteem, Confucius adopted a similar notion regarding the nature of the discipline. In his private schools, history became an official subject with its own curriculum goals and ‘textbooks’ compiled by Confucius himself, such as the *Spring and Autumn Annals* (「春秋」), a chronical historiography of the State of Lu. Confucius and his descendants (e.g., Mencius 孟子) believed that the purpose of history education was twofold. First, similar to Zhou, they suggested that emperors and royals were required to study history because it could provide moral guidance on how to rule a kingdom with virtues (i.e., 「仁政」) from the ‘wise kings’ (「賢君」) in history. Second, they believed that history could be utilised to restore order in society by preserving the long-term shared cultural heritage. It is only with comprehensive knowledge of the history of the past that the empire could truly become an orderly and moral society in which each individual has their own position in an appropriate social class and takes responsibility for their own work (「故尚賢，使能，等貴賤，分親疏，序長幼，此先王之道也」, see *Xunzi* in Chang et al., 1922).

The same approach was employed by Emperor Taizong of Tang (唐太宗, 598–649 AD), who once famously stated: ‘Using history as a mirror allows one to see the future trends.’ (Wang, 1013). The explicit analogy of history as a mirror later became an implicit preconception about the nature of the history subscribed to by many (Lee, 2007). Four centuries later, in the Northern Song Dynasty (960–1279 AD), a highly influential history work composed by Sima Guang (司馬光, 1084) was based on this metaphor and named *Comprehensive Mirror in Aid of Governance* (「資治通鑑」). This chronological Chinese historiography was designed to be employed as a history textbook for emperors and royals to learn from their predecessors. Moreover, highly influenced by the Confucianist perspective on the purpose of history, a philosopher and an educator, Zhu Xi (朱熹, 1130–1200 AD), in his historiography work called *Outline and Details of the Comprehensive Mirror for Aid in Government* (「資治通鑑綱目」, Zu, 1219), underpinned by Sima’s work, advocated a ‘paradigm shift’ regarding the purpose of history. From using history to maintain a ‘proper hierarchical political power

structure’ in the government (represented by Sima’s work) to training ‘literati to make moral decisions in historical contexts’, *Outline and Details* transformed historical knowledge (Lee, 2009, p. 44). The work implied that only morally cultivated people had the ability to make proper decisions, meaning the ruling class was able to consolidate a proper world order aided by historical knowledge. The Confucianism classics, such as *The Analects* (「論語」) and *I Ching* (「易經」) also known as *The Book of Changes*, became important materials for history education after that. Zu (1270) further argues that to achieve a proper understanding of history, one is supposed to read these classics, which he believes can provide a better moral compass for judgements.

History education as a means for moral education became even more indoctrinated during the Qing Dynasty (1636–1912). For instance, the emperors *Kangxi* (「康熙」), *Yongzheng* (「雍正」), and *Qianlong* (「乾隆」) all issued a sacred edict to make history education compulsory in school, with history textbooks standard material for moral education based on Confucianist classics. In public school, historical knowledge was considered an absolute truth and was taught and learnt via recitation and dictation from the classics (Lee, 2007). Interpreting history was solely controlled by the authorities, and any different historical interpretations were considered ‘unorthodox’ and could face severe penalties (Chen, 2006). Therefore, history research shifted to the study of classics using linguistic approaches (i.e., philology, see Chen 2015).

2.5.2 *From moral education to modern history education reform*

Following the Qing Dynasty, the first republic modern nation (i.e., the Republic of China [ROC]) took over China, and education was transformed into a modern education system influenced by the West. The educational aims of history in elementary schools and high schools heavily emphasised the understanding of substantial concepts in Chinese history, with less focus on moral education. Moreover, history education was viewed as a tool to educate and cultivate individuals’ sense of citizenship to become patriotic citizens. In the mid-twentieth century, after the ROC was replaced by the People’s Republic of China (PROC) in China, and the ROC retreated to Taiwan, the Chinese Nationalist Party (also known as the Kuomintang or KMT) used history education as propaganda to consolidate its power in Taiwan and deter the Communist Party from penetrating the island. People in Taiwan were taught Chinese history only to form their national identity as Chinese (Shi, 2014). Similar to the Qing Dynasty, historical knowledge and interpretations were controlled by the government and transmitted through teacher-centred monologic lectures (Du, 2009). Although moral lessons based on traditional Confucianist perspectives were less emphasised, much

attention was paid to judging historical figures with the dichotomous criteria of ‘good and bad’ or ‘heroes versus villains’ during Cold War period.

However, for the past few decades, as Taiwan has become a more democratic nation, ever more history educators have been dedicated to promoting numerous concepts to reform Taiwanese history education, such as historical thinking (e.g., Hsiao, 2009), historical consciousness (e.g., Zhou, 1992), or historical critical thinking (Huang et al., 2011), based on the works of British and American researchers (e.g., Lee, 2005; Seixas, 1996; Wineburg, 1991). For instance, Hsiao (2009) and Lin (2016, 2019) explicitly advocate the importance of understanding students’ historical thinking by applying the highly influential work by Lee (2005), and especially the model of ‘progression’ in history learning (Lee and Shemilt, 2003, 2004). Such work has successfully influenced policymaking in history education. In the latest national history curriculum reform for high schools, issued by the National Academy for Educational Research (NAER), the elements of historical thinking are officially included in ‘*SuYang*’ (‘素養’, equivalently meaning ‘core competences’), such as contextualisation, use of sources, and the ability to build an argument, are specifically emphasised (NAER, 2018). Core competencies are broadly divided into three major dimensions, namely spontaneity (viewing the individual as an autonomous agent), communication and interaction (the ability to communicate with others using physical and sociocultural tools), and social participation (cultural awareness as a global citizen), in which three items are included (see Figure 2.9). This new curriculum was expected in the academic year of September 2019, the same semester when this research took place.

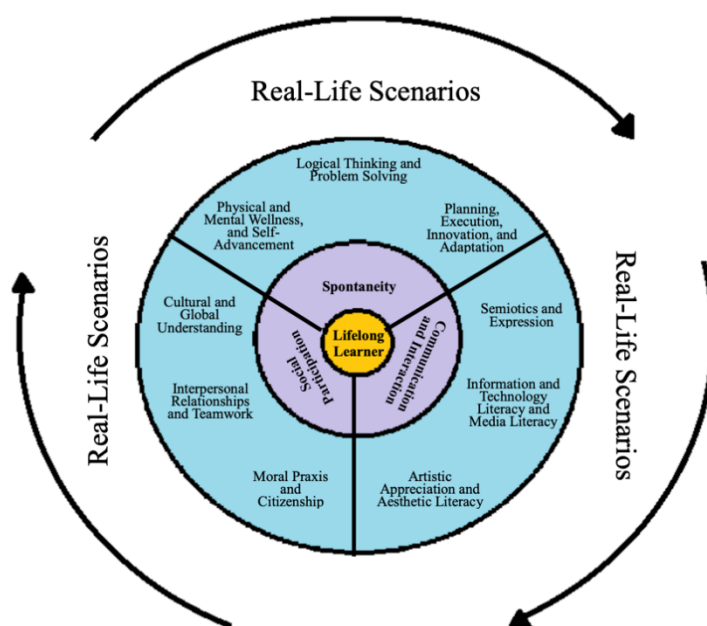


Figure 2.9
Wheel-in-action
diagram of core
competencies
(MOE, 2014, p.
6).

However, a few concerns have been expressed regarding this reform. The national curriculum has been a contested area regarding identity politics in Taiwan, as well as in other countries (Apple, 1979; Yang, 2020). National curricula, and history curricula in particular, are often employed to shape or reshape a nation's identity. In Taiwan, the ongoing dialogue and debates regarding the national history curriculum have taken place in two major topics: Transitional Justice in Post-War Taiwan, and Taiwan's Relationship with China. The first issue concerns how transitional justice is dealt with in history education (Elster, 2004) and focuses on numerous incidents that happened in the Martial Law Era (1949–1987) under the control of the ROC Armed Forces of the Kuomintang-led Government of the ROC regime. During this era, also known as the White Terror Era (Lan, 1991), more than 200,000 Taiwanese were executed in the suppression of political dissidents (Li, Lin, Lin, Hu, Tsao, and Zheng, 2002). In the latest curriculum, the emphasis is on reflection and regarding such historical accounts as an attempt to develop pupils' historical empathy, ethical responsibility (Seixas, 2017), and historical critical thinking (NAER, 2018). The other controversial topic in the Taiwanese History Curriculum centres on the country's complex history with China (e.g., *Is Taiwan an independent country separate from China in terms of historical perspective?*) and the shaping of self-identify (e.g., *Do you consider yourself Taiwanese or Chinese?*) through history education (Huang, 2016; Li, 2010; Yang, 2020). Such issues massively impact the content of the history curriculum in particular (Huang, 2016). Adopting a historical research approach, Yang (2020) contends that the high school history curriculum is heavily influenced by political and social forces that greatly impact the proportion of Chinese history being taught in high school and the number of 'historical facts' about Taiwan's relationships with China and the US (e.g., *Theory of the Undetermined Sovereignty of Taiwan*, see Xue, 2009).

Another concern is related to the pedagogical approach and aims in history education. Despite the positive evidence regarding teaching historical thinking in history education and the emphasis on historical thinking in the new curriculum, many high school teachers still pay most of their attention to historical facts, employing traditional pedagogy and lecturing in a monologic way (Huang, Lai, and Yang 2011; Lin, 2019; Chuang, 2019). Most teachers struggle with teaching the concept of historical reasoning in class; they find it not only time-consuming, but also difficult to assess using the existing written test system (multiple-choice tests; Hisao, 2012). Students, for their part, are reluctant to move away from understanding history as a 'never-changing' story to the multiple perspectives or interpretations based on different historical texts, which they find arduous (Hsiao, 2009; see also Duquette, 2015 for similar findings in Canada). Similarly, Huang et al. (2011) found that up to 96% of high school students believe that

history is merely a story; thus, they tend to rely heavily on teachers lecturing and the textbooks to acquire historical knowledge. However, Song (2008) points out that teachers often adopt a single narrative when lecturing, which fails to demonstrate the ‘multi-voice’ in history.

More criticism involves history teachers questioning the application of historical thinking in history education (Chen, 1999). Such teachers argue that mastering history requires high maturity in cognitive thinking, which high school students lack. Students are only interested in ‘stories’. Hence, the main purpose of history education for teachers is to tell these stories in an intriguing way to raise students’ interest in the subject. Others might have certain doubts about the necessity of teaching historical reasoning to high school students, who might not be interested in becoming historians (see also Elton, 1991). In addition, strongly influenced by Confucian perspectives on historical thinking, history education in Taiwan still implicitly and explicitly pays more attention to preserving factuality (Huang, 2014; see also Guan, 2012 for long-term cultural dialogue). Consequently, both pedagogy and forms of assessment in history education remain concentrated on conveying historical facts as their main purpose. Defending the importance of preserving cultural heritage of ‘*ZhoongHwua*’ (‘*中華*’, equivalent meaning ‘*China*’), Chiang (2017) strongly criticises the new history curriculum for being an attempt at ‘de-Sinicization’ by distorting the historical interpretation and purposefully neglecting certain historical facts as way to deconstruct and demolish pupils’ Chinese self-identity and to push the political agenda for pro-independence for Taiwan.

In contrast, Chen (1999) argues that the purpose of teaching historical reasoning is not to train students to become historians but to provide them with a better understanding of the nature of the discipline and the value of history. Similar to Seixas’s (1996) discussion on the nature of the discipline, Chen (1999) further suggests that once students understand the nature of history and view it as an inquiry mode of thinking, they can think critically and independently. Most important, however, they can defeat the monologic voice of authorities and embrace ‘multi-voice’ in society, becoming better citizens (see also Thompson, 1984 on the nature of history). Agreeing with this concept, Hsiao (2009) argues that only through constant inquiry and dialogues with pupils can teachers teach the concepts of historical thinking in class. Wang (2015) suggests that the history curriculum should be underpinned by the epistemic nature of history and the nature of history education, instead of political forces. He argues that it could be beneficial for students to include these controversial topics in history class as long as teachers use these issues as a medium to open up questions that could engage

students in dialogue and deepen their historical thinking.

The challenge raised by the national curriculum reform is twofold: the first issue centres on the content of the curriculum, specifically in relation to the historical accounts of the White Terror in Post-War Taiwan and Taiwan's historical relationship with China. Concerns have been raised regarding the ideology (de-Sinicization) and political agenda (pro-independence) behind the reformation (Chiang, 2017). The other main challenge highlights the pedagogical dilemma in history education: whether teachers should teach historical facts as their main curriculum goals, or foster pupils' second-order concepts as their priority (e.g., contextualisation and using historical sources, see Hsiao, 2009; Lin 2016, 2019). More questions also remain regarding how to apply the results from educational research to history teaching practice (Huang et al., 2011; Wu, 2004), and how to apply the core competences prescribed in the curriculum to teaching. In addition, Hsiao (2009) points out that teachers need to identify students' preconceptions about historical reasoning in class. Resonating with this idea, Ashby et al. (2005) emphasise that to co-construct historical knowledge with students effectively, teachers need to identify students' pre-existing but inappropriate preconceptions toward historical accounts and how to make sense of the past. Highlighting teachers' epistemic beliefs regarding history as a discipline, Lin (2016) suggests that more research devoted to this field could significantly benefit history education in Taiwan. Hence, this thesis aims to fill the salient research gap and address this dilemma in Taiwanese history education.

2.6 Research questions and aims

Overall, from the substantial body of literature discussed above, it has been widely acknowledged that good-quality classroom dialogue can positively impact students' learning (Alexander, 2004; Boyd and Markarian, 2011; Cazden, 2001; Hennessy et al., 2011; Howe and Abedin, 2013; Littleton and Mercer, 2013; Wegerif, 2007; Wells, 1999; Wells and Arauz, 2006). Two recent large-scale studies identified that some aspects of dialogue are related to learning gains (Alexander, 2018; Howe et al., 2019). Through dialogic teaching (Alexander, 2004), teachers can probe and promote students' higher-thinking skills (Wegerif, 2018), which resonates with the idea of 'second-order concepts' in HTR (Lee and Ashby, 2000; Seixas, 1996, 2017; van Drie and van Boxtel, 2007, 2018; Wineburg, 2001). To connect these two ideas, van Boxtel and van Drie (2017) argue that, based on Wegerif's (2013) notion of dialogic space, teachers can open up and widen the use of dialogue to stimulate students' HTR. In this sense, the researchers advocate a future involving dialogic history education.

However, limited research has addressed teachers' epistemic beliefs (Maggioni et al., 2004, 2009; Nespor, 1987; Wilkinson et al., 2017) before implementing a new pedagogical approach in class (Corden, 2009; Garet et al., 2001). As suggested by Wineburg (2001), the concern is that history teachers' existing preconceptions and beliefs about history might affect their philosophy towards teaching history. I argue that a fundamental change in teachers' beliefs is essential for the sustainable change of practice (Guskey, 1985; Clarke and Hollingsworth, 2002). Moreover, since there are cultural tradition differences rooted in Western and Taiwanese education, perspectives on dialogic education might vary (Guan, 2012; Nisbett, 2004). Therefore, the new perspective of dialogue I propose, hybrid dialogue, is explored to reconceptualise the notion of dialogic teaching in the Taiwanese history classroom. The research questions and research aims are as follows:

The research questions are in two overarching parts, with subquestions in each:

Part 1: Regarding teachers' and students' epistemic beliefs:

1.1 Have teachers' epistemic beliefs changed during the course of a professional development programme for dialogic history education?

1.2 Have students' epistemic beliefs changed during the course of a professional development programme for dialogic history education?

Part 2: Regarding dialogic education in the Taiwanese history classroom:

2.1 How do teachers facilitate and foster pupils' historical thinking in history class using dialogue?

2.2 To what extent has teachers' use of dialogue in the history classroom changed during the course of a professional development programme for dialogic history education?

The research aims to answer these research questions are as follows:

Research Aim 1: Explore both the teachers' and students' epistemic beliefs. Beliefs about the nature of the discipline and the teaching and learning of history (including the concept of dialogic teaching) were explored using semi-structured interviews. Students' epistemic beliefs consist of 'doing history' (i.e., historical thinking) and 'knowing history'. Through interviews with students and observations of teacher–pupil dialogue in class, these beliefs were analysed. Teaching practice was also analysed via

classroom observation. The purpose of this approach was to investigate whether the rationale behind practice coheres with personal epistemic beliefs and to collect rich data on teacher–pupil dialogue for further analysis.

Research Aim 2: Exploring and reconceptualising the notion of dialogic education in Taiwan. As mentioned above, the notion of dialogic education is revisited and explored due to cultural differences. The aim of this research to propose a new perspective on dialogic education that might not only bridge the dichotomy of the monologic and dialogic forms of teaching, but also address the pedagogical dilemma in history education raised by the latest national curriculum reform.

Research Aim 3: Assess the effectiveness of TPD by understanding the change and/or growth processes of both the teachers' and students' epistemic beliefs and teaching practice. Another major aim of the research was to design a TPD programme to change teachers' epistemic beliefs and their teaching practice towards a dialogic history education. A detailed description of designing the TPD is presented in the next chapter. After PD was employed, postinterviews and observations were conducted to explore any arising changes in three parts: (1) the change in teachers' epistemic beliefs and practice; (2) the change in students' epistemic beliefs; and (3) the degree of both changes. The effectiveness of TPD is also assessed.

Chapter 3 Methodology

In this chapter, the philosophical foundation of pragmatism is used as a research paradigm for a methodology named design-based research (DBR). The nature and challenges of such a methodology are introduced, as well as how it was adapted into a three-year PhD research framework for this study, with an illustration of a detailed designed TPD. In the next section, responding to the first overarching research question concerning historical epistemic beliefs, a justification for the chosen method for data collection (semi-structured interviews) with a coding instrument informed by previous studies is presented. Regarding data analysis, an innovative discourse analysis technique, Epistemic Network Analysis (ENA, Shaffer, 2017), is also introduced. In the final section, another coding scheme adapted from Teacher Scheme for Educational Dialogue Analysis (T-SEDA, Hennessy, et al., 2021) and an observational instrument for historical thinking are presented to respond to the second overarching research question related to analysing teachers' use of talk in the history classroom.

3.1 Pragmatism as a research paradigm

In social science, there are two main research paradigms – positivism and interpretivism – each of which has its own perspective on scientific enquiry in terms of the nature of knowledge and the formation of knowledge (Cohen, Manion, and Morrison, 2011; Mertens, 2009). On the one hand, rooted in natural science traditions, the positivist approach considers experimental or quantitative methods to test hypothetical generalisations (Hoepfl, 1997). Interpretivism, on the other hand, to understand a complex phenomenon in a context-specific setting, employs a more naturalistic approach, such as ethnography or phenomenology (Cohen et al., 2011; Morgan, 2007). For many years, researchers have debated the choice and the epistemology of each paradigm (the so-called 'paradigm war', see Tashakkori and Teddlie, 1998 for more details). Each stance has fiercely attacked the other party for the disadvantages of that particular paradigm choice.

However, others have criticised such dichotomy, stating that it is mistaken and has resulted in a remarkably unproductive debate that has been merely a 'philosophical trap' (Pring, 2010). Patton (1990) argues that the primary criterion regarding choice of paradigm should be 'methodological appropriateness', which allows for a 'situational responsiveness' (p. 39). Furthermore, some researchers believe that combining both quantitative and qualitative approaches in one research project could effectively yield more insights into a certain identified problem (e.g., Patton, 1990; Strauss and Corbin, 1990; Tashakkori and Teddlie, 1998). This new 'mixed method' (Creswell and Plano Clark, 2007) does not fall perfectly within either of the aforementioned paradigms.

Therefore, to move beyond the ‘paradigm war’ and pin down mixed methods to an epistemological stance, an alternative paradigm named ‘pragmatism’ has emerged, which accepts there are singular and multiple truths and remains open to empirical inquiry to *solve problems* in the real world (Creswell and Plano Clark, 2007; Feilzer, 2010; Tashakkori and Teddlie, 1998). In this sense, a pragmatist researcher is free from the philosophical and practical constraints imposed by the dichotomic choice of positivism and interpretivism (Creswell and Plano Clark, 2007). Similarly, questioning the dichotomy of positivism and constructivism, Rorty (1999) calls for ‘a convergence of quantitative and qualitative methods’ (p. ix) and argues that the methods share many commonalities at an epistemological or ontological level.

Highlighting the use of pragmatism, Rorty (1999) contends that an ‘antirepresentational view of knowledge’ is held by pragmatists, arguing that the focus of research should be useful and ‘aim at utility for us’ instead of presenting an ‘accurate account of how things are in themselves’ (p. xxvi). Building on the notion of utility, Feilzer (2010) calls for ‘reflexive research practice’ in which researchers should ask themselves questions about the inquiry, such as ‘what it is for?’ and ‘who it is for?’. These questions should be considered by researchers to make enquiry more than an attempt to ‘mirror reality’ (p. 8). Reichardt and Rallis (1994) characterise pragmatism by alluding to the following beliefs (p. 85):

- The value-ladenness of enquiry
- The theory-ladenness of facts
- That the reality is multiple, complex, constructed, and stratified
- The underdetermination of theory by fact (i.e., that any particular dataset is explicable by more than a single theory)

However, despite the intention to seek the middle ground of dualism between positivist and interpretivist, pragmatism also poses some methodological questions of its own, the main problem being the *true integration* of the quantitative approach and the qualitative approach (Feilzer, 2010). Researchers have claimed that using the mixed method often confines them to presenting the findings with a ‘juxtaposition putting the data derived through different methods alongside each other and discussing findings separately’ (Feilzer, 2010, p. 9). Bryman (2007) states that many mixed-method researchers still cannot transcend the dichotomy of the main traditional research paradigms since many continue to analyse data and present them as ‘totally or largely independent of each other’ (p. 8).

This present research adopts a pragmatist perspective that aims to achieve a true

integration in the sense of studying phenomena in specific context settings from multiple perspectives and providing an enriched understanding (Jick, 1979). Tashakkori and Teddlie (1998, p. 56) outline three dimensions of the research process under the pragmatist paradigm: (1) the type of investigation (exploratory or confirmatory); (2) the type of data collection and operation (qualitative or quantitative); and (3) the type of analysis and inference (qualitative or quantitative). Within these three outlined dimensions, this present study employs a fully integrated mixed design (Teddlie & Tashakkori, 2008), which combines qualitative and quantitative approaches. Regarding the characteristics of utility and problem-solving under pragmatism, this research focuses on finding solutions to educational problems instead of ‘sticking to a positivist or interpretivist epistemology’ (Denscombe, 2002, p. 23), which was achieved by employing the DBR approach to inform my project.

3.2 Research methodology: Design-Based Research

To provide answers to the research questions and achieve the research aims, a methodological approach that can incorporate an iterative process in which theory and practice are developed and tested is necessary. This methodology should also provide a pragmatic perspective due to the aims of the research and must not be trapped in the ‘paradigm war’ between positivism and interpretivism, as presented in the fully integrated mixed design (Teddlie & Tashakkori, 2008). Most important, the final outcome of the research should yield not only a theoretical contribution, but also practical pedagogical implications for teachers to use. Hence, considering all the criteria, DBR, with its roots in classroom practice (Brown, 1992) and engineering design (Collins, 1992), seems an appropriate methodology. In the following section, I introduce some basic concepts of DBR and its methodological challenges and how it fits into the present research.

3.2.1 What is design-based research?

Barab and Squire (2004) define DBR as ‘a series of approaches, with the intent of *producing new theories, artifacts, and practices* that account for and potentially impact learning and teaching *in naturalistic settings*’ (p. 2, emphasis added). This definition, despite the many other labels it has (e.g., ‘design research’, see Bakker, 2018; Reeves, Herrington & Oliver, 2005; or ‘design experiments’, see Brown, 1992; Collins, 1992; Cobb, Confrey, DiSessa, Lehrer, and Schauble, 2003), fits the focus of this methodology – the orientation of both the pragmatic and theoretical functions of the study. Similarly, Cobb et al. (2003) suggest DBR is ‘extended (iterative), interventionist (innovative and design-based), and theory-oriented enterprises whose “theories” do real work in practical educational contexts’ (p. 13). Similarly, McKenney and Reeves (2012)

describe DBR as a blend of ‘scientific investigation with systematic development and implementation of solutions to educational problems’ (p. 1). The focus of ‘what works’ in DBR has been argued to resonate with Vygotsky’s (1987) perspective on teaching: ‘The teacher must orient his work not on yesterday’s development in the child but on tomorrow’s’ (p. 211, cited in Bakker, 2018, p. 3). The characteristics of DBR are described as follows (summarised and synthesised from Anderson and Shattuck, 2012; Bakker, 2018; Brown, 1992; Collins, 1992; Cobb et al., 2003):

(1) Design-theory dualism

The first characteristic is that the purpose of DBR is not only to develop theories about learning or teaching, but also to design a practical pedagogical instrument for promoting particular learning goals in actual classroom settings (Bakker, 2018). These theories under development, as argued by Cobb et al. (2003), are ‘relatively humble in that they target domain-specific learning processes’ (p. 9), which have ‘*to do real work*’ (Bakker, 2018, p. 18). Bakker (2018) also argues that the theories are developed for a specific domain, although they must be transferrable and applicable to different contexts.

(2) The interventionist nature

Differing from naturalistic research approaches, DBR usually provides testbeds for innovations by researchers who deliberately manipulate a condition (Bakker, 2018; Cobb et al., 2003). Typically, prior to intervention, researchers identify issues within the original settings and then design an experiment drawn on existing research to solve the problems. These interventions can vary based on the aims of the research project, such as the learning activity, type of assessment, or TPD programme (Anderson and Shattuck, 2012; Lehrer and Schauble, 2012). Moreover, highlighting the degree of ‘openness’ of the interventions, Bakker (2018) suggests that researchers have little control of the situation and data in a design research project in which ‘the educational materials or ways of teaching are emergent and adjustable’ (p. 10).

(3) Iterative process

Design-based interventions are rarely perfectly implemented in the first trial. They usually evolve through multiple iterations in which the instructional interventions and the underlying theory are constantly refined and improved (Anderson and Shattuck, 2012). The original conjectures might sometimes be rejected; therefore, alternative conjecture is generated and tested (Bakker, 2018; Cobb, et al., 2003). Each cycle within the iterative process might consist of the following phases: preparation and design, teaching experiment, and retrospective analysis (Bakker, 2018, p. 18). Such *perspective*

and *reflective* components (Kanselaar, 1993) in each cycle may provide an exploratory framework for ‘the focus of investigations during the next cycle of inquiry’ (Cobb et al., 2003, p. 10).

(4) Collaborative partnership between researchers and practitioners

Design-based researchers intend to provide solutions to existing problems in real educational settings. Hence, to identify the problems and test their designed interventions, researchers must maintain a highly collaborative partnership with practitioners. Moreover, the researchers might need help from teachers to inform them about contexts in their classroom settings and some of the pedagogical issues they face. In this sense, teachers could be considered ‘co-investigators’ (Collins, 1992). Therefore, a partnership is developed that ‘negotiates the study from initial problem identification, through literature review, to intervention design and construction, implementation, assessment, and to the creation and publication of theoretical and design principles’ (Anderson and Shattuck, 2012, p. 17). However, in reality, due to teachers’ intensive time schedule, such a notion may be too idealistic. Therefore, in my own research, the research questions and the design were developed by myself and informed not only by existing literature, but also by the participating teachers’ needs. This high degree of researcher involvement might cause another methodological issue, namely researcher bias (Tabak, 2004), which I address in the following section.

3.2.2 The challenges of design-based research

Despite the numerous aforementioned articles disseminating the benefits of DBR, some methodological challenges arise when employing this approach. In this section, I address some of the issues and propose possible solutions to my own research problems, based on the literature (Anderson and Shattuck, 2012; Bakker, 2018; Barab and Squire, 2004; Brown, 1992).

As argued by Barab and Squire (2004), ‘if a researcher is intimately involved in the conceptualization, design, development, implementation, and researching of a pedagogical approach, then ensuring that researchers can make credible and trustworthy assertions is a challenge’ (p. 10). Therefore, the first challenge of DBR, similar to other qualitative research, is the issue of methodological criteria-validity and reliability potentially being compromised due to researchers’ personal bias (Anderson and Shattuck, 2012; Bakker, 2018). As mentioned in the previous section, due to the high involvement of researchers in their own projects, subjective bias is almost inevitable. Some have argued that researchers’ bias and deep understanding of context might serve as the best research tool (Anderson and Shattuck, 2012); however, to

minimise bias and to improve validity and reliability in my research, I propose solutions suggested by Bakker (2018).

Regarding maximising validity and reliability, Golafshani (2003) argues that it is crucial to examine ‘trustworthiness’, which lies, as stated by Seale (1999), ‘at the heart of issues conventionally discussed as validity and reliability’ (p. 266). To achieve this, the strategy of *triangulation* is used, as Mathison (1988) claims this can ‘control bias and establish valid propositions’ (p. 13). Similarly, advocating the use of multiple methods, Patton (2001) suggests that, ‘triangulation strengthens a study by combining methods. This can mean using several kinds of methods or data, including using both quantitative and qualitative approaches’ (p. 247). Hence, in my own research, I included multiple methods of data collection and data analysis (Bakker, 2018). For example, to explore teachers’ and students’ epistemic beliefs about history, I employed semi-structured interviews complemented with class observation, including fieldnotes and transcripts of classroom dialogue, which were used to collect rich data to draw a stronger conclusion. Moreover, regarding reliability, to examine whether the conclusions (e.g., in my own case, a theoretical model of epistemic beliefs and coding framework for analysing dialogues in historical thinking) are independent of the researchers, involves checking the degree of inter-reliability (i.e., the agreement of two raters), as proposed by Cohen (1960). More details concerning data collection and analysis are presented in the following sections.

Another main challenge related to the issue of validity and reliability is the question of generalisability (Anderson and Shattuck, 2012; Bakker, 2018), since DBR is usually conducted within a domain-specific context (Cobb et al., 2003). However, Barab and Squire (2004) argue that design experiments are ‘conceived not just to meet local needs, but to advance a theoretical agenda, to uncover, explore, and confirm theoretical relationships’ (p. 5). Regarding theoretical contribution, Bakker (2018) contends that although statistical generalisation is typically impossible, analytic or theoretical generalisation is feasible (p. 91). Hammersley (1992) claims that theoretical generalisation refers to ‘drawing conclusions about one or more social scientific theories from the features of the local events they observe and describe’ (p. 91). Therefore, the notion of theoretical generalisation informed my own research, as one aim of this study was to design a PD programme applicable to other domains.

Finally, in a practical sense, Collins et al. (2004) argue that due to the interventionist nature of DBR, which requires multiple iterations, it can take researchers many years to conduct their research and analyse large numbers of data. This time challenge has

intimidated PhD students regarding adopting DBR as a main research methodology, as students are usually expected to complete their degrees within three to four years. However, Abdallah and Wegerif (2014) argue that this approach is feasible, and they encourage PhD students to adjust ‘a flexible format or version of DBR compatible with the time span, the researcher’s context, and the specific circumstances of the PhD study’ (p. 13). Based on this argument, in the following section, I introduce the adapted version of DBR into a three-year PhD model.

3.2.3 Adapting the research process into a three-year PhD model

The version of DBR in this present study is based on the framework of Abdallah and Wegerif (2014) and the model from Herrington et al. (2007) for adapting DBR to the time span of PhD students. Regarding my own research, I had only one year to conduct the fieldwork in high schools, with two long-term breaks (summer holidays and winter holidays) within an academic year. Moreover, three exams (two midterm exams and one final exam) were set in each semester. Thus, the research timetable was additionally challenging and constrained. Therefore, the iterations and interventions needed to be tailored to fit the teachers’ and students’ tight school schedule rather than the researcher’s personal needs. The framework proposed by Herrington et al. (2007), which is based on Reeves’s (2006; illustrated in Figure 3.2.1), consists of four phases:

- (1) Analysis of practical problems by researchers and practitioners in collaboration
- (2) Development of solutions informed by existing design principles and technological innovations
- (3) Iterative cycles of testing and refinement of solutions in practice
- (4) Reflection to produce ‘design principles’ and enhance solution implementation (pp. 5–8)

However, Abdallah and Wegerif (2014) suggest that DBR should not be viewed as a strict set of rules to follow and apply to all DBR studies, but rather a ‘contextual methodology that is highly dependent on the specific context’ (p. 15). Hence, the researchers proposed a more flexible three-phase research framework for PhD students to adopt: *the preliminary phase*, *the prototyping phase*, and *the assessment/reflective phase* (pp. 16–17). The goal of the preliminary phase is to identify issues in real settings through consulting with practitioners and personal class observations, as well as to develop a theoretical framework for designing interventions through a comprehensive review of literature. Although I had already identified the problems through my own professional experience and the wide consensus about the need for teaching HTR in Taiwan (Hsiao, 2009; NAER, 2018), teachers’ opinions were also considered to inform the design process (e.g., the materials for workshops). In the next phase (the iterative design phase), the interventions were implemented, and within each micro-cycle they

were improved and refined for the next cycle. The final phase offered comprehensive assessments of the previous cycle and a final design framework was achieved, both practical and theoretical, which could have implications for future use.

This figure has been redacted for copyright issues.

Figure 3.1 Design-based research approaches in educational research (Reeves, 2006)

Combining the frameworks of Abdallah and Wegerif (2014) and Herrington et al. (2007), I propose the following model of DBR for this research, as illustrated in Figure 3.1. Details about how the PD programme was conducted are introduced in the next section. Moreover, in addition to the framework of DBR, Herrington et al. (2007) provide a possible research timeline for PhD students who consider using DBR as their methodology. Based on their suggestion, I adjusted my own project (see Figure 3.2 and *Table* for a research timetable).

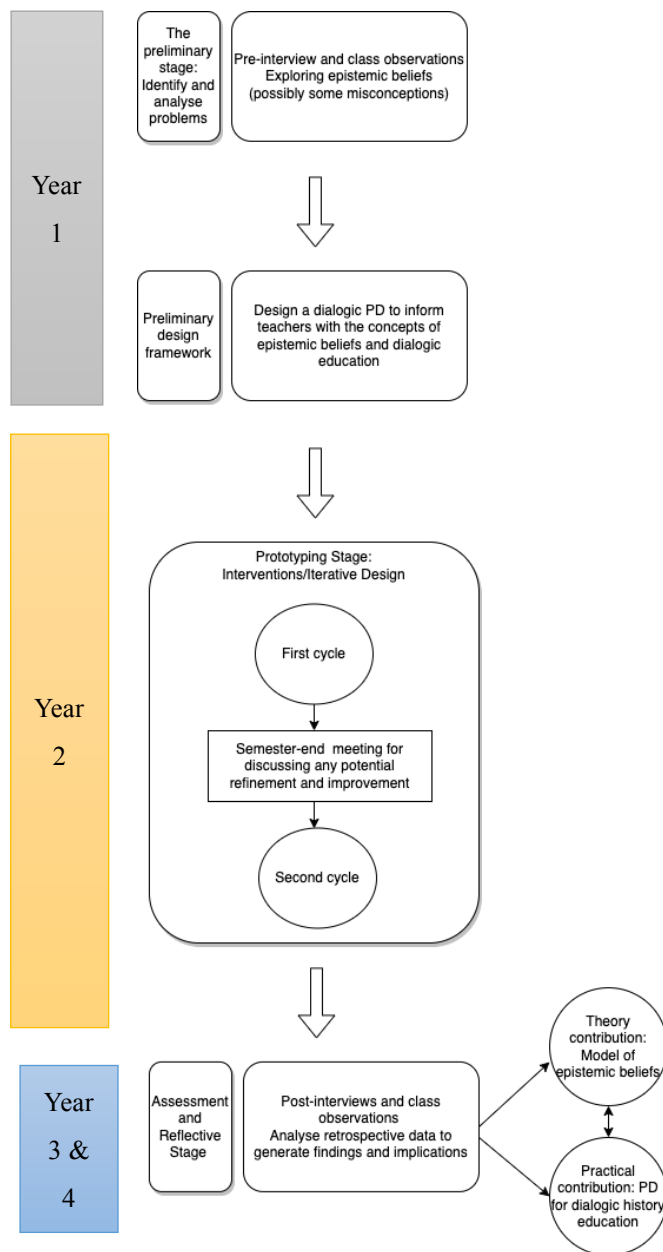


Figure 3.2 The adapted framework of DBR for this research.

3.2.4 Designing Professional Development Programme for dialogic history education in Taiwanese high schools

The essence of the PD in this research is informed by the theory of teachers' change, also termed 'reform-focused' (Fullan, 1982; Garet et al., 2001; Hennessy et al., 2018; Guskey, 1985; Clarke & Hollingsworth, 2002), the goals of which are: (1) inform participating teachers about epistemic beliefs and dialogic education; (2) teachers' professional growth and change to impact students' epistemic beliefs; (3) explore the effectiveness of PD and its future implications. Furthermore, grounded in sociocultural theory, the rationale of the designed PD programme is underpinned by the notions of

community of inquiry (Jaworski, 2006) and *dialogic inquiry* (Hennessy et al., 2011) in particular, which indicate that teachers learn by participating in a professional community in which researchers and practitioners work together to explore professional growth. This growth is also scaffolded by dialogue within the community and the use of materials and conceptual tools typically provided by researchers (Hennessy, 2014). Combining these aspects, the framework of the PD design is illustrated in Figure 3.4. The model is iterative rather than linear, which is informed by Clarke and Hollingsworth's (2002) interconnected model of professional growth (as discussed in the previous section of Literature Review). The present PD programme was conducted over the course of one academic year (September 2019 to July 2020), and included the following five phases:

(1) Phase 1: Pre-intervention

This phase began with participant recruitment (seven high school history teachers: see sampling strategy, below). To set up the baseline prior to intervention, pre-interviews with teachers and students were conducted, as well as class observations. After analysing the preliminary data, the findings informed the design of four two-hour workshops (in September 2019) for teachers to address the identified issues. The materials for workshops consisted of three parts: (1) the concepts of dialogic education, which draw largely on the toolkit based on the T-SEDA pack developed by Hennessy et al. (Vrikki et al., 2018; Hennessy et al., 2021 *shown in Appendix 2*) and an exploration of the notion of what exactly dialogic education might be within Taiwanese context; (2) the model of teachers' and students' epistemic beliefs generated from preliminary data and the importance of acknowledging them;

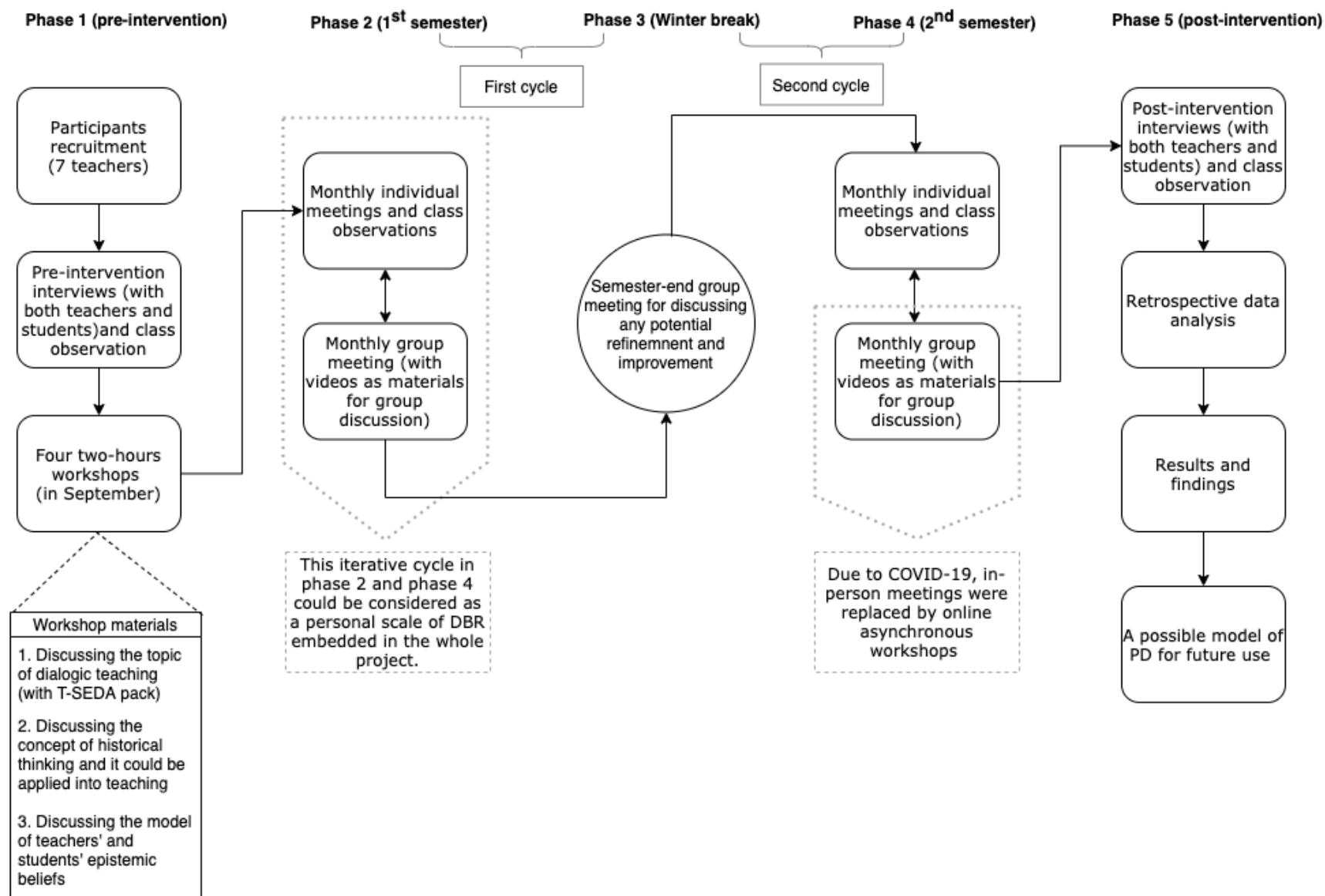


Fig. 3.4 The framework of PD designed.

and (3) the concept of historical thinking and how it could be applied to teaching by using an integrated framework of HTR developed in previous research (Lee, 2005; Seixas, 2017; Wineburg, 2001; van Drie and van Boxtel, 2018). All the sessions were conducted in a co-explored, interactive, and dialogic manner with various practical applications. Furthermore, although each session had its own topic of discussion, all the sessions were interconnected to ensure the teachers had a holistic understanding of dialogic history education. The final version of the workshop materials was determined only after the issues had been identified from the interviews with the participant teachers (Bakker, 2018).

(2) Phase 2: Cycle 1 (October 2019–January 2020)

Following the workshops, the teachers were required to plan their lessons with new teaching approaches (i.e., dialogic teaching and teaching historical thinking). Class (two hours) observations with an individual teacher were conducted and videotaped monthly, followed by an individual meeting to discuss any potential issues or challenges concerning executing the new lesson plans. Furthermore, at a monthly group meeting, the researcher and teachers explored any difficulties through professional dialogue within the learning community (Hennessy, 2014). Videos were used as materials to prompt and facilitate the discussion (Gaudin and Chalies, 2015; Pielmeier et al., 2018). In this ‘collaborative video analysis’ (Hennessy et al., 2011), the researcher and teachers discussed videos selected by the researcher, which provided rich opportunities to engage in professional dialogue (Hofmann, 2020). Moreover, the analysis of the videos not only offered in-depth insights into teaching practice, but also helped the teachers to revisualise the implicit rationale of their practice (Hennessy et al., 2011), or as Gröschner, Seidel, Kiemer, and Pehmer (2015) refer to the ‘Dialogic Video Cycle (DVC)’. During cycles, lessons were first videotaped, and then from these clips the researcher selected one or two extracted clips as a medium to discuss with the participating teachers in workshops. After watching the clips, the teachers were asked to code the extracted lesson using the coding framework developed in this study. This coding scheme could be refined, and adjustments were made to understand teaching practice more clearly and deeply. Hence, this phase could be considered a microlevel cycle of each of the two main cycles (Sedova et al., 2016). A more detailed description of the development of the coding framework is in the following section.

(3) Phase 3: The refinement of Cycle 1 (January–February 2020)

The refinement of the first cycle was conducted following the end of the first academic semester as the winter break started. A short survey was designed and distributed to the participating teachers, focusing on their responses and attitudes to the programme. Most

of the teachers (71.4%) partly agreed that the PD had positively impacted how they conducted their teaching practice in terms of becoming more dialogic. For instance, one teacher responded that during the programme, he '*had further developed the ability to have dialogue with pupils*'. Highlighting the benefits of dialogic education, another teacher said that dialogue '*allowed me to understand what students know or don't know*'. Moreover, many teachers expressed a highly positive attitude toward the workshops, in which they had the opportunities to engage in dialogue with other teachers and '*learnt from each other*'. However, regarding the refinement for the next cycle, one teacher suggested that more discussion on teaching practice was desirable.

The results from the survey were also used as reflective feedback for the teachers to discuss further in the two-hour workshop before the winter break (Ferguson, 2009). In the workshop, two issues were raised concerning dialogic history education. First, the issue of high pressure under limited class time and overwhelming curriculum goals was a huge contributor to avoiding more teacher–pupil dialogue in class. The second issue related to some pupils' negative attitude toward dialogic education, mainly their reluctance to engage in the whole-class discussions. These problems were then discussed through open and critical professional dialogue between the teachers and the researcher. In addition to revisiting the meaning of dialogic education in the Taiwan context and exploring the dilemma posed by the latest curriculum, some highly experienced teachers also shared practical knowledge on how to involve more students in dialogue. Suggestions were considered to design the workshops in the next cycle, which included the extracted clips being longer to provide a more holistic view of the teaching practice, and some adjustments on the coding framework (see Section 3.4).

(4) Phase 4: Cycle 2 (April–June 2020)

As the second semester started, Cycle 2 was implemented. The participating teachers were expected to make any potential improvements based on the discussion during Phase 3. The same format as Phase 2 was initially going to be conducted in this cycle. However, when the pandemic (COVID-19) struck, the opening of Taiwanese high schools was postponed from February to late March. Monthly class observations were allowed, but other nonessential teaching practice, including face-to-face workshops with teachers, was restricted under school guidance. To address this challenge, the nature of the design-based study allowed the researcher to adjust the method design to make it more flexible and appropriate for the situation (Bakker, 2018). Therefore, the discussion moved to an online platform (Wegerif, 2020). The online workshops were conducted using asynchronous discussion on Google Classroom (Iftakhar, 2016), as well as a website created by the researcher in which ideas about historical thinking and

dialogic theories were explored for the teachers' reference. Materials such as extracted videoclips of lessons alongside the transcripts were uploaded online for further discussion. The teachers were encouraged to post their comments responding to these materials as a way to engage in online dialogue.

(5) Phase 5: Postintervention (July 2020)

In the final phase of PD, postintervention interviews with teachers and students were conducted at the end of the second semester. The data collected during the implementation of PD, including videotapes from class observations and audio recordings of interviews with teachers and students, were then transcribed and analysed. The retrospective analysis of the data was conducted using two methods in response to the two parts of the research questions (i.e., the epistemic beliefs and dialogic education). The findings of the analysis then informed the final products from this design-based study, which consisted of a domain-specific analytical coding framework for classroom dialogue. This approach offered a new perspective to reconceptualise dialogic education in Taiwan and has implications for future TPD when exploring historical epistemic beliefs and dialogic history education. In the following section, I outline some methodological issues concerning analysing epistemic beliefs and classroom dialogue, as well as the justification for the chosen methods.

3.3 Research methods on exploring epistemic beliefs

As Wood and Kardash (2002) point out, there are a few difficulties when assessing personal epistemic beliefs in terms of choosing an appropriate technique. On the one hand, questionnaires (e.g., Perry's [1970] Checklist of Educational Values; or Schommer's [2004] Epistemological Beliefs Questionnaire), it is argued, are easy to perform and can yield a large database for further quantitative analysis. However, this approach has empirical and conceptual problems (Hofer and Pintrich, 1997; Wood, Kitchener and Jenson, 2002). On the other hand, interviews using ill-structured problems can provide rich qualitative data but are time-consuming for analysis and might lack the statistical power to achieve reliability (DeBacker, Crowson, Beesley, Thoma and Hestevold, 2010; Voet and De Wever, 2016; Wood et al., 2002; Yilmaz, 2010). In the following sections, I explore these issues further and propose a mixed-method approach to address them.

3.3.1 Methodological considerations

One approach for conducting analysis of epistemic beliefs is through the quantitative psychometric analysis of questionnaires (Wood et al., 2002). Following the work of Perry (1970), as mentioned in the literature review, a few self-report questionnaires

were created to analyse and assess personal epistemology (e.g., the Epistemological Questionnaire [EQ], see Schommer, 1990; the Epistemic Beliefs Inventory [EBI], see Schraw, Bendixen and Dunkle, 2002; the Epistemological Beliefs Survey, see Wood and Kardash, 2002). The advantages of these instruments are well recognised; they are easily administered, less time-consuming, and relatively more reliable and valid than collecting data from interviews (DeBacker et al., 2008; Schraw et al., 2002). For instance, based on the five epistemic beliefs (Certain Knowledge, Simple Knowledge, Omniscient Authority, Quick Learning and Innate Ability) in the EQ (Schommer, 1990), Schraw, Bendixen, and Dunkle (2002) proposed a more reliable instrument to test and refine these beliefs by employing exploratory factor analysis. To compare these two instruments (EQ and EBI), researchers performed an analysis using two types of factor: correlated factors (i.e., oblique rotation) and uncorrelated factors (i.e., varimax rotation). The results suggest that the EBI had considerably better test-retest reliability than the EQ and better predictive validity than the EQ when correlated with a test of reading comprehension (Schraw et al., 2002).

A few concerns should also be discussed regarding methodology. First, Hammer and Elby (2002) criticise the use of questionnaires as too limited to illustrate personal epistemic beliefs, which are, they argue, fine-grained cognitive resources that can vary in different contexts. In line with this criticism, Chinn, Buckland, and Samarapungavan (2011) propose a drastic expansion of the dimensions of epistemic beliefs that are more inclusive of other components, such as epistemic aims (i.e., an individual's goals for knowledge inquiry) and epistemic virtues (i.e., an individual's beliefs regarding pursuing epistemic aims). Therefore, the researchers advocate that these components are too complex to be assessed and analysed from items on self-report questionnaires (see also Greene, Azevedo, and Torney-Purta, 2008; Hammer and Elby, 2002). Another criticism concerns the issue of stage-like developmental models generated from the results of the questionnaire analysis and derived from conceptual models of epistemic beliefs (DeBacker et al., 2008). Some researchers have argued that an individual's epistemic beliefs are too complex to be put into one clear category (e.g. Boyes and Chandler, 1992). Others (e.g. Mason and Scirica, 2006) have presented empirical evidence to challenge the conceptual framework underpinning the developmental models, which they argue could be misleading and overly generalised. Based on such criticism, Greene and Yu (2014) proposed an exploratory study using interviews as the instrument to investigate the degree to which current epistemic belief models aligned with novices' and experts' cognition. The results from their qualitative analysis suggest that some models may need to be fundamentally altered regarding their conceptualisations and measuring methods.

3.3.2 Collection of data concerning epistemic beliefs: Interview

To address the methodological issues and psychometric problems derived from the use of a questionnaire as the data collection instrument, an interview approach is a desirable approach for a few reasons. Interviews can provide access to ‘the context of people’s behaviour’, meaning researchers can have a better understanding of that behaviour (Seidman, 2006, p. 10). Moreover, it has been argued that, compared with using questionnaires (e.g., Perry’s [1970] Checklist of Educational Values; or Schommer’s [2004] Epistemological Beliefs Questionnaire), interviews are particularly useful for building theory regarding developing conceptual models and schemes (Hofer, 2002; Greene and Yu, 2014), which is the main goal of this research. Finally, in Taiwan, based on the relatively limited amount of research in relation to epistemic beliefs, the existing questionnaires (Schommer’s [2004] Epistemological Beliefs Questionnaire in particular) have been heavily deployed as data collection instruments (Chen and Chang, 2007; Chiu, Huang, Hong, and Lin, 2011; Lin and Yang, 2011; Liu, 2009; Tu, 2015; Wang and Lin, 2012). However, one of the crucial concerns is how these questionnaires based on the Western culture and education system can be adapted into the Taiwanese context (Hofer, 2002). Agreeing with this issue, Buehl (2008) suggests that if researchers do not consider potential cross-cultural differences, this could have negative consequences. Typically, researchers will use ill-structured problems to probe interviewees’ reasoning and code their responses into different stages (e.g., King and Kitchener’s [1994] Reflective Judgement and Kuhn’s [1991] six levels of epistemological thinking) to generate a more holistic view of personal epistemology. Hence, informed by their work, the semi-structured interviews of this study consisted of two parts (*presented in the Appendix I*):

- (1) Part 1: Questions about the nature of history, such as ‘How would you describe history as an academic discipline?’ and ‘Do you think that one historical theory can be superior to another? Why (not)?’
- (2) Part 2: Interviewees are given two conflicting accounts of a historical event and asked questions such as whether the accounts were different and, if so, how? Furthermore, can both accounts be correct or is one account ‘more true’ than the other? (see also Lee, 2005; Hsiao, 2009 for the use of conflicting historical accounts in interviews).

It has also been pointed out that the sole use of an interview or a self-report measure to collect data is insufficient to achieve reliable and valid conclusions regarding stages or schemes of epistemic beliefs (DeBacker et al., 2008; Voet & De Wever, 2016; Yilmaz, 2010). Therefore, based on a triangulation strategy of data collection (Bakker, 2018; Kelle et al., 2019; Patton, 2001), the method of systematic class observation (Robson,

2002; Rosenberg, Hammer, and Phelan, 2006) was used to complement the interviews. Two cameras were set up in the classroom: one at the front to capture the students' reactions and behaviour, and the other at the back to capture the interaction between the teacher and the whole class (Cohen et al., 2011). Teaching practice and whole classroom dialogue were the main priorities during observation to explore the coherence between behaviour of teaching practice and claimed beliefs (Havekes et al., 2012; Hofer, 2002; Virta, 2002; Voet and De Wever, 2016).

The data collected from the interviews with the teachers and students were then analysed using ENA underpinned by Quantitative Ethnography (Shaffer, 2017) to resolve the dichotomy between the qualitative and quantitative analysis approaches toward the true integration of the two methods (Kelle, Kühberger, and Bernhard, 2019). Quantitative Ethnography is a new method that can assess learning and complex thinking by using statistical tools to analyse qualitative data (Shaffer, 2017). Combining the advantages of quantitative analysis and qualitatively 'thick' descriptions of data generated from the method of ethnography (Geertz, 1973), Quantitative Ethnography allows researchers to analyse patterns with a reliable and meaning-based method situated within a cultural context. In the next section, I briefly introduce the analytical tool of ENA and the coding scheme for analysing historical epistemic beliefs.

3.3.3 Coding instrument for epistemic network analysis

As mentioned above, the point of conducting ENA¹ in this project is to explore how the dimensions of the participants' epistemic beliefs connected are revealed in their discourse. Additionally, instead of providing a developmental stage-like category, ENA aims to illustrate an individual's epistemic beliefs as a trajectory during the project. Epistemic network analysis is a quantitative ethnographic technique for modelling the structure of connections in data. The technique assumes (1) that it is possible to identify systematically a set of meaningful features in the data (codes); (2) that the data have local structure (conversations); and (3) that an important feature of the data is how codes are connected to one another within conversations (Shaffer, 2017; Shaffer, Collier, and Ruis, 2016; Shaffer & Ruis, 2017). For example, if a team is working on a design project, they talk about important codes such as production processes, design specifications, budget, and so on. They have a series of conversations at design meetings, and a key part of understanding their design process is modelling how they think about the relationships between production processes, specifications, budget, and other key parts of their design work (Arastoopour, Shaffer, Swiecki, Ruis, and Chesler, 2016). In an interview transcript, each answer to a question might be a unique

¹ The website tool [can](http://www.epistemicnetwork.org/) be found here: <http://www.epistemicnetwork.org/>

conversation (Eagan and Hamilton, 2018), or in a collection of documents, each document or section of a document. Epistemic network analysis models the connections between codes by quantifying the co-occurrence of codes within conversations, producing a weighted network of co-occurrences, in addition to associated visualisations for each unit of analysis in the data. Critically, ENA analyses all the networks simultaneously, resulting in a set of networks that can be compared both visually and statistically.

Epistemic network analysis was originally developed to model theories of cognition, discourse, and culture, which argue that the connections people make in discourse are a critical level of analysis. DiSessa (1988), for example, characterises learning as a process in which isolated elements of experiential knowledge are connected through theoretical frameworks to develop both new knowledge and deep, systematic understanding. Similarly, Linn et al. (2004) argue that learners develop STEM (Science, Technology, Engineering and Mathematics) expertise by constructing a knowledge web; that is, a repertoire of ideas and the connections between them. Shaffer (2017) describes learning as the development of an epistemic frame; that is, a pattern of connections between knowledge, skills, habits of mind, and other cognitive elements that characterise communities of practice (Hutchins, 1995; Shaffer, 2004; Wenger, 1999), or groups of people who share similar ways of framing, investigating, and solving complex problems.

Although ENA was originally designed to address challenges in learning analytics, the method is not limited to analyses of learning data. For example, ENA has been used to analyse (a) surgery trainees' operating performance during a simulated procedure (Ruis, Rosser, Nathwani, Beems, Jung, and Pugh, 2019); (b) gaze coordination during collaborative work (Andrist, Collier, Gleicher, Mutlu, and Shaffer, 2015); and (c) communication between healthcare teams (Sullivan et al., 2018; Wooldridge, Carayon, Eagan, & Shaffer, 2018). The key assumption of the method is that the structure of connections in the data is the most important aspect in the analysis. In other words, ENA is an appropriate technique for any context in which the structure of connections is meaningful. Epistemic network analysis is, therefore, a useful technique for modelling historical epistemic beliefs because it can model the relationships between various dimensions of personal epistemology as they occur within discourse from the interviews.

In this study, I applied ENA (Shaffer, 2017) to the data using the ENA1.7.0 Web Tool. I defined the units of analysis as all lines of data associated with a single value of Unit

subsetting by Codes (see Table 3.1). The ENA algorithm then uses a moving temporal window to construct a network model for each line in the data, displaying how codes in the current line are connected to codes that occur within the recent temporal context (Siebert-Evenstone, Arastoopour, Collier, Swiecki, Ruis, and Shaffer, 2017). The resulting networks are aggregated for all lines for each unit of analysis in the model. In this model, the aggregated networks use a binary summation in which the networks for a given line reflect the presence or absence of the co-occurrence of each pair of codes.

The ENA model included the following codes: *CKO*, *CKS*, *SiKO*, *SiKS*, *SoKO*, *SoKS*, *JKO*, and *JKS*. I defined discourse as all lines of data associated with a single value of Line subsetting by Activity and Conversation. The ENA model normalised the networks for all units of analysis before they were subjected to a dimensional reduction, which accounts for the fact that different units of analysis may have different numbers of coded lines in the data. For the dimensional reduction, a singular value decomposition was used, which produces orthogonal dimensions that maximise the variance explained by each dimension. (See Shaffer et al., 2016 for a more detailed explanation of the mathematics; see Arastoopour et al., 2015 for examples of this type of analysis.)

The networks were visualised using network graphs in which nodes correspond to the codes and edges reflect the relative frequency of co-occurrence, or connection, between two codes. The result is two coordinated representations for each unit of analysis: (1) a plotted point, which represents the location of that unit's network in the low-dimensional projected space, and (2) a weighted network graph. The positions of the network graph nodes are fixed, and those positions are determined by an optimisation routine that minimises the difference between the plotted points and their corresponding network centroids. This coregistration of network graphs and projected space means the positions of the network graph nodes – and the connections they define – can be used to interpret the dimensions of the projected space and explain the positions of plotted points in the space.

Epistemic network analysis can be used to compare units of analysis regarding their plotted point positions, individual networks, mean plotted point positions, and mean networks, which average the connection weights across individual networks. Networks can also be compared using network difference graphs. These graphs are calculated by subtracting the weight of each connection in one network from the corresponding connections in another.

Regarding the coding scheme used in ENA, drawn from the literature concerning

historical epistemic beliefs, a coding scheme for analysing epistemic beliefs of history was created. Two general areas have been identified: the nature of knowledge and the process of knowing (Hofer & Pintrich, 1997; Schommer-Aikins, 2002). In the first area, there are two dimensions: *the certainty of knowledge* and *the simplicity of knowledge*, which represent the nature of knowledge, and the other area consists of *the source of knowledge* and *the justification of knowledge*, representing the process of knowing (Hofer, 2001). In each dimension, the belief can be further identified and characterised by *objective* and *subjective* perspectives (Maggioni et al., 2004). The certainty of the knowledge dimension characterises whether an individual views knowledge as unchanging and fixed facts (objective perspective) or ‘tentative and evolving’ (subjective perspective; Hofer & Pintrich, 1997, p. 120). The dimension of simple knowledge implies a view of knowledge as simple and discrete facts (objective perspective) or a complex continuum (subjective). In another area, in the process of knowing, at the objective end of the source of knowledge dimension, knowledge is regarded as existing outside individuals and can be found in sources, such as historical texts or authoritative figures, whereas at the other end (subjective perspective), an individual believes knowledge is constructed by groups of people, including themselves. Regarding the final dimension of justification of knowledge, an individual with the objective perspective believes that constructing knowledge should be supported by evidence and evaluated using certain criteria, whereas others at the subjective end of this dimension consider knowledge as mere personal opinions that are all equally valuable and valid.

Table 3.1 The coding framework for historical epistemic beliefs.

General Areas	Dimensions	Categories	Codes	Examples
The nature of knowledge	Certainty of Knowledge	Objective: In this category, the individual believes that the exist of absolute historical facts. Past could be ‘copied’ to the present. History is past as a fixed story.	CKO	"History is like an old story, which we can learn some experiences and lessons from "
		Subjective: Individuals realise there is uncertainty of historical knowledge and the past could not be exactly copied. There are many factors could have impact on historical facts, such as historians’ perspectives.	CKS	"Historical facts are like...maybe... written by many historians and then they judge which one might be correct."
	Simplicity of knowledge	Objective: Historical knowledge is a simple and discrete truth as the existence of concrete knowledgeable facts.	SiKO	"It's his (historian's) job to tell us what people in the past do and let us know it."
		Subjective: Individual views historical knowledge as a complex continuum , which consists of various inter-related concepts and needed to be situated in context.	SiKS	"I should know more about the context, like the background, of this historical event"
The process of knowing	Source of Knowledge	Objective: Knowledge exists outside of individuals and could be found in historical sources. It is also possessed by the authorities, such as historians, history teachers and history textbooks and can be transmitted to the ignorant.	SoKO	"Ah! We can know the history from the historical texts!"
		Subjective: Knowledge is constructed by group of people including one's self. At the same time, individual would be more sceptical about the authorities who claims to possess the knowledge.	SoKS	"Yes, and the nature of history is through research, but we don't really do that (at school). We just study and memorise things from somebody's work"
	Justification of Knowledge	Objective: The construction of historical knowledge should be supported by historical sources, which should also be evaluated through different criteria . Also, arguments proposed by historians should also be examined with certain criteria.	JKO	"I think it really depends on individuals but it should be rigorous and could be justified. "
		Subjective: Every opinion is equally valuable and valid. There is no right or wrong or good or bad. Everyone is entitled to their opinions. Therefore, the historical facts are simply personal interpretations .	JKS	"I think you know... everyone has their own opinions about one thing, so... no right or wrong"

This coding framework for epistemic beliefs consists of eight codes, as displayed and explained in Table 3.3.1. For the pilot study, to test the inter-rater reliability, a whole transcript (136 lines in total) from one of the interviewees was coded independently by myself and another doctorate student, who was informed of the rationale and conceptual framework of this coding scheme. To refine the reliability, another inter-rater reliability from the interviews in the first phase of DBR was conducted. Each code was analysed regarding presence (1) and absence (0), and then reliability calculated using Cohen's kappa (κ), performed on SPSS (v.25). A few codes (e.g., SiKO and SoKS) with a value <0.5 were refined and discussed between coders to investigate any disagreements about their meaning. The final results are in Table 3.2. The model had coregistration correlations of 0.98 (Pearson) and 0.98 (Spearman) for the first dimension, and coregistration correlations of 0.98 (Pearson) and 0.99 (Spearman) for the second. These measures indicate a strong fit between the visualisation and the original model.

Table 3.2 The inter-rater reliability of the coding scheme

Codes	Cohen's kappa (κ) value
CKO	0.881
CKS	0.796
SiKO	0.689
SiKS	0.721
SoKO	0.763
SoKS	0.659
JKO	0.827
JKS	0.756

3.4 Research methods on educational dialogue

As Howe and Abedin (2013) suggest, the analysis of classroom dialogues remains a complex research area due to several factors. The 'war' between using quantitative versus qualitative approaches has also contributed to this dilemma. Mercer (2010) points out there are two main methodologies for researching educational dialogues: one is linguistic ethnography rooted in the traditions of social anthropology and descriptive linguistics (Creese, 2008); the other is what Mercer (1995, 2004, 2010) calls sociocultural discourse analysis (SCDA), which is used to analyse how teachers and students co-construct knowledge through the use of dialogue in educational settings, underpinned by Vygotskian theories. In the following sections, I briefly introduce both approaches and justify the chosen method by introducing the development of the coding scheme.

3.4.1 Beyond two traditions on dialogue analysis: a mixed method

Rooted in the traditions of social anthropology and descriptive linguistics (Mercer, 2010), linguistic ethnography has been greatly influenced by anthropological traditions in the study of language (Creese, 2008), such as the ethnography of communication (Hymes, 1974) and interactional sociolinguistics (IS; Gumperz, 1972). As Tusting and Maybin (2007) suggest, in addition to the study of linguistic structure and variation of language, the main foci of linguistic ethnography are ‘identity, social groups, power and ideology, the politics of representation, gender, racism, narrativity and so on’ (p. 576). Linguistic ethnographers are normally interested in the mutual relationship between language and society and how they shape and reshape each other. For instance, in educational settings, children use talk or have dialogues with teachers to negotiate and construct their own identities (Meyerhoff, 2011). Moreover, to transition from language education to the study of linguistic ethnography in the classroom, researchers have to participate in three types of epistemological shift. First, they should view language as a social practice (an anthropological focus) instead of an academic competence. Second, teachers and pupils communicate with languages to explore and negotiate knowledge. Finally, the shift of ‘empirical gaze’ moves from only studying in the classroom to everyday life and experiences across the school (Rampton, Maybin, and Roberts, 2015).

Ethnography and linguistics benefit from each other. Ethnography enriches linguistics by providing a closer examination of traditional contexts, as well as interactive conversation. In return, linguistics provides ethnography with an authoritative analytical framework for languages. Taken together, a linguistic ethnography analysis aims to ‘combine close detail of local action and interaction as embedded in a wider social world’ (Creese, 2008, p. 233). Following this attempt, educational researchers, instead of using experimental methods or statistical analysis, mostly employ ethnographic and sociolinguistic methods to observe the structure of classroom talk in which socialisation is a ‘never-ending process’ mediated through ‘referential and interpersonal’ talk (Mercer, 2010).

Another approach for studying classroom dialogue is through what Mercer (2004, 2010) refers to as SDA, which is heavily influenced and underpinned by the developmental theory of Vygotsky (1978). From this perspective, knowledge is socially and culturally constructed, and language itself can be regarded as a tool for knowledge construction. Mercer (2004) emphasises the importance of mixed methods combining quantitative analysis and traditional qualitative approaches to inform a better understanding about how classroom dialogue is employed to co-construct knowledge between teachers and

pupils. For such analysis to be able to quantify qualitative data, such as talk, a fine-grained coding scheme may be required. Using a coding framework might contribute to the reduction of complexity of dialogue (Wegerif, 2020), but Hennessy et al. (2020) argue that such reduction is inconceivable for any ordinary human interaction; it is ‘part-and-parcel’ of any research process (p. 3). Hennessy et al. further outline some key methodological considerations and decisions that need to be made when developing or adapting a coding scheme. First, deciding the scope of dialogue analysis: what forms and boundaries should be included in the coding scheme? For instance, some frameworks focus only on teachers’ talk (e.g., Correnti et al., 2015), whereas others might centre on pupils’ moves only (Hardman, 2019). The second decision concerns the granularity of the analysis, meaning ‘the size of chunks’ for analysis (Hennessy et al., 2020, p. 4). Microlevel coding is arguably the most popular method in classroom dialogue analysis. This size of analysis not only allows researchers to count the frequency of certain codes to conduct quantitative data analysis (e.g., Howe et al., 2019), but also enables researchers to conduct ‘fine-grained, systematic’ qualitative analyses (Hennessy et al., 2020, p. 5). However, according to Mercer (2010), the use of such analysis might not be the best approach to deal with ambiguity of meanings, especially when coding for frequency counting. He further suggests the temporal dimension for classroom dialogue analysis, in which two aspects are included: a historical aspect and a dynamic aspect (Mercer, 2008). In this type of analysis, the interaction between interlocutors (teachers and pupils) is situated in a particular institutional and cultural context, and knowledge co-construction through dialogue is ‘inherently reflexive’; that is, the immediate shared experiences through conversation could further provide resources for ‘building future conversational context[s]’ (Mercer, 2008, p. 55). Such analysis could allow researchers to move away from a snapshot approach to dive deeper into a more holistic perspective of classroom dialogue. For this approach, qualitative interpretative analysis is needed to understand where the quantitative measures come from and what they mean, while at the same time, the quantitative approaches based on the interpretative analysis could suggest causal significance. For instance, Hennessy, Kershner, Calcagni, and Ahmed (2021) employed qualitative analysis to explore practitioners’ experiences when participating in a PD programme. The qualitative fine-grained analysis with T-SEDA from surveys and interviews was complemented using quantitative analysis using frequencies and percentages to draw a more convincing conclusion.

Such a mixed method is in line with the theoretical framework (see the Figure for Yin and Yang in Chapter 2) proposed in this study. In a sense, both these approaches emphasise the dynamic and holistic dimension of exploring two opposite concepts that

are reversible to a certain degree. Hence, I found this approach appropriate for this research. In the following sections, I elaborate on how this method informed the development of the coding scheme in this study.

3.4.2 Collection of data concerning classroom dialogue: observation

Before introducing the coding instrument, it is crucial to have a better understanding about the nature of the data. The dataset collected from class observations aims to provide an in-depth understanding of classroom dialogue – whole-class dialogue in particular (Mercer, 2003). Hence, the analysis focused on two goals. First, to examine the coherence between teachers' epistemic beliefs reported by themselves during interviews and their actual teaching practice, discourse from the interviews was analysed using Quantitative Ethnography. Second, one of the main goals of PD is to introduce to teachers the ideas of dialogic teaching and HTR; therefore, I also employed coding schemes integrated from T-SEDA and the observation instrument of HTR (Gestsdóttir et al., 2018 *shown in Appendix 3*) to observe the possible changes in the quality of classroom dialogue. However, the teachers were the co-coders of their own lessons to enhance their understanding of dialogic teaching and to self-reflect on their own practice and enquiry (Vrikki et al., 2018). Finally, all the teaching materials in class, such as copies of lesson plans and historical texts (including both written and nonwritten), were also considered to form a holistic teaching rationale (Hennessy et al., 2016). Audio recordings from the monthly group meetings were also collected to inform the refinement and improvement of PD design in this research.

3.4.3 Developing a coding scheme to analyse teachers' talk in history class

Tschan, Zimmerman, and Semmer (2018) suggest that due to it being overwhelmingly time-consuming, it is best for researchers' interest not to develop a new coding scheme unless necessary (see also Hennessy, Howe, Mercer, and Vrikki, 2020). However, caution is also strongly recommended when directly employing an existing scheme generated for other research with no further adaptation (Hennessy et al., 2020; Tschan, et al., 2018). Moreover, based on the considerations when developing a coding scheme suggested by Hennessy et al. (2020), for this coding scheme, I considered issues related to scope, granularity, and reliability.

Regarding the scope of the analysis, to answer the research question regarding how teachers' talk is used in the history classroom, the analysis mainly focused on teachers' discourse moves. However, to provide a more holistic and dynamic understanding of classroom dialogue, students' talk moves were also considered (Mercer, 2009). Regarding granularity, the unit of analysis employed a microlevel coding analysis for

two main reasons. On the one hand, the advantage of such analysis is that it allowed me to conduct frequency counting of codes to investigate the quantitative dimension of the dataset. On the other hand, informed by the concept of a dialogic and holistic approach, the microlevel analysis was conducted to provide fine-grained qualitative analysis to obtain deeper insights and understanding to avoid the risk of taking discourse out of context (Wegerif, 2020). In addition to microlevel analysis, this research also considered a macrolevel perspective, in which the ethos of the classroom and teachers' dialogic stance (Boyd and Markarian, 2015) were taken into account to explore the hybrid form of dialogue proposed in this research. In macroanalysis, it is crucial to move beyond and away from the simple dichotomy of the interaction forms (i.e., monologue and dialogue), as argued by Boyd and Markarian (2015). In their study, challenging the idea of the surface dialogic features required in dialogic education, they argue that, 'supportive epistemic and communal functions' of teachers' talk might be more crucial than the forms of talk to create successful dialogic teaching (*ibid.*, p. 275; see also Rubin, 1990, for functions of classroom talk).

Combined to fit the research objectives of this study, the coding scheme employed in this study was adapted from T-SEDA (Hennessy et al., 2019) and synthesised with the observational instrument for teaching historical thinking (Gestsdóttir et al., 2018). Moreover, in the spirit of DBR (Bakker, 2018), the development of the adapted coding scheme was undertaken in four steps (see Figure 3.5).

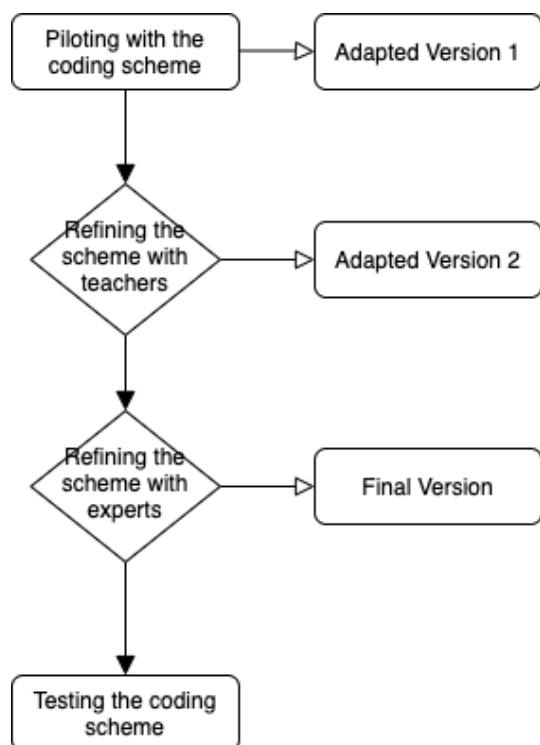


Figure. 3.5 The developing process of the coding scheme.

Step 1 Piloting the coding scheme

To test the practicality of the coding scheme, a pilot study was conducted in March and April 2019. The first version of the coding framework (see *Adapted Version [V.1]* in *Appendix 4*) consisted of 11 categories, highlighting how teacher talk can foster students' historical thinking (Lee & Ashby, 2000; Seixas, 1996, 2017; van Drie & van Boxtel, 2007, 2018; Wineburg, 2001). Although the preliminary analysis indicates highly dialogic interactions between teacher and whole class, this coding framework still required much refinement regarding reliability and validity. More data collected from class observations were required, as well as further consulting with relevant experts, such as history teachers and researchers (Hennessy et al., 2016), which led the process to the next step.

Step 2 Refining the coding scheme with teachers

This study aimed to develop the cooperation of teachers and researchers as part of the bridge between theory and practice; as Nind (2014) argues, 'it is conceived as research with, by or sometimes for teachers, and in contrast to research on them' (p. 3). Therefore, in an attempt to put the adapted coding scheme into practice in real and complex educational settings, the aim of the second step was to familiarise the participating teachers with the coding framework both theoretically and methodologically. With the aid of the T-SEDA Resource Pack (Hennessy et al., 2019; [Traditional Mandarin Version](#)), during the workshops in the first phase of the PD design (September, 2019), the concepts of dialogic education and the components of historical thinking (Lee and Ashby, 2000; Seixas, 1996, 2017; van Drie and van Boxtel, 2008; van Boxtel and van Drie, 2018; Wineburg, 2001) were introduced to teachers, who then coded their own lessons with the integrated coding scheme from the pilot study (V.1).

Following the coding session, the reflective refinement of the framework was discussed, and adjustments were made with the teachers (Vrikki et al., 2019). The main changes were as follows: first, clarifying any ambiguity between codes, such as IHR (*Invite historical reasoning*) and HR (*Make historical causal reasoning explicit to students*). When coding with these two codes, many of the teachers reported confusion, which appeared to be more a hierarchical relationship than parallel. Therefore, in the second version, these two codes were merged into a new code, HT (*Make historical thinking explicit to pupils*), highlighting specifically the teachers' explicit talk regarding introducing ideas of historical thinking to students (van Boxtel & van Drie, 2017). Moreover, a new code, BC (*Build up causality*), was created to capture the complexity of historical causal links introduced by teachers (Chapman, 2016). Second, teachers reported the lack of representation of other discursive techniques in a typical history

class, such as the notion of time (Lee, 2005) and the use of historical analogy (Yang, 2020). In the updated version (V.2), with two dedicated codes (TC and AC) newly added for this issue, the framework consisted of 12 codes.

Finally, due to linguistic and cultural reasons, we made a few alterations regarding the meaning of codes from the original version of T-SEDA. For instance, with the code IB (*Invite to build on ideas*), following the discussion, there was a need to extend the meaning. The rationale behind the extension focused on the contextual background of the Taiwanese history classroom, in which teachers usually initiate dialogue with questions, both open and closed (Song, 2008). Therefore, a new aspect was added to the description of this code (*'Invite ideas responding to the questions initiated by teachers'*) to capture the use of such a discursive technique. Another change was made concerning the use of the code CH (*Challenge, Disagree, and Question*) from T-SEDA. The reason for this change was due to a language translation issue with the word 'question'. Following the examination of the original version, we added another aspect (*'Ask a historical question that requires students to employ a higher level of historical thinking'*) to highlight the use of 'questioning' in the context of Chinese language and changed the name of the code to CHQ to extend the meaning of 'challenge' to include a broader sense than the original in the T-SEDA. For further clarification, the discussion also focused on the difference between using 'question' in CHQ and the code IB, which lies in the types of questions asked by teachers. If a question only requires a simple recall of substantial historical concepts (i.e., descriptive questions, see van Drie and van Boxtel, 2008), it was assigned the code IB. However, other types of questions, including causal questions and evaluative questions (van Drie and van Boxtel, 2008), were assigned the code CHQ. A similar extension was applied to the code RD (*Reflect on dialogue or activity*). The original meaning from the T-SEDA referred to teachers' talk to reflect 'metacognitively' on processes of dialogue or learning activity. However, after discussing with teachers, the need to expand this definition was identified to include the discursive technique of evaluating pupils' responses and, as a result, the name of the code was changed to 'RE' (*Reflect on dialogue or activity or evaluate pupils' response*). The second version of the coding scheme in this step is in Appendix 4 (Adapted Version [V.2]).

Step 3 Refining the coding scheme with experts

Followed the previous step, dialogue collected from the class observation was analysed using the coding scheme (V.2). However, a few issues occurred regarding the application of the scheme. The main issue concerned the confusion between the practical use of IB and CHQ. In the actual educational settings, teachers' questions are

often complex and multifunctional; therefore, it is sometimes difficult to differentiate the types of the questions when coding. After consulting with the experts (supervisors), a suggestion was made to separate the discursive techniques of questioning from these two codes to form a new category (Q), which was specifically dedicated to questions of all types to avoid such confusion (van Drie and van Boxtel, 2007). A suggestion was also made by the expert concerning the nature of the code IB. In the original version of T-SEDA, this code highlights how teachers invite pupils to build on previous ideas, an established dialogic move associated with student learning (Howe et al., 2019). For the adapted version, the code was altered to be more inclusive of the talk that teachers use to invite pupils to express or to provide their ideas, as well as to elaborate or clarify their own or others' ideas. The main reason for this adaptation was due to the concept of hybrid dialogue put forward in this research, which also considers the questions or responses usually regarded as monologic in form and function. On the one hand, some of the codes were designed to capture and analyse the dialogic discursive techniques used by teachers in history class (e.g., BH, CH, and Q). On the other hand, other codes (e.g., TC, BC, and MP) were assigned to demonstrate the structural forms of monologue used by teachers to foster second-order concepts, such as time and continuity, historical causality, and historical interpretation (i.e., historical thinking, see Lee, 2005; Seixas, 1996, 2017; van Drie and van Boxtel, 2008). Combined, the two types of code in this analytical scheme were employed to analyse a more holistic picture of hybrid dialogue used in Taiwanese history classes. A full description of the final version of the coding scheme is in Table 3.3.

Table 3.3 The final version of the coding scheme

Categories	Contributions and Strategies	Examples/ Key words	Note
IB Invite to contribute or build on ideas	1. Invite ideas, elaboration or clarifying own or others' ideas. 2. Invite students to build on ideas.	1. <i>'Do you want to share your thoughts to us?'</i> , <i>'What do you think?'</i> , <i>'What do you mean by that?'</i> , <i>'Can you tell me more?'</i> 2. <i>'Do you agree what he said?'</i> , <i>'Do you want to add anything to that?'</i>	This code is used when a teacher invites students to provide their ideas or further elaborations. Usually, the utterance would include a referent (e.g. 'you' or the name of a student). This code is also applied when teachers invite students to build on their or others' (including teachers' and peers') ideas. Note that if other implicit functions of a question are present, additional codes should be appended.
BH Build on ideas by using historical sources	Build on, elaborate or clarify own or others' ideas by using historical sources	<i>'based on the texts...'</i> , <i>'from this given source'</i> , <i>'from the existing evidence'</i>	This code includes teachers' talk that is specifically based on historical sources or texts to further build on their or students' ideas. If it is also used to challenge students' ideas, it will also be coded <i>CH</i> .
CH Challenge	1. Question, disagree with or challenge an idea or opinion (including from the textbooks) 2. Invite others to challenge	1. <i>'Why we don't see anything about how they fought in the textbook?'</i> 2. <i>'Does anyone want to challenge me? Who thinks I'm wrong?'</i>	Talk that questions or challenges students' ideas or responses would be assigned with this code. Also, talk that invite students to challenge the narrative from the textbook or their peers is included in this code.

<p>Q</p> <p>Asking questions</p>	<ol style="list-style-type: none"> 1. Use questions to extract students' historical substantial knowledge as the basis for following dialogue 2. Ask questions to initiate a dialogue 3. Ask questions to continue a dialogue 	<ol style="list-style-type: none"> 1. <i>'What happened to the Madou Tribe Incident?'</i> 2. <i>'We should define the word more properly. What is economics?'</i> 3. <i>'What else does it take to become a Taiwanese, Chris?'</i> 	<p>Questions that engage students in dialogue, which includes types: both closed and open-ended questions, evaluative questions and descriptive questions. If the question requires further causal reasoning, then the code <i>BC</i> is assigned instead.</p>
<p>HT</p> <p>Make historical thinking explicit to pupils</p>	<ol style="list-style-type: none"> 1. Explicitly explain the notion of historical thinking 2. Demonstrate the skills of historical thinking 3. Scaffold to use academic disciplinary language 	<ol style="list-style-type: none"> 1. <i>'You have to learn how to critically examine the sources- that is to use your historical thinking.'</i> 2. <i>'I'm showing you how to use sourcing in historical thinking.'</i> 3. <i>'In history, it's called "Physical Anthropology."'</i> 	<p>When a teacher explicitly uses or demonstrate the term to describe the notion of <i>historical thinking</i> (歷史思維), <i>historical reasoning</i> (歷史思考), <i>historiography</i> (歷史學), or introduce the nature of history as a discipline (歷史學本質) to students, the code HT is assigned. This code is also applied when teachers use talk to scaffold students to transform their everyday language into academic disciplinary language</p>
<p>TC</p> <p>Provide notions on time and continuity</p>	<ol style="list-style-type: none"> 1. Discerns/describes aspects of change and/or continuity in dialogue 2. Describe notions of time in history in dialogue 	<ol style="list-style-type: none"> 1. <i>'So you mean there might be a tendency, but it isn't necessarily going to break out?'</i> 2. <i>'After Japan retreat in 1945, when did the KMT come to Taiwan to take over?'</i> 	<p>This code is applied when a teacher introduces the notion of time (e.g. historical period, timeline, era, dynasty, years) and the continuity of historical events as a means to open up or deepen a dialogue.</p>

BC Build up causality	1. Invite students to build up causality through historical knowledge	<i>1. 'Why did the Dutch people take revenge in 1635? Why did it take so long?'</i>	Talk that invites students' causal reasoning through historical knowledge would be applied to this code, such as questions that usually include the word 'why' (為什麼) and giving answers that includes 'because' (因為), 'so' (所以) or the explicit term 'cause and effect' (因果). Also, when a connection between two historical events is explicitly or implicitly made with causal reasoning, this code is assigned.
	2. Explore multiple dimensions of a causal relationship?	<i>2. 'What sorts of things does it need to break out?'</i>	
	3. Makes causal connections (identifies causes and/or consequences)	<i>3. 'This is the first reason. The second reason is that, everyone, why did the Dutch want to control Taiwan?'</i>	
CA Coordination of ideas and activity	1. Contrast and synthesise ideas, express agreement and consensus	<i>1. 'He means that because they've already known the ideas of the Enlightenment...'</i>	In a dialogue, a teacher uses talk to coordinate, synthesise, rephrase or paraphrase students' ideas and responses in order to further the dialogue. Also, note that this code includes the use of talk to connect to the prior knowledge or previous lesson when such a strategy is used to move along the dialogue.
	2. Rephrase and synthesise an other's idea	<i>2. 'So there are two points from what you said: firstly...'</i>	
	3. Connect to prior knowledge or previous lessons	<i>3. 'Last time we spent a little time to finish talking about Emperor Wudi of the Han Dynasty'</i>	
RE	1. Evaluate and reflect "metacognitively" on learning activity	<i>1. 'Finally, we end this lesson with a question.'</i>	This code includes the use of teachers' talk to respond, give feedback (both positive and negative) or evaluate a student's answer.
	2. Evaluate an other's response	<i>2. 'I really want to say that Charlie really answered this question accurately'</i>	

Reflect on dialogue or activity or evaluate on pupils' response			
G Guide direction of dialogue or activity or strategy towards historical thinking	1. Take responsibility for shaping activity or focusing the dialogue in a desired direction	<i>1. 'Can you answer this question first? What is the purpose of building the canal?'</i>	This code is applied when a teacher uses discursive techniques to shape or re-shape the dialogue or activity toward a desired direction that aims to deepen students' historical understanding and to scaffold development of historical thinking.
	2. Use other scaffolding strategies to support dialogue or learning on historical thinking	<i>2. 'So if you have a mobile phone, you can look it up online. When were these trials?'</i>	
CX Contextualisation with sources	1. Contextualise the events or actions of people in the past/take a historical perspective	<i>1. 'From the historical background of Emperor Wu of Han, ...?'</i>	This code aims to capture the use of talk dedicated to providing context for historical events or historical persons with historical sources. Certain terms, such as 'context' (脈絡), and 'background' (背景) usually provide good indicators for assigning this code. Note that if the source is used to contextualise the event or a person, then the code CX is applied; otherwise, the code BH is applied.
	2. Compare information from different sources to understand the contextual background of a certain historical event/person.	<i>2. 'So many sources indicate he is assigned instead of deciding from his own personal will?'</i>	
MP Multiple perspectives and interpretation	1. Present/describe different historical interpretations	<i>1. 'From their point of view, they are right, because they want to maintain the political power...'</i>	This category is applied to talk that puts students 'in other people's shoes' and develops capability for historical empathy through explicit instruction for guiding students to take other people's

AC
Make historical analogy
and comparison

2. Present and explore the perspectives of different historical actors regarding the same event/in the same period.

1. Make connections to student's daily life or present-day experience to foster their historical thinking
2. Compare different/ similar historical account

2. *'Can you understand China treats its people in a repressive way from their perspectives?'*

1. *'If you are managing a company, how do you strengthen your power?'*
2. *'So what is the difference between Roman Republic and Ancient Greece?'*

perspectives. For instance, the phrase *'from one's perspective'* could engage students in exploring multiple perspectives from their own.

This code is then applied if a connection between students' everyday-life experience and history is made. Also analogy usually stimulates a form of imagination that allows students to connect past and present. This code also apply to when a teacher compares two or more historical accounts in order to scaffold students for developing historical thinking with dialogue. Also consider the code *HT* which emphasises the transformation of the use of language in class.

Step 4 Testing the coding scheme

To test the reliability of the coding scheme, intercoder reliability (ICR) was calculated for each code using Cohen's kappa (κ) to address the issue regarding the consistency of the implementation of a coding system (Lange, 2011). O'Connor and Joffe (2020) suggest that ICR can improve 'the systematicity, communicability, and transparency of the coding process' and provide trustworthiness for the scheme (p. 2). The selected transcripts from one participating teacher's lessons (three selected lessons, 125 lines in total) was coded independently by two coders, me, and a history teacher who had been informed of the rationale and conceptual framework of this coding scheme. Each code was analysed in terms of presence (1) and absence (0) and then Cohen's kappa (κ) was calculated using SPSS (v.27). A few codes (e.g., CA and CX) with a value of <0.5 (Landis and Koch, 1977) were refined and discussed with the coders to investigate their disagreement concerning the scheme (see also practical guidelines regarding coding in O'Connor and Joffe, 2020, p. 10). The final results are in Table 3.4.

Table 3.4 ICR by category

Code	Cohen's kappa (κ) value
IB	0.692
BH	0.720
CH	0.779
Q	0.607
HT	0.831
TC	0.797
BC	0.831
CA	0.612
RE	0.694
G	0.633
CX	0.601
MP	0.784
AC	0.648

3.5 Research context and participants

My fieldwork was conducted in three schools in three cities: New Taipei City (School A), Taipei City (School B), and Taoyuan City (School C). All the schools are municipal public schools providing excellent education and are considered 'high-level' schools with good college entrance rates in their respective regions. The system of high school in Taiwan is equivalent to the foundation course or A-Level courses in the UK

education system. There are three grades (i.e., three academic years) in Taiwanese high school. For the freshmen, all subjects, covering a range from humanities (e.g., language and history), mathematics, and social sciences (geography and citizenship) to natural sciences (e.g., physics, chemistry and biology), are all compulsory courses. This variety encourages students to explore various disciplines before they move onto the next grade (second academic year), in which they are required to choose one group from three different types of groups. The First Group, focusing on subjects such as humanities and social sciences and excludes the natural sciences, is for students who wish to study related majors at universities. The Second Group includes maths, physics, and chemistry, yet social sciences are also taught, but with less emphasis in terms of the curriculum time. In the Third Group, in addition to the subjects taught in the Second Group, a biology module is also provided. This group is especially designed for students interested in medical fields. Once decided, students may only change their group once. In the final year of high school (Third Grade), substantial time is dedicated to preparing for college entrance exams, which take place in January and July. Therefore, in addition to the new curriculum content prescribed to be taught in this third year, teachers normally help students to revise for the exams.

In this study, I recruited seven teachers ($N[\text{male}]=3$, $N[\text{female}]=4$) from three schools: five teachers from School A, one from School B, and one from School C. The process of recruitment was as follows: First, I approached the teacher from School A who participated in my pilot study to invite her to participate in this research, and I asked her for some references for potential participants. Another four history teachers (her colleagues) then agreed to join the programme. At the same time, the participant-recruitment letter was circulated on social media, as well as being distributed to school administrations. A few more teachers expressed their interest in participating. However, due to the limited time and the scale of this study, a few criteria were applied to screen suitable participants. To collect data related to the purposes and goals of the study, the rationale for participant recruitment was underpinned by the sampling strategy known as purposeful sampling or judgement sampling (Denscombe, 2010; Herrington et al., 2007; Marshall, 1996), which is based on the researcher's theoretical and practical knowledge of the research area, and researchers actively select the most productive sample for the research purpose (Cresswell & Clark, 2011). In contrast to random sampling, purposeful sampling can yield more useful and in-depth data to be analysed (Bakker, 2018). Considering the geographic restraints, the participants' schools needed to be in Northern Taiwan. Furthermore, regarding school type, since this research only focuses on the history curriculum in the context of regular high school, schools such as vocational schools with a different history curriculum were not considered. The same

rules were applied to the class types. Special classes, such as language-talented class, science-talented class, and music-talented class, were not included as they have very different curriculum goals and modules from the regular classes. To achieve wider representation from other cities, schools located in the same city as School A were excluded. Following this process, two further teachers were recruited.

The three schools were deliberately chosen to provide a contrast. School A is particularly famous for its open-minded school environment in which teachers are given much freedom to design and conduct their own teaching, and students are encouraged to engage in their school to express their own thinking and creativity. School C is, conversely, considered more conservative and traditional in terms of teaching style and the role of students. School B, in the capital city, has the richest educational resources and is open to experimenting with innovative pedagogy. For this research, I considered that participating teachers from these three schools could yield rich and diverse data. The teaching experience of the teachers ranged from two years to more than 20 years ($M=11.8$), and no teacher had prior experience of PD related to dialogic education. This point reflects the majority of teachers ($N=5$) expressing their interest in participating in this research because they wanted to learn more about dialogic education and how it could be applied to history teaching. Another major reason for joining this programme concerned the latest curriculum reform, with teachers being more willing to experiment with a new pedagogical approach to align more closely with the new competence-based curriculum in Taiwan (personal communication).

Regarding selecting students to be interviewees, 21 students (11 male, 10 female), comprising three students (aged from 15 to 17 years old) from each participating teacher's class, were selected. To achieve the most representative sample, I employed stratified random sampling (Cohen et al., 2001). First, each class was divided into three strata based on their academic performance in history, as measured by their record in history exams: high-achieving, average-achieving, and lower-achieving. This measure was taken to represent the diversity of levels of performances. Then, one student from each stratum was randomly selected as the interviewee. Combined with the purposive sampling, such a mixed-model sampling strategy has the potential not only to enhance the inferential quality of the research, but also to expand the transferability of the results (Kemper et al., 2003). In Table 3.5, below, the participating teachers' and students' information is listed using pseudonyms for the names of the participants and their schools due to ethical considerations.

Table 3.5. Characteristics of participants.

School	Teacher (Gender)	Experience	Class	Year (Group)	Students
A	Fang (F)	11 years	a	One	Mike (M)
					Ben (M)
					Gina (F)
A	Wu (F)	10 years	b	Two (First)	Adam (M)
					Betty (F)
					Cathy (F)
A	Chen (M)	2 years	c	Two (Second)	Alan (M)
					Blaire (F)
					Cory (M)
A	Chou (F)	18 years	d	Three (First)	Alvin (M)
					Beth (F)
					Chris (M)
A	Huang (F)	22 years	e	One	Artie (M)
					Branda (F)
					Cliff (M)
B	Hsu (M)	3 years	a	One	Alex (M)
					Winnie (F)
					Claire (F)
C	Lin (M)	17 years	a	one	Aaron (M)
					Becky (F)
					Carrie (F)

3.6 Ethical considerations

As pointed out by Robson (2011), any research that involves people will cause ‘ethical dilemmas’ (p. 66). To minimise the ethical issues generated by this research, I strictly followed the ethical guidance suggested by the British Educational Research Association (BERA, 2018) and the Taiwanese Sociology Society (TSS, 2010). Moreover, I completed an Ethical Clearance Checklist that was approved by the Faculty of Education at the University of Cambridge before the research was conducted. The ethical safeguards are as follows: First, all the consent forms (shown in Appendix 6 and Appendix 7) from the participating teachers were collected in written form in advance of the study. Regarding the consent form for students (aged 16–17 years old), since they were not adults, informed consent from their parents or legal guardians was required and received (BERA, 2018; TSS, 2010). Regarding data protection, all data were encrypted. All the names in this study are pseudonyms. The raw data were seen only by me and my supervisor. Video and audio files were encrypted and viewed only by me and my supervisor on a password-protected personal computer at a private location – either at the office or at home.

The teachers and students participated in this research voluntarily and were well-informed of their right to withdraw from the study at any stage. The students chosen to participate in the interviews were specifically informed that any response they gave would be in confidence and would not affect their academic performance. Moreover, although the students were chosen randomly for interviews, they had the right to decide whether they wished to participate. There was constant communication with the students regarding whether they had any concerns or doubts about the study. During class observations, cameras were placed in the front and the back of the classroom. To minimise any intrusion, the camera in the front remained static once set up. The researcher sat only at the back of the classroom for the lowest level of intrusion. At the start of every class observation, the teachers re-emphasised the nature of this study and the students’ right to withdraw.

In my view, ethical considerations should also address the relationship between researchers and participants, especially in my own research, in which I played a major part in collaboration with teachers. In this sense, I introduced the idea of ‘*inclusive research*’ proposed by Nind (2014) to inform this research. The aim of inclusive research is to address and counteract unequal power relations between researchers and the researched, which are usually found in most research-led studies. To highlight teacher agency, this study encouraged the participating teachers not only to act purposefully and constructively to further their own professional growth, but also to

contribute to the growth of their colleagues, rather than responding passively (Tao and Gao, 2017). Although, as mentioned above, it would have been quite unrealistic to require teachers to invest the same amount of effort and time into this research as I did, I still needed to try my best to move from co-option to collective action, as in ‘the idea of a continuum of involvement’ (Nind, 2004, p. 11). Similarly, when working in partnership with teachers to develop classroom dialogue, Hennessy et al. (2011, p. 3) offer a set of guidelines to researchers for productive interaction:

- (1) maintain an equilibrium between teacher and researcher perspectives and priorities, and acknowledge the potential danger of teacher politeness or superficial acquiescence to perceived expectations
- (2) build teachers’ security so that they can share their own perspectives and practices, and freely offer constructive criticism of other approaches
- (3) orchestrate team discussions carefully, and align participants regarding those ideas

These pointers informed my own research in collaboration with teachers and students to avoid potential ethical issues.

3.7 Timetable

The following table (Table 3.6) provides a summary of how and when all the methods were conducted and administered.

Table 3.6 Timetable for conducting the research

Period	Procedures
March–April 2019	Pilot Study: <ol style="list-style-type: none"> 1. Pilot the coding scheme and the ENA for historical epistemic beliefs 2. Pilot the coding instrument for classroom dialogue analysis and assess the intercoder reliability
July–August 2019	<ol style="list-style-type: none"> 1. Contact and confirm participants (teachers) 2. Obtain consent forms and agree on schedule
September 2019	<ol style="list-style-type: none"> 1. Confirm with participants (students) 2. Conduct preprogramme interviews with teachers and students about their historical epistemic beliefs 3. Class observations for baseline data 4. Workshops with teachers
October–January 2019	First cycle of the study <ol style="list-style-type: none"> 1. Monthly class observations 2. Monthly workshops with teachers

January–February 2020	<ol style="list-style-type: none"> 1. Conduct a preliminary analysis of the first cycle 2. Distribute a survey to teachers about their perceptions of the first cycle 3. Revise and adjust the design of the cycle according to the guidance for COVID-19
April–June 2020	<p>Second cycle of the study</p> <ol style="list-style-type: none"> 1. Monthly class observations 2. Online asynchronised workshops 3. Post-programme interviews with teachers and students
July–September 2020	<ol style="list-style-type: none"> 1. Review data across all the datasets 2. Transcribe interview data and data from class observations 3. Code the transcripts preliminarily

In the next two chapters, I explain how the data analysis concerning historical epistemic analysis and classroom dialogue was conducted and provide the results from the analysis to answer the research questions.

Chapter 4: Data analysis and results concerning epistemic beliefs

In this chapter, I first present the results of the ENA Web Tool (version 1.7.0) of each teacher's and student's historical epistemic beliefs. Data were collected through pre- and postinterviews, which each took approximately 30 to 50 minutes. The analysis and results aimed to answer the first part of the research questions:

Part 1: Regarding teachers' and students' epistemic beliefs:

1.1 *Have teachers' epistemic beliefs changed during the course of the professional development programme for dialogic history education?*

1.2 *Have students' epistemic beliefs changed during the course of the professional development programme for dialogic history education?*

To assess whether there were any changes in epistemic beliefs, the transcripts from the interviews were first coded using the coding instrument (see Table 3.3.1 in Chapter 3) for the data preparation for ENA. Then, the coded data were input into the software, which then generated a pattern-based model to visualise each individual's epistemic beliefs following statistical calculation (Siebert-Evenstone et al., 2017). The process is detailed below. Finally, a two-sample related t-test assuming unequal variance was run for each group from two separate dimensions (X axis and Y axis) to check whether there was a significant difference ($p < 0.05$) between the first dataset from the pre-interview and the second from the postinterview (Shaffer et al., 2016). The results for each group are presented in Table 4. In the rest of the chapter, I present the ENA results for each group (left: pre-interview and right: postinterview) accompanied by qualitative commentaries to highlight some pivotal components of the individual's historical epistemic beliefs.

4.1 Conducting epistemic network analysis for historical epistemic beliefs

In this study, ENA (Shaffer, 2017) was applied to the interview data using the ENA1.7.0 Web Tool. The units of analysis were defined as all lines of data associated with a single value of Unit subsetting by Codes. For example, one unit consisted of all the lines associated with Codes CKO and SiKS.

The ENA algorithm uses a moving window to construct a network model for each line in the data, displaying how codes in the current line are connected to codes that occur within the recent temporal context (Siebert-Evenstone et al., 2017). The resulting networks are aggregated for all lines for each unit of analysis in the model. In this model, I aggregated networks using a binary summation in which the networks for a given line reflect the presence or absence of the co-occurrence of each pair of codes. The final

model had coregistration correlations of 0.98 (Pearson) and 0.97 (Spearman) for the first dimension, and coregistration correlations of 0.99 (Pearson) and 0.98 (Spearman) for the second. These measures indicate a strong ‘goodness of fit’ between the visualisation and the original model.

Table 4. The results of ENA

School-Class	Names	t Test (X axis)		t Test (Y axis)	
A-a	T Fang	$t(31.84)=-0.49$ $p=0.62$	Effect Size: $d=0.17$	$t(31.04)=-1.51$ $p=0.14$	Effect Size: $d=0.52$
	S1: Mike	$t(32.98)=0.37$ $p=0.72$	Effect Size: $d=0.12$	$t(32.16)=1.51$ $p=0.04^*$	Effect Size: $d=0.49$
	S S2: Ben	$t(13.41)=-0.17$ $p=0.86$	Effect Size: $d=0.08$	$t(15.71)=-1.50$ $p=0.15$	Effect Size: $d=0.65$
	S3: Gina	$t(26.96)=0.33$ $p=0.74$	Effect Size: $d=0.12$	$t(26.71)=0.44$ $p=0.66$	Effect Size: $d=0.16$
B-a	T Hsu	$t(23.97)=0.02$ $p=0.99$	Effect Size: $d=0.01$	$t(29.42)=-0.27$ $p=0.79$	Effect Size: $d=0.09$
	S4: Alex	$t(20.99)=0.10$ $p=0.92$	Effect Size: $d=0.04$	$t(22.81)=0.14$ $p=0.89$	Effect Size: $d=0.05$
	S S5: Winnie	$t(21.01)=-2.85$ $p=0.01^*$	Effect Size: $d=1.00$	$t(26.83)=-0.49$ $p=0.63$	Effect Size: $d=0.18$
	S6: Claire	$t(20.33)=0.27$ $p=0.79$	Effect Size: $d=0.10$	$t(25.94)=-0.88$ $p=0.39$	Effect Size: $d=0.32$
A-b	T Wu	$t(30.83)=-0.01$ $p=0.99$	Effect Size: $d=0.00$	$t(34.62)=1.42$ $p=0.16$	Effect Size: $d=0.44$
	S7: Adam	$t(27.32)=-1.69$ $p=0.10$	Effect Size: $d=0.62$	$t(27.82)=-1.03$ $p=0.31$	Effect Size: $d=0.37$
	S S8: Betty	$t(24.52)=-1.77$ $p=0.09$	Effect Size: $d=0.65$	$t(23.77)=-1.10$ $p=0.28$	Effect Size: $d=0.42$
	S9: Cathy	$t(29.00)=0.99$ $p=0.33$	Effect Size: $d=0.36$	$t(25.96)=0.03$ $p=0.98$	Effect Size: $d=0.01$
C-a	T Lin	$t(25.31)=-0.31$ $p=0.76$	Effect Size: $d=0.11$	$t(25.71)=0.57$ $p=0.58$	Effect Size: $d=0.20$
	S S10: Aaron	$t(34.01)=0.62$ $p=0.54$	Effect Size: $d=0.20$	$t(30.54)=-2.05$ $p=0.05^*$	Effect Size: $d=0.69$
	S S11: Becky	$t(26.99)=-0.02$ $p=0.99$	Effect Size: $d=0.01$	$t(26.97)=0.03$ $p=0.98$	Effect Size: $d=0.01$

	S12: Carrie	$t(22.77)=-1.73$ $p=0.10$	Effect Size: $d=0.65$	$t(25.36)=-2.39$ $p=0.02^*$	Effect Size: $d=0.90$
A-c	T Chen	$t(13.71)=-1.68$ $p=0.11$	Effect Size: $d=0.73$	$t(16.47)=-1.45$ $p=0.17$	Effect Size: $d=0.57$
	S13: Alan	$t(29.15)=0.86$ $p=0.40$	Effect Size: $d=0.30$	$t(29.92)=0.17$ $p=0.86$	Effect Size: $d=0.06$
	S S14: Blair	$t(23.34)=0.79$ $p=0.44$	Effect Size: $d=0.31$	$t(24.51)=0.97$ $p=0.34$	Effect Size: $d=0.37$
	S15: Cory	$t(33.39)=0.83$ $p=0.42$	Effect Size: $d=0.27$	$t(34.75)=0.42$ $p=0.67$	Effect Size: $d=0.14$
A-d	T Chou	$t(25.71)=-0.47$ $p=0.64$	Effect Size: $d=0.17$	$t(24.27)=-2.29$ $p=0.03^*$	Effect Size: $d=0.87$
	S16: Alvin	$t(17.94)=-1.93$ $p=0.05^*$	Effect Size: $d=0.75$	$t(27.39)=-2.00$ $p=0.06$	Effect Size: $d=0.67$
	S S17: Beth	$t(29.92)=-0.96$ $p=0.34$	Effect Size: $d=0.31$	$t(29.75)=-3.04$ $p=0.00^*$	Effect Size: $d=1.00$
	S18: Chris	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
A-e	T Huang	$t(22.99)=-0.78$ $p=0.44$	Effect Size: $d=0.31$	$t(22.74)=1.14$ $p=0.27$	Effect Size: $d=0.45$
	S19: Artie	$t(26.36)=0.41$ $p=0.69$	Effect Size: $d=0.15$	$t(22.34)=0.60$ $p=0.56$	Effect Size: $d=0.23$
	S S20:Branda	$t(23.52)=-0.32$ $p=0.75$	Effect Size: $d=0.13$	$t(22.52)=-3.25$ $p=0.00^*$	Effect Size: $d=1.27$
	S21: Cliff	$t(23.35)=-0.10$ $p=0.92$	Effect Size: $d=0.04$	$t(21.35)=-0.98$ $p=0.34$	Effect Size: $d=0.39$

4.2 The results of individuals' historical epistemic beliefs

Teacher Fang

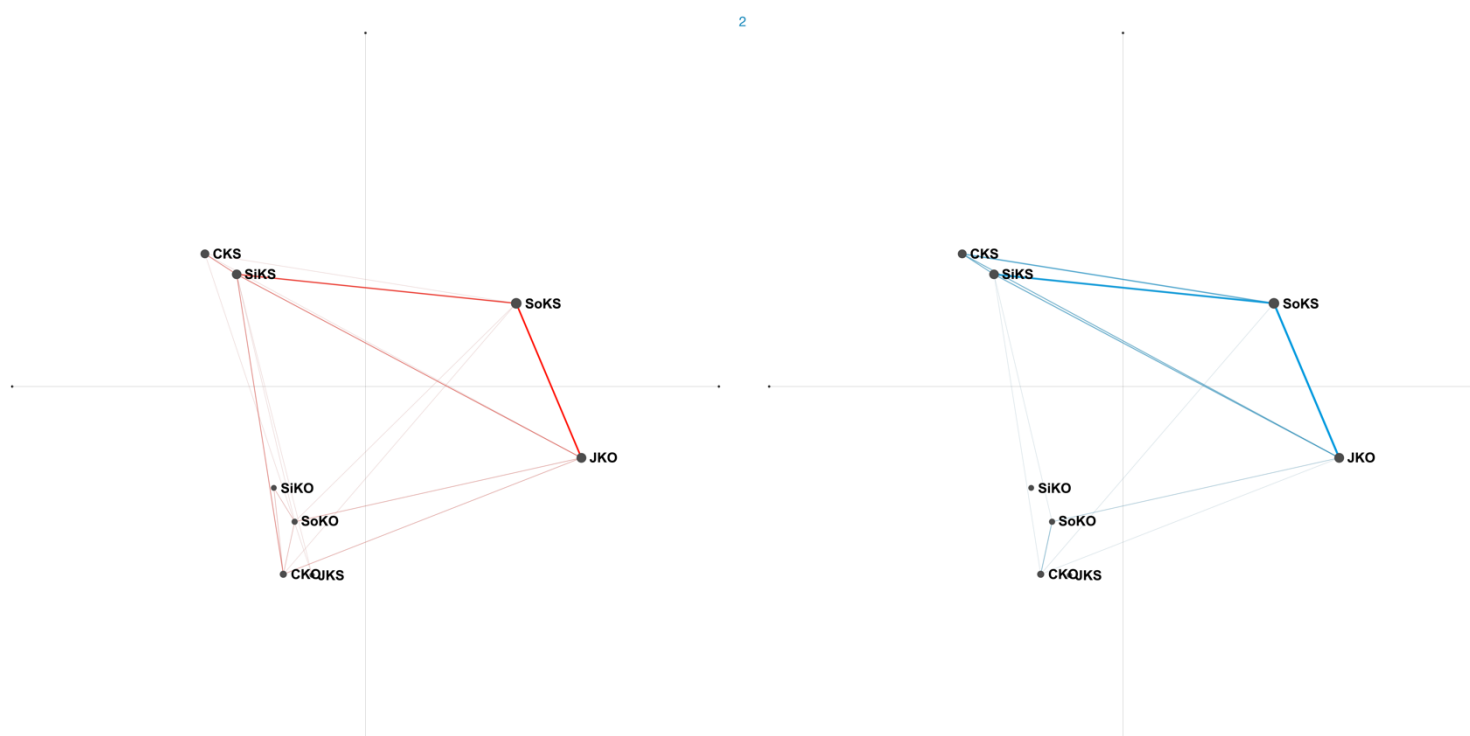


Figure 4.1 The ENA result for Fang.

From this result, it is clear that the connection between the codes of JKO and SoKS is relatively strong in the pre-interview ($M = 0.19$) and slightly stronger in the postinterview ($M = 0.24$). The connection of SoKS-SiKS also displays a strong relationship in both interviews ($M = 0.15, 0.22$ respectively). These connections indicate Fang believes the notion of historical knowledge is constructed by a group of scholars rather than provided by certain historical sources (VanSledright, 2002; Wineburg, 2001) and he displays scepticism toward the authorities claiming to process the knowledge, who should also be examined through certain criteria (*'... when a historian puts forward the hypothesis, and more and more evidence backing up it, he might be right. Yes, so actually we have been trained in a scientific way'*). She believes in the objectivity of the procedure of historical research but acknowledges that the subjectivity of a historian's personal interpretation, ideology, and political agenda (*'... emphasise how we deconstruct and interpret the sources in an objective and scientific way, but in fact, it is inevitable that during this process of interpreting, you would be affected by your own emotions and the time you are in'*).

It is also noticeable that the connection between CKS and JKO has become closer ($M =$

0.03 for the first dataset and $M=0.12$ for the second), demonstrating that Fang was increasingly leaning toward the uncertainty of historical knowledge and the view that the past cannot be exactly copied (Maggioni et al., 2004). This change of attitude is evident in her teaching practice when asking open-ended questions to open up dialogue with students and (*‘...have them think more deeply about what the textbook shows us is actually somehow different from other interpretations if we look at other historical sources as evidence’*), which is also apparent in the mean of SoKS-CKS increasing from 0.03 to 0.15). With such a change, it is also worth noting that Fang grew more confident to offer her own opinions and criticisms regarding professional historians. For instance, in the pre-interview, when asked about how historians do history, she replied: *‘I am in no position to give any comments on that’* (assigned code SoKO). However, the later in the interview, she had no problem answering the same question (the same code was not assigned to any line in this dataset). However, comparing both interviews, a two-sample t-test found the dataset of the pre-interview was not statistically significantly different from that of the postinterview ($p=0.36 > 0.05$).

Fang’s student 1: Mike

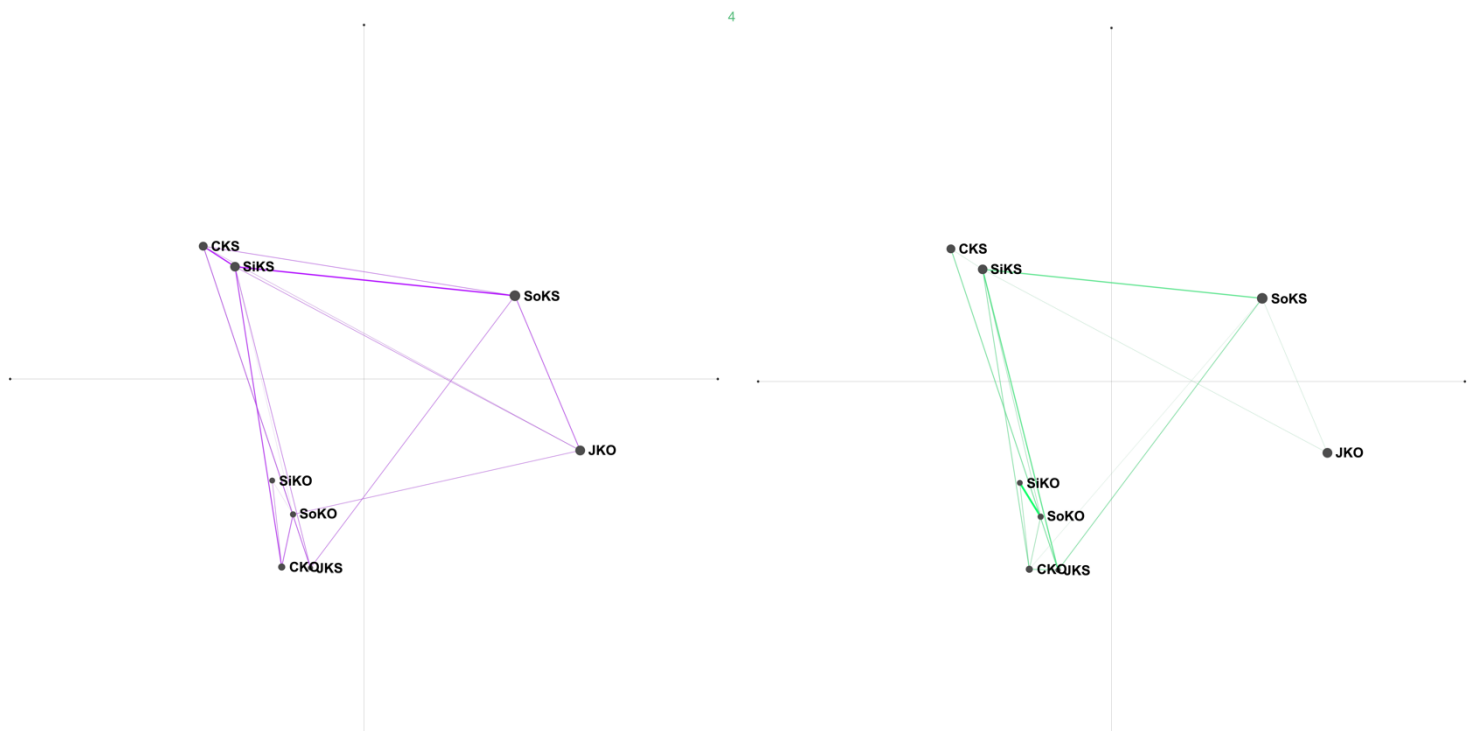


Figure 4.2 The ENA result for Mike.

In the figures above, the three most connected dots are SiKS, SoKS, and CKS in the pre-interview. For example, when asked about the reason historians might hold very

different interpretations about the same historical account, Mike acknowledged how the interpretation might be affected by historian's subjectivity and, thus, history is constructed with a great amount of personal emotion, which substantially differs from the nature of science, in which '*there is only one single truth*' ($M[\text{SiKS-SoKS}] = 0.16$; $M[\text{SiKS-CKS}] = 0.15$). Moreover, such a view about the nature of history led Mike to fall into relativism (Maggioni et al., 2004), meaning he believed all opinions are equally valued and '*there is no right or wrong*' ($M[\text{CKS-JKS}] = 0.10$). However, it is interesting to note that when discussing history education, his belief started to shift to a more copier stance (Havekes et al., 2012), in which historical knowledge is clearly defined and provided by an experienced teacher who helps students understand the complexity of the context of history and prepare them to perform better in exams ($M[\text{CKO-SoKO}] = 0.10$; e.g., '*I'm not a big fan of self-learning. Somehow it would bother me a lot if my questions are not fully answered...I just want teachers to give me the answer for me to understand the history a bit better*').

In the postinterview, it is noticeable that the connection between the codes SiKS and CKS is less strong ($M[\text{SiKS-CKS}] = 0.04$), which could reflect the view of what history is and how it is constructed. Mike explicitly said that history is '*about what people in the past have done*' and '*how these things affect us today*'. In terms of the formation of historical knowledge, he believed that history exists in the '*past traces of historical heritages, weapons and agricultural apparatus*' and could also be found in '*historical texts in the library*' (also evident in the considerable increase of $M[\text{SiKO-SoKO}] = 0.23$). However, after one academic year, Mike developed greater interest in engaging in open-ended questions by using historical thinking in history class. In the pre-interview, he criticised that teachers sometimes fail to provide the answers to his questions, but in the later interview he mentioned that he had made some progress on '*engaging more in dialogue with the teacher who likes to ask us many questions, and sometimes these questions just lead to more questions, which makes me think more deeply*'. Therefore, reflecting on his own learning trajectory, he argued that thanks to these unanswered questions, he started to '*learn history with more thinking and less memorising*'.

Fang's student 2: Ben

In the figures, the connections between three codes (SiKS, SoKS, and JKO) are even stronger than Mike's. For instance, when asked to comment on the nature of history and where it 'exists', Ben believed that history can be found in historical texts, but was also aware that the texts might be '*distorted depending on who wrote it*'. Therefore, to have a better

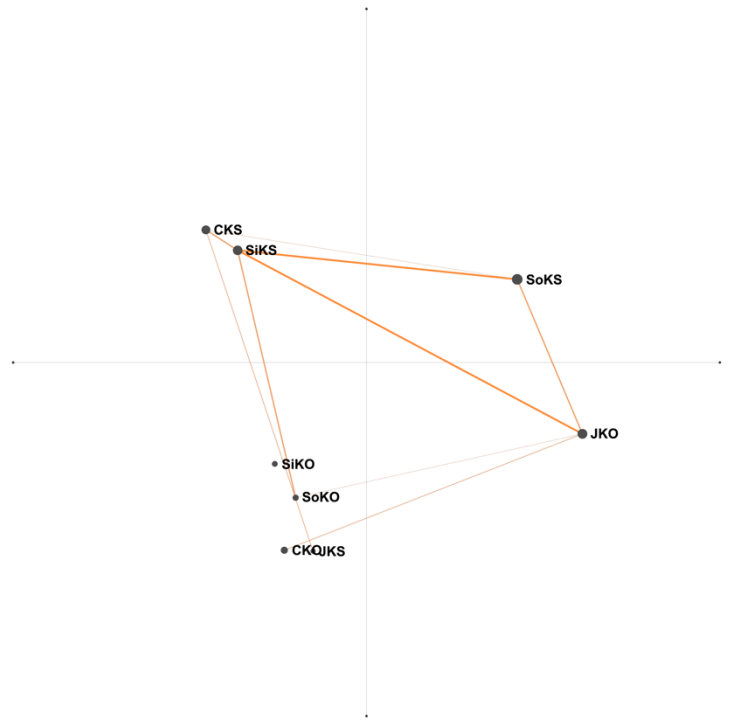
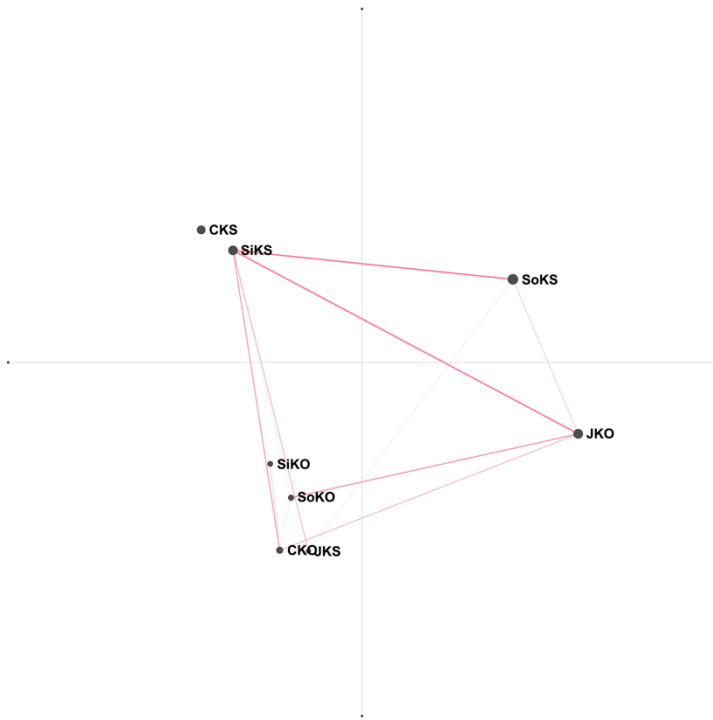


Figure 4.3 The ENA result for Ben.

understanding of history, ‘*we should take the contextual background fully into account as well as finding more evidence*’ ($M[\text{SiKO}-\text{SoKS}] = 0.18$ in the first dataset and 0.22 for the second). This epistemological stance is similar to what Havekes et al. (2012) describe as the *borrower stance*. Students in this stance understand that the past cannot be copied exactly, which requires using sources to reconstruct, but they also believe that the fixed procedure of doing history is possible. Moreover, although Ben believed that everyone is entitled to their opinions and the historical facts are simply personal interpretations (‘*it is okay that everyone has their own opinion*’), he also argued that there is one certain criterion that can ‘*depart good from bad*’, which was, interestingly, *the ethics of humanity* ($M[\text{SiKS}-\text{JKO}] = 0.18$ for the first interview, and 0.23 for the later). Ben later offered some examples regarding the meaning of ethics, such as murder and war crimes, which he strongly contended that no interpretations are allowed to attempt to justify such behaviour. Such a strong moral stance about the absolute view of right or wrong (Perry, 1970) is also reflected in his belief in the existence of an impartial third party to have ‘*the final say on historical interpretation*’ (‘*people who aren’t involved are more impartial and neutral*’; $M[\text{SoKO}-\text{JKO}] = 0.14$ in the first dataset).

In the postinterview after one academic year, regarding the objectivity of history or the ultimate truth about historical facts, Ben had become increasingly sceptical, mentioning

several times (*‘there is no absolute objectivity in history...to some degree there’d always be someone’s ideology involved’*; $M[CKS-SiKS] = 0.14$). However, unlike the response from the previous interview, it appears that Ben had developed more into a *criterialist* (Maggioni et al., 2004), who is more likely to search for the best explanation through the expert’s weaving together of the best evidence and the best argument available. For instance, he started to believe there could be a more *‘scientific way to examine different theories put forward by different historians’* and *‘maybe gather more evidence because it would be more objective’* ($M[SoKS-JKO] = 0.08$ for the first and 0.16 for the second).

Fang’s student 3: Gina

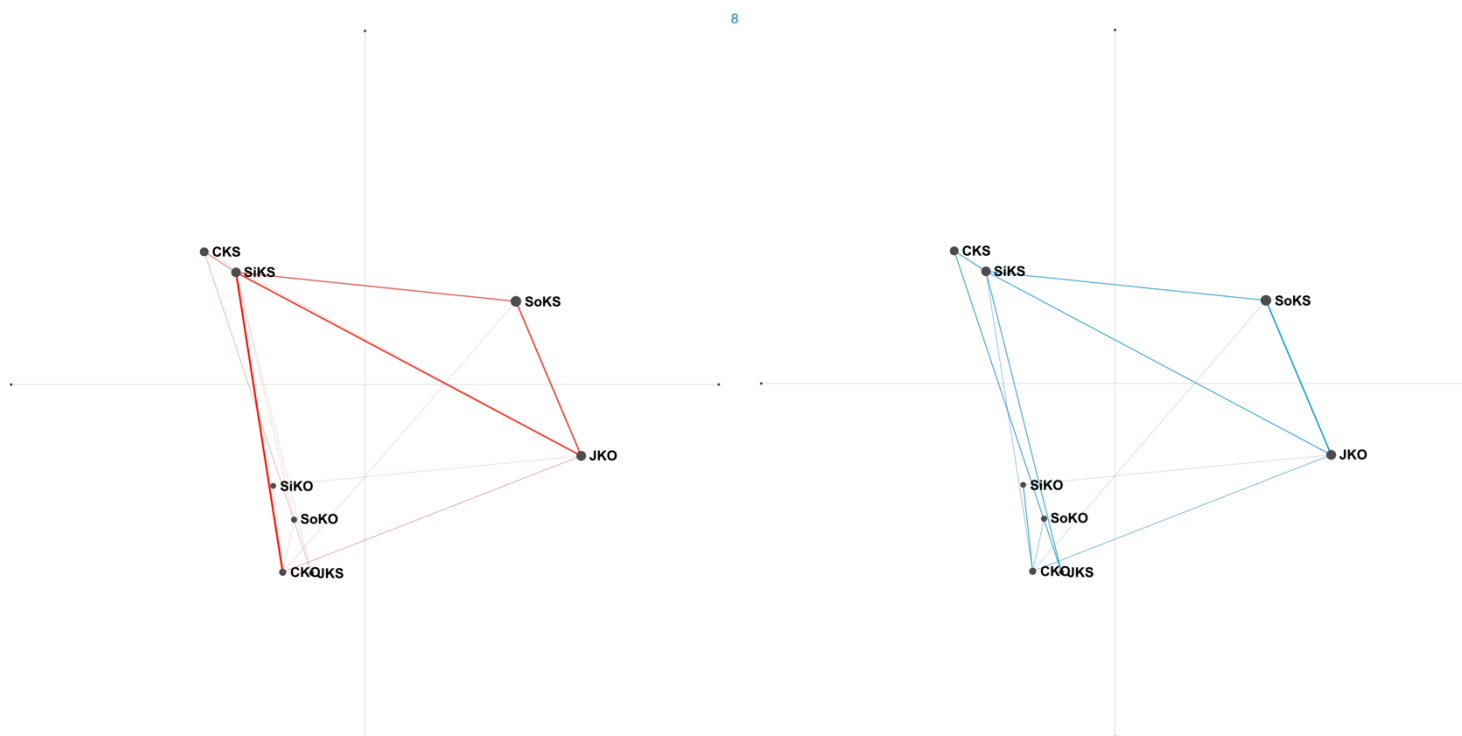


Figure 4.4 The ENA result for Gina.

In the pre-interview, Gina demonstrated developed and sophisticated epistemic beliefs about history from her discourse. On the one hand, she recognised how history could be more subjective than objective since it is constructed by historians who *‘inevitably bring their own personal perspectives into historical interpretation’* and that language is highly complex, so could *‘sometimes be really misleading and cause many misconceptions’* ($M[SiKS-SoKS] = 0.14$). However, instead of falling into relativism (Maggioni et al., 2004), Gina also believed that, *‘although there is no right or wrong about what they say, we could still decide which one is better by the use of logic’*

($M[\text{SiKS-JKO}] = 0.18$; $M[\text{SoKS-JKO}] = 0.17$). Despite the belief regarding the uncertainty of history, when encountering history teaching and learning, Gina still viewed history as a fixed story with complicated causality ($M[\text{SiKS-CKO}] = 0.22$). Therefore, history teachers, in her opinion, should be capable of '*providing organised and holistic explanations of historical accounts*'. This contradictory epistemic belief about history is also reported in Hsiao's (2009) research on Taiwanese students' historical thinking, who concludes that the overpacked curriculum contents and goals, as well as the immense pressure to succeed in standardised exams designed with only multiple-choices questions, contributed to students' low motivation to engage in exploring historical uncertainty and deep historical reasoning in history class (p. 102). In the postinterview after one academic year, it is noticeable that the connection between SiKS and CKO is less strong ($M[\text{SiKS-CKO}] = 0.07$), illustrating that Gina became less dependent on the teacher providing historical facts for her; instead, she started to emphasise the importance of achieving historical empathy (Lee, 2005; Wineburg, 2010). She stated that in the history classroom '*the teacher should prepare some materials which could help us try to stand in those people's shoes... so we would have better understanding about why this would happen.*' Although empathy does not necessarily mean understanding people's minds in the past, it is vital for students to achieve an empathetic understanding of the ideas they 'entertain' that differ greatly from our own (Lee, 2005). Similar ideas about historical empathy emerged from her opinion about dialogic history education in Taiwan, on which she held a rather positive attitude: '*it's great... like what I said, you could learn from others, and through dialogue you could also take other's perspectives to reflect on your own thoughts.*'

Teacher Hsu

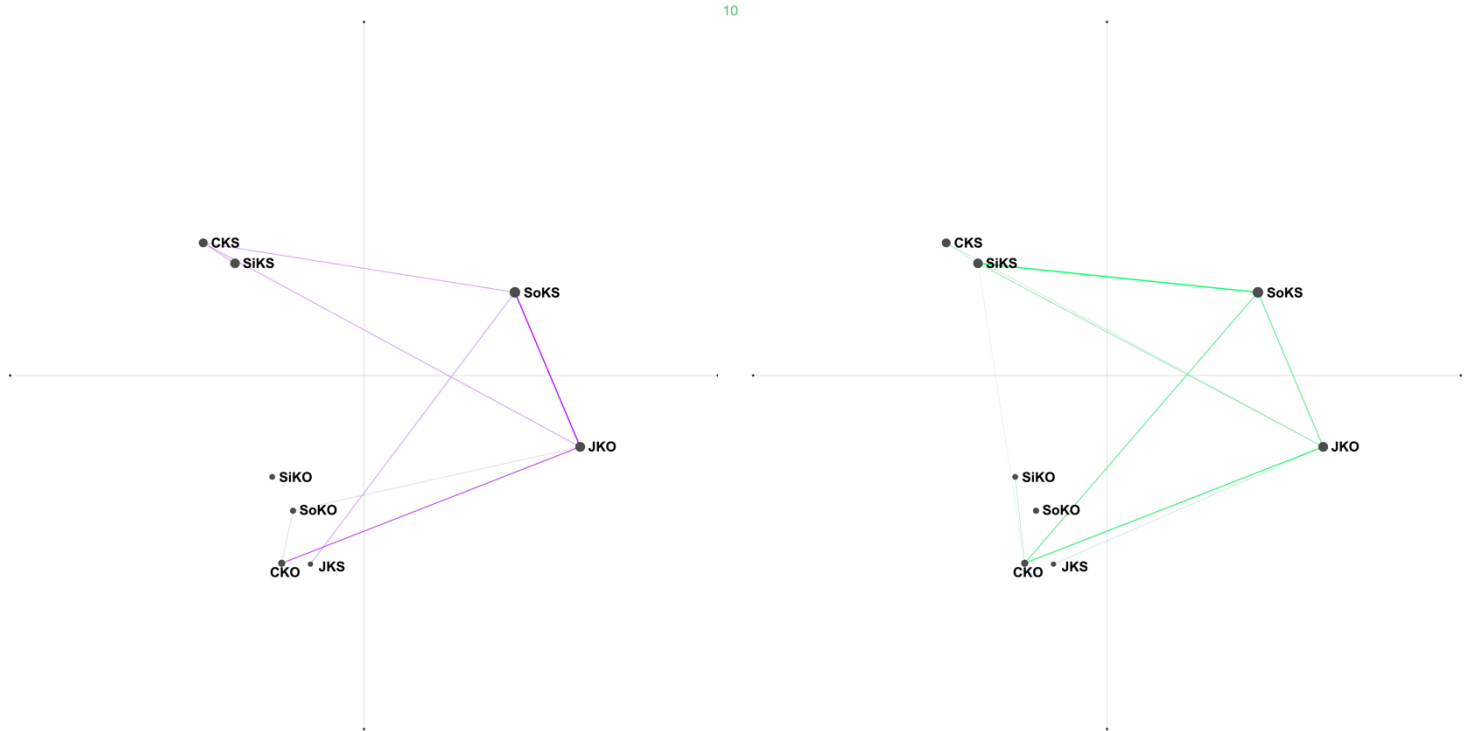


Figure 4.5 The ENA result for Hsu.

In the results of the pre-interview, the relatively strong connection between two codes, SoKS and JKO ($M[SoKS-JKO]=0.14$) suggests that, similar to Teacher Fang, Hsu also believed in how both knowing and doing history are not fixed but debatable through the rigorous use of evidence and historical texts (*'...it all depends on what evidence it is and whether it is logical.'*). However, it is interesting to note that, when discussing the absolute truth of history, Hsu was often in doubt and uncertain about his own response. For instance, he stated that, *'I don't think there is so-called historical truth'* in one sentence, but in the next sentence he rephrased his answer: *'I think I'd like to take it back. There is probably truth but it's almost impossible to find out what it is.'* ($M[CKO-JKO]=0.11$). Later during the interview, he again attempted to reshape his own thoughts by correcting his response: *'I'm sorry, but I think what I'm really trying to say is that I'm not sure whether truth exists, but it is constructed by the collective consensus justified by long-term historical research'* ($M[CKS-JKO]=0.10$).

There were some changes in the postinterview analysis compared with the first dataset. First, unlike the indecisive attitude toward historical truth in the pre-interview, Hsu had developed a more certain belief in the existence of the absolute truth (*'There is only one truth'*) while recognising and highlighting the difference between historical facts and interpretations ($M[CKO-SoKS]=0.11$; $M[CKO-JKO]=0.13$). Second, regarding

teaching practice, Hsu admitted he had not paid much attention to the latest curriculum (NAER, 2018) until the second semester in the academic year. However, by participating in this research project, Hsu had started to redesign some of his teaching practice and in-class activity by engaging students in discussing current social affairs to enable ‘*students to see the value of learning history and put it in good use for society.*’ The codes assigned to this concept were SiKS and SoKS to capture the complexity and the practicality of the nature of the discipline ($M[SiKS-SoKS]= 0.16$). This notion is mentioned by Shemilt (1983), who contends that the purpose of history should be the liberal one, which allows learners to make sense of and to see the value of history. Moreover, wary about students falling into vicious relativism (Kuhn and Weinstock, 2002), Hsu expressed this concern by emphasising the importance of teaching students a proper approach to historical reasoning, such as ‘*with logical use of evidence*’ or ‘*being critically engaged in different perspectives*’ ($M[SoKS-JKO]= 0.11$).

Hsu’s student 4: Alex

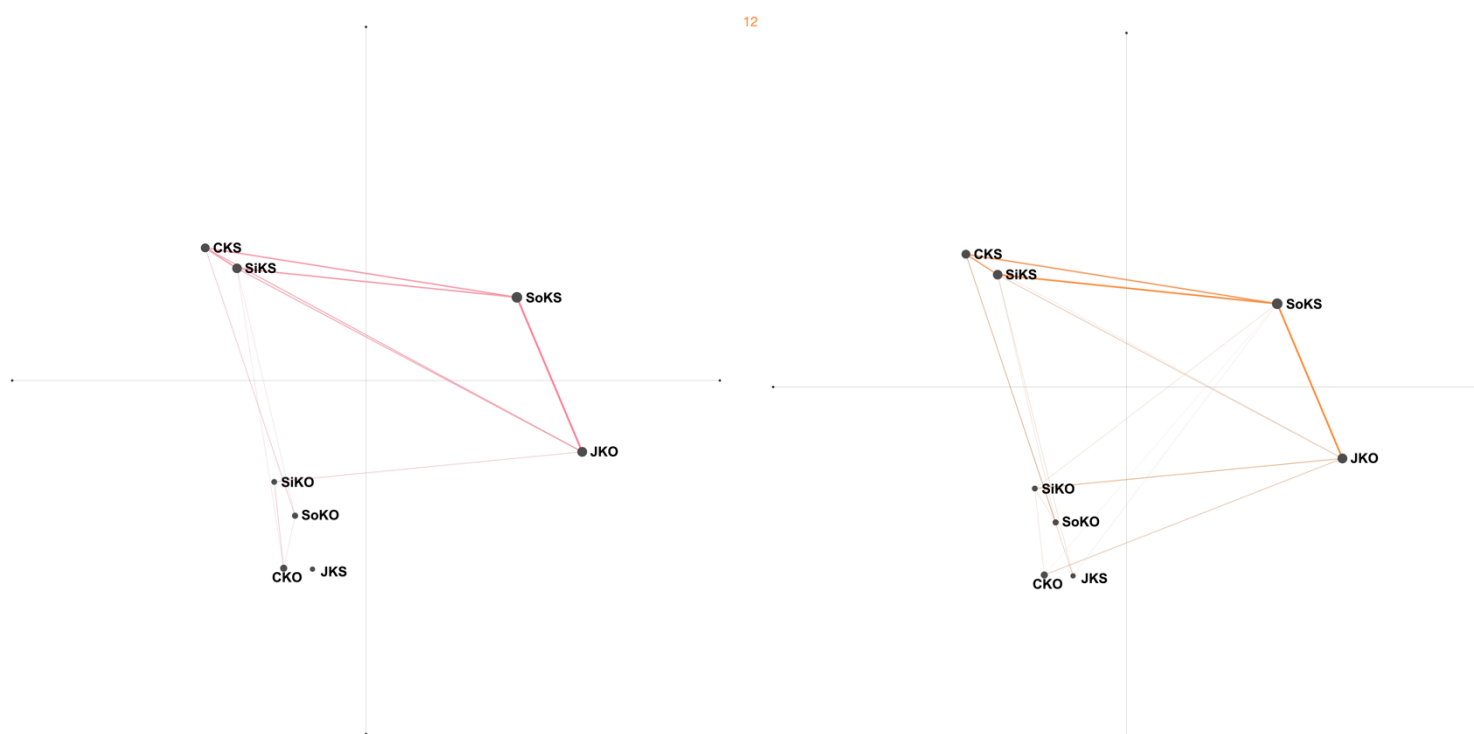


Figure 4.6 The ENA result for Alex.

In both interviews, Alex demonstrated his developed and sophisticated epistemic beliefs in an articulate manner. For instance, he defined history as ‘*the culture that has been passed down by the people in the past with their own lifestyle and traces*’ ($M[CKO-SiKO]= 0.08$). He was also aware of the subjective biases from firsthand sources (‘*...it’s not enough to just use these things. Even if they saw things in person,*

that didn't mean they would write everything down completely'; $M[CKO-SoKS]=0.17$). Moreover, highlighting the solution to address subjectivity, Alex believed that the procedure of historical research should be both '*logical and scientifically rigorous*', from which the '*so-called historical truth*' could be constructed through '*statistical agreement*' among historians ($M[SoKS-JKO]=0.21$). Such a scientific notion of history was also mentioned in his positive view of history class, which he '*enjoys a lot because the teacher often provides many sources to present various point of views, which allows me to use my brain and decide which interpretation is better*' ($M[CKS-JKO]=0.13$; and also at $M[SiKS-JKO]=0.13$).

In the postinterview, the epistemic beliefs that Alex held appeared to be similar to the first interview, with a similar quantitative result in the second figure (e.g., $M[CKS-SiKS]=0.17$ for the first dataset, and 0.15 for the second; also $M[SoKS-SiKS]=0.17$ for the first dataset, and 0.20 for the later). The most prominent change is in the connection between the two codes JKO and CKS ($M=0.13$ for the first dataset, and 0.03 for the second), which was replaced by the emerging connection between JKO and CKO (no data for the pre-interview but $M[CKO-JKO]=0.08$). This change indicates Alex had gradually become more convinced there is an ultimate truth about historical knowledge, which will '*be revealed with the advancement of technology and constantly test and verify*.' Regarding history class, as mentioned previously, Alex expressed positive comments on Hsu's pedagogical approach. In the second semester, aligned with Hsu's teaching innovation, Alex noticed some changes in the classroom, with the teacher introducing various historical research on the same historical account from different historians, about which Alex stated, '*it really sharpened and deepened the way of thinking, especially on critical thinking*' ($M[SoKS-JKO]=0.21$).

Hsu's student 5: Winnie

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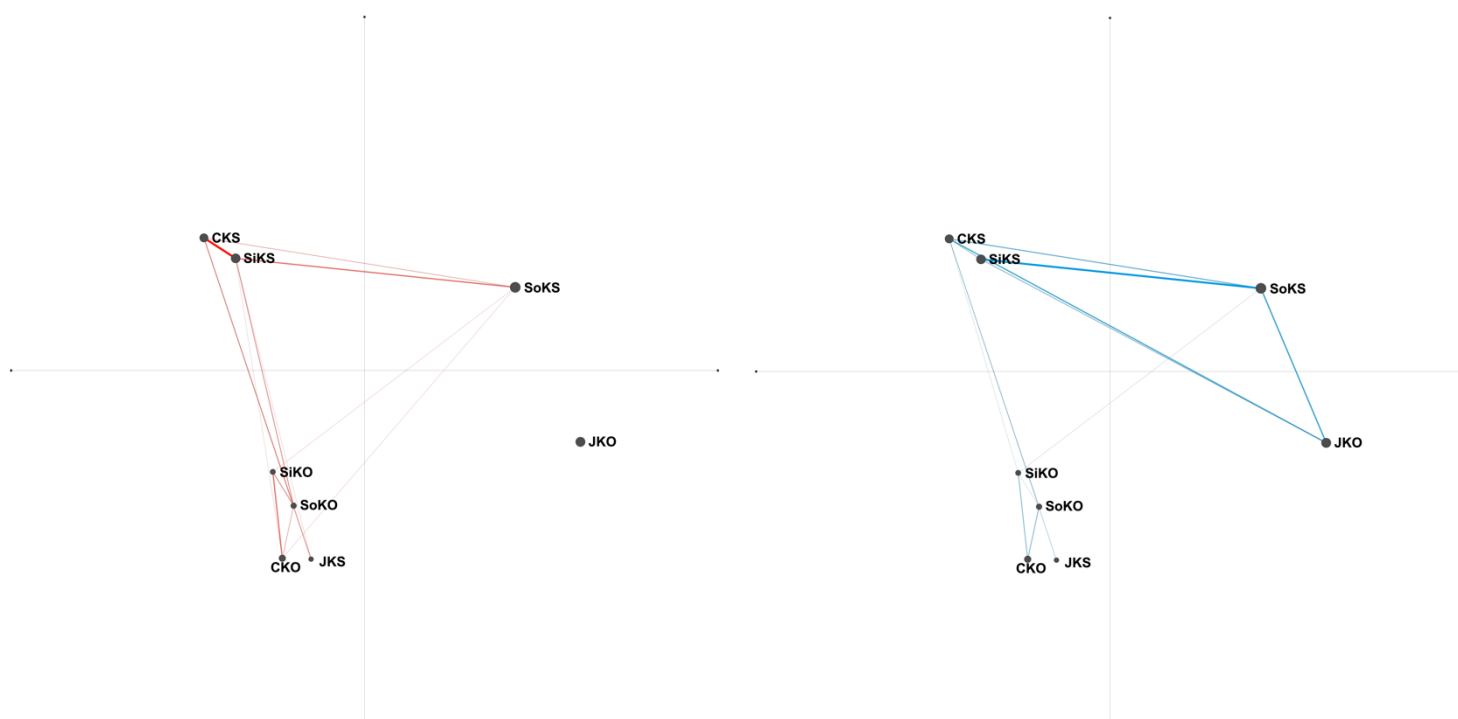


Figure 4.7 The ENA result for Winnie.

In the pre-interview, it is important to note two primary features: First, several times, Winnie explicitly referred to history as *'a pile of stories'* that can be *'found in some ancient books and some ruins left by the people in the past'* and the historical knowledge from these objects are true since *'it is what happened'* ($M[CKO-SiKO] = 0.14$). This idea also provided a way of reasoning to reconcile conflicting historical accounts: *'not every historian has read all the details in the sources, so there must be someone who misses out something'*. Moreover, Winnie called for a scientific approach to *'dig out the truth'*, such as by using *'carbon-14 dating'* ($M[SoKO-SiKO] = 0.11$). Second, another, even stronger connection is found in the two codes CKS and SiKS ($M = 0.25$). The quantitative analysis results initially seem self-contradictory (with $M[CKO-SiKO] = 0.14$); however, complemented by the qualitative analysis, the idea of acknowledging the subjectivity from personal positioning substantially contributed to this connection as the interview unfolded. For example, when asked to provide reasons three historical texts about the image of Koxinga (who defeated the Dutch outposts in Taiwan in 1661) were significantly different, she pointed out the biases from the authors of different nationalities affect the way they wrote about the historical persona.

The postinterview analysis revealed that Winnie had developed more sophisticated epistemic beliefs about the nature of the discipline (Hsiao, 2009). Although Winnie

again viewed history as a fixed story with some simple facts ($M[CKO-SiKO]= 0.10$), she also recognised the limitations and difficulties regarding uncovering historical truth (*‘... such as the Opium War, of course the British would write about it in a way that is totally different from the Chinese, so who knows what the real truth is’*; $M[CKS-SoKS]= 0.12$). Moreover, from her discourse, it appeared Winnie paid more attention to the use of historical thinking when learning history ($M[CKS-JKO]= 0.15$), including understanding contextualisation and critically using evidence (van Boxtel and van Drie, 2018). For instance, when asked to comment on history class, she displayed a positive attitude about how *‘the teacher starts dialogues with us, which gives me some space for thinking more deeply’*. Thus, this teaching practice changed her way of learning history (*‘I used to memorise everything, but now it’s impossible to do so. I’m trying to use more thinking to understand the complexity of history’*; $M[SiKS-SoKS]= 0.22$).

Hsu’s student 6: Claire

In the first figure for the results of the pre-interview, three codes are predominantly connected, namely SoKS, SiKS, and CKS. The connection between CKS and SoKS ($M= 0.16$) highlights Claire’s beliefs regarding the uncertainty of historical knowledge and the construction of knowledge among historians. For instance, she pointed out that it is impossible to discover the truth since *‘many sources might be destroyed or forged due to some political issues or any other reasons’*. Therefore, historians *‘can only try to make the best of the existing evidence to develop the theory, but once more evidence is available, new historical knowledge might be constructed’*. Another main feature in this figure is the connection between SiKS and SoKS ($M= 0.20$). This connection demonstrates how Claire not only understood how history is constructed by people, instead of being directly found in the historical texts, but she also viewed historical knowledge as a complex continuum that

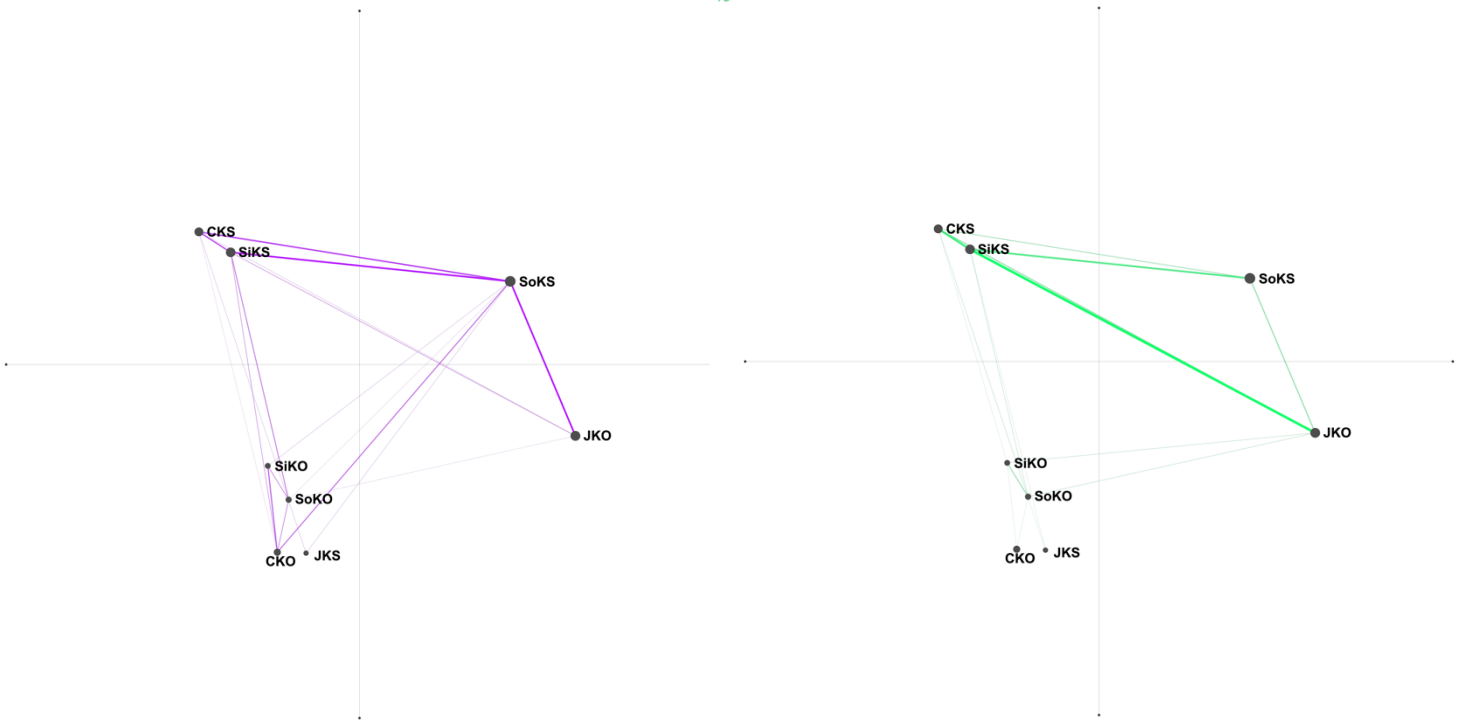


Figure 4.8 The ENA result for Claire.

that consists of various inter-related concepts and needs to be situated in context (Maggioni et al., 2004; ‘...we should also look at the political context when this Chinese historian appraises Koxinga so highly in his writing. I mean there might be some personal agenda he wanted to achieve by worshipping him [Koxinga]’).

In the postinterview, the connection between JKO and SiKS was stronger (*at $M=0.08$ for the first dataset, and 0.29 for the second*), indicating how Claire emphasised the importance of understanding historical context to have a better understanding to evaluate different sources and opinions critically. This understanding could also be observed from her high interest in history class. She described the history teacher as ‘*the most fantastic teacher I ever had, who not only teaches us historical knowledge but better understanding about historical context, so we could get what is going on in today’s political and society situation*’. Moreover, her passion for the class influenced her view on how to learn history in the same manner as Winnie (less memorising, more thinking). Another major change evident in the figure is that the other codes are less connected to CKO (the connections are only CKO and SiKO, with $M=0.03$ and SoKO also at $M=0.03$). Claire explicitly stated that, ‘*the 100% historical truth does not exist*’, and therefore, there might not be right or wrong facts; yet ‘*we could still and have to evaluate who has better credibility through the existing evidence we have so far*’ ($M[CKS-JKO]=0.13$ and $M[SoKS-JKO]=0.13$).

Teacher Wu

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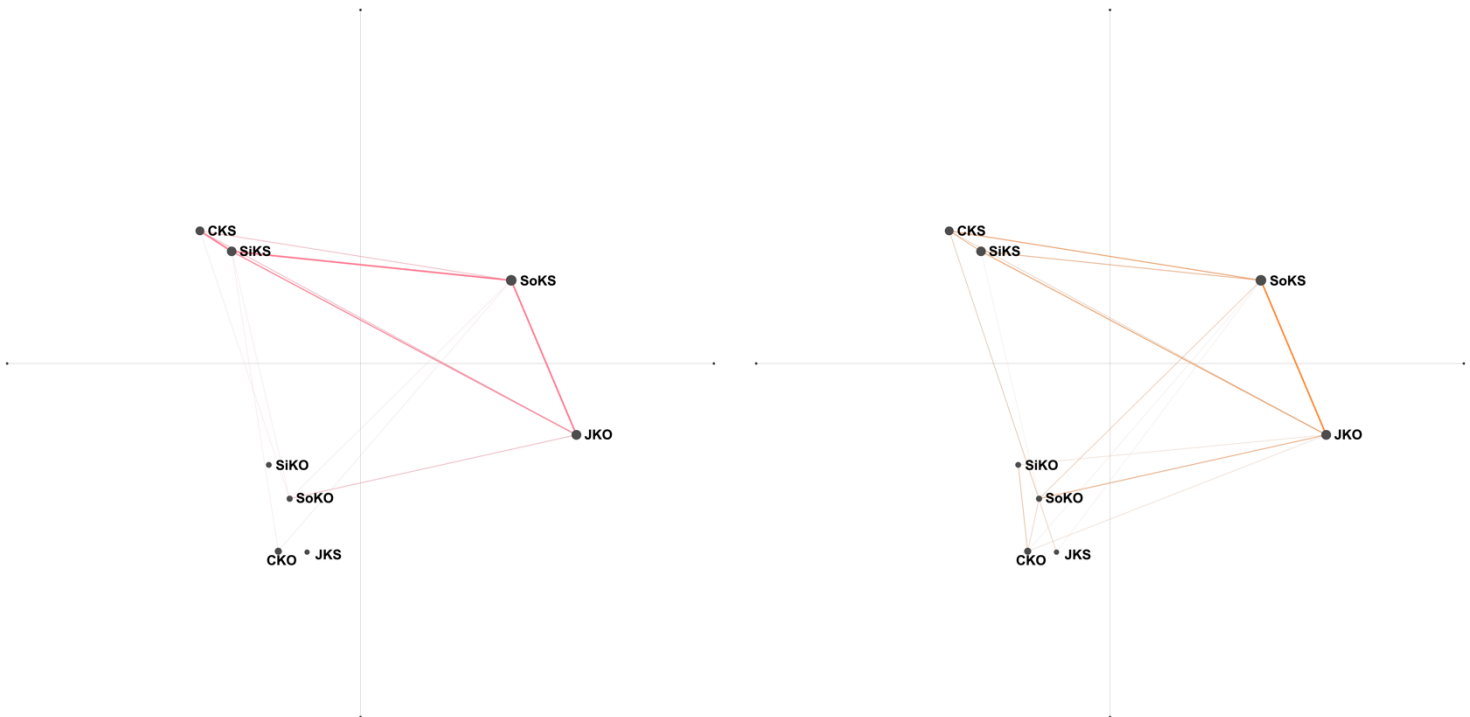


Figure 4.9 The ENA result for Wu.

In the pre-interview, Teacher Wu numerously mentioned how she paid great attention to teaching students the complexity of history with a more humanity-based and emotionally appealing approach ($M[CKS-SoKS] = 0.20$). For instance, when talking about her own teaching strategy, she explained, *‘I always try my best to connect history to learners’ own personal life experience and to highlight some significant and touching moments in historical accounts for students’*. Thus, pupils have a better understanding of *‘why history in the far past is still relevant and vital to them nowadays’*. The main purpose of history education, according to Wu, is to *‘inspire students’ passion and curiosity for history’*, instead of teaching a certain amount of substantial historical knowledge (Lee, 2005). Moreover, she described her history class as *‘a sort of a religion, according to some students’*, with an emphasis on the *‘spiritual level’* and fusing with *‘personal-growth coach session’* ($M[SiKS-SoKS] = 0.20$). However, regarding the nature of history as a discipline, Wu believed in a rigorous approach to research in history, but the nature and purpose of research questions in history should ultimately *‘be connected to social concern’* ($M[SoKS-JKO] = 0.20$). This perspective on the nature of history also influenced her pedagogical approach. Wu claimed that she sometimes *‘discuss[es] two conflicting historical interpretations with students but provides them sufficient sources to unpack the context, such as the background of the personae and the intention of the discourse’*. By doing so, she hoped to enable students

not only to learn historical thinking, but also to ‘understand the importance of diversity’ ($M[SiKS-JKO] = 0.16$).

After one academic year, the results indicate no significant changes. However, it is still worth noting Wu’s contradictory beliefs regarding history and history education. On the one hand, regarding the nature of history, Wu still believed in rigorous study to discover the objectivity in historical truth. However, on the other hand, for history teaching, she contended that, ‘*a history teacher should not be afraid of being too subjective in class*’; instead, a teacher should ‘*open up dialogue with students about how you think, how you reach the conclusion and then help them to do so on their own*’. Take the political tension between Taiwan and China for example, Wu explained that it was inevitable for her to discuss such issues with students during the topic on Modern Chinese History: ‘*At first I tried to be as objective as I could but it was just not working because students wanted a more genuine conversation with me. They all knew this is a very important issue.*’ Therefore, Wu opened up a dialogic space with students to discuss her perspectives and what other possible perspectives are with the backing of historical sources as the evidence for argument ($M[SoKS-JKO] = 0.18$).

Teacher Wu’s student 7: Adam

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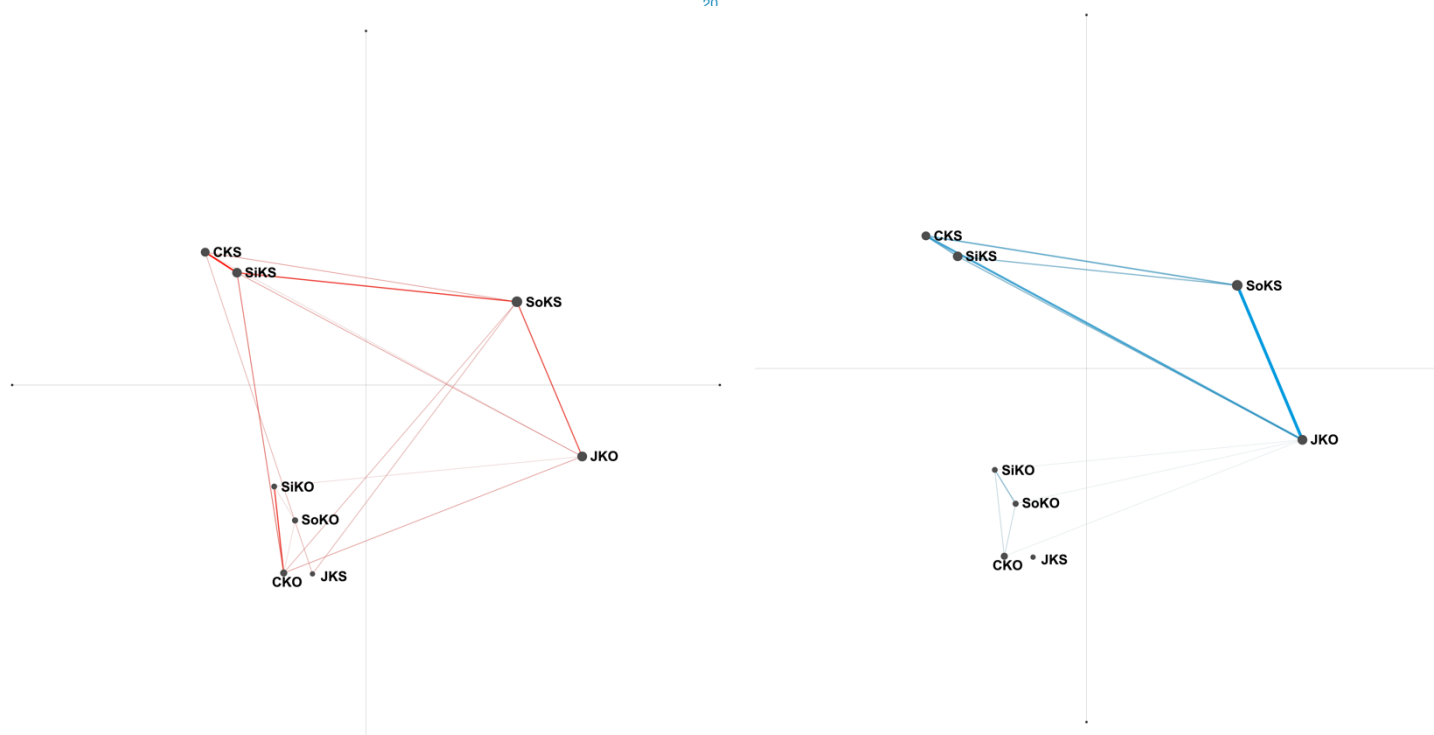


Figure 4.10 The ENA result for Adam.

In the pre-interview, Adam explicitly referred to history as a story passed down by generations ($M[CKO-SiKO] = 0.16$). He also believed there might be *'a law or a pattern for us to understand history, so it's more like science than music or art'*. However, regarding historical truth, he did not think *'it is possible to represent or recreate 100% of the history to the present, but we still could try to sketch a shape of history'* ($M[CKO-SoKS] = 0.08$). As the interview unfolded, especially when discussing three historical texts on one historical persona (Koxinga) from different perspectives, Adam became aware of subjectivity bias in these sources ($M[CKS-SiKS] = 0.16$). For instance, he recognised how the Dutch and the Chinese described Koxinga in contradictory ways because *'Koxinga defeated the Dutch in the Battle of Formosa'*. Therefore, considering the contextual background of history, Adam stated, *'the more a persona was involved in the historical account, the more subjective one might be'* ($M[SoKS-SiKS] = 0.14$). This belief influenced his idea of history education: *'it is inevitable for teachers to have their own opinions, which is quite good actually, because after students absorb these ideas, we can build our own ideas to have a further and deeper discussion'* ($M[JKO-SoKS] = 0.13$).

The figure illustrating the results of the postinterview reveals a few changes. First, the lines connecting other codes to CKO are less prominent, indicating Adam believed less in the existence of absolute historical facts. Instead, he reaffirmed his belief in the notion of uncertainty of historical knowledge, and that the past cannot be exactly copied. Many factors can affect historical facts, such as historians' perspectives. Furthermore, the construction of historical knowledge should be supported by historical sources, which should also be evaluated using different criteria ($M[JKO-CKS] = 0.25$). Another major change concerned the substantial increase of the connection between the two codes SoKS and JKO (*at $M = 0.13$ for the first dataset, and $M = 0.35$ for the second*). This change indicates how Adam became more confident regarding critically examining the credibility of historical sources and exploring different perspectives from different historians in history learning. For instance, he mentioned how he enjoyed history class, in which the teacher and students could *'jointly explore different sources to discuss a historical account and use these sources to back up my own argument'*. A two-sample t-test assuming unequal variance found the pre-interview was statistically significantly different at the $\alpha=0.05$ level from the postinterview ($p=0.04 < 0.05$).

Teacher Wu's student 8: Betty

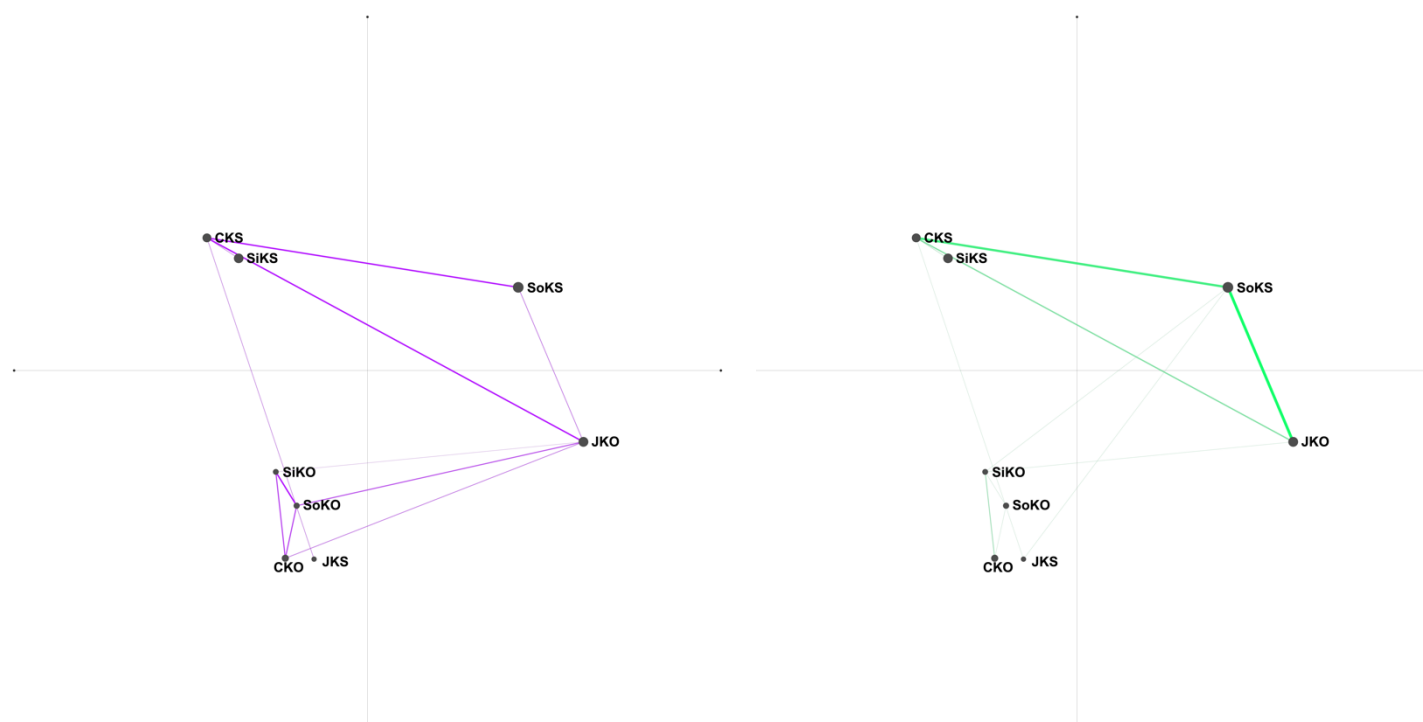


Figure 4.11 The ENA result for Betty.

In the figure for the pre-interview analysis, the two separated ‘triangles’ in the graph indicate two different epistemic beliefs about history. First, the connections between three codes, CKO, SoKO, and SiKO, suggest a more absolute and ‘copier’ stance of viewing history (Havekes et al., 2012). For example, Betty believed that history ‘*is just some record of the major event in the past*’ ($M[CKO-SiKO] = 0.13$). Moreover these historical facts, in her opinion, can be directly found in either historical texts or through ‘*archaeological research*’ without the need to examine the sources critically ($M[SoKO-SiKO] = 0.17$). However, after being presented with three contradictory historical texts on the same historical figure, Betty seemed to change her beliefs quickly into a more subjective and criterialist stance (Havekes et al., 2012; Maggioni et al., 2004). She started to be aware of how sources could be biased due to personal ideology and complicated contextual backgrounds ($M[CKS-SoKS] = 0.17$). She also valued the importance of certain criteria for evaluating different arguments, or the situation could end up as ‘*your words against mine and no one is right or wrong*’ ($M[CKS-JKO] = 0.17$).

In the postinterview, although Betty still believed in constructing history from historical texts and archaeological work, she now recognised the subjectivity element in the nature of history. For instance, she mentioned how personal values and agendas could

greatly impact writing history. Historians should ‘*search for more sources for reference to prove if something is right, and the argument they make should also be examined by the majority*’ ($M[\text{SoKS-JKO}] = 0.33$ and see $M[\text{SoKS-CKS}] = 0.26$). Therefore, she believed that the historical knowledge she learnt from the textbook was constructed by the majority of historians, who ‘*reached a consensus on certain theory with less controversy*’. Regarding history class, Betty was in favour of learning history through the employment of historical thinking and dialogic teaching, through which ‘*we can learn how to analyse and examine historical sources*’ and ‘*listen to other people’s opinions and co-construct different interpretations with peers*’. By doing so, she thought history class could be ‘*free from being chained and restrained by the textbook*’. This viewpoint echoed Teacher Wu’s aim regarding history class.

Teacher Wu’s student 9: Cathy

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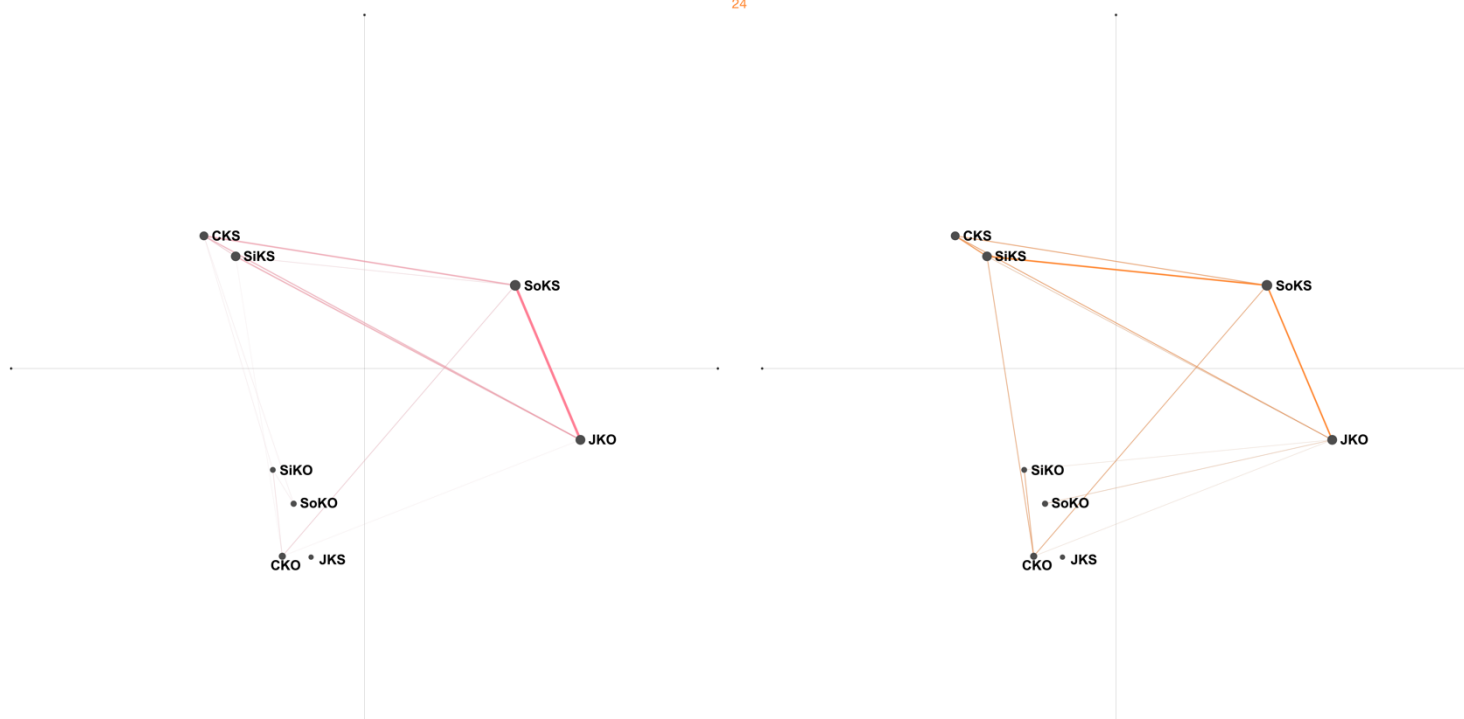


Figure 4.12 The ENA result for Cathy.

In the pre-interview, although Cathy viewed history as a story to help her learn it, she also believed ‘*it is not a fixed story but a story which is evolving and changing constantly depending on whoever writes the story*’ ($M[\text{SoKS-CKS}] = 0.17$). She then elaborated on how the contextual background of a person could greatly impact his or her approach to writing history ($M[\text{SiKS-CKS}] = 0.10$). Therefore, it is impossible, according to Cathy, to discover the ‘truth’, and historians can only ‘*try their best to do research with more evidence and inquiry into historical accounts as deeply as they can*’.

This belief is represented in the strong connection between the two codes JKO and SoKS ($M = 0.29$). Moreover, due to her understanding of the complexity of historical contextualisation, she emphasised the importance of '*connecting the dots*' in history class. Cathy believed it is the teacher's responsibility to teach history in a holistic and systematic approach because historical knowledge from textbooks is too '*fragmented and like a patch-work*'. To do so, Cathy suggested teachers could provide sufficient sources to demonstrate the complexity of one historical account and '*help students to inquire with this evidence*' ($M[\text{SiKS-JKO}] = 0.16$).

In the figure illustrating the analysis of the postinterview, it is clear that the connections involving the code CKO became stronger, indicating her belief in the nature of history had shifted a little towards the certainty of history. For instance, Cathy explicitly mentioned that she believed in the existence of 'truth', but she also acknowledged the notion that historical knowledge is a complex continuum (Maggioni et al., 2004; $M[\text{SiKS-CKO}] = 0.11$). Moreover, she also believed that the 'truth' is neither fixed nor complete because '*there might be other evidence found in the future [that] reveals another truth*' ($M[\text{SoKS-CKO}] = 0.11$). Another major change is evident in the tighter connection between SiKS and SoKS ($M = 0.06$ for the first dataset, and $M = 0.18$ for the second). This connection demonstrates her gradual development of critical thinking toward the authorities who claim to possess historical knowledge. She began to be more sceptical about the historical knowledge in textbooks, answers in exams, and even the teacher. For example, she mentioned how she had tried to '*not accept everything from the teacher*' and to '*examine the historical account from the perspective of that time*'.

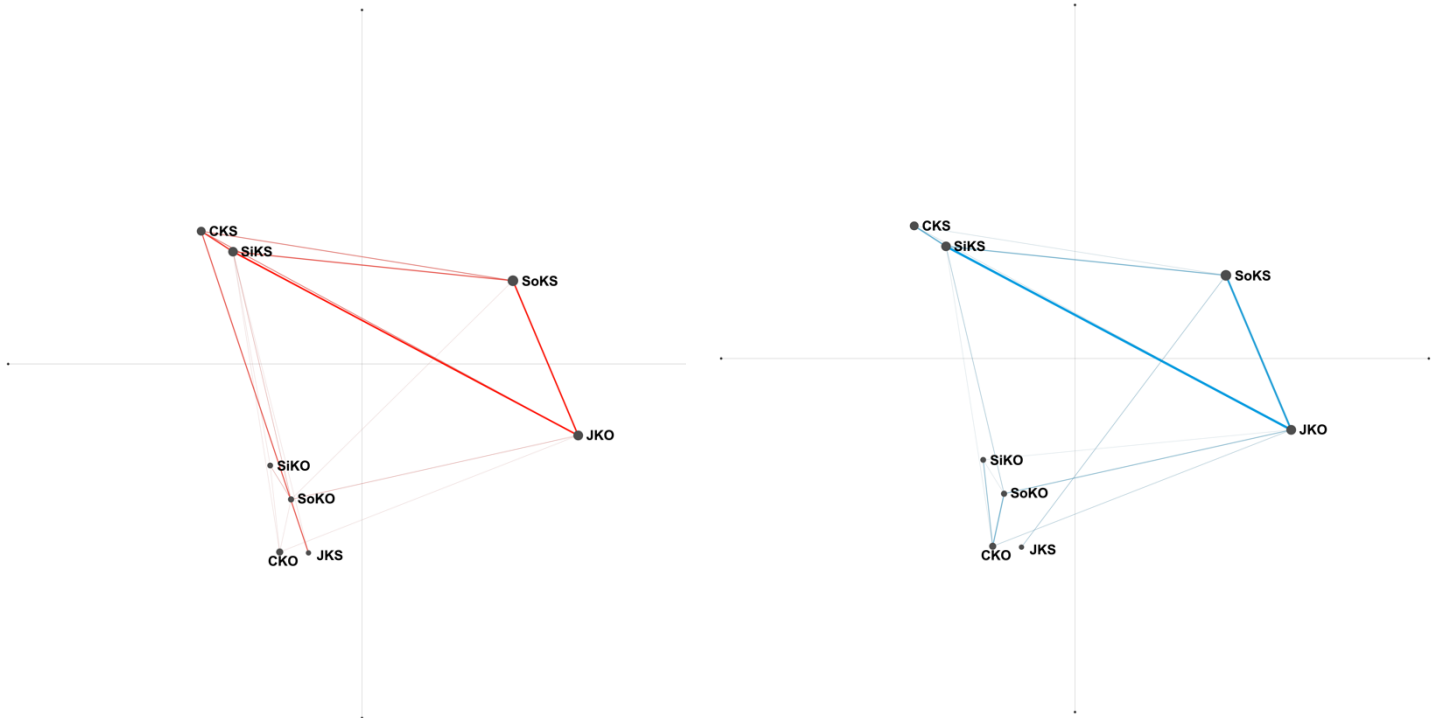


Figure 4.13 The ENA result for Lin.

To make sense of the analysis of Teacher Lin's interview data, it is insufficient to interpret the quantitative data analysis from ENA, which demonstrated similar epistemic beliefs of history in both interviews. However, a fine-grained qualitative analysis could provide more insights in conjunction with the ENA results. First, regarding the nature of history, Lin firmly believed history '*was written by the victors*' and '*every historical source, texts, evidence, to some degree, has been deliberately manipulated by people in some way*'. Therefore, it is '*certainly impossible for an entirely objective or holistic history to exist*'. Moreover, one should '*be careful [and use] these sources with a critical pair of eyes to examine the ideology behind the person*' ($M[\text{SoKS-CKS}] = 0.10$ and $M[\text{SiKS-CKS}] = 0.16$). This emphasis on promoting critical thinking influenced Lin's vision for history education, which he believed should '*set up a right value*'. He then clarified that the meaning of being '*right*' was not '*defined by the country or some politicians but by the universal values shared by all humans, which is being more critically engaged but also being more open-minded to see things from different perspectives*' ($M[\text{SiKS-JKO}] = 0.19$ and $M[\text{SoKS-JKO}] = 0.18$). Responding to the new curriculum reform, Lin displayed some positive attitude, stating that the goal of the latest curriculum '*fit really well with my own belief about history education*'.

In the postinterview, Lin began with a brief but thorough introduction on historiography, especially on the comparison between Western and Chinese traditional views on the

nature of history ($M[SiKS-CKS] = 0.15$). While recognising the inevitable subjectivity involved in history writing, Lin still emphasised how certain criteria are required to examine the historical sources critically and how historians are embedded in their own time, which provides the contextual background of sources ($M[SiKS-JKO] = 0.27$). Lin included a famous quote from the Italian historian Benedetto Croce, ‘every true history is contemporary history’. This quote indicates how Lin understood and appreciated both the constructed nature of historical explanations and the academic criteria for evaluating these causal statements (Lee & Shemilt, 2009; Stoel et al., 2017). However, after one academic year, when asked to provide feedback on the latest reform of the history curriculum, Lin expressed his frustration by stating that this curriculum is ‘*a total failure*’. This drastic shift of attitude was prompted by the lack of substantial concepts in the textbook and the overemphasis on the second-order concepts prescribed in the curriculum (Lee, 2011; Lévesque & Clark, 2018). Lin believed that without substantial historical knowledge, students ‘*aren’t capable of doing history*’; therefore, history education would end up being ‘*a boring and meaningless subject*’.

Teacher Lin’s student 10: Aaron

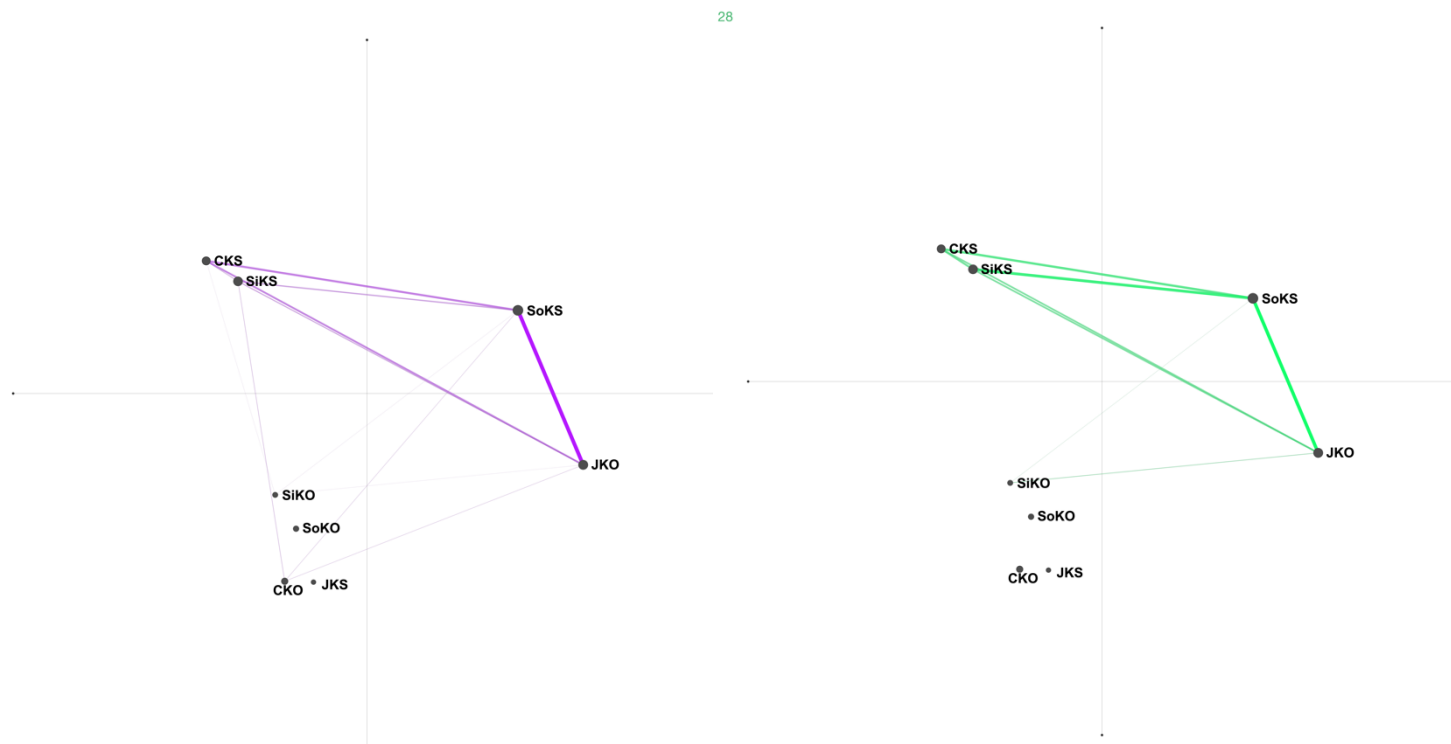


Figure 4.14 The ENA result for Aaron.

For both interviews, it is clear three dots are closely connected, JKO, SoKS, and CKS. In the first dataset, Aaron revealed his sophisticated advanced epistemic beliefs, concluding that accounts only yield evidence when placed in historical context, and

contexts can vary across time and place ($M[\text{SoKS-CKS}] = 0.24$). To extract evidence from historical accounts, he also noted that authors need to be questioned about who they are, to whom they are speaking, and why, if a better understanding of situational context is to be achieved ($M[\text{SoKS-JKO}] = 0.44$). Aaron employed one historical account in Modern Chinese History concerning the sovereignty of Taiwan as an example to illustrate how two sides could ‘*come up with something entirely different from another*’. Therefore, he suggested one should ‘*synthesise all the sources and get rid of the personal subjectivity in order to form a more objective historical theory*’ ($M[\text{CKS-JKO}] = 0.21$). Aaron was even aware of the epistemic imbalance between the teacher and students and the subjectivity of the teacher’s teaching practice, so he mentioned that, after class, he often ‘*looked for more information online to have my own personal opinions*’ ($M[\text{SoKS-JKO}] = 0.44$).

In the postinterview, the connections between the three codes JKO, SoKS, and CKS are still quite strong, indicating Aaron’s belief in the nature of history and the process of doing history had not significantly changed. For instance, he still believed that all historical sources should be ‘*cross-examined with any other sources, like paintings, objects and so on, in order to generate a more holistic and nonbiased theory*’ ($M[\text{SoKS-JKO}] = 0.39$ and $M[\text{SoKS-CKS}] = 0.27$). He also reaffirmed the importance of critical thinking when using the sources and ‘*things you learn from teachers because they might be entirely true*’. Therefore, he emphasised using self-agency when learning history to consider one’s own personal perspectives. Another prominent difference between the first and second datasets is the stronger connections involved with the code SiKS. The strong connection between SiKS and SoKS ($M=32$), for example, illustrate that Aaron not only understood the complexity of historical accounts, but also constructed a personal perspective of knowledge by judging evidence in context. This belief led him to criticise the teacher’s pedagogical approach for being too ‘*dogmatic and too certain without providing multiple perspectives in history*’ ($M[\text{SiKS-CKS}] = 0.22$).

Teacher Lin's student 11: Becky

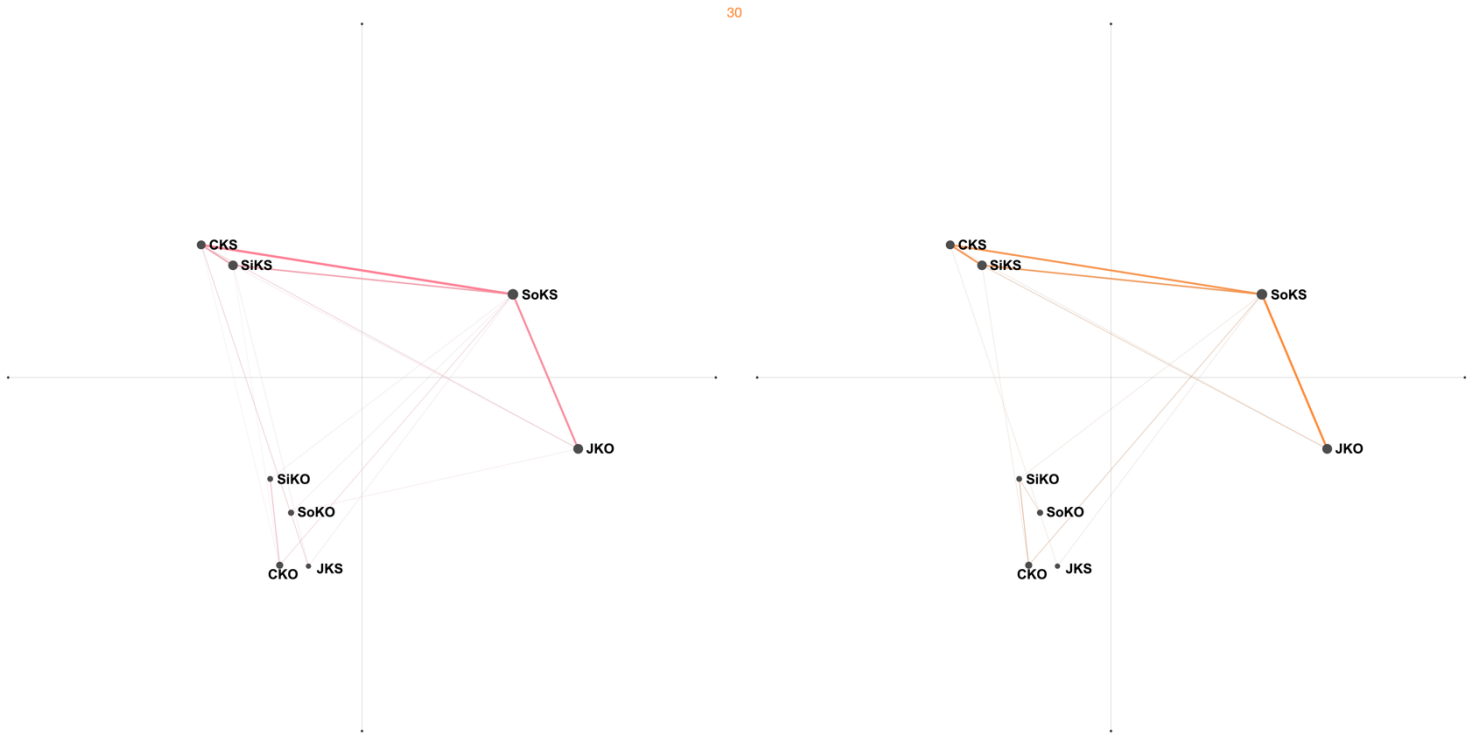


Figure 4.15 The ENA result for Becky.

In both interviews, an obvious pattern can be observed. The connections between three codes, CKS, SoKS, and SiKS, are strong, illustrating Becky's belief in subjectivity in the nature of the history and the process of knowing. Regarding the pre-interview, Becky mentioned that without the invention of a *'time machine, we would never fully understand what's happened in the past'*. Therefore, all the sources recording historical accounts might be *'just the tip of the iceberg, which [means] historians would never know if something is true or false'* ($M[\text{SiKS-CKS}] = 0.18$). Becky also defined the disciplinary nature of history as more *'humanity than science'* due to the similarity to the arts: *'historical theories can easily be overthrown by new interpretations put forward by other historians; however, in science, one plus one always equals two'* ($M[\text{SoKS-CKS}] = 0.27$). Regarding history education, Becky emphasised the importance of both the *individual interest* and *situational interest* of the domain of history (Stoel et al., 2017). Students in the early phases of expertise rely on the teacher to increase their situational interest and to connect a new topic to the broader domain, as well as to their prior knowledge and interests, which consists of valuing the relevance of what is learnt and enjoying the learning activities (Alexander, 2003). In contrast, individual interest refers to when a learner gains more knowledge of the domain, the intrinsic motivation increases also (Stoel et al., 2017). Becky believed that the goal of history education is to motivate and encourage students to *'do the inquiry on their own*

with the employment of historical thinking' ($M[SoKS-JKO]=0.24$).

The results of the analysis of the postinterview displayed large similarities with the first dataset. The connections between CKS, SoKS, and SiKS are still strong (e.g., $M[SoKS-CKS]=0.22$ and $M[CKS-SiKS]=0.21$). For instance, Becky still believed that multiple sources presenting different perspectives should be considered to provide a more impartial and objective interpretation. Becky concluded the interview with a reflection on her own learning trajectory of history, in which she stated she has gradually understood the complexity of history instead of holding the naïve realist view of the discipline she had when she was in junior high school ($M[JKO-SoKS]=0.25$).

Teacher Lin's student 12: Carrie

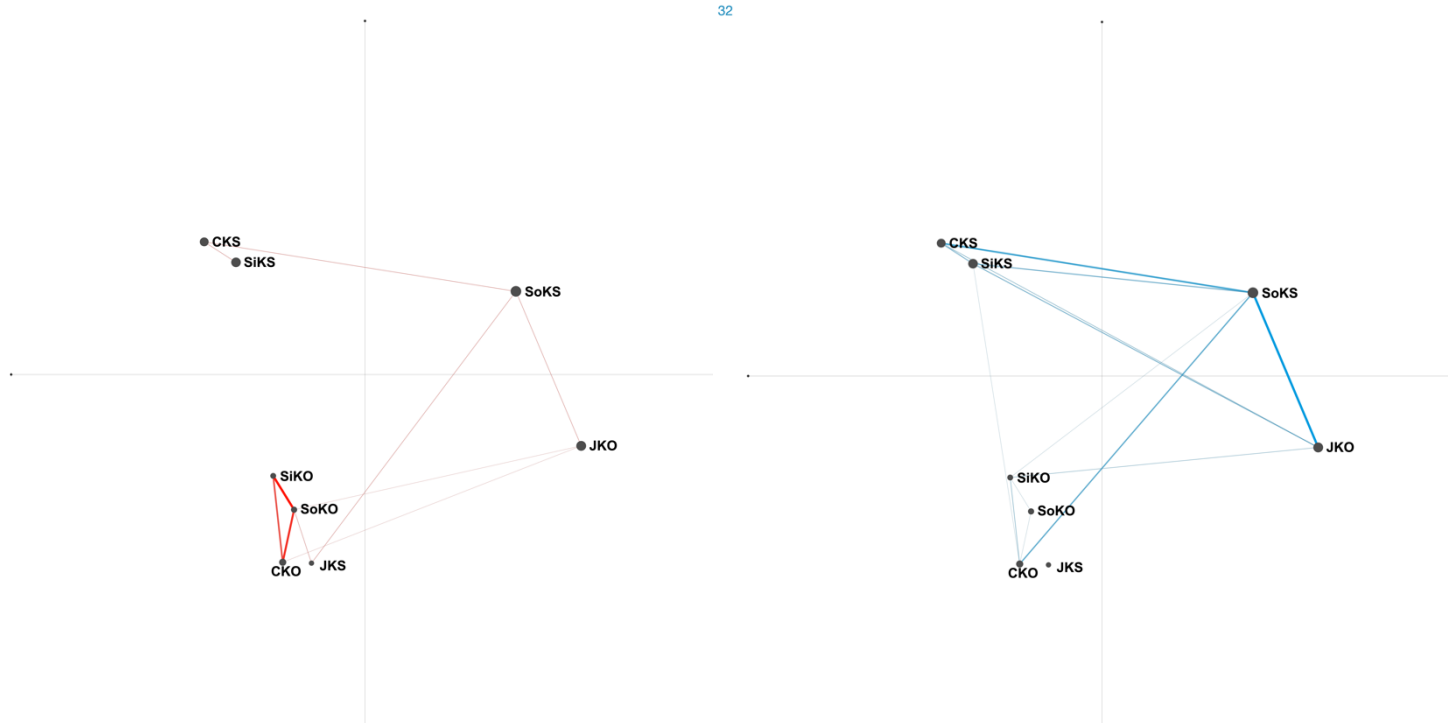


Figure 4.16 The ENA result for Carrie.

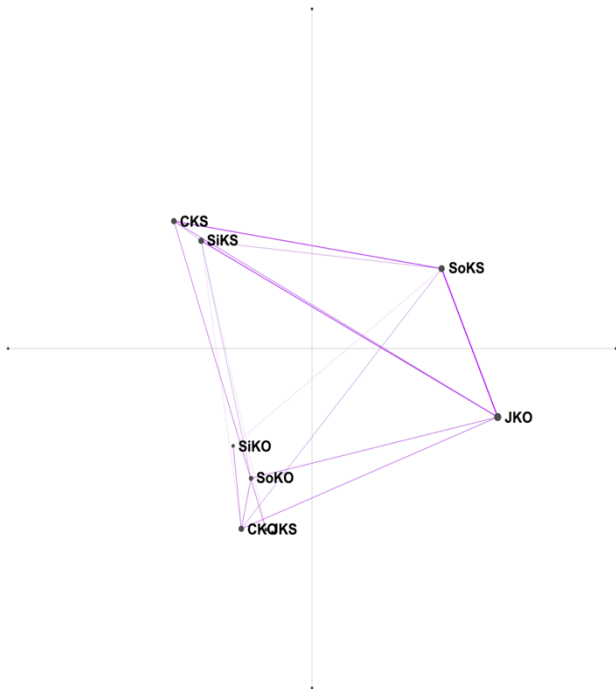
The results of the pre- and postinterviews reveal two quite different pictures for each analysis. In the first dataset, Carrie constantly referred to history as '*things in the past*'. She believed in the existence of absolute historical facts and that the past could be 'copied' to the present. History is the past as a fixed story. Moreover, she believed that historical knowledge is a simple and unchanging truth in the form of concrete facts ($M[CKO-SiKO]=0.20$). For instance, when asked about the nature of the discipline, she replied history is '*something that has been recorded from the past*', which can be seen '*everywhere in daily lives*'. This belief, Lee (2005) argues, comes from exposure

to everyday experience, used by students to make sense of everyday life, which leads to learners' misconception about history. This misconception also leads to a relativist view of historical interpretation. Carrie believed that every historian is entitled to their own opinion and, therefore, there are no certain criteria to evaluate whose interpretation is more valuable than others. Every opinion is equally valid and valuable ($M[JKS-SoKO] = 0.07$). However, regarding history education, she said she *'sometimes would be aware of whether what the teacher said is true or not'*, and therefore, she hoped the teacher could *'provide some tools for students to look up more sources on their own'* ($M[JKO-SoKS] = 0.07$).

In the postinterview, there were some major changes. First, although Carrie still believed in the certainty of historical knowledge, she began to be more cautious about using sources to construct historical knowledge and was more critically engaged when examining sources from different perspectives ($M[CKO-SoKS] = 0.15$). Second, the stronger connection between SoKS and CKS ($M=0.07$ for the first dataset, and $M=0.20$ for the second) demonstrates how Carrie had become more aware of personal subjectivity in history, contributing to uncertainty regarding historical knowledge (*'We should cross-examine these sources because they all consist of personal emotions'*). Finally, Carrie displayed a more positive attitude and interest in history class after one academic year. She used to *'sleep or play with [her] cellphone'* in class, but she became more engaged when the teacher started to ask more questions to open up discussion with pupils. More important, her individual interest reportedly increased due to acknowledging that history is *'connected to what's happening in our society nowadays and everything is all interconnected, which is really cool'* ($M[JKO-SoKS] = 0.27$).

Teacher Chen

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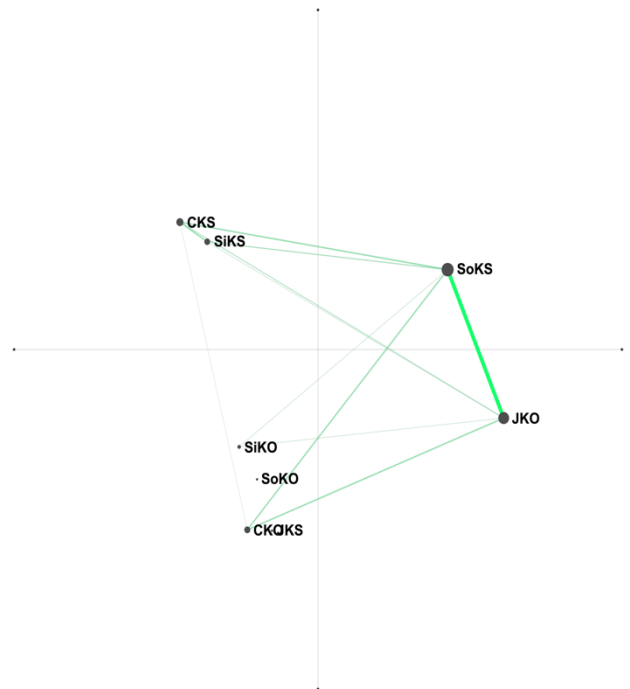


Figure 4.17 The ENA result of Chen.

In the pre-interview, highlighting the importance of ‘time’ in the nature of the discipline (Lee, 2005), Teacher Chen explained how the dimension of time lies at the core of history, by which ‘*people can understand what has happened in the past*’ ($M[JKO-SiKS] = 0.10$). Such historical understanding can be employed to ‘*solve the issues in the present day*’. This pragmatic view of history (Novick, 1988) is also evident in Chen’s belief about history education, with one of the main goals being to ‘*let learners understand how history could be useful and relevant in everyday life*’. Moreover, aligned with Lee (2005), Chen also believed that promoting history thinking in history class did not mean ‘*train[ing] all students into historians but to learn the mindset of a historian and acquire similar skills of how historians do history, like sourcing, contextualising and so on*’ ($M[JKO-SoKS] = 0.13$). These beliefs influenced how Chen designed his teaching practice, in which he stressed that every session is designed around one core question, and historical knowledge is taught to answer the question (Graaff & Kolmos, 2007). This pattern of pedagogical approach, in his opinion, enabled students to ‘*explore and construct the nature of the discipline and also give them a bit of a taste of how historians do history in reality*’ ($M[CKS-SoKS] = 0.10$).

In the second dataset, it is evident that the connection between two codes, JKO and SoKS, is much stronger ($M = 0.13$ for the first dataset, and $M = 0.43$ for the second).

This result indicates Chen paid significant attention to the use of historical sources to ask critical questions and to construct the past, and to understand that both knowing and doing history are not fixed but debatable. He explained how his training from postgraduate study in history led him to become much more *‘evidence-centred and idealist’* regarding the belief in the certainty of the discipline, and yet such absolute truth *‘only exists in what Plato called the ideas, which we may never find out what it is’*. However, from Chen’s perspective, it is historians’ job to *‘search for as much evidence as possible to build up the tentative but convincing truth’* ($M[CKO-SoKS]=0.16$ and $M[CKO-JKO]=0.16$). This belief impacted his goals for history education; he had broadened the purpose by expanding the *‘levels of learning’*. The top level, also influenced by this study, allows students to *‘have a historical sense to engage in a universal dialogue with all human beings across time and space’*.

Teacher Chen’s student 13: Alan

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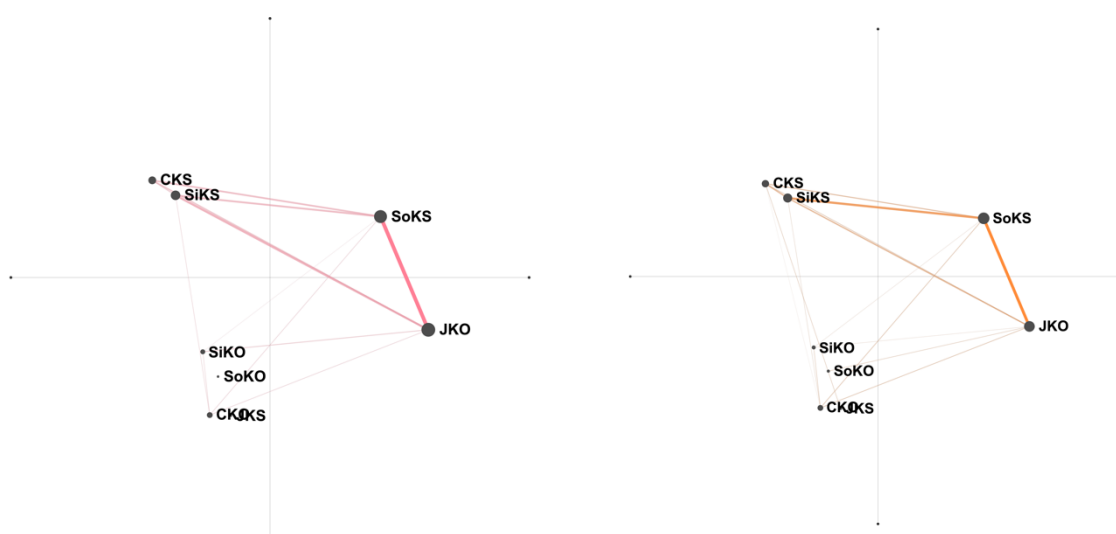


Figure 4.18 The ENA result for Alan.

In both interviews, the connections between four codes, JKO, CKS, SiKS, and SoKS, are close. First, in the pre-interview, differentiating between ‘discover’ and ‘invention’, Alan believed that history, similar to science, cannot simply *‘invent something from out of nowhere’* because it should be *‘evidence-based and take contextual background into account’* ($M[SiKS-SoKS]=0.18$). He also emphasised the importance of ‘logic’ when judging opinions from different perspectives, stating that although the absolute truth is

difficult to achieve, *‘one should always be logical to reason’* ($M[SoKS-JKO] = 0.39$ and $M[CKS-JKO] = 0.15$). This critical belief applies not only when examining multiple sources from different perspectives, but also regarding his attitude toward history class. He believed that, in history class, students should not *‘accept everything from teachers and from textbooks’* because every opinion is inevitably involved with subjectivity ($M[CKS-SoKS] = 0.18$). Teacher Chen’s pragmatic view of history seemed to influence Alan’s discourse on the goal of history education, with him stating that history is and should be relevant to students for *‘solving the issues of the society in present day’* and could serve as *‘a tool to understand the world better’* ($M[SiKS-JKO] = 0.22$).

In the postinterview, the fundamental structure of the results remains similar to the first interview. The connections between four codes are still relatively close. For instance, Alan believed that history is written by the victor, so it involves subjective bias and can be used as *‘a tool to brainwash people in the country’* ($M[SiKS-CKS] = 0.16$). Therefore, to make an appropriate judgement, constant research to find more evidence and build up a reasonable argument is required. To overcome personal bias, Alan warned of the danger of the *‘echo chamber effect’*, worsened by the spread of fake information and the manipulation of information selection by the media ($M[SoKS-JKO] = 0.31$). His belief in the importance of critical thinking also led Alan to become in favour of dialogic teaching, by which historical knowledge can be challenged with questions and rebuttals, which he referred to as *‘the clash of knowledge’* ($M[SoKS-CKS] = 0.16$). Such notions on the nature of knowledge also led him to become more aware of the uncertainty and multiple perspectives of historical accounts.

Teacher Chen's student 14: Blair

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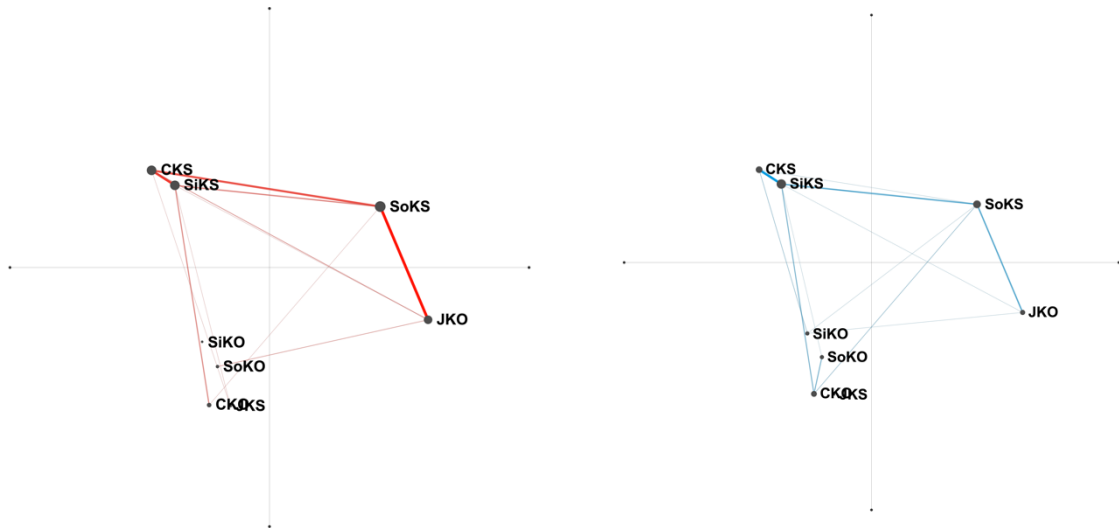


Figure 4.19 The ENA result for Blair.

In the pre-interview, Blair referred to history as not only a story, but also a '*never-ending story which people now are still writing*'. Therefore, to understand history, she suggested to '*get into historical characters, which allows us to find the clues about what they would do next and why they have done certain things*' ($M[\text{SiKS-CKO}] = 0.12$). However similar to Alan, Blair also recognised the danger of neglecting the '*silence history*' of the defeated and how historians selectively chose what to write down in history: '*only they would truly know what really happened*' ($M[\text{CKS-SoKS}] = 0.21$). This view of objectivity is similar to what Megill (2007) refers to as *procedural objectivity*, in which the individual believes that subjectivity in history is a source of error and bias. This belief influenced Blair's idea about the nature of the discipline, which, in her opinion, is more similar to art than science because the '*core value of history is humanity and the exploration of the nature of human beings*' ($M[\text{SiKS-CKS}] = 0.24$). Regarding history education, Blair believed that the main goal is to equip students with '*thinking skills to reason with sources and explore the relevance to our present world*' ($M[\text{SoKS-JKO}] = 0.29$).

For the second dataset, similar to the belief in the first interview, the view of disciplinary objectivity (Megill, 2007) also appeared in Blair's discourse regarding how to achieve more impartial and nonbiased historical accounts through '*synthesising the majority's*

opinion' ($M[CKS-SiKS] = 0.26$). Sufficient evidentiary support was also considered an important criterion to evaluate the validity and credibility of historical theories proposed by historians from different perspectives, even contradictory ones ($M[SoKS-JKO] = 0.15$). When asked to explain multiple documents on the same historical figure, Blair believed that when a source provides the opposite viewpoint from the author, it becomes more trustworthy. For instance, one text written by the Dutch Government, which was defeated by Koxinga at the Battle of Formosa, holds a more neutral position regarding recording the battle. Thus, Blair found the text more convincing and more valuable for historical research. One change from the previous result is the emerging connection between CKO and SoKO (*no connection was found in the first dataset, and $M = 0.11$ for the second*). This change illustrates that Blair had become more dependent on historical documents to construct certain historical knowledge.

Teacher Chen's student 15: Cory

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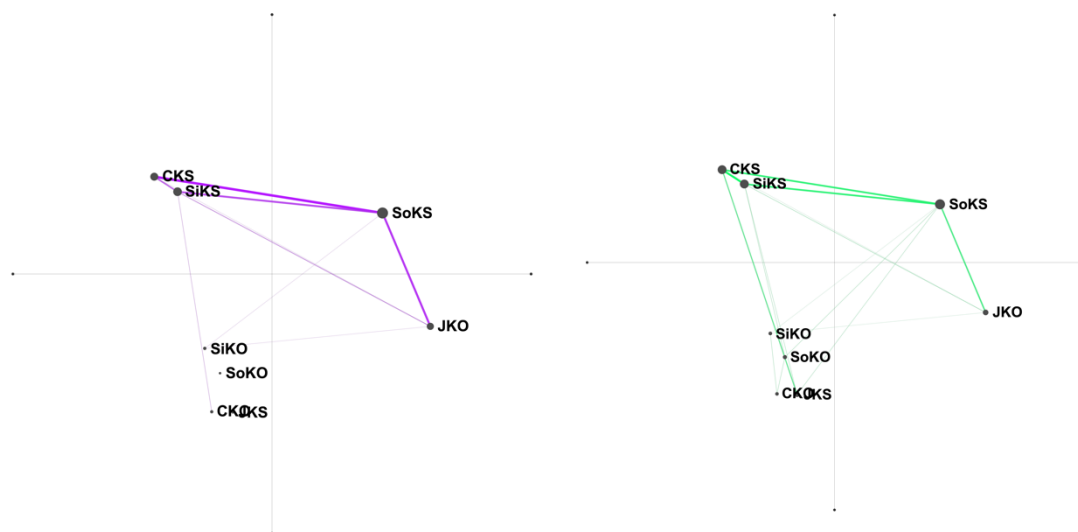


Figure 4.20 The ENA result for Cory.

In the pre-interview, the pragmatist view of history observed in Teacher Chen's interview also appeared in Cory's discourse on the nature of the discipline. Cory believed that history is '*basically a window to understand what's happened in the past and how it has affected the world today, which could prevent us from making the same mistakes as in the past*' ($M[CKO-SiKS] = 0.06$). Cory also believed that to achieve a more objective interpretation, '*personal irrational emotions and radical viewpoints*

should be avoided' ($M[CKS-SoKS] = 0.25$). Such a view on objectivity reflects what Megill (2007) refers to as procedural objectivity, which attempts to exclude subjectivity as a source of error and bias by relying on methodological rigour independent of the individual (see also VanSledright & Maggioni, 2016). This belief led to Cory's critique on the current design of history textbooks, which he found *'too simplified and lack[ing]... multiple perspectives that could allow students to reason on their own to form their personal opinions'* ($M[JKO-SoKS] = 0.22$ and $M[SiKS-SoKS] = 0.19$).

The results of the postinterview analysis illustrate few changes from the first dataset. The most prominent change resulted in the increasing connection between CKS and JKS (*no connection formed for the first dataset, and $M=0.13$ for the second*). This change indicates Cory inclined to a more relativist viewpoint when discussing the subjectivity in the historical interpretation. For instance, regarding different perspectives, he stated that, *'since there is no absolutely correct version of history as a standard, it is quite impossible to determine which interpretation is right or wrong'*. However, despite such a relativist belief, Cory still believed that a historian should take historical sources from different perspectives to advance a convincing and reliable argument ($M[JKO-SoKS] = 0.22$). Regarding history education, Cory was still aware of the authority of the textbooks and, moreover, from his own self-reflection, he believed that following this academic year of history class, Chen had taught him to become more *'critically engaged with historical sources'* and more interested to learn history in his own time to explore multiple perspectives ($M[CKS-SoKS] = 0.19$).

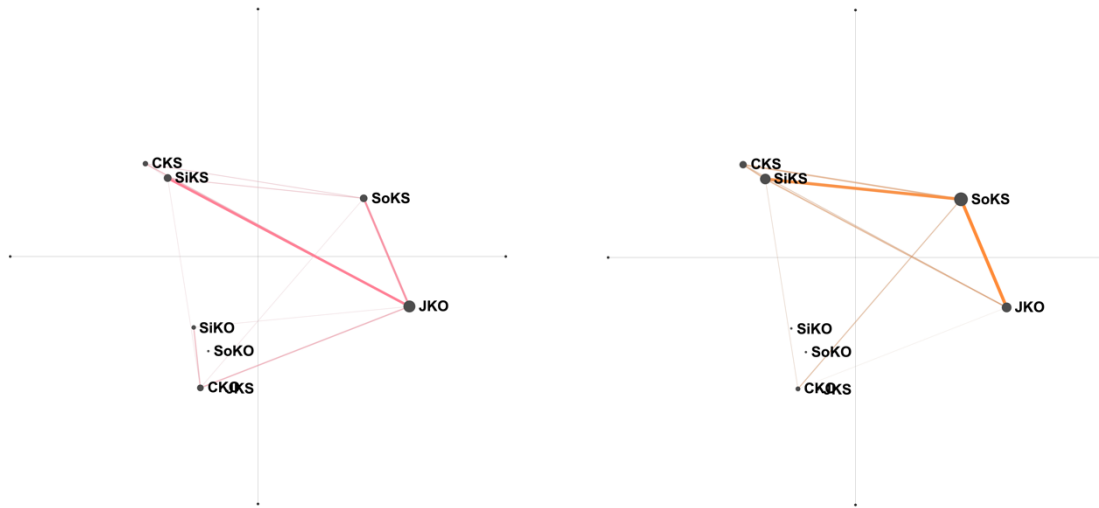


Figure 4.21 The ENA result for Chou.

In the pre-interview analysis, the core epistemic beliefs of Chou are clear. The strongest connection between SoKS and JKO ($M=0.23$) suggests the teacher has a clear and firm understanding of what she believes the nature of history to be. Like any other well-trained history expert, Chou often cited various scholars (e.g., Ranke) and literature (e.g., *The Historian's Craft* by Marc Bloch, 1953) to support her argument when required regarding conflicting historical sources (Wineburg, 2001, 2010). Chou also suggested that, when using sources, students should be cautious about not only the content of the sources, but also the contextual background of the authors (Wineburg, 2001) to develop more in-depth and critical thinking ($M[SiKS-JKO]=0.28$). For instance, regarding the subjectivity of sources, she argued, *'because these sources were selected actively by the historians who always have their own agenda, you have to take that into account'*. However, this constructive perspective regarding epistemic beliefs does not quite reflect her teaching practice. In her classroom, from my observation, a substantial amount of time (95%) was devoted to Chou's own monologue, lecturing students about the historical facts from the textbook they used. In her interview, she admitted, *'most of the time, I'm just spoon-feeding them the knowledge they need to know...because we don't really have much time for discussion and you know there's lots of content to catch up on before the exams'* ($CKO-SiKO$, mean = 0.69). Nevertheless, Chou also expressed her positive attitude toward the new curriculum (NAER, 2018),

which she believed will provide her with more time and flexibility to ‘*try something new, like dialogic teaching, or more in-depth discussion on inquiry-based topics with students... to help them develop more transferable skills*’.

In the postinterview, when asked about the nature of the discipline, Chou responded by highlighting the importance of ‘*inquiry [into] the truth*’. This belief influenced her pedagogical approach this academic year, via a transition to a more inquiry-based teaching practice ($M[SoKS-JKO]=0.36$) to accommodate the new curriculum (NAER, 2018). She also emphasised teaching contextualisation as one of the main goals of history education, by which students can develop their historical empathy (Wineburg, 2001) and ‘*become a person with more compassion and warmth*’. Chou concluded that her belief regarding the nature of history is twofold: one, a more external purpose is to understand the disciplinary approach, and the other is a more intrinsic aspect to ‘*know humans and oneself more deeply*’ (Lin, 1999; Lee & Ashby, 2001; $M[SiKS-SoKS]=0.33$).

Teacher Chou’s student 16: Alvin

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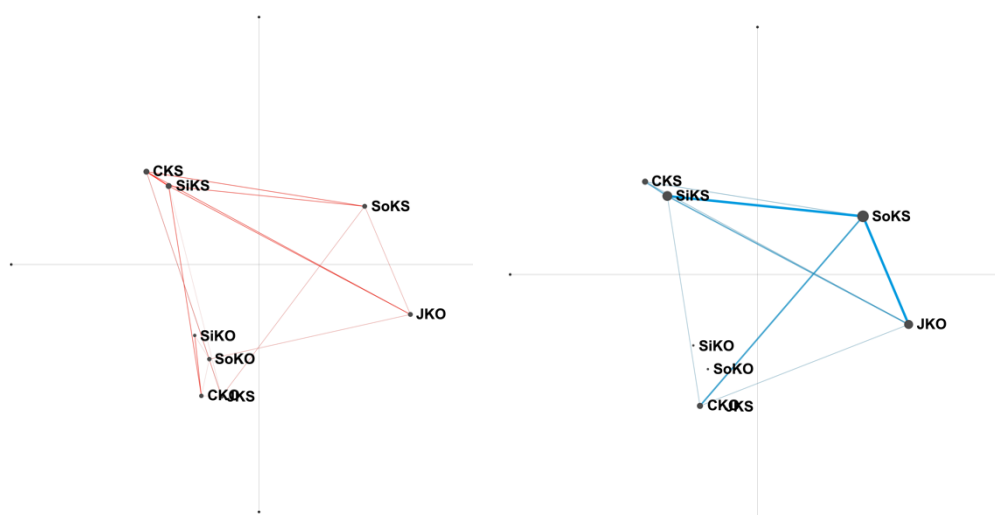


Figure 4.22 The ENA result for Alvin.

In the results of the pre-interview analysis, the three most connected codes are CKS, SiKS, and JKO. In Alvin’s answers, the connection between CKS and SiKS ($M=0.10$) appeared heavily in his critiques of the current situation regarding history education in

Taiwan. For example, he strongly criticised history education as ‘*brain-washing*’ because, he argued, teachers always ask students to memorise numerous historical facts from textbooks without any critical thinking engagement. He contended that, ‘*the more you study [history], the stupider you would become*’. Building on that harsh criticism, he believed it is almost impossible to have a certain historical fact because no experts (including historians) can have ‘*omnipotent views of everything that happened in the past, so they could only write something they’ve seen*’. However, Alvin also argued that although historical interpretation can differ according to an individual’s perspective, it should still be ‘*rigorous and can be justified*’ ($M[CKS-JKO]= 0.07$). Overall, the analysis of Alvin’s epistemic beliefs is similar to what Maggioni et al. (2004) and Havekes et al. (2012) call criterialists, who question the certainty and simplicity of knowledge and the authority of sources but, at the same time, state that arguments should be evaluated and supported with criteria. However, due to the pressure of tests, Alvin started to compromise his position in the sense he accepted the historical facts provided by teachers and textbooks without personal reasoning involvement ($M[SiKS-CKO]= 0.07$).

In the postinterview, Alvin became even more convinced that the truth exists but ‘*it is hard to find out*’. He stated that historical knowledge is constructed by historians who ‘*do extensive research with multiple varieties of sources, such as historical texts or even from scientific methods*’ ($M[SoKS-CKO]= 0.18$). Similar to the first interview, Alvin again heavily criticised Taiwanese history education for lacking critical thinking and independent thinking, since he believed that the main goal of history education is to ‘*develop students’ attitude and skillset about historical inquiry*’ ($M[SoKS-JKO]= 0.27$).

Teacher Chou's student 17: Beth

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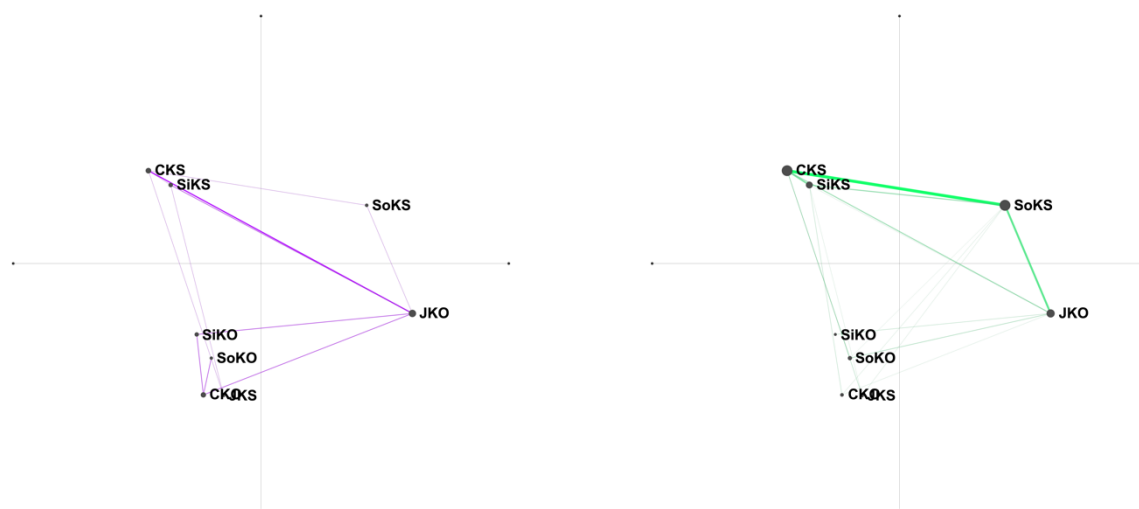


Figure 4.23 The ENA result for Beth.

Similar to Alvin's response, Beth also criticised history education for being too 'test-oriented', so students only 'memorise for tests and knowing for tests'. However, unlike Alvin's perspective on the nature of knowledge, she viewed history as a concrete series of events from which people can learn regarding the modern world: 'History is like an old story, which we can learn some experiences and lessons from' ($M[CKO-SiKO]=0.08$). For example, regarding history education, she stated the discipline is more like science than art because 'art is more abstract, whereas there is much concrete stuff going on in history'. She also claimed that a good historian is one who 'knows what he is doing and tells us what this period of history is about'. Similar statements were made repeatedly in her responses to all four topics. Overall, Lisa believed positively in the certainty and simplicity of historical facts (CKO-SiKO) and the sources from the authorities (CKO-SoKO). However, there is some incoherence in her discourse about the notion of the justification of knowledge. In the figure, the connection between JKS and CKS is relatively strong ($M=0.13$), which means Beth sometimes believed in the uncertainty and complexity of knowledge regarding the process of how people justify their arguments. She stated that, 'it all depends on what sort of interpretation you find appropriate, so there's no good or bad'. When required to explain three different pieces of historical sources on the same event, she simply replied, 'because they were all from different points of view!' without any further in-depth analysis.

However, in the postinterview after one academic year, Beth's belief regarding the nature of history had undergone a significant transition from naïve realist to a more criterialist perspective (Maggioni et al., 2004). For instance, she questioned the certainty of historical knowledge by acknowledging how personal agendas can be involved in constructing history, even '*in the historical texts in ancient Chinese dynasties*' ($M[CKS-SoKS] = 0.32$). This belief regarding the uncertainty of history led her to become more critically engaged when reading sources, meaning she was aware of the importance of examining multiple sources and considering the contextual background of the writers before forming an argument ($M[SiKS-SoKS] = 0.12$). A two-sample t-test assuming unequal variance found the first dataset was statistically significantly different from the second ($p=0.01 < 0.05$, Cohen's $d=0.92$).

Teacher Chou's student 18: Chris

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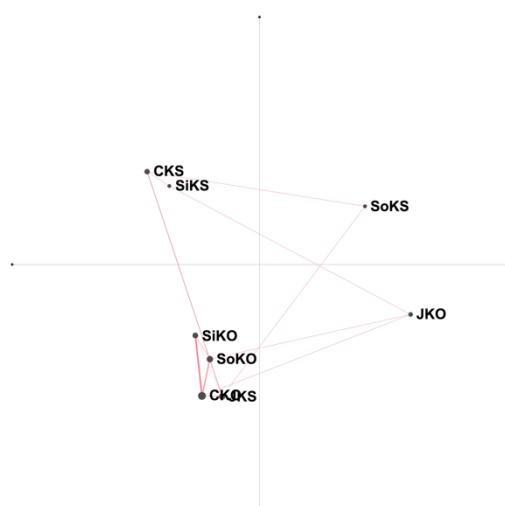


Figure 4.24 The ENA result for Chris.

Chris explicitly ('*I would study history like listening to a story*') and implicitly referred to history as a fixed story from which he could learn from the people in the past and '*see how they got things done*'. This notion implies that Chris believed in the certainty and simplicity of knowledge (Hofer, 2001), as displayed in the relatively strong connection between CKO and SiKO ($M = 0.17$). Moreover, similar to Beth, when confronting the conflictive sources, Tim only stated, '*everyone has different opinions*' without any further justification ($M[CKS-JKS] = 0.10$). Overall, Chris's epistemic

beliefs are similar to what Havekes et al. (2012) call the copier stance and borrower stance. However, Chris's historical thinking gradually emerged when asked about the difference between historical research and history education, to which he replied: '*it's kind of different...at school, it's too superficial, you know? And yes, the nature of history should be through research, but we don't really do that. We just study and memorise things from somebody's work*' ($M[SiKS-JKO] = 0.06$). With this statement, Chris begins to question the authorities and calls for more critical engagement with knowledge learnt in classroom settings. Unfortunately, due to some personal issues, Chris dropped out of the project in the midterm, so no data were collected for the postinterview.

Teacher Huang

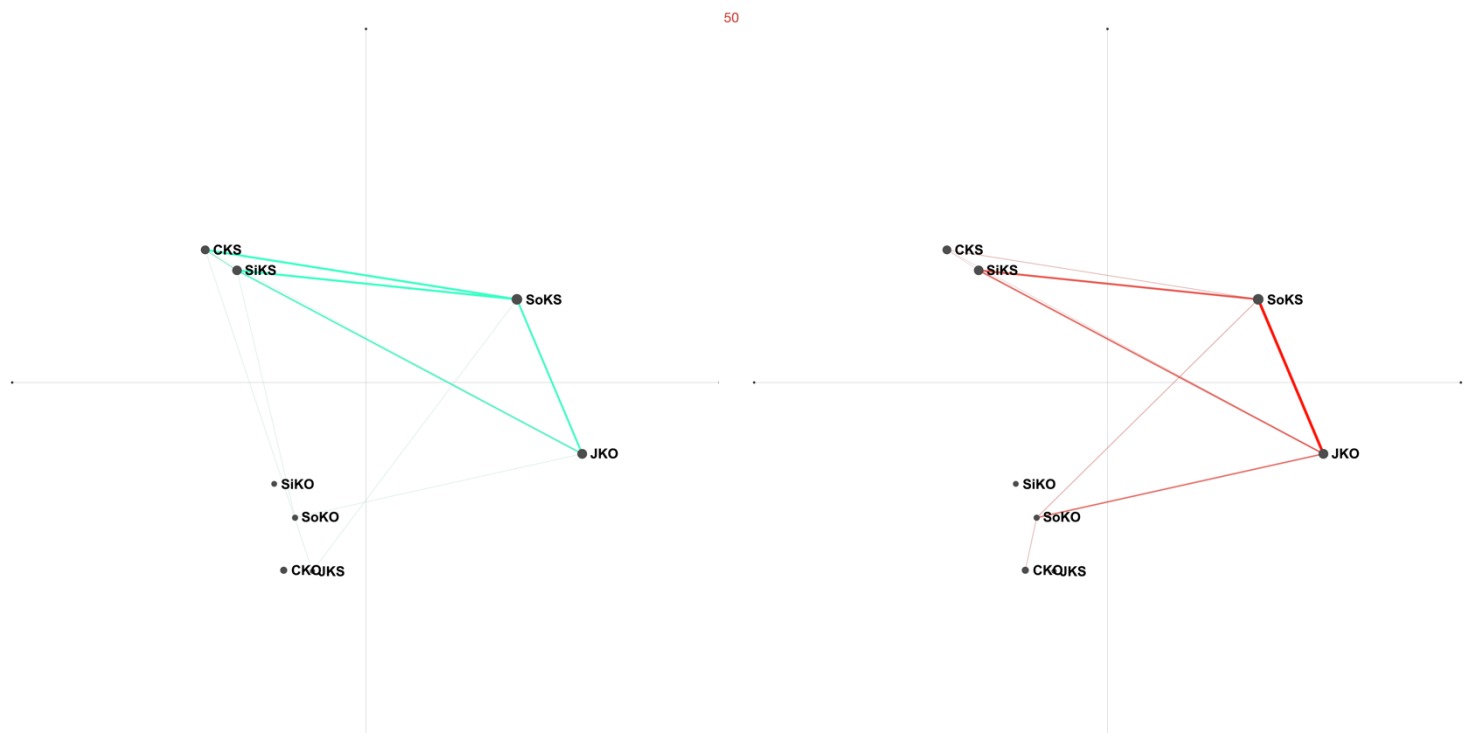


Figure 4.25 The ENA result for Huang.

As an experienced history teacher (over 20 years), Huang constantly displayed great passion and academic professionalism for history throughout the course of the interviews. In the pre-interview, she believed that the nature of history is linked to the essence of historical thinking (Lee, 2005), in which '*time and space provide crucial contextual background in history, as well as the social and cultural background*'. Therefore, she heavily criticised the structure of history written in textbook for being too '*linear and simplistic*'; instead, causality in history should be more '*complex and presented in holistic network*' ($M[SiKS-SoKS] = 0.24$). She also believed that the main goals of history education are not only to motivate pupils to become interested in history,

but also to foster their historical thinking to understand the practical use of history in modern society, and she described her teaching philosophy as similar to the spirit of ‘*public history*’ (Tosh, 2010; $M[JKO-SoKS]=0.23$). Hence, regarding her pedagogical methods, she designed activities to engage more students in class and have more dialogue with them by highlighting the importance of ‘*asking a good question*’ (van Drie & van Boxtel, 2007, 2018).

In the postinterview, Huang was more aware that to ‘*have dialogue in good quality with students*’, a certain historical knowledge foundation is required. Therefore, she said she sometimes provides the answer for them to ‘*demonstrate the proper way to reason*’, which is illustrated by the connection between SoKO and JKO ($M=0.04$ for the first dataset, and 0.18 for the second). However, she was concerned that pupils’ creative thinking and independent thinking would become less and less visible. Huang also mentioned that, being on one of the advisory committees for the latest curriculum, she realised that the relationship between history research and history education is not hierarchal (the idea of most of the interviewees) but parallel. As such, she heavily criticised ‘*so-called scholars*’ for ‘*looking down*’ on the profession of history teachers ($M[JKO-SoKS]=0.32$). She argued that ‘*the skill of using historical sources is crucial in both history education and research*’, but some scholars seemed to lack such common sense.

Teacher Huang’s student 19: Artie

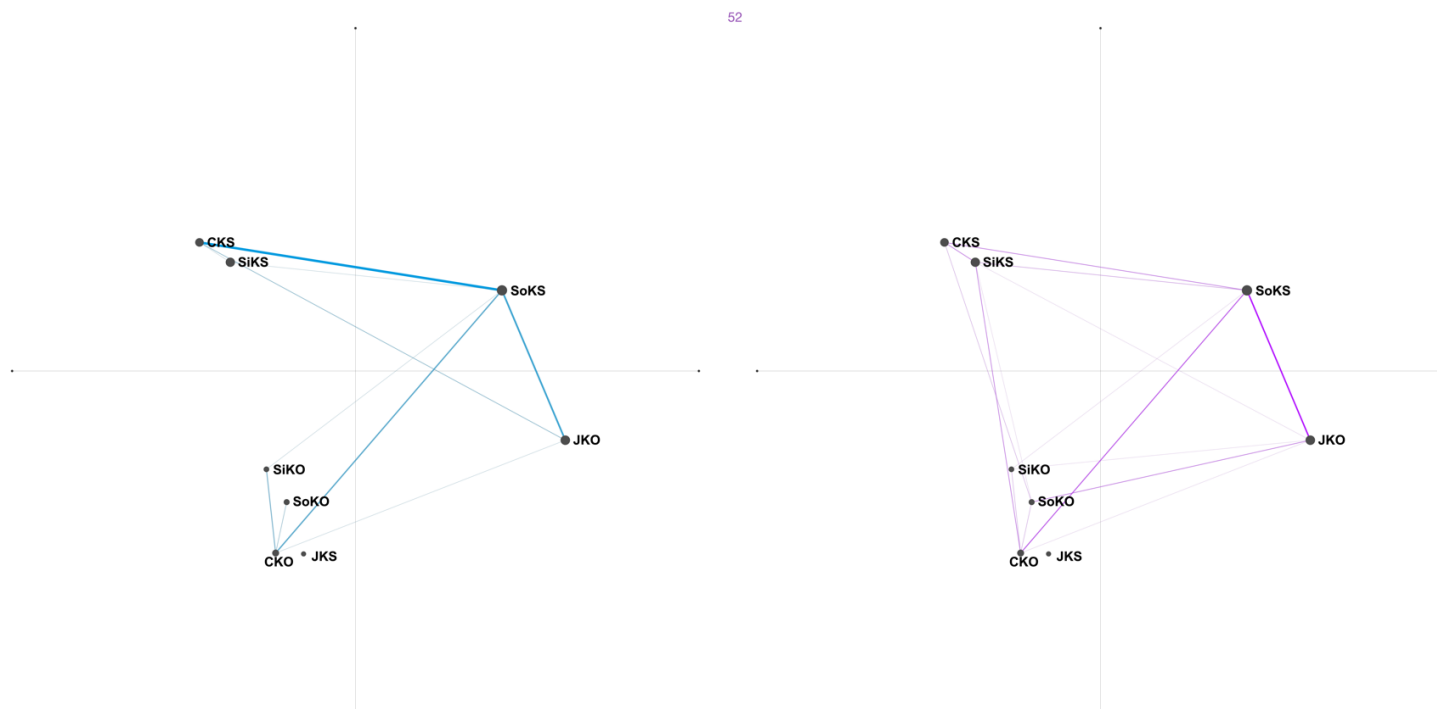


Figure 4.26 The ENA result for Artie.

The results of the pre-interview analysis clearly indicate the core code, SoKS, is connected to three other codes, JKO, CKS, and CKO. On the one hand, the connection between CKO and SoKS ($M = 0.17$) illustrates that Artie believed in the certainty of historical knowledge (Maggioni et al., 2004; Megill, 2007) and acknowledged that objective truth does not *‘exist out there because it should be constructed by reliable sources gathered by a group of historians’*. In his opinion, historians can extrapolate *‘the unknown history from the known history, [but] one thing [that] remains fixed is the timeline of history’* ($M[CKO-SiKO] = 0.12$). However, when reasoning about multiple sources from contradictory perspectives, Artie believed that the subjectivity of writers and historians is inevitably involved in constructing historical knowledge ($M[CKS-SoKS] = 0.29$). Therefore, *‘after all, it all depends on whether we can find that truth’*. Regarding history education, Artie made some complaints about the lack of discussion in history class and the *‘answer-feeding’* teaching approach from his teacher. He contended that, *‘although not everyone will be a historian, we should still learn some basic skills of historical thinking through more dialogue’*, because dialogues can foster the process of finding truth ($M[JKO-SoKS] = 0.22$).

In the postinterview, Artie was more aware of the uncertainty of historical knowledge because *‘the speculations made by historians can have too many possibilities’* ($M[CKS-SoKS] = 0.21$), meaning he was less focused on the objectivity of historical knowledge ($M[CKO-SoKS] = 0.03$). Artie also stated that the differences in contextual background of each individual contributed greatly to the degree of uncertainty of history (VanSledright & Maggioni, 2016). Regarding the criticism he had made of the history class in the pre-interview, Artie acknowledged that the teacher had *‘tried to have more discussion in class by implementing some group activities’*; however, in his opinion, this experiment failed because, *‘at the end of day, the teacher has still already prepared the perfect answer for us to write down’*. It is interesting to note that Artie’s opinion differed greatly to the teacher’s own reflection on her teaching practice.

Teacher Huang's student 20: Branda

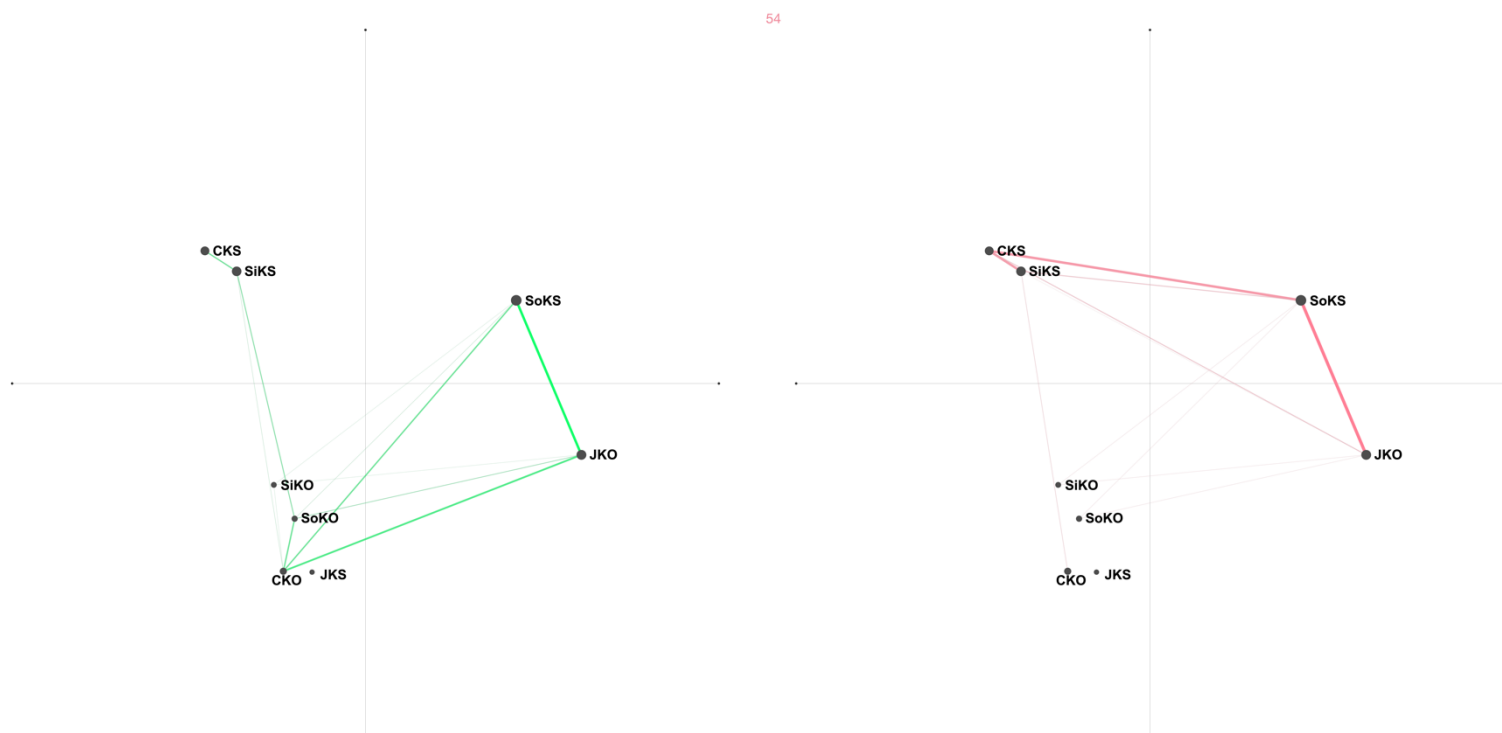


Figure 4.27 The ENA result for Branda.

In the pre-interview analysis, the connections between three codes, CKO, JKO, and SoKS, are relatively strong. Regarding the nature of history, Branda believed there is one ‘*ultimate truth*’, and the main job of historians is to construct that truth via the use of historical texts or through archaeological methods to ‘*dig out the truth*’ ($M[CKO-SoKS] = 0.16$). Although she believed there is certainty in historical knowledge, she was also aware that individual subjectivity can substantially impact knowledge construction. Therefore, she believed that, to elicit the most objective truth, one should consider multiple interpretations and ‘*look for the highest common factor among them*’ ($M[CKO-JKO] = 0.21$). This firm belief in the importance of objectivity made her sometimes question the teacher’s practice in history class for being ‘*too subjective*’ compared with the history textbook, which she also found ‘*partially subjective*’ ($M[CKO-JKO] = 0.21$). For instance, she mentioned that, when discussing questions in class, ‘*sometimes the questions are so many that we don’t even have time to discuss, so the teacher just provides the prepared answers for us, which is quite a pity*’. Therefore, she believed that to engage more students in history, teachers should teach students ‘*how to reason more deeply instead of providing answers to them*’.

In the postinterview analysis, it is clear that the connections with the code CKO has become weaker compared with the first dataset. In contrast, the strong connection

between CKS and SiKS ($M = 0.27$) illustrates Branda had become more uncertain about the existence of truth in history. For example, although she still believed that it is the historian's job to discover '*what's happened in the past*', she began to display concerns about whether history is the ultimate truth. Therefore, one way she suggested to ensure and validate '*the quality of the truth*' is through a rigorous and scientific approach, and that '*certain criteria must be met*' ($M[\text{SoKS-JKO}] = 0.36$; VanSledright & Maggioni, 2016). Regarding the complaints about history class she made in the pre-interview, after one academic year, Branda began to realise the purpose of the questions provided by the teacher in class: '*I think she wants us to explore the answers by ourselves.*' This positive shift influenced her method for history learning '*from memorising to understanding*' ($M[\text{SoKS-CKS}] = 0.29$).

Teacher Huang's student 21: Cliff

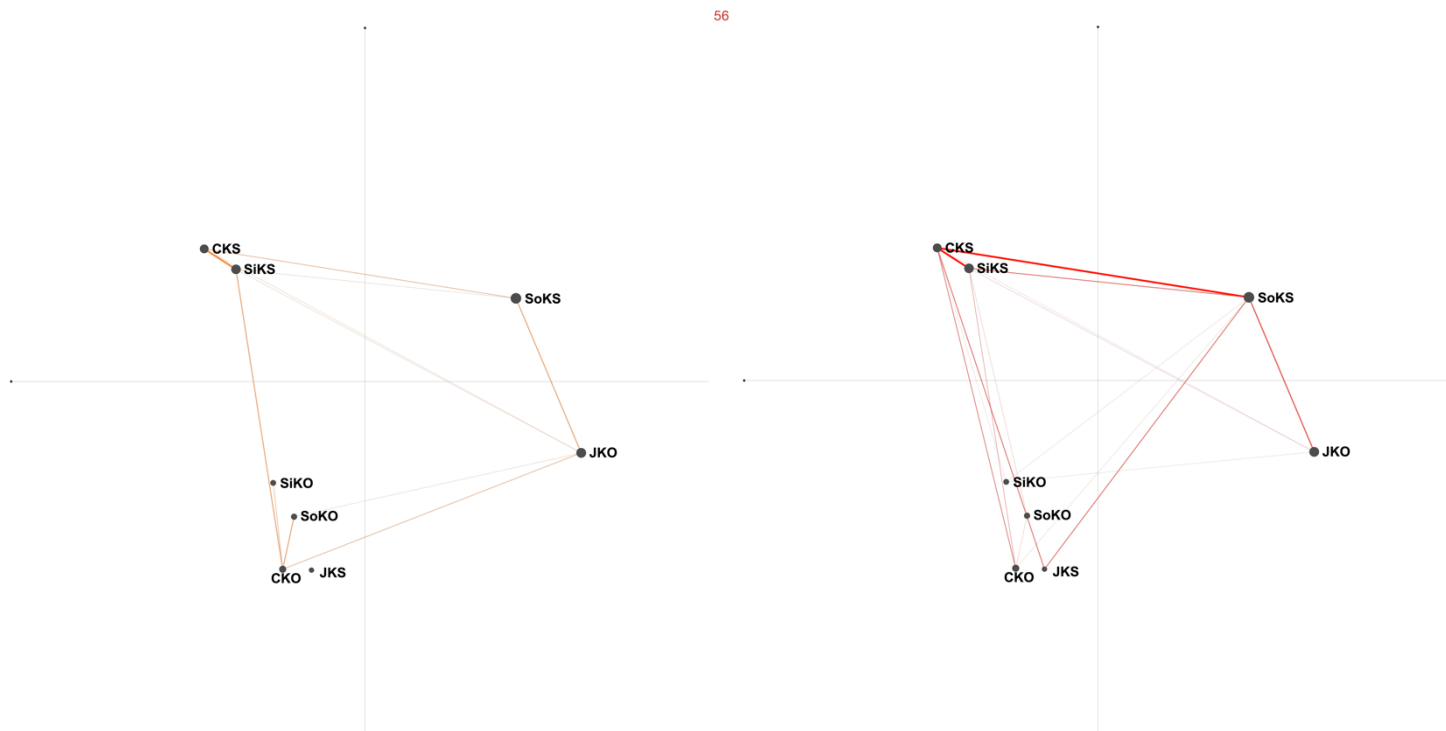


Figure 4.28 The ENA result for Cliff.

In the pre-interview, Cliff displayed much hesitancy with most of the questions and provided only very short answers that demonstrated simplistic perspectives on the nature of history. For example, when asked to describe what history is, after a long pause, he simply replied, '*Everything about human activities from the past*' ($M[\text{CKO-SiKO}] = 0.08$). However, as the interview progressed, Cliff began to display more sophisticated epistemic beliefs and offered more elaborate answers. For instance, regarding the discussion on the subjectivity of historians when writing history, he

pointed out that, *'the readers would also impose their own ideas when interpreting the texts'*; therefore, the issue of subjectivity became *'too complicated to tackle'* ($M[JKO-SoKS] = 0.13$). This belief led him to stress the importance of dialogic teaching employed in history class, in which *'teachers and students have their perspectives, and, through dialogue, these ideas could become more explicit to one another'*.

From the result of the postinterview analysis, the connection between CKS and SiKS remained strong ($M = 0.21$ for both datasets), illustrating that Cliff continued to struggle with the uncertainty of historical knowledge, and that the past cannot be exactly copied because many factors can affect historical facts, such as historians' perspectives (Maggioni et al., 2004). Cliff believed that the nature of the discipline combines science and humanity, in which the research methodology should be *'rigorous but also with human compassion'* ($M[JKO-SoKS] = 0.14$; $M[CKS-SoKS] = 0.21$).

4.3 Summary of the results

The overall results from ENA align with recent research on historical epistemic beliefs (Maggioni et al., 2004; Havekes et al., 2012) and the developmental models of personal epistemology (e.g., Hofer and Pintrich, 1997; Kuhn, 1991). That is, the domain-specific experts held a more advanced stage of epistemic stance than the novices (in this research, history teachers and students, respectively). Moreover, students with high academic performance in history displayed more sophisticated epistemic stances than their lower-performance counterparts (Havekes et al., 2012). However, the results also indicate that it might be difficult to categorise individuals' epistemic beliefs clearly, unlike the developmental stage-based models from previous studies. Regarding individuals' trajectories of personal epistemology during an academic year, the results reveal that 28% ($N=8$) of the participants demonstrated significant change (i.e., $p < 0.05$) in their epistemic beliefs: seven of whom were students, and the other a teacher. Among these students, two were boys and the other five girls. Only two out of seven were in their final year of high school; the majority were freshmen. Regarding the teachers' epistemic belief trajectories, there was little change during a one-year period, except for one teacher who displayed significant change in her personal epistemology. This change might be a contributory factor to two of the three students' change in her class, although further investigation is needed to confirm the relationship between teachers' change and their pupils' change in epistemic beliefs. These results not only provide answers to the research questions, but also offer a pattern-based visualised model for exploring historical epistemic beliefs. More discussion on the main patterns of this model and the significance of the findings are presented in Chapter 6.

Chapter 5: Data analysis and results for classroom dialogue

In this chapter, I present the results of the quantitative analysis for each participant teacher. This analysis is complemented by qualitative analysis in an attempt to characterise the teaching style of each teacher (Correnti et al., 2015) and to answer the second part of the research questions concerning classroom dialogue.

Part 2: In relation to dialogic education in Taiwanese history classroom:

2.1 How do teachers facilitate and foster pupils' historical thinking in history class with dialogue?

2.2 To what extent has teachers' use of dialogue in history classroom changed during the course of a professional development programme for dialogic history education?

Since this study was conducted using a design-based approach, the results are presented in three parts, reflecting the three cycles of the design (Bakker, 2018): pre-intervention (i.e., baseline; in September 2019), first semester (from October 2019 to December 2019), and the second semester (from April 2020 to June 2020). For each participating teacher, the analysis consists of two parts: first, the quantitative analysis is presented with two diagrams: frequencies of codes for each teacher's class in three different stages, and a percentage comparison of the different codes in the classrooms of each teacher. The purpose of the figures is mainly to demonstrate the quantitative difference and progress (if any) between each stage and to illustrate the predominant discursive techniques employed in each teacher's class, as well as to observe whether there were any changes in the use of dialogue in the history classroom. Regarding the second part, brief lesson contexts are introduced, followed by selected excerpts (numbers vary) of lessons to exemplify the use of the coding framework, with qualitative analysis and the researcher's commentary to explore how teachers' talk was used in the history classrooms to answer the research questions presented above. The following table (Table 5) is a key to the initials of the code names for readers' reference.

Code	Description
IB	Invite to contribute or build on ideas
BH	Build on ideas by using historical sources
CH	Challenge
Q	Asking questions
HT	Make historical thinking explicit to pupils
TC	Provide notions on time and continuity
BC	Build up causality
CA	Coordination of ideas and activity
RD	Reflect on dialogue or activity or evaluate on pupils' response

G	Guide direction of dialogue or activity or strategy towards historical thinking
CX	Contextualisation with sources
MP	Multiple perspectives and interpretation
AC	Make historical analogy and comparison

Table 5. A key to codes.

5.1 Analysis and result

Teacher Fang

Overview and Context

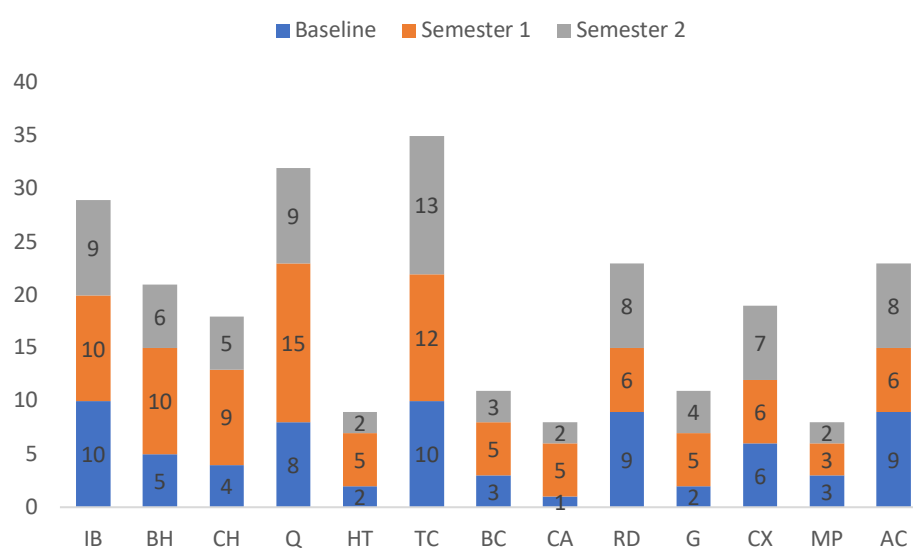


Figure 5.1 Frequencies of codes for Fang's class at three different stages.

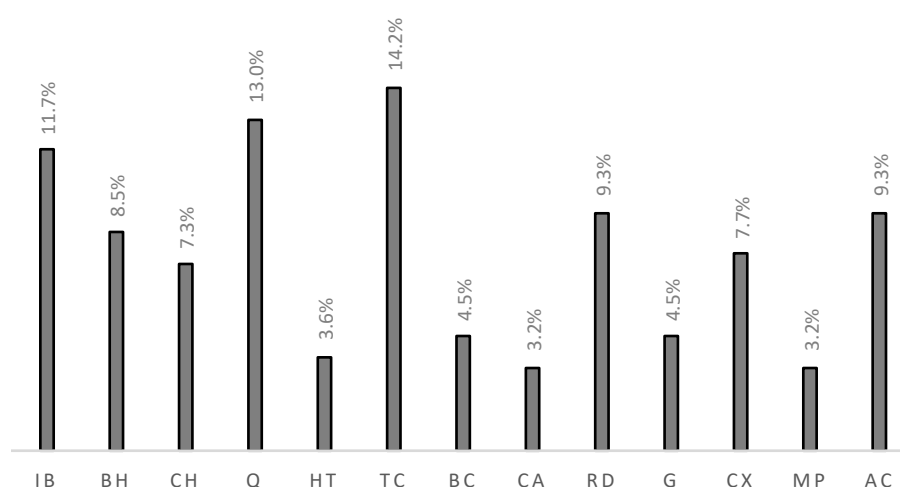


Figure 5.2 Comparison of percentages of different codes in Fang's classrooms.

The overall pedagogical approach that Fang employed relied heavily on traditional teacher-centred lectures (Alexander, 2008) aided by technology, such as slides. In her interviews, she emphasised the importance of substantial concepts (i.e., historical knowledge) and the concept of historical time (see Lee, 2005) in history education. Such beliefs were realised in her own teaching practice, with an emphasis on the detailed explanation of historical accounts. In the analysis (Figure 5.1), the three most commonly used categories of discursive techniques are TC (14.2%), Q (13.0%), and IB (11.7%), which align with Fang's belief in teaching the notion of time and her emphasis on historical knowledge by asking questions that could elicit knowledge from students.

The class observation for the pre-intervention data covered two lessons in September 2019, when the new semester had begun. The lessons focused on introducing the Taiwanese aboriginal history and culture. It is quite difficult to choose an excerpt to exemplify the use of the coding framework since the teacher dominated the talk for almost 95% of class time. However, among these teacher's 'monologues', it is interesting to explore the idea of hybrid dialogues to open the dialogic space to foster learners' historical thinking. The first short excerpt (Table 5.1), below, was a discussion on name rectification between two aboriginal groups in Taiwan: the *Truku* and the *Sediq*. In the late nineteenth century, when Taiwan was under Japanese colonisation, Japanese anthropologists falsely categorised the *Truku* and the *Sediq* in the same indigenous group. With the name rectification campaign in the early 2000s, the *Truku* people demanded separate status (from the *Sediq*) for themselves.

The data in the second excerpt (Table 5.2) were collected from the monthly class observation in the three months from October to December. The excerpt was from a lesson on Taiwanese economic history. At the outset of the lesson, Fang began the topic with a question on the definition of the word '*economics*' to introduce the core historical concepts and foci in the lesson. The excerpt in Table 5.2 illustrates the teacher-mediated dialogue with learners, which highlights the use of talk to scaffold students to use disciplinary academic language (Husbands, 1996).

Due to the pandemic (COVID-19), the school was closed in March and reopened in April with strict health and safety guidelines, under which Teacher Fang cancelled all group cooperative activities to avoid unnecessary close contact. Inevitably, it was observed that classroom dialogue became even rarer. However, the third excerpt (Table 5.3) was chosen to demonstrate how the teacher used talk to engage students in historical empathy to have a deeper understanding of historical figures in ancient China (Foster, 2001). The lesson the excerpt was taken from was on the imperial system in

ancient Chinese dynasties. To highlight the fundamental concept of the establishment of an autocratic and centralised state, the legacy and historical accounts of Emperor Wu of Han were introduced by Fang, who used historical sources to construct the image of the emperor with learners. It is important to note that despite the lack of student contribution, this excerpt portrays a dialogic stance in its very nature (Boyd and Markarian, 2015), as analysed in the following paragraphs.

Analysis and commentary. The teacher's central goal, as is evident in the first excerpt (see Table 5.1), was to pose an open-ended question as a bridge to conclude the previous lesson to open up a new topic for the rest of the lesson. I chose this short discussion to illustrate how Teacher Fang used the strategy of analogy in history teaching (Young and Leinhardt, 1998) to help students understand the complexity and unfamiliarity of historical concepts (Wineburg, 2001). The question posed (*L1, coded Q*) is with a prepared answer (*L10*) for students, which might not be considered a genuine dialogue, as Matusov (2009) argues that a genuine dialogue could never happen if a participant knows its endpoint in advance. Although the contributions from the students were relatively insignificant (e.g., the students' responses in *L2* and *L4*), the use of a historical analogy that was more related to the students' experience (the issue of nation identity, see Yang, 2020) could provide the students greater historical understanding to engage in the dialogic space opened by the teacher (Wegerif, 2013). However, it is also noticeable that Teacher Fang often left students with limited or even no time to be involved in dialogue in depth. The space was quickly closed (van Boxtel and van Drie, 2017). This issue occurred constantly throughout the lessons in which the code IB accounts for the largest proportion (16 times) among other codes. This finding indicates that Teacher Fang preferred using many short and closed questions to elicit students' historical knowledge (Mercer, 1995), and fewer historical questions to enhance students' historical thinking (van Drie and van Boxtel, 2008).

In the first semester following the first cycle of workshops, from the class observations, it seemed that Fang had become more inclined to design class activities to engage students in more dialogue. For instance, in the class observed in October (see the second excerpt, Table 5.2), she designed a cooperative activity combined with 'playing experts' (Husbands, 1996), in which each group worked on different phases in Taiwanese economic history, drawing on the materials provided by the teacher and from the textbook. One student represented each group, then shared their group work with the rest of the class, after which the teacher synthesised the findings and offered feedback. This excerpt was taken from the discussion before the activity. The question posed by the teacher highlights the issues of linguistic difficulties in the history classroom (Lee,

2005), as teachers and students might construe meanings in different ways. The pre-existing perception about the meaning of historical discourse derived from everyday language makes learning history fraught with uncertainty (Husbands, 1996). Therefore, Fang attempted to address this issue by co-constructing the meaning of the word with the learners (Mercer, 2004). After Fang asked the question (*L1, coded Q*), one student, Allan (in pseudonym), quickly provided a short response (*'Money'*). It is important to note that Fang constantly asked students to elaborate their answers (*coded IB*) and to use more 'academic language' (e.g., *L13, coded HT*). Although the definition of the term 'economy' was provided by the teacher (*L11*), throughout the discussion the students engaged in shared dialogue to clarify the existing preconceptions about the concept from historical perspectives (Hsiao, 2009; Lee, 2005). Once the consensus of the definition was achieved, the discursive technique (Mercer, 1995) in the teacher's final remark (*L19*), in which she not only linked the dialogue to the learners' prior knowledge (*coded CA*), but also provided an overview of the following lesson's objectives, is also noticeable.

Despite the surface structure of the third excerpt (Table 5.3) having the appearance of conventional teacher-centred monologue, this exchange was chosen to illustrate that the teacher-led talk could seem monologic in structure but be dialogic in function (Boyd and Markarian, 2015). As displayed in Table 7, the monologue provided by Fang consisted of numerous first and second personal pronouns (e.g., *L2, L4, and L5*) in an attempt to include students in the monologue to transform it into dialogue. From the ontological perspective of dialogue, Wegerif (2018) argues that a genuine dialogue involves the participants taking perspectives from the other. In other words, in a dialogue, even before one makes any utterance, the image of the other participant is already in one's mind. Therefore, as a person talks, it is directed to the imaginative other person in his/her mind. A dialogic space then opens up. The notion of perspective-taking also occurs in the engagement of historical empathy (Endacott and Brooks, 2013), which is also demonstrated in this excerpt. Historical empathy is the process of 'students' cognitive and affective engagement with historical figures to better understand and contextualize their lived experiences, decisions, or actions' (Endacott and Brooks, 2013, p. 41). As is evident in this excerpt, the code CX has been assigned to a few lines (e.g., *L1–L4*), indicating that Fang attempted to contextualise the actions of the emperor by introducing historical sources as a medium for students to adopt a historical perspective more easily. By doing so, the perspective of the historical figure in that specific time and space can be transcended into Great Time (Bakhtin, 1981) in dialogic space, in which the teacher and students take a historical perspective from the past to open up a dialogue between past and the present (Carr, 1961), which in nature

is not bound by time or space (Wegerif, 2011).

Table 5.1 Discussion on name rectification campaign.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	好，那這邊我們有一個問題，就是說，太魯閣從賽德克族出來後，其實太魯閣裡面有些聲音，就說我們應該回歸賽德克族，可是有些人說不應該。你覺得為什麼會有這種說法？	Right, so here we got a problem. As the Truku's separation from the Sediq, there were some disagreement within the group. They said they should go back as the Sediq. Why do you think that is?	Q	IB
Ariel	2	因為資源有限	Because the resources are limited.		
Teacher	3	都是原住民阿，加分加的一樣，拿到資源一樣	They are all aboriginal people, so they have the same support from the government.	CH	
Ben	4	人數較多...	There are more people...		
Teacher	5	嗯？為什麼？	Hmm? Why?	Q	
Cathy	6	因為賽德克名字比較好聽	Because the name Sediq sounds better.		
Teacher	7	(笑) 你不能因為好聽就不認祖歸宗吧？好詭異對不對？其實他的問題，聽起來好像很難，但你去設身處地，換個方式想，就會覺得超簡單，為什麼？為什麼有些人會想回歸賽德克族？(沈默)	(<i>Laugh</i>) You can't forget your ancestors just because the name sounds better, can you? It's a bit tricky right? It looks like a hard question but if you put yourself in other's position, it is quite an easy question. So why? (<i>silence</i>)	CH	MP
Teacher	8	問你啊，如果你三代前住在泉州，你阿祖來到台灣，生出你阿公，你	Let's say your ancestors lived in China and your great-grandfather came to Taiwan. He had your grandfather and your grandfather had your father, then you. One day	AC	

阿公生出你爸，你爸生出你，好現在你回到泉州，發現你阿祖弟弟的後代，握著你的手說我們都是一家人，你也是中國人，這時候你心中會怎麼想？

Ben 9

(inaudible)

Teacher 10

我跟你又不一樣，我們一百年文化上又不一樣，雖然我們系出同源，問題是一百年來，我生活的經驗，我生活的土地，然後成長的經驗，接受的文化跟你都不一樣，誰跟你是一家人。所以一樣的問題啊，太魯閣族跟賽德克族他們本來是同源沒錯，但遷徙後各自有各自的文化發展，那所以族人一定會有兩種聲音，我跟你一樣，我跟你不一樣。這種問題其實很簡單...

some guy from your family tells you that you are actually belonged to a Chinese ancestor. You are Chinese! What would you think?

(inaudible)

You'd probably think that although we have the same ancestors, during this hundred-year, the land I was raised in, the experience I encounter and the culture are all so different from China. *So we are different.* The same situation could be applied to this question. These two groups may probably from the same origins but they had different cultural development. Therefore, there would be different opinions... AC

Table 5.2 Discussion on defining ‘economics’.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	好這一章，我們要來談經濟。第一個我們名詞要先定義清楚，什麼叫經濟？	Right, for this lesson, we’re going to talk about Economic history. But first, we should define the word more properly. What is economics?	Q	
Allan	2	錢。	Money.		
Teacher	3	錢喔？就這樣嗎？定義清楚一點。吼，你才會知道他在問，他在講什麼。錢嗎？不講話我就問人。...來，36 號。什麼叫經濟？	Money? That’s it? Be clearer so you’d have better understanding of what this chapter is about. <i>(Silence)</i> Fine, Blaine can you tell me what is economics?	RD	IB
Blaine	4	錢的活動。	The activity of money.		
Teacher	5	錢的活動，談，快到囉！吼，那如果是錢的活動，那你看喔，台灣有經濟部長對不對，有財政部長，啊都是錢，那差在哪裡？	The activity of money. Great, that’s close! But if it’s about the activity of money, what’s the difference between economics and finance?	RD	IB
Student	6	<i>(無法辨識)</i>	<i>(inaudible)</i>		
Teacher	7	經濟？財政？	...economics and finance?	Q	
Blaine	8	一個管人	One is in charge of people.		
Teacher	9	一個管人。	In charge of people...	CA	
Blaine	10	一個管人，一個把財政 <i>(無法辨識)</i>	One is in charge of people, and the other is about finance.		
Teacher	11	一個管人，一個...感覺好像不一樣，但又說不出來對不對吼？所以你先來	Right, it’s kind of different but it’s hard to tell the difference. So let’s see the definition by Wiki. It says: “Economics is the social science that studies how people	G	CA

		<p>看一下，你 google 一下，他說經濟是什麼？他說：「組織一切生產、分配、流通、消費活動和關係的系統。」什麼意思啊？白話文什麼意思？對，就是有關於消費的活動，就是從生產到消費，這一個系列的活動，我們都稱作經濟。所以它涵蓋的範圍非常廣。那你說財政呢？他其實是管政府的收入跟支出，吼所以這個就比較狹隘。雖然說都關於錢。所以了解經濟的定義之後，接下來我們來想，所以我們討論經濟要看什麼東西？看什麼？(停頓) 又沈默？</p>	<p>interact with things of value; in particular, the production, distribution, and consumption of goods and services” What does that mean? Well it’s the series of activities from production to consumptions, so it covers quite a wide range. Next, now we know what the economics is, so what exactly do we focus on when discussing economics? <i>(pause)</i> Silence again?</p>		
Calvin	12	看錢。	Focus on money!		
Teacher	13	看錢（笑）。講文言一點啦，講專業一點啦。阿，什麼？要不要再抽一個？	Money (laugh). Be more academic and professional. So what is it?	HT	IB
Dan	14	交易。	Transactions.		
Teacher	15	交易。7 號，來跟我說。對，交易也是啦，還有要看哪一方面的？如果要	Transactions. Sort of correct. Eric, if we look at Taiwanese economics, what aspect	IB	Q
Eric	16	看台灣經濟，你想要看哪一方面的？貿易。	do you focus on? Trade.		

Teacher	17	誒對，沒錯！貿易吼。再來呢？我們賣什麼東西？貿易就是賣東西，買東西嘛！我們賣什麼東西？	Great, that's right! Now trade is about buying and selling. So what did we trade?	RD	IB
Eric	18	茶、糖	Tea and sugar.		
Teacher	19	嘿沒錯，什麼清領的時候前期米糖呀，開港之後茶糖樟腦。你會發現很多東西都是農產品，每個時代不一樣，但很多都是農產品。所以呢，我們會順便討論一下，農產品種在土地上嘛。所以呢會討論一下貿易，還有呢？因為農產品種在土地上，所以我們會討論一些土地制度。吼，這樣OK 嗎？	That's right! In the first period of Qin's Occupation, they exported rice and sugar and in the late period, they were tea, sugar and camphor instead. So basically they were all agricultural products. And since they grew on land, we'll also discuss the historical development of the land system in Taiwan. Is that alright?	RD	CA

Table 5.3 Discussion on Emperor Wu of Han.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	上次我們花了一點時間把漢武帝這個人講完，他的個性吼，就是說你了解他的個性你就大概知道他怎麼做，我一直覺得他應該是獅子座（笑），很華麗地，他個性就是這種人...	Last time we spent a little time to finish talking about Emperor Wudi of the Han Dynasty. His personality well if you understand his personality, you probably know what he might do. I always think he should be a Leo (<i>laughs</i>), very gorgeous, He is this kind of person.	CX	AC

Teacher 2	<p>你可以發現他後來做的那些事情從他的個性就可以看到。我們看一下資治通鑑這兩段他的故事，年輕的時候，就是不良富二代那種，就是開名車去撞人還會說我爸爸是誰，就是那種個性。他說吼，他年輕的時候微服出巡，然後呢駕馬車去採農田的地，人民一直在罵他，...，可以看到仗勢欺人的。</p>	<p>You can see the things he did later from his personality. Let's take a look at the two stories in <i>Zizhi Tongjian</i>. When he was young, he was like the second generation of the wealth. Even when he drove a famous car to hit people, he would say who my father is. That kind of person. It said, well when he was young, he went on a patrol in undercover, and then drove a carriage into farmlands. People have been scolding him..., you can see how he bullied people.</p>	CX	BH
Teacher 3	<p>還有這邊可以看到，也是年輕的時候...，你可以看到他年輕的時候就是這麼的跋扈，了解了吼。所以我們會說漢武帝他會做多少事，你可以看到，這些事情是不是作為一個很張揚個性，他怎麼能夠容許對匈奴又送錢又送女人，他怎麼容許權力能夠放在別人手上，加上他有他的條件，漢代休息 80 年，國庫已豐。</p>	<p>And here you can see it, also when he was young..., you can see that he was so domineering when he was young. Understood? So from this we could say how much Emperor Wu of the Han Dynasty would do. You can see with such personality, how could he tolerate to send money and women to the Huns, asking for peace? And how could he tolerate his power to be handed in the hands of others? In addition, he has his advantages, the Han Dynasty had been resting for 80 years, the treasury has been abundant, and his personality...</p>	CX	BH
Teacher 4	<p>但其實你可以看到晚年打匈奴真的很花錢，所以幾乎是財政破產，幾乎都是大戰爭，所以你可以從資治通鑑這段話看到，假如你把漢武帝名字去掉，你覺得他在形容誰？你不覺得這</p>	<p>But in fact, you can see that fighting the Huns in his later years really cost money, so it was almost financial bankruptcy. There have been some major wars. So you can see from the passage in <i>Zizhi Tongjian</i>, if you remove the name of Emperor Wu of Han, you Who do you think he is describing? Don't you think this is the time when the country is about to end. We usually see these paragraphs in historical books. Actually, it was really like this in</p>	CX	BH

是要亡國的時候，我們通常會在史書看到這幾段文字，其實漢武帝末年真的就是這樣，整個經濟都很差，所以你說他不停止對匈奴作戰嗎？也該停止了把？...

Teacher 5

那現在我們花了一點時間把秦始皇到漢武帝講完，你會發現他們的時代在做什麼？你會發現秦始皇開始了中央集權的皇帝，可是問題是他是開創時代之先所以會有很多人反撲，所以那時候一百年都在拉拉扯扯。可是到了漢武帝的時候，他跟秦始做的事情是一樣的都在幹嘛？中央集權，吼可是你會發現，到了漢武帝之後我們評價就完全不一樣了...兩個人差了一百年，評價是差很多的，因為不同時代背景。往後的君王也差不多都是這樣的模式。

Teacher 6

所以假如你是後來的君主，而且前提是愛好權力的君主，你會從哪些地方加強你的權力？如果你管理一個公司，但是你要從哪些地方再把權力在抓緊一點？哪些方面？

the last years of Emperor Wu of the Han Dynasty. The entire economy was very poor, so you said he wouldn't stop fighting the Huns? Shouldn't he stop?

So now we have spent a little time finishing Qin Shihuang to Han Wudi. You will find what their era was doing? You will find that Emperor Qin Shihuang started a centralized emperor, but the problem is that he was the first to create an era, so many people would counterattack, so at that time he was pulling and pulling for a hundred years. But when Emperor Wu of the Han Dynasty arrived, what did he do the same thing as Qin Shi? Centralized power, roar, but you will find that after Emperor Wu of the Han Dynasty, our evaluations were completely different... The difference between the two people is 100 years, and the evaluation is much different because of the different backgrounds. The future kings will almost follow this pattern

MP

CH

So if you were a later monarch, and the premise was a power-loving monarch, how would you strengthen your power? If you are managing a company, how do you tighten your power? What aspects?

AC

CX

Student	7	錢	Money.	
Teacher	8	錢（笑）對，錢很重要，還有呢？第一個，你的權力要再更大一點，財政權、行政權什麼的，通通要一把抓...所以我們就知道越到後面，皇帝的權力是越來越？	Money (<i>laughs</i>). Yes, money is very important, what else? The first thing is that you have to have greater power, financial power, administrative power, etc., all have to be grasped in your own hands...So we know that the emperor's power is getting more and more?	Q
Class	9	高（齊聲）	High (<i>in unison</i>).	
Teacher	10	高，那宰相，就代表百官，他們的權利就越來越？	High, and the prime minister ('Zaixiang') and the whole admin , their rights are getting more and more?	G
Class	11	低（齊聲）	Low (<i>in unison</i>).	
Teacher	12	低，這是第一個趨勢。...	Low, this is the first pattern.	CA

Teacher Hsu

Overview and Context

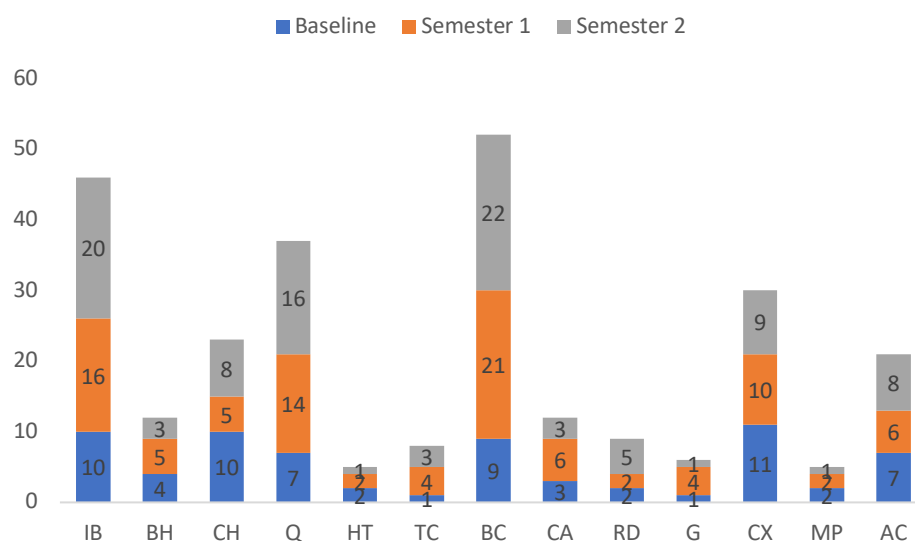


Figure 5.3 Frequencies of codes for Hsu's class at three different stages.

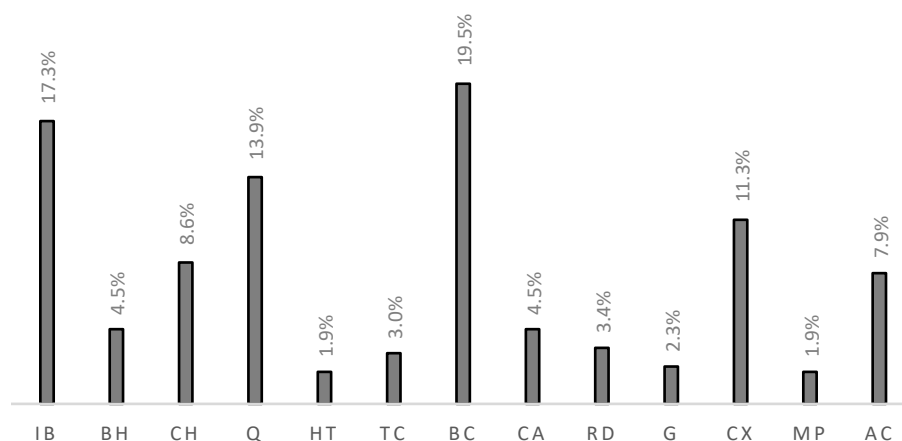


Figure 5.4 Comparison of percentages of different codes in Hsu's classrooms.

From the results of the analysis (Figure 5.3 and Figure 5.4), two predominant discursive techniques were employed in Hsu's class, namely IB (17.3%) and BC (19.5%). As is evident in the selected excerpt in the following tables, Hsu often provided a line of causal reasoning with discursive markers that highlight causal relationships, such as 'why' (「為什麼」), 'because' (「因為」), and 'reason' (「原因」). This code also significantly increased in frequency during the period of three stages (from 9 to 22), indicating how Hsu placed increasing emphasis on historical causality. Most codes

increased in frequency, except BH, CX, and MP. Moreover, the total number of codes increased from 69 to 100, implying Hsu became more confident to employ more diverse discursive techniques.

The first dataset was collected from three lessons in September 2019, before the workshops. The aims of the lessons were to introduce the historical and cultural background of Taiwanese indigenous groups. The first excerpt (Table 5.4) was chosen to demonstrate how the teacher employed a series of simple closed questions to introduce complex historical concepts (Lee, 2005). Highlighting the complex causal and contextual background of a historical account about one Taiwanese aboriginal rebellion against the Dutch Government, Hsu introduced the concept of ‘subduing’ (「以番制番」) as a means to establish total control of Taiwan.

The second dataset was collected from the monthly class observation in the three months from October to December in the first semester. The lesson from which the excerpt (Table 5.5) was extracted was on Taiwanese economic history. After the chronological introduction of each era, Hsu concluded the lesson with a question that served to challenge the narrative from the textbook and provide an alternative perspective about a certain policy from the Land Reform executed by the KMT Government in the mid-twentieth century. According to the textbook, the Land Reform had a hugely positive effect on Taiwanese postwar economics. However, Hsu pointed out that some research claimed that the policy was unconstitutional, violating the rights of many landlords at the time. The exchange, below, demonstrates how Hsu unpacked the different perspective to students using a link to their historical knowledge about that time period.

The third excerpt (Table 5.6) was chosen from the lesson on the history of immigration throughout various Chinese dynasties. This exchange especially highlights the discussion on the different purposes of canals between two historical periods: medieval China (Sui and Tang Dynasty) and early modern China (Yuan and Ming Dynasty; Liang, 2014).

Analysis and commentary. Similar to the excerpt in Table 7, the surface structure of the exchange in the first excerpt (Table 5.4) is not dialogic since it is predominantly Hsu’s own monologue (Alexander, 2008). However, the discourse aims to scaffold students to understand the complex causal relationships and contextual background of an unfamiliar historical account with a series of self-asked and self-answered questions. It is evident that Hsu opened almost every utterance with questions (e.g., *L1*, *L2*, *L3*,

L5, and L6) in an attempt to demonstrate one of the most crucial and fundamental components in historical thinking, asking historical questions (van Drie and van Boxtel, 2008). As Graesser et al. (1996) argue, questioning is one of the fundamental cognitive components that guide human reasoning, Schreiber et al. (2006) also point out the engine for historical thinking is the ability to ask, recognise, and answer historical questions. Van Drie and van Boxtel (2008) identified three types of historical questions: descriptive questions (e.g., *What happened in the incident?* retrieved from *L1*), causal questions (e.g., *Why did the Dutch wait for so long to fight back?* retrieved from *L8*), and evaluative questions (e.g., *What is the significance of this incident?* in *L11*). All three types can be identified in this excerpt. As seen in the first line, Hsu opened with a historical descriptive question (*'What happened in the MaDou Tribe Incident?'* coded *Q*), which also served as a core question for inquiry with the students throughout the lesson. In the following lines, Hsu gradually unpacked the historical account and the historical significance behind the account (Seixas, 1996, 2007) via a series of historical questions, as is evident in code *Q*, assigned in six lines out of 11. Notable, too, is Hsu's explicit use of questions in almost every utterance, which could be a method to open up a dialogue not only with the students, but also with himself (Sidorkin, 1999).

The concepts of 'social justice' and 'transitional justice' (Teitel, 2000) have received a great amount of attention in the Taiwanese History Curriculum in the past few years (Lieu, 2020; Wu, 2006). These topics have become a point of contention for various political ideologies and historical interpretations (Elster, 2004; Wu, 2006). In the second excerpt (Table 5.5), after substantial knowledge (Lee, 2005) was taught in the lesson (not included in the excerpt), Hsu began to incorporate the ideas of 'social justice' and 'transitional justice' by challenging (coded *CH*) the narrative from the textbook (e.g., in *L1* *'Can we really deprive the rights of the landlord just to boost economics?'* and in *L3* *'Why don't we see anything in the textbook about how they [the landlords] fought?'*). Seixas (1996, 2017) points out that in history thinking, one of the crucial components is to teach students about the ethical dimension in history. The issues regarding teaching ethical topics in history include: (1) the problem of judging actors and actions from the past; (2) dealing with past crimes and injustices whose legacies we live with today; and (3) the memorial obligations we in the present owe to those who made sacrifices from which we benefit (Seixas, 2017). The ethical issues in Taiwanese history concern dealing with two the major injustice incidents in postwar Taiwan: the 228 Massacre (1947–1948) and the White Terror (1949–1987; Chang, 2009; Wu, 2006), which formed the common contextual background of historical knowledge acquired by learners in the lesson. Hsu employed this knowledge and invited students to contribute to the reasons *'why the landlords didn't fight against the Land Reform'*

(L3, coded BC, also see in L11). From L4 to L11 demonstrates how the teacher and students cobuilt the causal relationship between the Land Reform and the White Terror, which is neglected in the textbook. By challenging the narrative from the textbook in the dialogic space, the teacher also critically presented students with multiple interpretations and how to adopt different perspectives (van Boxtel and van Drie, 2017).

The analysis of the third excerpt (Table 5.6) indicates two aspects of facilitating hybrid dialogue in the history class. First, before opening up the core question (*'Why were canals different in the Tang Dynasty and the Yuan Dynasty?'* in L4, coded BC), the teacher used visual aids (maps of the canals in the two different historical periods) to guide and scaffold students regarding the discussion and the essential historical knowledge (e.g., L1 and L2 coded G; Wiley and Ash, 2005). Hsu began with a simple closed question to open up the dialogic space, which demonstrates that, in the hybrid dialogue, the surface structural difference between closed questions and open questions is not as significant as the purpose of the question itself (Matusov, 2009). Similar findings are in my MPhil thesis, in which I found the teacher's (in my MPhil study) use of closed questions to open up the dialogue and deepen the learners' historical thinking (van Boxtel and van Drie, 2017). In L8, Hsu realised that Allan found the core question rather challenging; therefore, he redirected the question to another pupil (coded G) to keep to dialogue going. However, following Burt's response, it seemed that the desired answer in Hsu's mind was not provided, so he rephrased his question using a different structure, from a causal question to a descriptive question (van Drie and van Boxtel, 2007; *'Can you answer this question first? What is the purpose of building the canal?'* in L10), which might be more linked to the students' lived experiences (Lee, 2005). This discursive strategy of restructuring the question form (Mercer, 2004) seemed to fail (see from L11 to L13), so Hsu made a second attempt to rephrase the question (*'Is the economic centre in a country the same as the political centre?'* in L14) to scaffold the students to understand the historical significance of a such causal relationship (van Boxtel and van Drie, 2017). Following a series of closed questions (from L16 to L21) to elicit the learners' knowledge, Burt's contribution was encouraged and received positive feedback, followed by the teacher's synthesis of the student's response and a more elaborate answer. The dialogue was then closed.

Table 5.4 Discussion on Taiwanese aboriginal rebellion.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	麻豆社事件發生什麼事情呢？簡單來說，荷蘭人大舉入侵麻豆社，殺了非常多的麻豆社原住民後，一把火把麻豆社全部燒了。這對於麻豆社社民來說，這個東西滿慘烈的。那為什麼麻豆社事件會爆發呢？有他的背景。背景是什麼？荷蘭當初想要加強控制整個南台灣，可是日本人跟漢人他早就在荷蘭人以前跟原住民做生意了，可是1624年荷蘭來了之後，他覺得自己是老大，於是他開始跟漢人海商課徵「十一稅」，那這時候有些日本人就不滿...	What happened to the Madou Tribe Incident? To put it simply, the Dutch invaded the Madou community and killed a large number of the indigenous people of the Madou community. For the people of the Madou Society, this is very tragic. So why did the incident break out? What is the background? The Netherlands wanted to strengthen the control of the entire southern Taiwan, but the Japanese and the Han people had long been doing business with the aborigines before the Dutch. After the Netherlands came in 1624, they felt that they were the boss, so they started to pose "Eleven Taxes" to the Han businessmen, and then some Japanese were dissatisfied at this time...	Q	CX
Teacher	2	...那濱田彌兵衛事件怎麼爆發的呢？濱田彌兵衛是長期在台灣做生意的日本人，那荷蘭人來之後，除了被課稅之後，荷蘭還百般刁難甚至還軟禁了濱田彌兵衛，於是他就找了同夥跑到荷蘭官邸去綁架當時的長官，之後經	How did the Incident of Hamada Yahei break out? Yahei Hamada is a Japanese who has been doing business in Taiwan for a long time. After the Dutch came, in addition to being taxed, the Netherlands made trouble in every possible way and even had Yahei Hamada under arrested. So he and his accomplices went to the Dutch official residence to kidnap the Governor. After the hostages were exchanged to Japan for negotiations, the incident was resolved.	Q	

	過人質交換到日本談判，才解決這件事情。			
Teacher 3	那為什麼他是麻豆社事件背景呢？原因非常簡單，因為他只花十幾個人可以到荷蘭長官邸去挾持長官，這代表什麼事？原因非常簡單，因為荷蘭當時對於台灣的控制並不穩固，如果你在台灣你現在敢做這件事情，你覺得你會發生什麼事情？你說你要挾持誰？你走在凱達格蘭大道，你都還沒行動，你就會被逮捕了。所以不可能。	So why is this the background of the Madou Tribe Incident? The reason is very simple, because it only took a dozen people to go to the Dutch governor's residence to kidnap the Governor. What does this mean? The reason is very simple, because the Dutch's control of Taiwan was not stable at the time. If you dare to do this in Taiwan now, what do you think will happen to you? If you walk on Ketagalan Avenue, you will be arrested before you act. So it's quite impossible now.	CX	BC
Teacher 4	所以當時濱田迷兵衛可以挾持長官，這代表荷蘭對於台灣的控制並不穩固的情況下，所以才會有這個引爆點啊！所以麻豆社事件就是，當荷蘭開始對原住民開始加壓控制，麻豆社原住民早就不滿，在 1629 年時候彼此串通好：我們背荷蘭人到河中間的時候，我們就把他溺死吧造成荷蘭六十名士兵全部溺死。	So at that time, Hamada could kidnapped the Governor, which means that the Netherlands' control of Taiwan is not stable, so that is the tipping point! So the Madou Tribe Incident was that when the Netherlands began to exert pressure on the aborigines, the indigenous people of the Madou Tribe were dissatisfied for a long time. They colluded with each other in 1629: When we carried the Dutch to the middle of the river, we drowned them. Right, all 60 Dutch soldiers were drowned to death.	BC	Q
Teacher 5	之後結果是什麼？1635 年荷蘭人反擊，他大屠殺麻豆社社員，這就是麻	What was the result afterwards? In 1635, the Dutch fought back. They massacred the people of the Madou Tribe. This was the Madou Tribe Incident. Then how did they	BC	

		豆社事件。那他怎麼大屠殺呢？肯定是有人幫他的，他除了用荷蘭人先進武器外，還有一個重要的「以番制番」。「以番制番」就是外來統治者用來控制原住民的方式，這我們之後到清代到日治都會看到一樣的方法，這叫做「以番制番」。	massacre? Someone must have helped them from within. In addition to using advanced weapons, they also had an important strategy called ‘subduing’, which is a method used by foreign rulers to control the aborigines. We will see the same method used from the Qing Dynasty to the Japanese rule.		
Teacher	6	那到底誰去幫荷蘭人？幫我寫上，新港社，新港社去幫荷蘭人。	So who helped the Dutch? Write it down, the Xingang Tribe, Xingang Tribe helped the Dutch.	Q	G
Teacher	7	但問題又來了，1629 年發生麻豆社事件，但為何 1635 年荷蘭人才報仇？為什麼隔了那麼久？	But another problem came is that The Madou Tribe Incident occurred in 1629, but why did the Dutch people take revenge in 1635? Why did it take so long?	TC	BC
Teacher	8	為什麼那麼久？原因有兩個，第一個荷蘭人當時對台灣控制還不穩固，所以他沒有足夠兵力，去鎮壓麻豆社社員，這是第一個原因，第二個請問各位，荷蘭人為什麼要控制台灣，難道他真的·很想統治台灣嗎？不是，他是要把台灣作為什麼？	Why did it take so long? There are two reasons. Firstly Dutchman did not have a firm control of Taiwan at that time, so he did not have enough troops to suppress the people of the Madou Tribe. This is the first reason. The second reason is that, everyone, why did the Dutch want to control Taiwan? Does they really want to rule Taiwan? No, what does they want to use Taiwan for?	BC	
Student	9	貿易的點	A place for business.		
Teacher	10	貿易的點！轉口貿易很重要的中繼站，他是要跟誰做貿易？日本跟中國，所以 1629 年當時荷蘭人他的目光	A place for business! Re-export trade is an important relay station, with whom is he going to do trade? Japan and China, so in 1629, the Dutch had their eyes on the Ming Dynasty. He wanted to do business with China. But, in 1633, the Ming Dynasty	CX	

		都在明朝，他想跟中國做生意，結果在 1633 年的時候，明朝打敗了荷蘭，所以荷蘭就不能跟明朝做生意了，這時候他們就把經營中心從中國轉到台灣，所以是有這個原因的，聽得懂意思嗎？	defeated the Netherlands, so the Netherlands could not do business with the Ming Dynasty. At that time, they transferred their business center from China to Taiwan, so it is for this reason. Do you understand?		
Teacher	11	所以麻豆社事件結束以後呢，這時候荷蘭就跟麻豆社社員簽訂麻豆條約...這時候他在台灣的主權才開始確立，所以這一整個事件的結果是什麼？確立統治基礎。	So after the end of the Incident, the Netherlands signed the Madou Treaty with the people of the Madou Tribe. At this time their sovereignty in Taiwan began to be established, so what was the result of this entire incident? What is the significance about this incident? Establish a foundation for governance.	Q	
Teacher	12	那如何證明確立統治基礎呢？我給大家一個數據，在麻豆社事件隔一年後，1636 年就有 47 個平埔族的部落紛紛歸降於 VOC，所以麻豆社事件他起了殺雞儆猴之用。	So how to prove that they have established the foundation of ruling? Let me give you a piece of data as an evident. One year after the Madou Tribe Incident, 47 Pingpu tribes were relegated to the VOC in 1636, so they used the Mado Incident to set up an example for other tribes to follow.	Q	BH

Table 5.5 Discussion on Taiwanese Land Reform in Post-War era.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	來第二個是土地正義的問題，就算你說我要穩定政治，甚至我要促進台灣的農業經濟，難道耕者有其田就真的	The second one is the issue of land justice. Even if you say that I want to stabilize politics, or even I want to promote Taiwan's agricultural economy, can it really be	CH	

		可以實施嗎？我們真的能夠剝奪地主的權利嗎？可以嗎？	implemented if the farmers have their own land? Could we really deprive the rights of the landlord just to boost the economics? Could we?		
Teacher	2	所以呢，大法官曾經就對耕者有其田去做釋憲，發現這個政策是違憲的，所以土地正義這個問題值得我們去反思。	Therefore, the Supreme Court once explained the constitution of the farmer's land and found that this policy is unconstitutional, so the issue of land justice deserves our reflection.	MP	
Teacher	3	最後，我們用一個問題去結尾，當我們學到這一段歷史的時候，請問我們有學到說，國民政府在台灣實施這些土地政策時，地主有激烈反抗，但我們有學到這段歷史嗎？沒有，所以問題是，為什麼地主沒有激烈反抗？	Finally, we end this lesson with a question. When we learn this period of history, may I have learned that when the KMT Government implemented these land policies in Taiwan, the landlords had fierce resistance, but why we don't see anything about how they fought in the textbook? No, so the question is, why didn't the landlords resist fiercely?	BC	Q
Student	4	(不清楚)	(inaudible)		
Teacher	5	為什麼？	Why?	BC	
Alex	6	被磨除掉	They got rid off.		
Teacher	7	被除掉？好，那還有嗎？	Got rid off? Alright, anything else?	RD	IB
Ben	8	動員戡亂時期條款	Temporary Provisions against the Communist Rebellion.		
Teacher	9	動員戡亂時期條款！好，有講到重點了！為什麼，1947 年發生什麼事情？	Great! You got the point! Why, what happened in 1947?	RD	TC
Ben	10	228 事件	228 Incident.		
Teacher	11	228 事件，甚至是國民政府來到台灣時為反共，實施的一種戒嚴體制！白色恐怖！所以有了前人的經驗，這些人	228 Incident. Even an anti-communist regime implemented by the KMT Government when it came to Taiwan! White horror! So with the experience of the predecessors, in order to rebel against the National Government in Chen Yi's time, these people	BC	

		為了要反抗國民政府在陳儀那年代， 所以就被消失了，被抓去關就不見 了。所以請問你敢反抗嗎？你不敢反 抗。	disappeared, and were arrested and detained and disappeared. So do you dare to resist? You dare not.		
Teacher	12	所以我們從三七五減租就看到，三七 五實施的時間點是在國民政府遷台以 前，三七五是誰推動的？	So we can see from The 37.5% Arable Rent Reduction Act, which was executed before KMT fled to Taiwan. Who implemented it?	Q	TC
Cathy	13	陳誠	Chen Cheng.		
Teacher	14	當時的台灣省省主席陳誠。陳誠一開 始在推動三七五減租時是很多地主在 反抗的，當時陳誠就說了一句話，調 皮搗蛋的人有，但不要命的人總沒 有。所以我們就可以用這句話，總結 戰後的土地改革，那各位有問題嗎？ 沒問題就下課了。	Chen Cheng, then chairman of Taiwan Province at that time. Many landlords were resisting when Chen Cheng promoted The 37.5% Arable Rent Reduction Act at the beginning. At that time, Chen Cheng said “There are some mischievous people, but there are no people who don’t want to live.” So we can see from this sentence to summarize the land reform after the war. Do you have any questions? Class is dismissed if there is no problem.	CA	

Table 5.6 Discussion on the purposes of the canals in different Dynasties.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	首先各位，你先看這張圖，這張是隋 唐時期的運河圖，那其實呢這個運河 圖之前在國中就有學過滿多次的...好， 請各位先記住這張圖，好再來	First of all, everyone, you look at this picture first. This is a canal map from the Sui and Tang Dynasty. Actually, this canal map has been studied many times in junior high schools... well, please remember this picture first. Alright next.	G	

Teacher	2	另外一張圖是長這樣，這是元代以後的京杭大運河，元明清以後的運河是長這樣子，所以我要問各位問題了，第一個問題：請問比較這兩張圖，這兩條運河一樣嗎？很簡單的，路線一樣嗎？來，Allen，你可以看你課本上面有圖片，一樣嗎？	The other picture looks like this. This is the Beijing-Hangzhou Grand Canal after the Yuan Dynasty. The canal looks like this after the Yuan, Ming and Qing Dynasties. So I have to ask you some questions. The first question: Compare these two pictures, are the two canals the same? It's very simple, is the route the same? Come on, Allen, you can see that there are pictures in your textbook, are they the same?	IB	G
Allan	3	不一樣	Not really.		
Teacher	4	好，太好了，不一樣，那不一樣在哪？為什麼他們的路線不太一樣？	OK, great, not the same, but in which aspect? Why canals were different in Tang Dynasty and Yuan Dynasty?	BC	RD
Allan	5	運的東西不一樣	The things they shipped.		
Teacher	6	運的東西不一樣，是嗎？運的東西大概類似的啊，都是糧食，為什麼不一樣？	The things they shipped, right? The things they shipped are probably similar, they are all food. Why are they different?	RD	CH
Allan	7	(無法辨識)	(inaudible)		
Teacher	8	所以各位可以想一下，為什麼元代的運河跟隋唐的運河他的路線不太一樣，為什麼？思考一下，有人知道嗎？(停頓)沒有人知道(抽籤)，來 Burt 為什麼不一樣？	So you can think about why the route of the canals in the Yuan Dynasty is different from the canals in the Sui and Tang Dynasties, and why? Think about it, does anyone know? (Pause) No one knows. (draw lots) Burt, why is it different?	G	IB
Burt	9	經濟重心不一樣	The economic centres are different.		
Teacher	10	經濟重心不一樣？可是到了隋唐以後經濟重心開始轉移到江南啊，為什麼	The economic centres are different? However, after the Sui and Tang Dynasties, the economic centre began to shift to Jiangnan. Why is it different? What is the purpose of	CH	G

		不一樣？請問建運河的目的是什麼？ 為什麼要建運河？你可以先回答我這 問題嗎？建運河的目的是什麼？	building the canal? Why did they build a canal? Can you answer this question first? What is the purpose of building the canal?		
Burt	11	要運輸。	For transportation.		
Teacher	12	對要運輸，不管是人還是物，那所以 建運河的目的是要把這些東西運往 哪裡？	Yes, transportation for people or stuff. And where did they ship to?	RD	IB
Burt	13	打仗那邊	The frontline of warfare.		
Teacher	14	對，還有嗎？請問經濟中心一定是政 治重心嗎？	Yes, anything else? Is the economic centre always the same with political centre?	RD	IB
Burt	15	不一定	Not necessarily.		
Teacher	16	不一定媽，所以為什麼？所以為什麼 元代的運河跟隋唐的運河長不一樣？	Not really, so why? Why the route of the canals in the Yuan Dynasty is different from the canals in the Sui and Tang Dynasties?	RD	BC
Burt	17	政治中心不一樣	The political centre is different.		
Teacher	18	好，很好，所以隋唐政治重心在哪？ 首都在哪裡？你以看出來吧！	OK, great! So where is the political centre of Sui and Tang Dynasty? Where is the capital? You can see it!	RD	IB
Burt	19	長安	Changan.		
Teacher	20	長安，可是元明清的首都在哪裡？	Changan, but how about Yuan, Ming and Qing Dynasty?	IB	Q
Burt	21	北京	Beijing.		
Teacher	22	很好，北京！所以請問政治重心一樣 嗎？不一樣呀！所以你會看隋唐運河 有點東西向，因為他要把江南經濟運	Great, Beijing! So is the political centre the same? It's different! So you will see that the Sui and Tang Canal is a bit east-west, because he wanted to transport the Jiangnan economy to the political center... But the political center in the Ming Dynasty was in	RD	CA

到政治重心...可是明代政治重心都在北
京，所已不需要東西向，南北向就
好，所以就稍微解決這個問題。

Beijing, so the east-west direction is not needed anymore, the north-south direction is
better instead. So this problem is solved slightly .

Teacher Wu

Overview and Context.

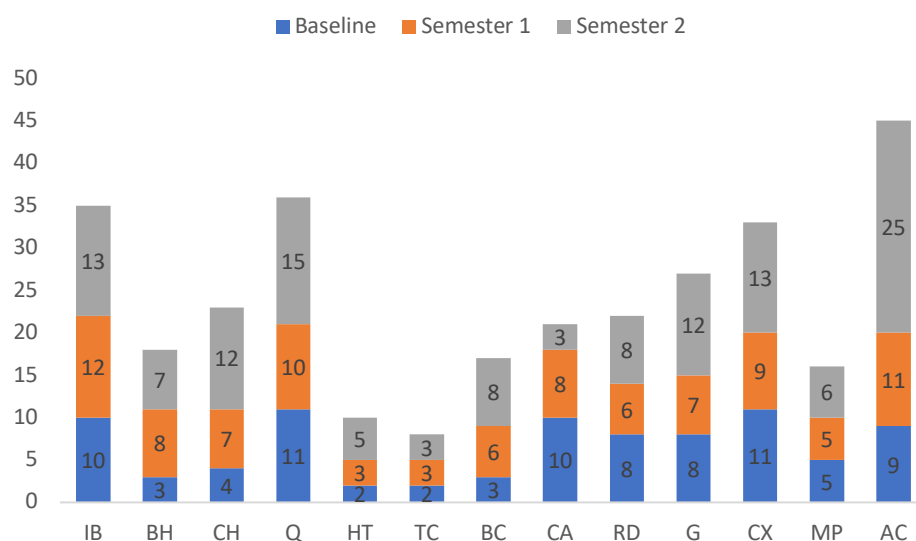


Figure 5.5 Frequencies of codes for Wu's class at three different stages.

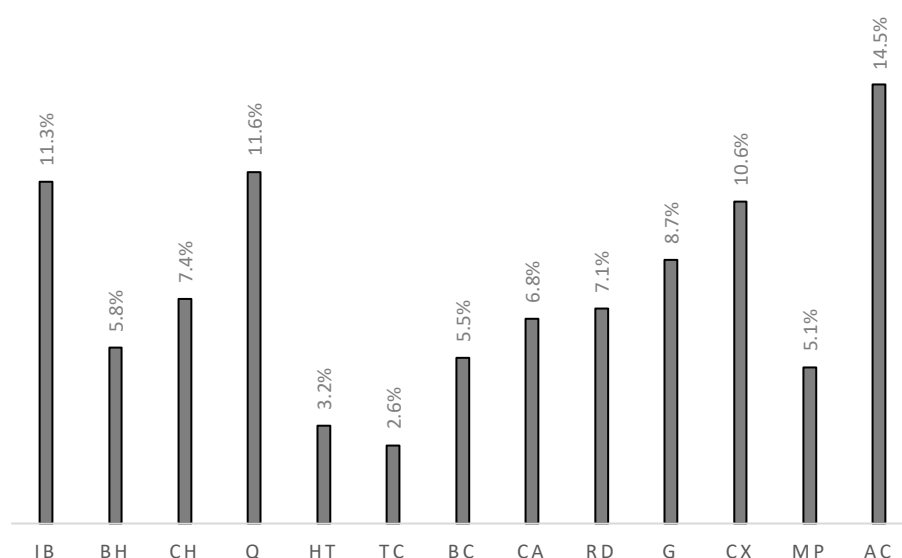


Figure 5.6 Comparison of percentage of different codes in Wu's classroom.

Wu's teaching method heavily relied on educational technology, mainly PowerPoint, as the main medium of instruction, with multiple media sources such as pictures, videos, and music. From her interviews, Wu believed this teaching approach enabled students to immerse themselves fully into history and cultivate historical empathy in a deeper sense (Lee, 2005). Worksheets with supplementary materials were often provided, on which questions related to the contents of the lessons the teacher discussed with the pupils were included. The questions were usually carefully designed to engage students

in the dialogue, focusing more on the humanity side of history instead of simply eliciting their historical knowledge. This design approach is evident from the coding analysis (see Figure 5.5 and Figure 5.6), in which the frequency of two codes, AC and CX, increased over the period of the study, accounting for 14.5% and 10.6%, respectively. These two codes demonstrate how the teacher used talks to connect to students' lived experience and to contextualise the events or actions of people in the past for students to take a historical perspective. Moreover, the increasing number of total codes (from 86 to 130) suggests that more talks were qualified to open up dialogic space in class (Wegerif, 2011).

The first excerpt (Table 5.7) was chosen from the lesson on the history of Communist China in the twentieth century and the discussion on the Tiananmen Square Massacre (1989). Wu first played the class a video and a song about the Massacre from YouTube, then presented some historical facts about the incident as fundamental contextual background knowledge prior to the discussion. Second, the teacher divided the class into numerous groups and asked them to discuss the questions from the worksheet designed by herself. The exchange in the excerpt explored the reasons behind this incident and what the students thought about the Massacre.

The second excerpt (Table 5.8) was selected from a lesson in the first semester (from October to December). This lesson was conducted in the traditional teacher-centred lecture fashion, which focused on introducing the political and philosophical differences between Capitalism and Socialism in nineteenth-century Europe. The exchange presented in Table 5.8 initially reveals how the teacher used personal experience to explain the complicated concept of 'alienation', the term that was put forward by Karl Marx. Then, Wu invited students to discuss the concept of normalisation and how it impacted the First Industrial Revolution in the nineteenth century.

The third excerpt (Table 5.9) was chosen from a lesson in the second semester (from April to June), introducing historical accounts of World War Two. This lesson was especially designed to focus on the Holocaust and was conducted in four steps. First, Wu played the class some video clips from the movie *Schindler's List* to introduce the tragedy. Second, the students were asked to discuss the first two questions on the worksheet designed by the teacher, including an excerpt from the book *The Authoritarian Personality*, by Theodor W. Adorno (1950). Then, the teacher invited students to share their thoughts. Finally, the lesson concluded with another short video, by the BBC, about one Jewish girl's personal experience of the Holocaust.

Analysis and commentary. The analysis indicates that compared with other classes from the teachers mentioned above, the contributions made from pupils were significantly substantial in the first excerpt (e.g., *L2 and L10*). Therefore, it is important to explore how the dialogues unfold in this excerpt. First, as observed in the class, the ethos and culture Wu created were friendly and encouraging for expressing ideas, with students not being afraid of being wrong with their responses. In the first line, the teacher directly invited Jack to share his thoughts with the classroom (*coded IB*), followed by whole-class applause, which demonstrates the encouraging classroom environment. From Jack's response, he displayed a degree of advanced historical thinking, especially the ability to contextualise the historical account and situate it in a temporal, special, and social context (van Drie & van Boxel, 2008, 2018; 'Deng Xiaoping's main goal is to establish his power in the party and, therefore, his political agenda could be successfully pushed without being accused of being reactionaries' in *L2*). Wu then offered positive feedback to his response ('Great! I think what Jack said was really clear.' in *L3*, *coded RD*) and rephrased his idea and turned the focus to the next question (*coded G*, in *L3*). In the following exchanges (*from L3 to L6*), Wu posed two closed questions ('What is stability maintenance?' in *L3*, and 'How about "right protection"? What does it mean?' *L5*) to set the foundation for further and deeper discussion of the Tiananmen Square Massacre. The core question appeared in *L9*, with the emphasis on reasoning in a contextual background, stressed by the teacher (*coded MP and CX*) to invite learners to think beyond the simple dichotomy of morally right or wrong in historical accounts (Maggioni et al., 2004; Seixas, 2017). From *L8* to *L9*, the importance of giving students enough time to think to be involved in dialogic space is emphasised (Wegerif, 2011). Charlie then joined the dialogue with the sophisticated ability of perspective-taking regarding a historical figure (Endacott and Brooks, 2013; VanSledright, 2001; *L10 and L12*). Following Charlie's response, Wu paraphrased his answer to seek agreement and consensus (*coded CA*) and then re-emphasised the importance of contextualisation in historical thinking (*L15*).

The second excerpt (Table 5.8) demonstrates how the complicated academic disciplinary language can be explained in simple everyday language in the hybrid dialogue (*coded HT* in *L2*; Husbands, 1996). First, as evident in *L1* (*coded AC*) and *L2*, instead of directly putting forward the concept of 'alienation' (「異化」) to the whole class, the teacher approached the rather complex idea via her own personal experience, not only to engage students in understanding the concept, but also to foster students' compassion for humanity, which served as a core value in Wu's teaching belief (from the interview; VanSledright and Reddy, 2014). After the story, the word 'alienation' was put forward and written on the board to emphasise the importance of the concept

(Shi, 2010), followed by a more detailed explanation of the word (*L3*), linking it to knowledge from previous lessons (e.g., the Industrial Revolution in *L3*), and compared with different historical concepts in different historical periods (*coded A*). In the second part of the excerpt, Wu used a similar approach to teach the concept of normalisation and its impact on the Industrial Revolution with the question, ‘*You can find it [the concept of normalisation] in life. What things are like this way?*’ in *L7*, *coded AC*, to invite students to contribute their daily life experience (Lee, 2005; *from L7 to L13*). This approach was also used in a later discussion of how Capitalism works in society by asking about the students’ own experiences of consuming (not included in this excerpt).

In the final excerpt (Table 5.9), although the exchange is quite short in length, it provides rich data to demonstrate the use of guiding the dialogue when discussing a sensitive topic with the whole class. First, Wu not only briefly instructed what the pupils should do on the worksheet, but also presented some explanation regarding the meaning of the texts to scaffold and guide the whole class on the focus of the questions on the sheet (*L1 and L2*, *coded G and Q*). In the next line (*L3*), Wu again re-emphasised the importance of identifying the historical significance in this lesson by highlighting her own belief about the nature of history (‘*The focus of this course is actually our attitude and perceptions towards war and how we should conduct postwar reflections*’, *coded HT and G*). This belief was also found in her interview. The 10-minute wait between *L3* and *L4* allowed the students have time to read the materials and discuss with their fellows to engage in a deeper discussion. This waiting time is considered ‘luxurious’ in a 50-minute history lesson, yet is crucial to provide students with more opportunities to engage in historical thinking (Hsiao, 2009; Song, 2008). However, the questions in *L4* seemed to fail at inviting the students to share their opinions, so the teacher rephrased her questions more simply (‘*Or you don’t need to answer my questions. How do you feel after reading this text?*’) and directly called upon one student to share her thoughts (*L5 and L6*, *coded IB*). After Betty’s response, Wu synthesised her answer and invited other pupils to join in the dialogue (*coded CA and IB*, in *L8*), which was followed by Charlie’s extensive and elaborate contribution to the dialogue, demonstrating his advanced competence regarding historical thinking. The entire dialogue was then closed by the applause from the whole class and the teacher’s reflection on Charlie’s response (‘*I really have to say that Charlie really answered this question accurately*’), as well as restating the goals of the lesson.

Table 5.7 Discussion on the Tiananmen Square Massacre.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	所以你這邊可以看到，所有鄧小平之前的盟友，都被犧牲掉了，他想保住的成果到底是什麼？我們來請 Jack 來跟我們分享一下（全班掌聲）。你可以直接講出你們討論的答案。	So you can see from here that all Deng Xiaoping's allies were sacrificed. What is the result he wanted to keep? Let's ask Jack to share it with us (<i>applause from the class</i>). You can just say the answers you discussed with your classmates.	Q	IB
Jack	2	就，透過犧牲趙子陽他們來稍微安撫保守派的人，讓自己在黨中央的權力可以鞏固。所以鄧小平的目的就是要確保自己在黨中央的勢力不倒的話，就可以讓改革的政見變成官方的政見，不會被打成是反動那一派。	Well, by sacrificing Zhao Ziyang and the others to reassure the conservatives a little bit, and his own power in the party can be consolidated. Therefore, Deng Xiaoping's main goal is to establish his power in the party and therefore his political agenda could be successfully pushed without accused of being reactionaries.		
Teacher	3	好，我覺得 Jack 講的真的非常清楚，大家有聽懂嗎？因為鄧小平在黨的勢力非常大，所以藉由犧牲掉他的盟友，他可以確保他的改革發展。所以你就可以呼應到之後天安門的發展... 回到學習單第五題，你可以去重新思考一下兩個名詞，一個叫做維穩。維穩的重點是什麼？什麼叫做維穩？	Great! I think what Jack just said was really clear. Is that understood? Because Deng Xiaoping is very powerful in the party, he can ensure his reform and development by sacrificing his allies. So you can echo the development of Tiananmen Square afterwards... Go back to the fifth question of the worksheet, you can rethink two terms, one is called stability maintenance. What is the point of maintaining stability? What is stability maintenance?	RD	G
Wendy	4	安定民心。	Their citizens.		

Teacher	5	安定民心，很好。好所以從政治上的考量安定民心，那什麼叫做維權？權，權指的是什麼？	Citizens, very good. How about 'right protection'? What does it mean? Right? What does it refer to?	RD	Q
Ricky	6	中共在中國的權力。	The power of Communist Party in China.		
Teacher	7	好，假如我們把它解讀成權力 power（寫在黑板），好像有點解讀錯誤。你看現在中共的異議人士又叫作維權人士。所以那個權指的是什麼？指的是人權（寫在黑板）或者就是我們說的 human rights，利益的利。OK 嗎？所以你們可以試著自己去想想看，從維持穩定跟維護人權這兩個角度去想，鄧小平下令軍事鎮壓天安門，你覺得合理嗎？好，你們可以自由表達意見，我這邊舉個例子...	Well, if we interpret it as power (<i>written on the blackboard</i>), it seems a bit wrong. You see, now the CCP's dissidents are also called rights defenders. So what does that right refer to? It refers to human rights (<i>written on the blackboard</i>), the benefit of interest. OK? So you can try to think about it for yourself, from the perspectives of maintaining stability and safeguarding human rights. Deng Xiaoping ordered the military suppression of Tiananmen Square. Do you think it is reasonable? OK, you are free to express your opinions, let me give you an example...	CH	G
Teacher	8	好，所以你把 1989 年的時空背景放進去想一下，如果他沒有這個軍事鎮壓，最後會演變成怎麼樣？你在呼應第一題，你覺得這場鎮壓是合理的嗎？政府所使用的手段你可以接受嗎？如果你的評價有改變，你可以說說你的原因。（停頓）	Okay, so you put in the contextual background of 1989 and think about it. If he didn't have this military suppression, what would happen in the end? You are responding to the first question. Do you think this suppression is reasonable? Can you accept the methods used by the government? If your opinion changes, you can talk about your reasons. (<i>pause</i>)	CX	Q

Teacher	9	好那現在我來問人，有沒有同學經過討論，你比較可以理解中共鎮壓的原因了？你可以理解中國用鎮壓的方式來對待人民？有沒有人？（等待）有嗎？（Charlie 舉手）有，很好，那我們來聽聽你的想法。	Okay, now I'm going to ask people. Did anyone discuss the reasons for the CCP's suppression? Can you understand that China treats its people in a repressive way? Is anyone there? (Pause) Is there? (Charlie raises his hand) Yes, good, then let's hear your thoughts.	MP	CX
Charlie	10	因為假如他沒有鎮壓的話，他的政權一定會受到威脅，然後，所以他鎮壓的合理性就是為了維持中國的安定，如果他沒有鎮壓的話，就是整個政權會大洗牌，...(無法辨識)	Because if he does not suppress, his regime will definitely be threatened. Then, the rationality of his suppression is to maintain the stability of China. If he does not suppress, the whole regime will be shuffled....(inaudible)		
Teacher	11	(無法辨識)	(inaudible)		
Charlie	12	所以以他們的角度來說的話，他們做是對的，因為他們要維持政權，不然整個會大分裂，可能情況會更加嚴重。大概是這樣。	So from their point of view, they are right, because they want to maintain the political power, otherwise the whole will be divided and the situation may become more serious. Probably so.		
Teacher	13	所以你覺得為了維持中國的統一與穩定，這件事情很重要？	So do you think this matter is very important in order to maintain the unity and stability of China?	CA	
Charlie	14	對啊，很重要！	Yes, quite important!		
Teacher	15	好，很好，OK 嗎？所以這一題沒有標準答案，假如你是站在中共維穩的脈絡底下，鎮壓這件事情可能你會覺得	Ok, Great! Therefore, there is no standard answer to this question. If you are standing in the context of maintaining the stability of the CCP, the suppression of this matter may be understandable. Okay, that's all for today's discussion	RD	CX

是可以被理解的。好，那今天討論就到這邊。

Table 5.8 Discussion on the Capitalism in nineteenth century.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	所以在這個生產的過程當中，福特汽車變成是這個標準化一個很重要的指標，甚至還出現一個英文，就是福特主義。那我們可以看到這個生產線，可以跟你們分享一個我在大學在工廠生產線打工的經驗。...	Therefore, in the production process, Ford became a very important indicator of this standardisation, and even an English language appeared, namely Fordism. Then we can see this production line, and I can share with you my experience of working in a factory production line at university.	AC	G
Teacher	2	做了半天之後，我們大家都笑不出來，因為首先你有生理需求，但不能隨時跟老闆講說你要去上廁所，然後把生產線空在那邊轉，所以最後大家都只能忍著不喝水，不上廁所，一直到老闆規定的時間，所以那天下來之後，我們都有一種感覺，我們都覺得自己被「異化」了（寫在黑板上）。	After doing this for a long time, all of us can't laugh. Because first you have nature calls, but you can't tell your boss that you are going to the bathroom at any time, and then leave the production line empty. So at the end everyone can only bear no drinking water, and no toilet, until the time set by the boss. After that day, we all have a feeling that we all become " <i>alienated</i> " (written on the blackboard).	HT	AC
Teacher	3	那這個異化其實是馬克思在形容工人工作的一種心理狀態，你再也覺	This <i>alienation</i> is actually a psychological state of what Marx's description of workers' work. You no longer feel like you are not a human being, but a part of a machine. Your	CX	AC

得自己不像是個人類，而是像機器的一環，你的那些情緒、那些需求慢慢在那個生產壓力之下，都會被迫抹平。而且說實在的，今天我來做這工作，或是其他人來做都沒有差別，我們都非常容易被取代，然後工作都非常零碎。所以最後我們都有點哀傷...所以你才能夠去體會為什麼在工業革命的時代，會有這個多人去關懷社會底層，甚至會認為資本主義本身是非常邪惡的。妳一定要經過那個過程，才會有那種感受。...

Teacher 4

所以你可以去思考一下，在中古時期我們就可以看到所謂的工人，當時時候被稱為工匠（寫在黑板上），他們是一些在基爾特行會的工匠，但你不會覺得他們有所謂工人的悲哀。那為什麼到了近代，那些在工廠的工人他們面對到的處境是不一樣的？

Tim 5

工作內容不同。

emotions and needs will gradually become under the pressure of production, which are all forced to smooth out. And to be honest, it doesn't make any difference whether it's me or anyone else do this job. We are all easily replaced, and then the work is very fragmented. So in the end we are all a little sad...So you can understand why in the era of the Industrial Revolution, there are so many people who care about the bottom class of society, and even think that capitalism itself is very evil. You must go through that experience to feel that way.

So you can think about it. In the Middle Ages, we can see so-called workers. They were called craftsmen (*written on the blackboard*). They were craftsmen in the Guild, but you wouldn't think of them to have the sorrow of the workers in the industrial revolution. Then why in modern times, those workers in factories faced different situations?

The job description is different.

AC

BC

Teacher	6	對，因為首先他們面臨到的工作處境就不同，今天你是一個中古的工匠，你從一開始當一個學徒，到後來出師，你必須要把所有生產的流程都非常熟悉，中間你需要做過專業的認證，所以你的技術是無可取代的。但你會發現到了近代，你的工作誰都可以來做。所以假如你沒有一些東西是發自人性，展現人性的創意，那你其實這個處境，都是所謂的無產階級。	Yes, because the work situation they face is different at first. Today if you were a medieval craftsman, from the beginning of your apprenticeship to later becoming a master, you would be very familiar with all the production processes with professional certification required. So your techniques are irreplaceable. But you will find that in modern times, anyone can do your job. So if you don't have something that comes from human nature and shows creativity, then you are in this situation, in fact, the so-called proletariat.	RD	HT
Teacher	7	好，第二個那規格化，我們就可以想到我們日常生活當中，有很多產品其實是不同的廠商，他生產出同樣規格的產品，你們可以找到生活周圍，什麼東西是屬於這樣子的？	Okay, the second one is standardization. We can think that in our daily life, many products are actually made by different manufacturers. They produce products of the same specification. You can find them in life. What things are like this way?	Q	AC
Henry	8	電池。	Batteries.		
Teacher	9	電池，很好。還有呢？	Batteries, good. Anything else?	RD	IB
Vicky	10	水。	Water.		
Teacher	11	水，你是說礦泉水？對不對，因為我們其實喝哪一家都沒有差，水其實算規格化嗎？這樣算好像也是。	Water, you mean bottled water? Right, so Since it doesn't matter which one we drink, is water actually standardized? It seems to be so.	RD	
Danny	12	隨身碟。	Thumb drives.		

Teacher	13	好，隨身碟很明顯，就是不管哪一家都是用同樣的接頭。所以可看到這個規格化被大量運用在資訊類產品...。	Right, it's quite obvious. That is, no matter which one uses the same connector. So we can see that this standardization is widely used in electronic products.	RD	CA
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Table 5.9 Discussion on the Holocaust.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	你可以從學習單上那一段開始閱讀，其實這個最終解決方案我們上次也有講過，不只包含猶太人，也包含身心障礙者、吉普賽人、同性戀者，這些他們覺得會妨礙純種種族的這些部分。所以這邊請大家花一點點時間，閱讀從猶太人到屠殺...另外，在學習單上還有一首詩，上面寫到「奧斯維辛之後，寫詩是野蠻的行為，也是不可能的事」，這句話其實是非常隱喻的話，那為什麼他會認為說野蠻的？野蠻在哪裡？所以閱讀完這篇文章後可以請你去思考，我們覺得野蠻第一個在於他殺了非常多的生命，還代表了在文化當中代表的恐怖性。所以你可以再這段文章當中，感受到野蠻	You can start reading from the paragraph on the worksheet. In fact, the final solution we talked about last time includes not only the Jews, but also the handicapped, Gypsies, and homosexuals, which they think will hinder the purebred race. So please spend a little time here, reading from the Jews to the Holocaust... In addition, there is a poem on the worksheet, which says "After Auschwitz, writing poems is a barbaric act and it is an impossible thing to do." This sentence is actually very metaphorical, so why does he think it is barbaric? In what way it is barbaric? So after reading this article, I can ask you to think about it. We think that the first thing about barbarity is that he killed a lot of lives, and it also represents the horror embedded in the culture. So you can feel what barbarity represents in this article? Why is writing poetry a barbaric act? Please take a moment to read the text.	Q	G

		代表什麼？為什麼寫詩是種野蠻的行為？請大家花一點時間閱讀文字。		
Teacher	2	如果你一開始上課就已經讀完了，你可以繼續往下，拿出你的手機，來查詢一下，後來針對納粹屠殺猶太人在國際上進行很多個審判，這邊其實是連結到課本八之二的紐倫堡大審判。那我們在另外補充一個就是法蘭克福大審判，所以大家有手機的話可以上網查一下，這些審判的時間點在什麼時候？他針對是哪一些人？是誰發起這個大審判？這一次的學習單其實有點難，她需要你去做一些課外的延伸，然後你可以去思考一下，這些大審判是想要達到怎樣子的目的？...	If you have finished reading before the class, you can continue to keep going down. Take out your mobile phone, and google it, many international trials for the Nazi genocide of Jews. This is actually linked to the chapter 8, section 2 in the textbook: The Nuremberg Trial. Then we will add another one that is the Frankfurt Trial, so if you have a mobile phone, you can look it up online. When were these trials? Who was it targeting? Who initiated this big trial? This worksheet is actually a bit difficult. It needs you to do some extensive research outside the textbook. Then you can think about it. What are the goals of these big trials? ...	Q G
Teacher	3	這段課本講了很多二戰詳細的重要戰役，但我覺得這些並不是歷史學重點，在這段課程重點其實是來自於我們對戰爭的態度，以及戰後的反省應該如何進行，所以我幫你們拉了個主題出來。學習單有點難，但可以試著寫寫看，那如果你看完了但你覺得不	This textbook talks about a lot of details about important battles of World War II, but I think these are not the focus of history. The focus of this course is actually our attitude and perceptions towards war and how we should conduct post-war reflections. So I designed a whole new topic apart from the textbook. The worksheet is a bit difficult, but you can try to write and read. If you are not sure about your ideas after reading it, you can discuss with your classmates... <i>(wait for 10 minutes)</i>	HT G

		是很肯定你的想法，可以左右跟同學討論一下... (等10分鐘)			
Teacher	4	有沒有同學寫完，想跟大家分享一下，你覺得這些屠殺的手段，他們恐怖來自於哪裡？為什麼我們覺得這是種野蠻的行為？你看完這段文字，結合你以前看過的電影，你覺得納粹是怎麼做的？才有辦法做到對於一個族群所謂的種族滅絕？ (停頓)	Has anyone finished writing and would like to share with you, where do you think these methods of massacre come from? Why do we think this is a barbaric act? After you read this text, combined with the movies we have seen before, what do you think the Nazis did? Is there a way to achieve the so-called genocide of an ethnic group? (pause)	IB	Q
Teacher	5	有人有想法嗎？或是你也不用回答我的問題，你看完這段文字之後，你有怎樣的感覺？看完之後你有什麼樣的想法？給我一些關鍵詞 (停頓)	Does anyone have any idea? Or you don't need to answer my questions. How do you feel after reading this text? What do you think after reading it? Give me any ideas you have. (pause)	G	IB
Teacher	6	如何，Betty 你覺得呢？ (笑) 因為我看妳寫完了。你覺得呢？	What do you think Betty? (Laughs) I see you've done. What do you think?	IB	
Betty	7	就是其實他們看到自己的親友也是一樣殺害，很可怕。	The fact that they saw their relatives and friends but still killed them was truly terrible.		
Teacher	8	好，對，你看到這段的時候你會看到有時候他們殺的人是自己認識的人，但他們卻呈現一種，冷漠的態度，這是一種令人覺得非常可怕的事。好，還有沒有？ (Charlie 舉手)	Well, yes, when you read this paragraph, you will see that sometimes the people they kill are people they know, but they show a kind of indifferent attitude, which is a very scary thing. Okay, is there any more? (Charlie raises his hand)	CA	IB

Charlie	9	<p>在這整個行為當中，體制是很重要的，一環，高效又精準的執行這一切，一環到一環，從命令到行動，到每發子彈打進去每個人的腦袋裡，到每個猶太人被抓，都非常精準。而每一個人的個體，在這當中是被徹底忽略，就算你認識他，但是這整個機器會讓人，是非善惡這件事情一點都不重要，在這體制當中每一個人都是那個完美的一個零件，這就是一個最純粹的惡，也是一個完美個官僚體系下，每個人完美地執行他的命令，然後沒有自己的想法，只是把一切做到最好，他就是一個零件而已。他就是在執行當時主宰的國家和政府，然後他只是執行當時背景，他所認為是正確的事情，但在戰敗後就變成他是錯的。（全班掌聲）</p>	<p>In this behavior, the system plays a very important part. The efficient and precise implementation of all this, from order to action, to every bullet hitting everyone's head, to every Jew being caught, is very important. Very precise. And everyone's individuality is completely ignored in this. Even if you know him, this whole machine will make people do it. It doesn't matter whether right or wrong and good or evil. Everyone in this system is the part of it. This is the purest evil. It is also a perfect bureaucratic system. Everyone executes the orders perfectly, and then he has no ideas of his own, just doing everything to his best. He is just a part. He was implementing the country and government that was dominating at the time. He was doing things what he believed was right under that contextual background, but it became wrong after the war. (<i>Applause from the class</i>)</p>
Teacher	10	<p>好，我真的要說，Charlie 真的很精準地去回答了這個問題...。所以你會看到，除了這些頭號戰犯之外，底下這些人，小小螺絲釘，這些人到底有沒</p>	<p>Well, I really have to say that Charlie really answered this question accurately.... So you will see that in addition to these major war criminals, these people, the little screws, are these people guilty? This is actually a question we started to think about in this class.</p>

RD CX

有罪？這其實是我們在這堂課當中，
我們開始要去思考的一個問題。

Teacher Lin

Overall and Context

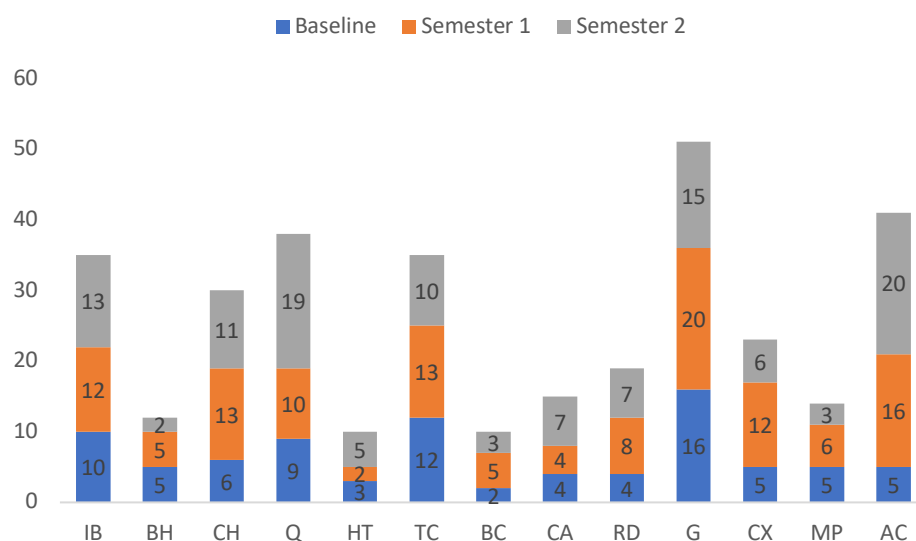


Figure 5.7 Frequencies of codes for Lin's class at three different stages.

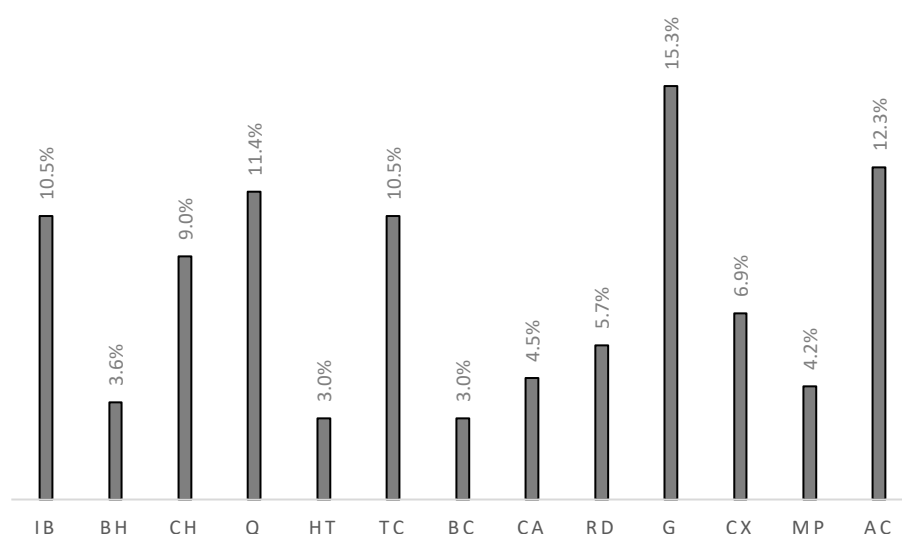


Figure 5.8 Comparison of percentages of different codes in Lin's classrooms.

Lin's teaching practice heavily relied on a traditional teacher-centred approach, with predominant use of the blackboard instead of slides. In Figure 5.7 and Figure 5.8, it is notable that in addition to the wide use of the code of AC (12.3%), the high frequency of the code G (15.3%) in three different stages (16, 20, 15 times, respectively) demonstrates Lin employed talk to guide and scaffold students in the desired direction of the dialogue, focusing on a more sophisticated use of historical thinking. From the interviews, one concern about the dialogic teaching in Lin's perspective was the

‘exclusiveness of the dialogue’, in which only a few students were involved. I observed from his teaching practice that Lin attempted to include as many students in the dialogue as possible by directly calling on them and inviting them to respond, as well as challenging them (evident from the increasing proportion of *codes IB and CH*, accounting for 10.5% and 9%, respectively). Moreover, to engage students in cultivating their interest in history, Lin’s pedagogical approach consisted of numerous interesting historical stories and personal experiences as a metaphorical link to the historical accounts in the curriculum (increasingly *coded AC*, from five to 20 through the stages).

In the first excerpt (Table 5.10), the lesson focused on the history of the Taiwanese aboriginal rights movement in the late twentieth century. Following Lin’s lecture, he used a poem written by an aboriginal poet as supplementary material to open a dialogue with the students (see the excerpt). The teacher called on certain students who fell asleep during the lecture and asked them to read out one stanza of the poem, followed by a few questions related to the curriculum content. Three students were engaged in the dialogue; however, few students voluntarily answered Lin’s question.

In the lesson from which the second excerpt (Table 5.11) was selected, the teacher discussed the reasons for the outbreak of the 228 Massacre (1947–1948, an infamous incident in Taiwan) in terms of the political, economic, and sociocultural background. At the outset of the lesson, Lin played a video about the 2019 protests in Hong Kong to introduce the lesson, followed by a brief outline of the timeline prior to the Massacre. Another video about the incident was played, and the teacher–pupil dialogue on the reasons for the incident took place in the midst of the video.

Analysis and commentary. The analysis of the first excerpt (Table 5.10) indicates that the teacher used strategies to guide students to focus on the dialogue analysing the poem based on their substantial concepts of historical knowledge. For example, in *L1*, Lin called on one student, Ken, whom he noticed falling asleep during the lecture, and asked him to read out the poem (*coded G*). After Ken finished reading, Lin asked him a question that required Ken to reason using both with his literal competency (to analyse the underlying meaning of the poem) and historical knowledge from previous lessons (Hsiao, 2009; Lee, 2005). However, between Lin and Ken’s exchange (from *L1* to *L7*), after Ken failed to answer the question (in *L6*), Beth voluntarily joined in the dialogue, which is quite rare in Taiwanese classrooms, in which students are usually more passively engaged (Song, 2008). From *L11*, another student, Phil, who also fell asleep, was called on by Lin to read out the following stanza of the poem (*coded G*). Lin then

asked him a question that demanded sophisticated competence of historical thinking based on the sources and a certain amount of knowledge of Taiwanese aboriginal history (*L13, coded BH*). Phil answered the question and received positive feedback from Lin (*L15, coded RD*), who then opened another dialogue with another student (Jason) by asking the last question about the poem (also in *L15, coded G*). Notable, too, was that another student joined the dialogue without being called upon, but the teacher redirected the question towards Jason by asking him to ‘*speak up*’ (in *L21, coded G*). The whole dialogue was then closed when Lin summarised Jason’s answer and confirmed with whole class that no questions remained (*L25, coded G and CA*).

The second excerpt (Table 5.11) provides a rich demonstration of the use of hybrid dialogue in dialogic space, which is embedded in the monologue. The entire structure of this exchange is derived from the teacher-centred monologue during the lecture on the incident. However, it is worth exploring how Lin opened up the dialogic space from the way that he structured his talk. First, Lin used the current situation in Hong Kong as an example and motivation to engage students’ interest in the lesson on the 228 Massacre (*L1, coded A*; Wineburg, 2010). This approach successfully created an encouraging stage for dialogic space for further discussion (van Boxtel and van Drie, 2017; Wegerif, 2011). From *L3* to *L17*, the discussion focused on the background to the Massacre, which provided the students with sufficient contextual background about a certain historical account (Lee, 2005). The incident has been widely acknowledged as a tragic massacre for the past few decades; therefore, it was quite controversial for the teacher to open a dialogue with a statement that involved the word ‘well’ in the description (‘*Chen- Yi has done his job really well,*’ in *L21*). However, as the dialogue unfolded, the approach allowed students to take a very different perspective than the majority’s narrative, with the teacher explicitly instructing regarding historical empathy (‘*If you were Chen Yi and you came to Taiwan, and your purpose was to take over, what would you do?*’ in *L21, coded CX and MP*; Endacott and Brooks, 2013). This approach was repeatedly employed in several lines (e.g., *L23, L27, and L35*) as a constant reminder for the students to take historical perspectives while reasoning with a causal relationship situated in a contextual historical background (van Drie and van Boxel, 2008, 2018).

Table 5.10 Discussion on the Aboriginal's Right Movement in 1980s.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	我們從莫那能，原權會的領袖之一那邊開始唸，這是他寫的詩：〈恢復我們的姓名〉，他們正名運動很重要的概念，我們從這邊看一下，你唸一下吧！（請Ken 讀詩）	We started reading from Monaneng, one of the leaders of the Aboriginal's Right Committee. This is a poem written by him: "Restore Our Names". They are a very important concept of the rectification movement. Let's look at it from here, and read it. Right! (<i>Ask Ken to read the poem</i>)	G	IB
Ken	2	(唸詩)	(<i>Reading poem</i>)		
Teacher	3	你唸的很沒有感情啊！（笑）好，我問你，人類學的報告哪時候就有的？	You should put more emotions when reading it! (Laughs) Fine, let me ask you, when did they have anthropological report?	IB	Q
Ken	4	日治時期。	Taiwan under Japanese rule.		
Teacher	5	日治時期，誰？	Under Japanese rule, who?	Q	
Ken	6	伊... (停頓)	In...(pause)		
Teacher	7	對，伊能[	Yes, Ino[
Beth	8	[伊能嘉矩。	[Ino Kanori		
Teacher	9	對，伊能嘉矩跟烏居[	Yes, Ino Kanori and Torii[
Ken	10	[烏居龍藏	[Torii Ryuzo		
Teacher	11	對，烏居龍藏，好坐下吧！另外一個，Phil 你剛剛也睡著了，來幫我們接下去唸。請站起來。	Yes, Torii Ryuzo, alright, sit down. Next, Phil, you also fell asleep. Read the next paragraph for us. Please stand up.	G	IB
Phil	12	(唸詩)	(<i>Reading poem</i>)		

Teacher	13	好，請坐，請告訴我，為什麼他的姓名在身分證的表格被埋沒了？（停頓）請用你的知識回答，想看看。	Okay, please sit down. Please tell me, why is his name buried in the ID card form? (Pause) Please answer the question based on your knowledge. Think about it.	BH	
Phil	14	他中華民國返籍	He became the citizen of Republic of China.		
Teacher	15	對！請坐。身分證上面除了一個很重要你在這個國家的編號外，還有你的名字。可是他的名字是什麼？他要改成什麼？漢姓，所以在身分證上面看不到他的原住民名字。...了解嗎？這段文字，莫那能用非常淺顯的文字來表達出了原住民的困境，可以嗎？我簡單地說，就是這樣吧！可以吧！好，那就再請 Jason 唸完最後一段。	Yes! In addition to a very important number of your country on the ID card, there is also your name. But what is his name? What name is he going to change? His surname is a family name of Han ethnicity, so his aboriginal name cannot be seen on the ID card. ...understood? In this passage, Monaneng uses very simple words to express the plight of the aborigines, right? I simply said, that's it! OK! OK, then Jason please finish the last paragraph.	G	IB
Jason	16	（唸詩）	(Reading poem)		
Teacher	17	請問你覺得他要的是什麼？（停頓）沒關係，你自己說，Jason 你覺得他要的是什麼？	What do you think he wants to say? (Pauses) It doesn't alright. You could say whatever you like. What do you think he wants, Jason?	IB	Q
Jason	18	正名吧。	Maybe name rectification.		
Teacher	19	嗯？	Yes?	CH	
Nate	20	他說他想要一個正名。	He said he wants name rectification.		
Teacher	21	正名嗎？你自己說，大聲一點，我聽不到你講話。	Name rectification? Could you speak up? I can't hear you.	G	IB
Jason	22	正確的名字。	The correct name.		

Teacher	23	他只要名字嗎?	He wants only the name?	CH	
Jason	24	還有傳統。	And traditions.		
Teacher	25	對, 除了名字還有傳統文化他都要, 但第一點他要的是正名。這樣可以嗎? ...到這邊這樣沒問題吧? 今天, 我的課程就到這邊。	Yes he wants both name and traditions. But the first thing is name rectification, is that OK? Got any problems? Right, this is the end of class.	G	CA

Table 5.11 Discussion on the outbreaks of the 228 Massacre.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	好來同學, 今日香港會不會是明日台灣?	Right, so do you think what is happening to Hong Kong today will become the future of Taiwan?	AC	
Ana	2	會	Yes		
Teacher	3	我不知道, 但我可以告訴你, 今日香港是昨日台灣。先想一想, 1945 年日本撤退了之後, 國民政府哪時候到台灣接收? (停頓) 國民政府哪時候到台灣接收?	I don't know, but I can tell you that Hong Kong now is what Taiwan was in the past. Firstly, think about it. After Japan retreat in 1945, when did the KMT come to Taiwan to take over? (Pause) When did the KMT come to Taiwan to accept it? ?	TC	
Carrie	4	1945	1945.		
Teacher	5	1945 什麼時候? 10 月 25 號吧! 有人說是光復, 這已經講過了, 完全都忘記了嗎? 蔣中正是為什麼來台灣接收?	When in 1945? 25 October! Somebody calls it Retrocession, remember? Why did Chiang Kai-shek come to Taiwan?	BC	CA

Burt	6	撤退來台灣	They fled to Taiwan.		
Dennis	7	聯合國命令	By the order of UN.		
Teacher	8	對，這一段是因為聯合國給他命令來台灣接收，中間基本上「接收」的意思是，把日本的東西收到他的口袋裡面去。請問中國正在幹嘛？	Yes, it was because the United Nations gave him an order to come to Taiwan to receive it. Basically, "received" meant to take Japanese things into his pocket. What was China doing at that time?	CX	Q
Elisa	9	在內戰。	In Civil War.		
Teacher	10	正在國共內戰，可以吧？那台灣要扮演怎麼樣的角色？你們覺得呢？	In civil war, right? What role did Taiwan play then? What do you think?	CX	IB
Dennis	11	後援的角色	The role of backup.		
Teacher	12	後援的角色？	The role of backup?	RD	
Dennis	13	基地	The base.		
Teacher	14	基地的角色。所以台灣基本上在接收這件事情應該怎麼做？（停頓）Frank 你覺得應該怎麼做？立場是什麼？	The base. So what should Taiwan do in terms of the issue of receiving? <i>(Pauses)</i> Frank, what do you think should be done? What is your perspective?	IB	Q
Frank	15	幫國民黨進行後援。	Providing backup for KMT.		
Teacher	16	後援，對你們說的都對。1947 年二月份爆發了什麼事？	Backup. What you guys said was all right. What happened in February 1947?	RD	TC
Carrie	17	二二八	228 Massacre.		
Teacher	18	好，這段你們國中應該學過了，給你們看另一段影片（播放影片）。	Right, you have probably learned about this in junior high. Let me show you another clip. <i>(Play clip)</i>	G	

Teacher	19	(暫停影片) 之所以會爆發 228 事件, 我這邊要先講一下, 是因為接收接得好, 是誰來台灣接收?	(Pause clip) The reason why 228 Massacre broke out, I have to talk about it first, is that the takeover was well executed. Who came to Taiwan to take over?	IB	
Class	20	陳儀。	Chen-Yi.		
Teacher	21	陳儀做得好, 他把台灣的東西都運往中國大陸, 陳儀哪些方面做得好? 政治方面、經濟方面還有社會方面都做得不錯。請問政治的話他怎麼做? 你覺得如果你是陳儀, 你到台灣來, 你的目的是要接收, 你會怎麼做? (停頓) 你的目的是要接收, 政治上你會怎麼做?	Chen- Yi has done his job really well. He shipped everything from Taiwan to Mainland China. What aspects did Chen Yi do well? The political, economic and social aspects are all well. What would he do in terms of politics? What do you think if you were Chen Yi and you came to Taiwan, your purpose was to take over, what would you do? (Pause) Your purpose is to receive, what would you do politically?	CX	MP
Garry	22	先弄出一個自己的政府。	To establish his own government.		
Teacher	23	對, 所以基本上他在政治上成立了一個很特殊的單位叫做「行政長官公署」, 他的權力集中在一起, 對台灣人來講其實就是另外一個新的總督府。OK, 政治上還可以怎麼做? 有沒有看到課本, 他怎麼說? 如果你是陳儀, 你會用誰?	Yes, so basically he set up a very special political unit called the "Chief Executive Office." His power is concentrated, and for Taiwanese it is actually another Japanese government office. OK, what else can be done politically? Did you see in the textbook, what did he say? If you were Chen Yi, who would you use?	CX	MP
Carrie	24	用中國人。	Chinese.		
Teacher	25	用中國人, 對就是外省人, 那這批外省人都在幹嘛?	Chinese, yes, or it's called 'Mainlanders' and what have they done?	RD	

Carrie	26	貪污。	Corrupting.		
Teacher	27	對，貪污很嚴重。好，那經濟上如果你 是陳儀，你要怎麼做？Harry 如果你 你，你到台灣來接收，你會怎麼做？	Yes, it was a very serious issue back then. Okay, if you were Chen Yi, what would you do financially? Harry, what would you do?	CX	IB
Harry	28	繳稅！	Tax!		
Teacher	29	繳稅？稅是一定得交，這是沒錯，那還 有呢？	Tax? Of course, what else?	RD	
Harry	30	專賣制度。	Sale Monopoly System.		
Teacher	31	專賣，經濟上他搞專賣制度，他擴及 很多民生用品，例如菸、酒、還有很 多。還有除了這個之外，你要把專賣 的物資接收的物資幹嘛？	Monopoly, yes in terms of economics, there was monopoly system for many products, such as tobaccos, wines and more. So besides this, what did he do with these products that he collected from the system?	Q	
Burt	32	運到中國	To ship to China.		
Teacher	33	對運往大陸，運輸變得很重要，那這 邊就有一個問題，假如你把物資都運 往大陸去，所有的東西基本上都專賣 得很嚴格，還有警察在抓，然後台灣 的東西全部運往上海，所以台灣會怎 樣？	Yes shipping to China so the transportation became quite important. There is a problem here. If you ship all the materials to the mainland, basically everything is sold strictly under the monopoly system, and the police are catching them, and then all the things from Taiwan were shipped to Shanghai, so what would happen to Taiwan?	Q	CX
Carrie	34	物價[	Prices[
Teacher	35	[就物價上漲，可以吼，沒錯通膨很嚴 重。這問題全部來了，雖然你是聯合 國派來接受的，但蔣中正把所有日產	[Prices went up, right? Yes the inflation was quite serious. And there were more problems here. Although you were sent by the United Nations to accept it, Chiang took	CX	MP

		都直接接收到自己口袋裡面了。再來，在社會上，你是陳儀，你會怎麼做？	all the property left by the Japanese directly into his pocket. Next, societally, if you were Chen-Yi, what would you do?	
Lan	36	把台灣視為殖民地。	Treat Taiwan as a colony.	
Teacher	37	把台灣視為是殖民地，新的一個殖民地，是這樣嗎？在社會文化上面必須要加強什麼東西？你要告訴統治的人，你是什麼人？	Treat Taiwan as a colony, another colony, right? What must be strengthened in terms of social and culture? You want to tell the people that you rule: what nationality are you?	CH
Dennis	38	中國人。	Chinese.	
Teacher	39	你是中國人，所以就要去日本化，再中國化。這樣可以吧？（播放影片）。	You are Chinese so it is a process of de-Japanisation and re-Sinicisation. Understood? <i>(Resume to the clip)</i>	G

Teacher Chen

Overview and Context

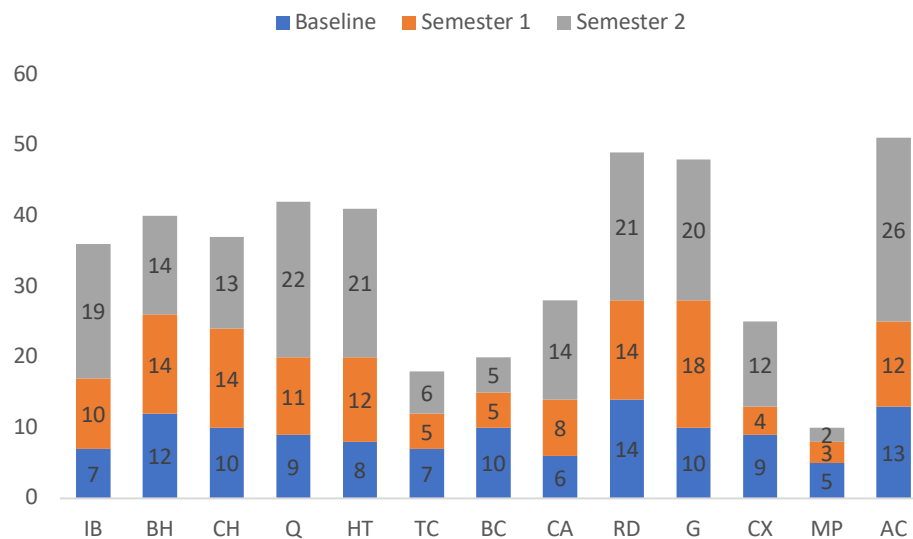


Figure 5.9 Frequencies of codes for Chen's class at three different stages.

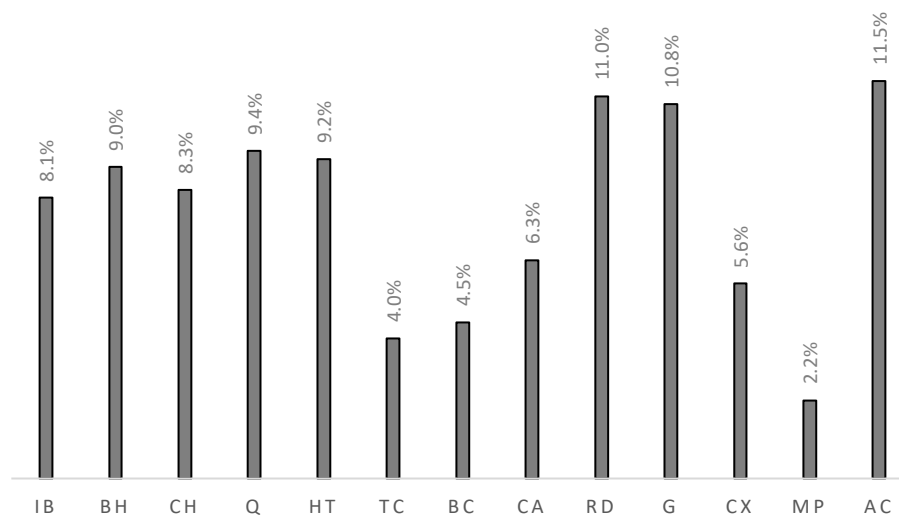


Figure 5.10 Comparison of percentages of different codes in Chen's classrooms.

In Chen's class, attuned to his own epistemic beliefs on history regarding the importance of inquiry- and source-based history education, many activities were designed using historical sources and multimedia materials, such as music and films. With various activities, high-quality teacher–pupil dialogue was observed. From the analysis in Figure 5.9 and Figure 5.10, the relatively equal distribution of most codes (8–11%) supports the observation mentioned above. Moreover, despite the pandemic in the second semester, activities remained a crucial part of the lesson design, such as

group work for discussing historical texts, which increased the classroom dialogue, as evident in the 50% increase to 195 counts in the second semester (see Figure 5.9). From his interviews, Chen stated that one goal in history education is to equip students with sufficient historical knowledge and the ability to think historically to consider current issues in today's world. Therefore, as represented by the increasing numbers of the code AC (from 13 to 26), Chen often, at the outset of the lesson, opened the dialogue with current affairs, not only to motivate the students' interest in history, but also to open a dialogue between the past and the present (Carr, 1961).

The first excerpt (Table 5.12) was chosen from a lesson in the first semester of the second grade on Roman history. The lesson was conducted in the following stages. First, Chen briefly introduced the origin of the Roman civilisation with the mythical story of the twin brothers Romulus and Remus to provide historical background for further discussion. Next, a worksheet with four historical sources about politics in the Roman Republic was distributed to the students, who were asked to read them while thinking about two questions posed by the teacher. Then, as evident in Table 5.12, the teacher–pupil dialogue in this exchange was opened up by the questions. More questions were asked following this discussion (not in the table below).

The second excerpt (Table 5.13) was selected from a lesson in the second semester. This lesson introduced the concepts of nationalism in nineteenth-century Europe, particularly the formation of the modern nations of Germany and Italy. The exchange in Table 5.13 highlights the discussion of the definition of 'nation', which served as a foundation to the introduction of the idea of 'Imagined Communities', a highly academic term proposed by Benedict Anderson (2006). Following the discussion, Chen lectured on the history of the nation of Germany in the modern period and played some music from that period as supplementary material for the pupils to have a better understanding of the concept of 'Nationalism'.

Analysis and commentary. In the first excerpt (Table 5.12), the analysis indicates Chen employed the techniques to invite students to build up ideas while challenging and questioning them by proposing historical questions (*coded IB, CH, and Q*). Moreover, the high frequency of code G demonstrates that Chen constantly restructured and rephrased the questions to direct students to focus on the essence of the inquiry to participate in the dialogic space created by hybrid dialogue (Wegerif, 2011). In the excerpt, the two fundamental questions asked were, '*What are the features of politics in the Roman Republic?*' (L1) and '*Does any modern country have a similar political system?*' (L2). After posing the questions, no response from the students was received.

Therefore, Chen used a ‘lottery’ system to call on students to engage them in the dialogue. This challenge and others, such as overly short responses from the students or reluctance to answer, are illustrated in this exchange (Husbands, 1996; Song, 2008). However, as van Drie and van Boxtel (2008) argue, the ability to ask or answer a historical question is the fundamental key to foster historical thinking. Many factors could contribute to these issues. For instance, the linguistics gap involves the differences in the preconceptions about ‘everyday language’ between teachers and students, which might cause historical epistemological obstacles (Husbands, 1996; Lee, 2005 ; Wineburg, 2010). This excerpt reveals Chen’s solutions to the issues. First, the dialogue (*from L4 to L11*) between Chen and Tim moved in a circle with no deeper interthinking (Littleton and Mercer, 2013). When Chen discovered the problem, he reformulated and simplified the question to focus on the political system of Roman citizens (‘*So, what do you think the reasons were for the existence of a tribune in Roman government?*’ in *L18, coded BC and G*). Tim then understood the essence of the question and was able to provide an answer (‘*To protect citizens’ rights*’, in *L21*), which was strongly praised by the teacher (‘*That’s right! Very good!*’, in *L22*). This response also set the foundation of historical concepts for further discussion.

The final three lines of this excerpt contain the teacher’s monologue, which demonstrates how a ‘monologue’ can engage students in ‘long-term dialogue’ in hybrid dialogue (Wegerif, 2018). In the discipline of history, long-term dialogue refers to the presence of cultural and virtual voices embedded in a long-term dialogue shared within humans (Bakhtin, 1981), which includes sophisticated critical investigation and analysis of the evidence of the past (Lévesque, 2008). Hence, from the latter part of this excerpt, the surface structure appears to be monologic, but in terms of function it is dialogic in nature (Boyd, 2016). To become hybrid dialogue, a certain degree of self-dialogue must transcend from monologic self to dialogic self (van der Veen, et al. 2018; Wegerif, 2011). This process was observed, for instance, in *L23*, in which the teacher asked a question (‘*Why would the nobles agree to this?*’ coded *BC*), followed by a self-response. This approach allows pupils, implicitly and internally, to join the dialogic space opened up by the teacher in the sense of long-term cultural discussion (Guan, 2013; Li and Wegerif, 2014).

The second excerpt (Table 5.13) demonstrates how Chen introduced the highly conceptual and rather unfamiliar term of *Imagined Communities* (Anderson, 2006) to the students. He did this by opening up dialogue by employing lived experience that is familiar to the pupils’ (Lee, 2005). In the first line, Chen directly wrote down the word ‘*nationalism?*’ (「民族主義」) on the blackboard to introduce the question to students,

then drew lots to call on students (*coded IB and Q*). Following Nina's response (*in L2*), Chen reconfirmed her answer (*coded G*) and then challenged her with a simple yet controversial question ('*Do you consider yourself Taiwanese?*') to motivate more interest in this topic (*L5, coded CH*). In Taiwan, political identity has been a controversial but unavoidable topic in the history classroom, which teachers should deal with sensitively (Chen, 2013). In this discussion, Chen explored the topic to clarify the ambiguous meaning of 'nation' from a historical perspective (*in L21*). It is also interesting to note how Chen kept the dialogue moving by opening up the space to the whole class (Rojas- Drummond et al., 2013). For instance, from *L7* to *L13*, following Nina's response, Chen reformulated her answer into an extensive question directed to the whole class (see *L7, coded G*). At the end of the discussion, Chen finally introduced the term, *Imagined Communities*, to the class and provided a clear definition and the important role it played in dealing with the historical concept of '*nationalism*' (*in L24, coded HT*).

Table 5.12 Discussion on the politics in Roman Republic.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	我想要問大家第一個問題是，所以這一套政治制度，這樣看起來組成羅馬帝國的核心，他們自己覺得是什麼？就是羅馬帝國是由什麼組成的？他們自己覺得？	The first question I want to ask you is, so this set of political systems, what do you think the core of the Roman Empire is? What are the features of politics in the Roman Republic? What do you think?	Q	IB
Teacher	2	好第二個，你覺得這一套政治體系你覺得，看起來有什麼特色？有一個點你可以去想一下，現代國家有沒有哪個國家有類似的政治制度？好兩個問題，	OK the second question, what do you think this political system look like? There is one thing you can think about. Does any modern country have a similar political system? Two questions. <i>(pause)</i>	Q	AC
Teacher	3	好來同學 Tim，這應該是一眼可見的問題拉，我們有兩個線索，一個是 SPQR，羅馬自己的自稱，還有刻在建築物上面的自稱還有寫在文件的自稱叫做 SPQR，叫做元老院與人民，他們的政治制度是長這樣就是有區分兩塊。	Ok, Tim, this is quite obvious. We have two clues. One is SPQR, a name Rome called herself, engraved on the building, and the name written on the document called SPQR, which is called the Senate and the People. Their political system is like this and there is a distinction.	IB	BH
Teacher	4	那請問一下這樣來看，你覺得羅馬人覺得自己政治主體是什麼？他們的政	Looking at it this way, what do you think the Romans feel about their political subject? How is their politics and government constituted? If you see from their name[	BH	Q

		治，政府是怎麼樣構成的？如果從名稱上來看的話[
Tim	5	[菁英	[The elites		
Teacher	6	只有菁英嗎？	Only the elites?	CH	
Tim	7	還有人民	And the people.		
Teacher	8	還有人民，那怎麼區分？我剛剛說，這兩個是用財產區分，我們說跟希臘人最大的差別就是，其實古時候的人通常可以運用財產來做區分階級地位，所以用財產大概可以分成貴族跟平民。那元老院這邊是比較偏貴族，這邊是比較偏人民，所以我剛剛想問你的是，怎麼樣構成政治主體？我應該問你，什麼樣的階級構成羅馬的政治主體。	And the people, how to distinct these two classes? I just said that these two are distinguished by property. We said that the biggest difference with the Greeks is that people in ancient times can usually use property to distinguish class status, so property can probably be divided into nobles and commoners. The Senate is more aristocratic, and here are more people. So what I just wanted to ask you is how to constitute a political subject? I should ask you what class constitutes Rome's political subject.	AC	G
Tim	9	貴族	The aristocracy.		
Teacher	10	貴族，只有貴族嗎？那這邊呢？(指著黑板)所以他有一個設置叫做保民官嘛！所以他跟希臘的差別在哪裡？我上個禮拜講，希臘民主的特色是所有公民都可以參加嘛，對不對？那這個可以參加的人他分成哪兩個階層？	The aristocracy, just them? How about here (<i>point at the blackboard</i>). So it has a system called <i>Tribune</i> ! So what is the difference between it and Greece? I said in last week that the feature of Greek democracy is that all citizens can participate, right? So between the two classes of people, who can participate?	CH	G
Tim	11	貴族跟平民代表	The representatives from the nobles and commoners.		

Teacher	12	貴族跟平民代表，那你覺得為什麼要做這樣的區分？	The representatives from the nobles and commoners. Why do you think there is a need for such a distinction?	BC	IB
Tim	13	效率	For efficiency.		
Teacher	14	效率嗎？會什麼你覺得會有效率問題？	For efficiency? What makes you think it's a matter of efficiency?	CH	BC
Tim	15	因為人民比較少	Because there were less commoners.		
Teacher	16	因為人民比較少嗎？一個國家都是貴族比較多還是平民比較多？國家裡面比較強勢的人通常是誰？	Commoners were less? In a country, are there more nobles or commoners? Who has more power?	CH	G
Tim	17	貴族階級	The nobles.		
Teacher	18	比較有錢的貴族，那為什麼你覺得這個政治體制裡面需要一個以平民為主的政治措施？	The rich nobles, So what do you think the reasons for the existence of a Tribune in Roman government was?	BC	G
Tim	19	怕被剝削	To prevent deprivation.		
Teacher	20	怕被剝削，很好。那你覺得這樣的政治可能有什麼樣的特色？他注重的是什麼？他這麼做是代表，可能他們覺得這邊（平民）也很重要，那你覺得這樣的特色是什麼？	Prevent deprivation, good. So what is special about this? What is it focused on? Does that mean they thought the commoners were also important? What do you think?	RD	IB
Tim	21	保障人民權利	To protect citizens' rights.		
Teacher	22	保障人民權利，很好喔！沒錯！需要大家看出來的其實只有這點而已。我們可以發現，羅馬人他很明確就已經	To protect citizens' rights. Let's right, very good! We can find that the Romans have clearly discovered that there may be a problem of class antagonism in society, that is to say, nobles and commoners have conflicts, so we can't see this in Greek politics.	RD	CA

發現說社會上可能有階級對立的問題，就是說貴族跟平民本來就是會有衝突，那在希臘政治裡面我們比較看不到這一塊，羅馬人的政治制度很直接就表明，貴族本來就有可能會侵害到平民權利，所以當貴族跟平民一起推翻王政的時候，平民就要求，他們需要有他們保障的權利，所以就有保民官的措施。那其實還有另外一個你可以發現，其實我剛剛講得有點不太明確，就是什麼叫做政治的主體？就是構成這個國家的主要群體是什麼？在希臘那邊可能是市民菁英，可是在羅馬這邊你可以發現，他連名稱也都很故意地強調，我們的國家就是由元老院和人民組成的，我們國家的權利是貴族和平民共同共享的。所以這是他們共和體制的一大特色，在於這裡。他們是共享權力的。

Teacher 23

可是世界哪有那麼美好，為什麼貴族要同意？這是我們要解決的另一個問題。貴族之所以為貴族，就是因為他們比較有錢，那有錢可以幹嘛呢？以

Romans The political system directly shows that the nobles may infringe on the rights of the civilians. Therefore, when the nobles and the civilians overthrow the king's government, the civilians demand that they need their rights guaranteed. So there are measures to protect the civilian officials. In fact, there is another one that you can find. Actually, what I just said is a bit unclear, that is, what is the subject of politics? What are the main groups that make up this country? On the Greek side, it may be an elite citizen, but on the Roman side, you can find that his name also deliberately emphasized that our country is composed of the Senate and the People, and the rights of our country are shared by nobles and commoners. shared. So this is a major feature of their republican system. They share power.

But this world is not that perfect, why should the nobles agree? This is another problem we want to solve. Nobles are nobles because they are richer, so what can they do? In ancient times, when you were a soldier you had to buy your own equipment, so knights were all rich people because they could afford horses and heavy equipment. Then you

BC CX

前古時候當兵是要自己買裝備的，所以騎兵都是有錢人在當，因為他們買得起馬還有重裝備。那你是騎兵，參加比較高階的軍種，你才有機會立比較高的戰功。所以他是一個這樣的循環，貴族就是佔據這樣的位置，那平民大部分只能當步兵拉，因為你只買得起長槍跟盾牌，你其他都買不起，這樣子。所以是這樣子做區分的

Teacher 24 可是問題來了，打仗又不是只有騎兵的事情，步兵也一樣是重要的來源，所以民眾要怎麼樣去威脅貴族呢？主要就是以當兵的問題，平民的權力來源在於兵源的威脅。

Teacher 25 就是說，如果你不讓我參與政治，或是做出侵害我的事情，那我就拒絕當兵，那沒有兵的話，我就沒有辦法很好控制整個國家。所以他們是用這種方式來威脅貴族的。

are a knight, and only when you participate in a higher-ranking service. You have the opportunity to achieve higher combat merits. Therefore, it is such a cycle. The nobles occupy such a position. Most of the civilians can only be used as infantry soldiers, because you can only afford spears and shields, and you can't afford the others. So the distinction is made like this

But here comes the problem. Fighting is not just knights' job. Infantry is also an important source. So how can the people threaten the nobles? The main reason is the problem of being a soldier. The source of the power of civilians is the threat of the source of troops.

In other words, if you do not allow me to participate in politics or you do things that violate me, then I refuse to be a soldier. If there are no soldiers, it's hard to control the whole country well. So they threatened the nobles in this way.

Q

BC

Table 5.13 Discussion on the concept of nationalism in nineteenth century.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	我要問一下大家，民族的定義是什麼（在黑板上寫下「民族主義」）？我們要來問人，你被問到你可以有兩個選擇，你可以用自己的對於民族有沒有什麼想法？如果沒有什麼特別想法的話沒有關係，你可以講一下，如果是你的話要怎麼查、解決這個問題？好不好？（抽籤）Nina 來，你對民族有什麼想法嗎？或是要怎麼去找這個答案？	I want to ask everyone: what is the definition of a nation (<i>writes "nationalism" on the blackboard</i>)? You will be asked with two choices. Do you have any thoughts about the nation on your own? If you don't have any special ideas, it's okay. You can talk about it. If it's you, how do you explore and solve this problem? OK? (<i>Draw lots</i>) Nina, do you have any thoughts on the nation? Or how to find this answer?	IB	Q
Nina	2	就是擁有共同文化的一群人。	A group of people with shared culture.		
Teacher	3	共同文化（在黑板上寫）。好，很好，所以你的重點在文化嗎？	Shared culture (<i>write in the blackboard</i>). Good, very good, so you focus on the culture?	RD	G
Nina	4	對呀！	Yes!		
Teacher	5	好，你說民族的定義是共同文化的一群人，那我就要再問你一個問題，你覺得自己是台灣人嗎？	Good, so by your definition, let me ask you one more question: do you consider yourself as Taiwanese?	CH	IB
Nina	6	是吧！	Yes!		
Teacher	7	是？那台灣人就是類似民族的一個概念囉？我相信現在大部分的人都會覺	Yes? So that means Taiwanese is a concept of a nation? I believe that most people now consider themselves as Taiwanese. Nina just put forward a good explanation. In fact,	RD	G

		得自己是台灣人，剛剛 Nina 提出一個很好的解釋，其實你提出的這個是滿標準的解釋，我們現在可以討論一個問題，如果你說民族是擁有共同文化的一群人的話，那這個文化是什麼？有什麼樣的文化各位才會覺得是台灣人？文化包括很多層面。	the explanation you put forward is a standard explanation. We can now discuss a question. If you say that the nation has a shared culture, what kind of culture do you think you are- Taiwanese? Culture consists of many aspects.		
Aaron	8	吃的東西。	Food.		
Teacher	9	吃什麼當然是文化	Of course, food is culture.	RD	
Aaron	10	使用筷子吧？	Using chopsticks?		
Teacher	11	你說筷子嗎？對啊，但有很多國家都是使用筷子啊，而且你這又牽扯到一個很尷尬的問題，中國人也都用筷子啊！那還有什麼？	Chopsticks, you're saying? Yes, but many other countries use chopsticks too. It's a bit awkward. Chinese people also use chopsticks! What else?	CH	IB
Blaire	12	台語。	Taiwanese the language.		
Teacher	13	台語（在黑板寫下），有意思，台語是種語言，可是這也很尷尬，你自己覺得台語講得好嗎？一點點？所以語言確實是可以判斷你是否為台灣人的 一個要件，可是他會刪除掉很多的人，所以我們可以再想一下因為會講台語的人越來越少了。還有什麼？但你們至少講出語言是文化的重要特	Taiwanese (<i>write in the board</i>). Interesting, Taiwanese is a language, but it's also quite awkward. Do you think you speak Taiwanese really well? Just a bit? So language is indeed an important factor that can determine whether you are a Taiwanese, but it also excludes a lot of people. We can think about it again because there are fewer and fewer people who speak Taiwanese. What else? But you at least say that language is an important feature of culture. This is correct. Is there anything else? What else does it take to become a Taiwanese, Chris?	RD	IB

		徵，這是對的，還有沒有什麼？Chris 還有什麼是成為台灣人的條件？			
Chris	14	還有戶籍。	And family register.		
Teacher	15	戶籍？戶籍是文化嗎？	Family register? Is that culture?	CH	
Chris	16	自我認同。	Self-identity.		
Teacher	17	什麼意思？	What do you mean by that?	CH	IB
Chris	18	就是要自己擁有台灣人的自我認同。	I meant we need to self identify as Taiwanese.		
Teacher	19	對啊，那所以我就要問你那台灣人的 自我認同是什麼？像我們剛剛想台語 是種自我認同，但他有點難代表住在 台灣島上的人。你剛剛講戶籍也算 對，那戶籍算什麼？	Yes, then the question is what is Taiwanese' self-identity? Like what we said before, Taiwanese (the language) is a sort of self-identity but it lacks representation of people who live here. You said register, that is kind of correct. What do you mean by register?	Q	IB
Chris	20	證明。	It is a proof.		
Teacher	21	證明，其實你講的也是對的，這是很 直觀，法律上面的區分（在黑板上 寫）。就是國籍是最直接的判斷方 式。但老問題還是存在，所以其實同 學多多少少有一點概念，但又沒辦法 講的或是區分的把自己概念區分得很 明確。其實 Chris 剛剛也有講到關於認 同的問題，這就是屬於比較文化的問 題。（在黑板上寫下 identity）我有拼 錯嗎？所謂的身份認同，某一種程度	A proof. Actually you're right. This is quite straightforward. From the perspective of law, this is the most directly way to decide your nationality. Yet the problem still exists. So in fact, you all have more or less ideas about nation, but it's hard to tell or distinguish the concepts clearly. In fact, Chris just talked about the issue of identity, which is a cultural issue. <i>(Writes 'identity' on the blackboard)</i> Did I misspell it? The so-called identity, to a certain extent, is to identify what kind of person you are. So whether the language we just spoke, you are classifying people. In fact, food is also a way to classify people. What kind of food is considered Taiwanese?	RD	CA

就是辨識你這個人到底是屬於哪一類。所以各位不論是我們剛剛講的語言阿，都是在把人做一個分類，其實還有食物也是一個可以把人分類的方法。吃什麼食物算是台灣人？

Class 22 (*開始講食物*)

Teacher 23 對啊，有很多種，所以我們慢慢察覺到一個困難的地方就是，我們這些東西很難說出一個所以然，他會因為每個人對於這個東西的定義，都會有所不同，其實還有一個東西也很常分類的就是「氣質」（寫在黑板），這也是種分類的方式。

Teacher 24 所以回過頭來，剛剛 Nina 跟我們講的，他是共同文化的一群人，可是你會發現這一群人對於共同文化的想像、想法是不一樣的，所以其實他還有一個很重要的要件在於說，每個人對於這個想像不一樣。所以近代學者就對於這件事有一個很專門，聽起來很華麗，各位可以記起來的一個詞，

(*Talking about food*)

Yes, many kinds. So we gradually realized that one of the difficulties is that it is difficult to say one of these things. Therefore, because everyone's definition of this thing will be different, in fact, there is another thing that is often used for classified: "temperament." "*(Written on the blackboard)*. This is also a way of classification.

So looking back, Nina told us just now that a nation is a group of people with a shared culture, but you will find that this group of people has different imaginations and ideas about the same culture. So in fact, it has another very important preposition. Say, everyone has a different vision for this. So modern scholars have a very special idea about this matter, it sounds gorgeous, and you can remember a word, he says that nation is an "imaginary community" (*written on the blackboard*).

G

HT

CA

HT

他說民族就是一個「想像共同體」
(寫在黑板上)。

Teacher Huang

Overall and Context

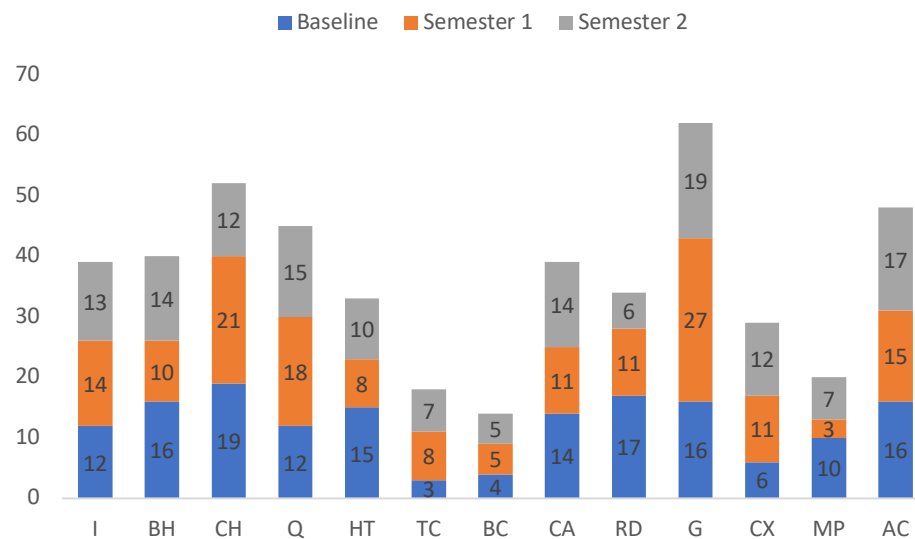


Figure 5.11 Frequencies of codes for Huang's class at three different stages.

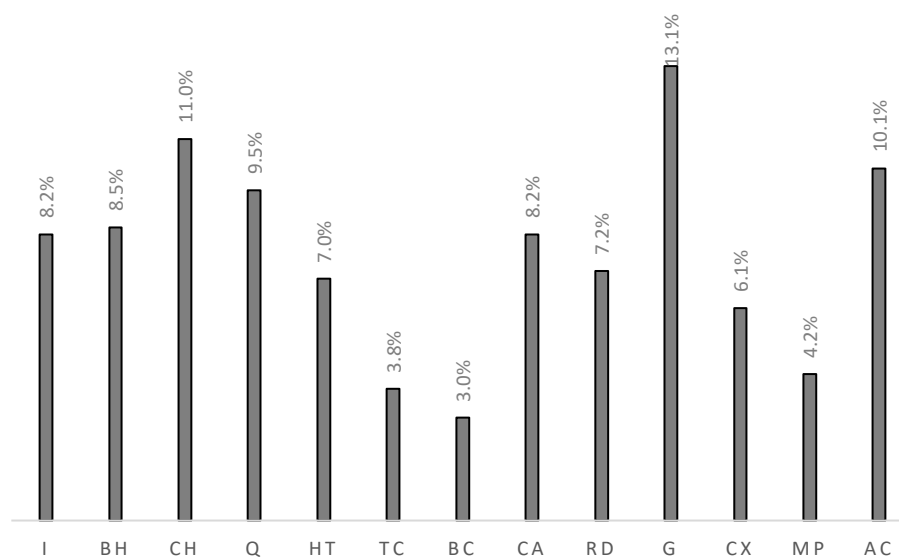


Figure 5.12 Comparison of percentages of different codes in Huang's classrooms.

As a highly experienced teacher with over 20 years' teaching experience, Huang's great passion for history and constant effort to improve her pedagogical technique meant she was willing to experiment with new ideas about history teaching. From her interviews, she stated that although there is a significant difference between historical research and history education, the components and ideas of how historians do history (as in second-order concepts, see Lee, 2005) should be taught in school to pupils. This belief

regarding the nature of the discipline and history education significantly impacted her teaching style (Hofer and Bendixen, 2012), which largely consisted of cooperative activities requiring a high level of historical thinking, such as analysing historical texts (Husbands, 1996; van Boxtel and van Drie, 2018). Moreover, going beyond the simplistic structural view of dialogue, her perspective about dialogic teaching aligns with this study by focusing on the ontological views of dialogue (Bakhtin, 1992), which highlight the ‘long-term dialogue’ transcending of time and space aided by various sources (Wegerif, 2011). The results of the coding analysis (Figure 5.11 and Figure 5.12) illustrate that, overall, during the first semester, among the high frequency of talks qualified as dialogue (counts 164), Huang often challenged students by asking further questions that required them to provide more detailed contextual historical background. Furthermore, she invited students to challenge the authoritative narratives from the textbook (*code CH*, accounting for 10.8%). The relatively high proportion of code G (12.9%) also indicates how Huang often used different scaffolding strategies to support dialogue or learning in historical thinking, such as group cooperation work and ‘playing experts’ (Husbands, 1996). However, due to the pandemic, all activities were cancelled, leading to a slight decrease in the number of the coded frequency (counts 154) in the second semester.

The first excerpt (Table 5.14) was chosen from a lesson at the beginning of the semester in September. In this lesson on the history of Taiwanese aboriginal people, Huang focused on the differences between *Gaishan* and *Pingpu* Indigenous people. The class was divided into 10 groups. Each group was assigned a worksheet. The students were required to work cooperatively to complete the questions, aided by the textbook and the supplementary materials provided by the teacher. The goal of the lesson was to teach pupils historical knowledge regarding Indigenous people and to scaffold students to achieve an understanding of how historians study typology using the methodology of ethnography as firsthand sources.

The second short exchange (Table 5.15) was selected from the first semester. The lesson was the introduction of the Taiwanese history of economics. In this lesson, the class was again divided into 10 groups, and each group was asked to find a ‘keyword’ in the chapter in the textbook that they found confusing yet crucial. Then, each group chose one keyword selected by another group and explained the concept of the word. The discussion in Table 5.15 illustrates a dialogue between the teacher and pupils from one group discussing the meaning of word ‘*NaoLiao*’ (腦寮).

Analysis and commentary. In the first excerpt (Table 5.14), the analysis indicates that

Huang often invited students to build on ideas (*coded IB*) and offered feedback (*coded RD*), as well as refocusing the dialogue on the questions with further use of historical thinking (*coded G*). For instance, following the first failed attempt to pose a question to the class (*'Does anyone want to share your answer with us?' in L1*), Huang directly invited Gina to share her answer to open up the dialogue and focused on the concept of *'Gaishan'* to simplify the question (van Drie and van Boxtel, 2008). After Gina's response, to further the dialogue (as in spiral IRF exchanges, see Rojas-Drummond, 2000), Huang extended Gina's answer to open another question regarding *Pingpu* (*'Why did Pinpu women farm and men hunt?' in L7*) by challenging the pupils' pre-existing epistemological structure (Lee, 2005; Hsiao, 2009) and the textbook's dominant epistemological imbalance (e.g., *'You have to be careful about the current typology in the textbook because it could be challenged and redefined once you gather more empirical evidence' in L17, coded CH and HT*). In the second part of the exchange, Huang employed the same technique to explore different possibilities regarding historical sources. During the exchange from L24 to L27, Huang demonstrated how to transform everyday language into academic disciplinary language (Husbands, 1996; Mercer, 1995; Northedge, 2010). When Helen offered an interesting response to Huang's question regarding the types of firsthand sources, the teacher provided really positive feedback (*'Excellent!' in L35*) and reformulated Helen's idea to introduce the concept of *'physical anthropology'* to demonstrate how historians *'do history'* in real life (Lee, 2005; L35, *coded G and HT*).

The second short excerpt (Table 5.15) demonstrates how the teacher started the dialogue with a different approach by calling pupils up to the front of the class. The purpose of this activity was to allow students to look for the historical significance from the textbook with their peers (Seixas, 1996; 2017) and to learn how to explain the substantial historical concepts aided by both textbook and technology (Lee, 2005). After Alice from the first group explained the meaning of *'NaoLiao'* (in L2), Huang asked the group to provide more contextual background behind the meaning of the word to highlight and direct students to the deeper understanding of this certain historical period of economic history (*'Why is this word mentioned in this paragraph?' in L5*). From L7 to L16, Huang constantly asked the student to elaborate her answer (e.g., *'This period? Which period?' in L7*). By doing so, Huang attempted to demonstrate the proper dialogue to build on ideas together, not only with Carrie, but also with the whole class.

Table 5.14 Discussion on the typology of Taiwanese Indigenous People.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	...我們也可以整理在這裡頭，好來，那 所以有沒有同學要來發獎勵卡的？有 沒有誰要跟我們分享，你怎麼寫的？這 是我們上次一開始講的，社會科很重要的 概念叫做分類，對吧？	...We could finish in here, alright. So Does anyone what to share your answer to us? It's a very important concept in social science called typology, that we discussed in the last lesson, right?	IB	HT
Class	2	對。(齊聲)	Yes! (<i>in unison</i>)		
Teacher	3	所以我們就來正確的分類，Gina 你要不 要來幫大家，你怎麼寫的？你把學習單 拿出來，你唸一下你高山族怎麼寫的？	Right, let's do this. Gina, would you share your answer to everybody? What do you write about Gaushan?	IB	
Gina	4	食小米文化。	The culture of millets.		
Teacher	5	談對沒錯，課本就寫拉...對，他是小米 文化，也有漁獵文化依據地理條件不 同。但統整起來，高山族的特色就是什 麼？他是跟大自然共存的，然後為什麼 只寫小米跟漁獵？表示他只吃魚跟小 米嗎？	Yes! As you can see from the textbook, they have the culture of millets and also fishing depends on the geographic differences. But does that mean they only eat millets and fish?	CH	Q
Gina	6	不是	No.		
Teacher	7	不是，小米跟魚是他的主食，他還會找 其他的，有什麼吃什麼。這樣聽懂嗎？ 所以課本這樣寫的時候你不要以為阿	No, it's their main dish but they also eat other things from nature. Understand? So don't believe everything on the textbook. This point is how they live with nature cooperatively and peacefully. In comparison to Pingpu people, some were farming. The	CH	BC

		他們都只有吃小米，他可能還有吃其他的野菜，重點是他們跟自然共存生活的概念。好，那課本有寫這邊，那對應過來平埔族呢？有沒有發現，有些是農耕，那天同學也有問到叫做刀耕火種的農耕方式，但是也有一些族是狩獵的。比較有趣的事，如果是農耕的話，是女生去種田，狩獵的話是男人去打獵。所以這個是高山族這邊沒有寫到的，高山族這邊是靠地區來分類。可是到平埔族這邊他有一個新的發現，多的發現，就是他跟性別有關，不見得跟族群有關。那同學我要問一下為什麼？為什麼平埔族會有這樣的女生是農耕男生是狩獵？	classmates also asked about the farming method called slash-and-burn farming the other day, but some groups were hunting. The more interesting thing is that if it is farming, it is girls who go to farm, and if it is hunting, it is men who go hunting. So this is not written here on the description of the Gaoshan people, and the Gaoshan people are classified by region. But when it comes to the Pingpu, there is a new discovery, which was related to gender, not necessarily to ethnic group. I want to ask why. Why is it that Pinpu women farmed and men hunted?		
Benson	8	因為狩獵比較危險	Because hunting is more dangerous.		
Teacher	9	有可能是這樣，那還有沒有？我們現在知道的平埔族有哪些？我們剛剛講過了，高山族我們現在知道比較多族，平埔族很少，課本怎麼講只有兩族，哪兩族？	It's one possibility, anything else? How many Pingpu Tribes do we know so far? We just talked about that we know more about Gaoshan than Pingpu from the textbook. There are only two tribes mentioned in the book, which two?	CH	Q
Besson	10	西拉雅族	Siraya.		
Teacher	11	西拉雅跟？	Siraya and?	IB	

Jake	12	凱達格蘭	Ketagalan.		
Teacher	13	對所以平埔族為什麼我們看到是這樣？有沒有可能因為我們只觀察這兩個族，剛好這兩個族就是這樣。阿可是以後我們在觀察別的族[	Yes, so why do we see the Pingpu people like this? Is it possible because we have only observed these two races, which happens to be the case for these two tribes. Ah but we are observing other tribes in the future[	CH	
Gina	14	[有可能	[possible		
Teacher	15	有沒有可能會打破這樣的分類？	Is it possible to break such classification?	CH	
Class	16	有(齊聲)!	Yes (<i>in unison</i>)!		
Teacher	17	太好了，所以你要注意到，所有分類都是暫時的，他以後是可以打破的，但你現在就是從既有的資料裡面去分類。這樣聽懂嗎？所以我們歷史科叫做歸納法，就是你看了好多好多的資料再整理起來，那這個學期我就是想要請同學好好的練習這樣的技巧。...	Fantastic! So you have to be careful about the current typology in the textbook because it could be challenged and redefined once you gather more empirical evidence. Do you understand? So in history department, it is called induction, which means you read a lot of materials and then sort them out. Then this semester I just want to ask you to practice such skills.	CH	HT
Teacher	18	所以你有沒有發現課本標題是重要的，不要只看標題下面的文字，你要看課本是怎麼分類的，那為什麼課本分成這三類？這才是要問的問題	So have you found that the title in the textbook is important? Don't just look at the text below the title. You have to see how the textbook is classified, so why are the textbooks divided into these three categories? This is the question worth asked.	BH	CH
Dylan	19	比較重要	It's more important.		
Teacher	20	對，就是課本展現人類學家用來觀察一個我們不知道的社會的方法，就是這三個。所以同樣道理，你可不可以寫一個	Yes, it is how the textbook shows the methods that anthropologists use to observe a society that we don't know, these three. So for the same reason, can you write a description for Han people? Most of us are Han. What is the life philosophy and	Q	HT

		漢族的？我們大部分是漢人，漢人的生活哲學跟生活方式是什麼？然後我們漢人的家族跟社會組織是什麼？然後再來漢人的宗教信仰跟祭典是什麼？是不是就可以跟原住民比對出來。...	lifestyle of Han people? Then, what are our Han family and social organization? Then, what are the religious beliefs and ceremonies of the Han people? Can it be compared with the indigenous people? ...		
Teacher	21	...再來，剛剛講的這些關於原住民的事情，我們是怎麼知道的？這是第七題要問的，對，我們是怎麼知道的？除了我們上禮拜看的東番記這些文字史料之外，還有哪些方法？好來。	...Moreover, how did we know these things about the indigenous people? This is the seventh question. Yes, how do we know? In addition to the written historical materials of Dongfanji that we read last week, what other methods are there? <i>(Ethan raises hand)</i>	Q	IB
Ethan	22	神話	Mythology.		
Teacher	23	對，神話傳說，所以我們很多都要去採集他們的神話傳說，就是前面講的口傳的故事，很好！這邊呢？	Yes mythology, so we need to collect their mythologies. It's what we called oral traditions. Great, how about here?	RD	IB
Fiona	24	食物	Food.		
Teacher	25	阿食物跟什麼？所以我們是研究什麼？什麼樣的文化？	Food and what? What do we study? What kind of culture?	Q	IB
Fiona	26	生活上	In life.		
Teacher	27	生活上，是，看得見的東西，所以叫做 物質文明 。很好吼，也可以看他們吃什麼穿什麼。再來呢？	In life, yes visible things. It's called material culture. Great, so you can observe what they eat and what they wear. What else?	HT	IB
Eric	28	祭典活動	Religious activities.		

Teacher	29	看他的祭典活動，對，親自體驗祭典活動，所以你去參加豐年祭、矮靈祭，你不是只是去娛樂而已，你也可以去做觀察。還有呢？同學在講的時候有沒有啟發你，你是不是可以把自己沒想到的也記錄下來。好，還有呢？	Go and see or experience their religious activities on your own. So when you go to the Harvest Festival and the Dwarf Spirit Festival, you are not just for entertainment, you can also do observations, anything else? Did your classmates inspire you when they talked about their answer? Can you also write down what you didn't think about? Okay, what else?	G	IB
Helen	30	身體構造	Physique structure.		
Teacher	31	身體構造，這個有意思喔！好可不可以詳細說明為什麼要研究人家的身體？	Physique structure, that's interesting. Can you elaborate more why studying other's physique?	RD	BC
Helen	32	是屍體	It's body.		
Teacher	33	屍體？有意思喔，你有觀察到，身體構造不是只有活著的人也有死的人。來再多講一點。	Body? Interesting. You've noticed that for physique structure, there are both living and dead. Could you say more?	IB	RD
Helen	34	不同國家的人住在不同地方，身體構造會不一樣。	People from different countries live in different places and have different body structures.		
Teacher	35	很好，所以他在講說，因為南島語族住在熱帶地區，他的身理構造可能會跟著在北方的人不一樣。沒有錯，太好了，他講到一個我沒想到今天會講的，叫做「體質人類學」...就是人類學的一個分類，透過醫學的解剖與生理的研究，了解不同地域的人他的體質上跟他的環	Excellent! So she is saying that because the Austronesian people live in the tropics, their physical structures may be different from those in the north. That's right, great. She mentioned something I didn't expect to talk about today. It's called "Physical Anthropology." ...It's a branch of anthropology. Through medical anatomy and physiology, what is the impact of understanding people from different regions on their physique and their environment? What different diseases would be created? So indeed	G	HT

境，會有什麼影響？會產生什麼不一樣的疾病。所以確實在台灣，我們後面會看到，日本統治台灣時期，就會有這個，熱帶醫學研究。

in Taiwan, we will see later in the textbook that there will be this when Japan ruled Taiwan, tropical medicine research

Table 5.15 Discussion on the concept of 'NaoLiao'.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	來接下來第一組請告訴大家 82 頁，這個「腦寮」講的是什麼？好來請上台。好接下來第四組請準備講買辦喔！好腦寮來講一下，什麼是，腦寮是頭腦的腦嗎？嚇死人[	Coming to the next group, please tell everyone in page 82, what does this " NaoLiao " mean? Come on, please come on stage. Okay, please prepare to talk about comprador, the fourth group! So, let's talk about it, what is it, is it really about the brain? Scary[	IB	Q
Alice	2	[腦寮就是製作樟腦的地方。就是有點像一個工廠，然後把樟腦樹變成樟腦的地方。	[NaoLiao is a place for making camphor. It's kind of like a factory, where the camphor trees were turned into camphor.		
Teacher	3	喔！OK！好極了！所以這一段在講什麼呢？所以腦寮是製作樟腦的地方，現在很多地方還有這樣的地名。比如說，有同學坐那個[	Ah! OK! Great! What is this paragraph about? So NaoLiao is where camphor is made, and many places still have such place names. For example, when you take the bus[	RD	AC
Alice	4	[貢寮	[GongLiao		

Teacher	5	[那個藍 32 線，到那個{馬祖堂}的那個公車路線，他現在還有這樣的地方，有這樣的寮吼。OK!那這一段呢？那這一段在講腦寮是什麼東西？82 頁的這一段。來，幫忙說明一下。為什麼這一段在講腦寮？好，上台來說。	[The Blue 32 Line, to the MaZao Tang, the place is still there. OK, how about this paragraph in page 82? Why this word was mentioned in this paragraph? Can you explain? Come on stage.	Q	IB
Carrie	6	(Carrie 上台)因為這個時候就是有國際貿易的商品，然後[	(Carrie goes onto the stage) Because during this period, they had international trade, and[
Teacher	7	[這時候，是什麼時候？	[period? Which period?	TC	
Carrie	8	嗯...開港過後。	Umm... after the harbour opened.		
Teacher	9	對，台灣開港以後。吼，OK，然後？	Yes after the harbour opened. Ok and?	IB	
Carrie	10	樟腦就是國際市場貿易比較多的商品[	Camphor was the major commodity in international trade [
Teacher	11	[對，所以	[Yes, so?	IB	
Carrie	12	就是有比較多的腦寮來專門製作樟腦。然後通常腦寮都設在那個原料樟樹皮。	More and more NaoLiao were built to make more camphor and store the barks of camphor tree.		
Teacher	13	對，樟樹。所以在地理位置上面，會比較傾向在台灣哪一個地理位置上面看到？哪邊？	Yes, camphor trees. Where could you see these trees in Taiwan? Which areas?	RD	Q
Carrie	14	山地。	Mountains.		
Teacher	15	山地，而且是北中南哪一部分的山地？	Mountains, in north, middle or south of Taiwan?	Q	

Carrie	16	北部。	North.		
Teacher	17	對，應該在北部比較靠山地的地方會有很多的腦寮。因為在開港後，樟腦是非常重要的國際貿易的商品。好，所以你就可以知道，在那個時代，19世紀後期開港以後，做開樟腦公司的製腦的工作就會有很多人做。OK。好極了！	Yes, there should be more NaoLiaos in the the mountain in northern Taiwan. Because after the opening of the port, camphor was a very important commodity for international trade. Okay, so you can know that in that era, after the opening of the port in the late 19th century, many people would do the camphor-making work in camphor companies. OK. Great!	CA	RD

Teacher Chou

Overall and Context

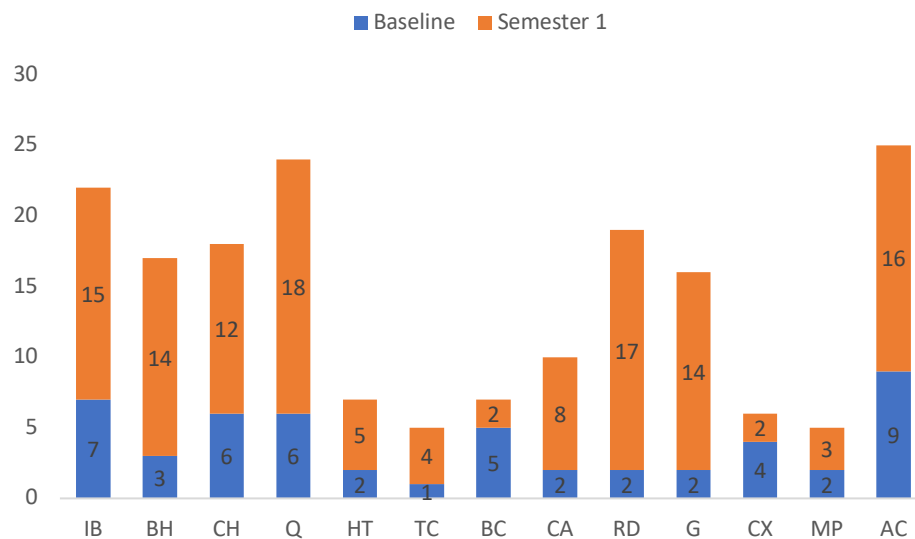


Figure 5.13 Frequencies of codes for Chou's class at two different stages.

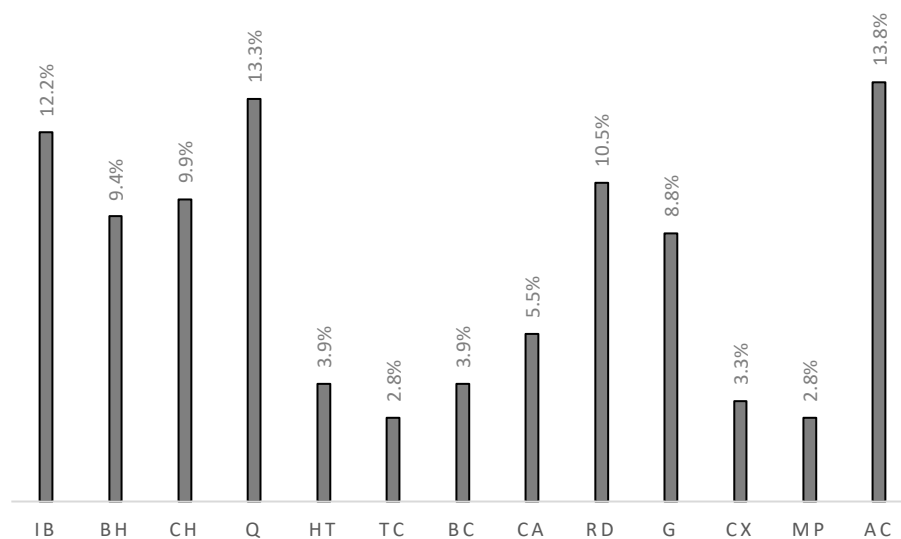


Figure 5.14 Comparison of percentages of different codes in Chou's classrooms.

Chou is a history teacher and a homeroom teacher of a Third Grade class, which is the final year of Taiwanese high school. Students in this grade face great pressure preparing for the college entrance exams, which take place at the end of the first and second semesters (January and July). Therefore, a huge proportion of the lessons was dedicated to exam preparation, such as reviewing content of previous curricula and taking mock exams. Lessons were often conducted in a traditional teacher-centred lecture style, as is evident from the relatively low frequency of codes (Figure 5.13) for the pre-

intervention period (51 times). However, following the workshops that introduced the concept of dialogic teaching, Chou began to experiment with different activities that successfully fostered more teacher–pupil dialogue in class, illustrated by the analysis (Figure 5.13 and Figure 5.14). The frequency of codes significantly increased to 130 times, with the emphasis on different types of questions and providing historical analogy to connect the past with the students’ own life experience (accounting for 13.3% and 13.8%, respectively). Unfortunately, due to the pandemic and the growing pressure of the second college entrance exams, Chou dropped out the study in the second semester.

Since dialogue was rarely observed in class before the programme and the dropout in the second semester, the only excerpt (Table 5.16) was selected from a lesson in October from the first semester. The lesson was a review lesson regarding the reformation in the late nineteenth century during the Qing Dynasty in China, which was taught in the second grade. Therefore, instead of lecturing, Chou designed an activity that required the students to employ their substantial historical concepts and components of historical thinking, such as analysing historical sources (Lee, 2005; van Drie and van Boxel, 2008, 2018). The resultant discussion focused on the essay written by a Chinese philosopher from the Qing Dynasty, *Zhang Zhidong*, who held a strong belief in military reform to form a more modern Western military system in China.

Analysis and commentary. In the excerpt (Table 5.16), after a few minutes of reading and discussing with peers, the teacher started the dialogue by asking several questions about the essay and highlighting the importance of answering the questions based on the texts (e.g., *‘From this excerpt of the essay, can you tell me...?’* in *L1*, coded *BH* and *IB*). It is rare that students answer teachers’ questions voluntarily in Taiwanese classrooms; however, in this exchange, four students demonstrated how to engage actively in whole-class dialogue. For instance, after Chou’s question in *L1*, Denice raised her hand to ask for approval to talk, she was then called on by the teacher. In *L2*, Denice’s rather short response prompted Chou to ask for further elaboration (*‘What do you mean by that? Can you be more specific?’* in *L5*, coded *IB*). It is interesting to note that in *L9*, after Chou offered feedback to Denice’s response, the teacher opened up the dialogic space to the whole class, instead of with Denice alone, by inviting others to challenge her answer (coded *CH* and *IB*). The same approach was employed in *L11* to invite more pupils into the dialogue and expand the level of historical thinking. The whole discussion then closed when Chou summarised the pupils’ ideas and synthesised them with her own thoughts (in *L19*, coded *CA* and *G*).

Table 5.16 Discussion on Zhang Zhidong's essay.

Agent	Line	Utterance	Translation	Code 1	Code 2
Teacher	1	我們先來解讀一下你手邊的資料，先看一下資料一，張之洞勸學篇，其實這一題也可以達到 How 的答案，你覺得張之洞在我摘的這一段文字裡頭，他主張怎麼樣的變法原則？或是他主張變法到什麼程度？看得出來嗎？好來，有沒有人要主動回答？來（Denice 舉手），好 Denice	Let's first interpret the information you have at hand. Let's take a look at Source 1, Zhang Zhidong's <i>Advising to Learn</i> . In fact, this question can also reach the answer to 'How'. Do you think Zhang Zhidong was, based on the text I picked, advocating the reform? From this excerpt of the essay, can you tell me what the principles of reform were? Or to what extent did he advocate reform? Can you tell? Okay, does anyone want to take the initiative to answer? Come (<i>Denice raises her hand</i>), Good Denice.	BH	IB
Denice	2	政教相護啊。	The combination of State and the Church.		
Teacher	3	什麼東西？	What do you mean?	CH	IB
Denice	4	政教相護。	State and the Church.		
Teacher	5	政教相護？怎樣護？什麼意思？翻白話一點	State and the Church? How? What do you mean by that? Can you be more specific?	IB	
Denice	6	就是他一定要結合在一起，他們才會更強大，就是他上面不是寫說什麼...之類的嗎。	It is that they must be combined together to make China stronger. Isn't he saying something on it...		
Teacher	7	對，所以他政教相護的教指的是什麼？	Yes, so the Church here in China was referred to?	Q	IB
Denice	8	道教。	Taoism.		

Teacher	9	喔？好來，有沒有人要補充，或是你覺得不是的？（Tina 舉手）好	<i>Oh? OK, anyone wants to jump in or you might disagree with what she said? (Tina raises her hand). Good.</i>	CH	IB
Tina	10	儒學	Confucianism.		
Teacher	11	儒學儒術，好很好！所以這個政就是中國的政治，教就是儒學，有沒有覺得不 OK？要補充的？就是兩個要相維一起，那我 follow 這個概念問喔，就是張之洞，他覺得變法要變到什麼程度？或是這文章有沒有什麼關鍵句你要補充的？來，（Mandy 舉手）來你講	Confucianism, good! So the State means the Empire of China and the Church means Confucianism. Does anyone have different thoughts? So they had to be combined together. OK, in that case, to what extent did he advocate reform? Do you see anything else from the text? (<i>Mandy raises her hand</i>). OK go ahead.	RD	IB
Mandy	12	他這邊說：「...」就是他說儒教的理念很重要，就是為什麼耶穌，他們西方人力量會這麼大，是因為他們還有兵力，所以就是他覺得中國的根基不要改不要動，但要把西方的兵力引進來。	He says: “...” In other words, he said that the beliefs from Confucianism were very important. That is why Jesus, the Westerns were so powerful, because they still have military strength. So he thinks that the foundation of China should not be changed, but the Western forces should be brought into China.		
Teacher	13	所以你看的是因為他說天主耶穌之教是因為兵力的關係，所以要強軍，就是加強軍隊[	So you see that because he said that the religion of God Jesus is powerful because of the strength of the army. Therefore, to strengthen the country is to strengthen the army [	CA	
Ricky	14	[但是他並沒有說什麼制度或想法有沒有一定要改變，就是精神層面他還是推崇儒教，所以他這應該是比較早期的做法。	[However, he did not say whether any system or ideas must be changed, that is, he still respects Confucianism on a spiritual level, so this should be an earlier approach.		

Teacher	15	早期，所以是哪一期？有自強、戊戌、庚子後新政？	Early? Which time period? There's Western Affairs Movement, Wuxu Reform and Late Qing Reforms.	IB	TC
Class	16	自強。(齊聲)	Western Affairs Movement.		
Teacher	17	自強的概念，不過他這本書寫的時間是在 1898 年，但是他還是 follow 概念，那概念應該可以說一直持續到什麼時候？	The concepts from Western Affairs Movement. However, the time he wrote this book was in 1898, but he still follows the concepts, which should last until when?	TC	
Ricky	18	一直持續到接近民國吧？	Until the early Republic?		
Teacher	19	對，說穿了其實一直到清末都是。對不對？好，所以同學有看到重點了吼，就是儒教很重要，所以張之洞在這一段，我幫你統整...	Yes, in fact, it was until the end of Qing Dynasty. right? Okay, so you have noticed the important points: Confucianism is very important. So Zhang Zhidong, from this text, I'm going to synthesise...	CA	G

5.2 Summary of the results

From the results of the quantitative analysis on coding frequency, most of the teachers heavily employed the use of ‘Invite to contribute or build on ideas’ (*coded IB*) and ‘Asking questions’ (*coded Q*), as demonstrated by the high percentages of these two codes in each individual’s analysis. The teachers employed these techniques to ask questions and open discussions. Furthermore, to continue the classroom dialogue, teachers often asked follow-up questions and invited pupils to build on others’ ideas. However, to foster pupils’ higher-order thinking (i.e., historical thinking), techniques such as ‘Build up historical causality’ (*coded BC*), ‘Contextualisation with sources’ (*coded CX*), and ‘Making historical analogy and comparison’ (*coded AC*) had to be used by teachers. These techniques can not only be used to expand the dialogue, but also to create a dialogic space for teachers and pupils to think cooperatively and explore possible historical explanations with careful scaffolding from teachers. Linguistic difficulties, such as historical terminology (Berti, 1994; Edwards, 1978; Husbands, 1996), can also be solved and addressed within this space.

Responding to the research question concerning the effectiveness of the TPD, the results indicate a positive trend in the teachers’ use of dialogue, as illustrated by the increased frequency of codes after the programme. All the teachers demonstrated an increase in the use of dialogue, with Chou having the most considerable gain of nearly 155%, whereas the frequency of Huang’s use of dialogue only went up by 1.3% compared with the baseline result from the end of the first semester. Regarding the second semester, although the pandemic impacted the design of the lessons, leading to extremely limited group cooperative activities, the teachers managed to maintain the quality of classroom dialogue, as evident in the increase in percentage compared with the baseline. Only the talk of Huang decreased regarding the frequency of the codes in the second semester. In the next chapter, I explore the results in more detail and provide possible explanations for the findings.

Chapter 6 Discussion

This study first aimed to explore teachers' and students' epistemic beliefs towards history as a discipline by employing ENA (Shaffer, 2017). I also examined classroom dialogue in history classrooms, emphasising teachers' talk. A coding scheme that reconceptualised the T-SEDA (Hennessy et al., 2019) and synthesised it with the observation instrument of HTR in class (Gestsdóttir et al., 2018) was developed. This scheme was used to investigate how the hybrid form of teachers' talk fostered students' historical thinking within the Taiwanese context. Regarding the third research aim, as both of the first two research aims were addressed through a DBR approach (Bakker, 2018), a TPD programme was designed and implemented to investigate the trajectory of both teachers' and students' personal epistemology, as well as teachers' use of classroom dialogue. In this chapter, I first discuss the findings from ENA, and then discuss the characteristics of the hybrid dialogue that emerged from the analysis. In the final section, the design of the TPD in this research is also discussed.

6.1 Historical epistemic beliefs

The study of personal epistemology has widely used questionnaires to generate a category-like model. However, such an approach has been criticised for oversimplifying the complexity of various dimensions of epistemic beliefs (e.g. Chinn, et al., 2011). Moreover, regarding the methodological issue, using questionnaires has also been challenged for its reliability and credibility (e.g. DeBacker et al., 2008). Therefore, in this research, a mixed approach was employed to combine the strengths of quantitative and qualitative methods. To build a model for historical epistemic beliefs, which is a salient gap in the literature, interviews were conducted. The rich data from the interviews provided fine-grained qualitative analysis to complement the statistical results from ENA to generate each individual's trajectory of personal epistemology, as illustrated by visualised network figures. The following discussion focuses on two overarching themes: the differences between individual trajectories of epistemic beliefs, and a possible model for historical epistemic beliefs.

6.1.1 Differences in individual trajectories of epistemic beliefs

The overall findings from ENA suggest that the domain-specific experts held a more advanced epistemic stance than the novices (in this research, history teachers and students, respectively), which are align with the previous research (Maggioni et al., 2004; Havekes et al., 2012). However, the findings indicate it might be difficult to categorise an individual's epistemic beliefs in a clear box, such as in category-like models underpinned by developmental perspectives (e.g., Hofer & Pintrich, 1997; Maggioni et al., 2004; Schommer-Aikins, 2002). There are two possible explanations

for this finding. One explanation is related to the types of questions asked to the participants in interviews. To explore their epistemic beliefs, the interview questions were designed around four topics: history learning (e.g., the nature of history), historians (e.g., the historical interpretation from historians), historical research (e.g., how to reason with contradictory historical sources), and history education (e.g., the style of teaching practice in history class). The participants displayed different epistemic stances toward each individual topic. A few teachers and students held rather objective perspectives towards historical knowledge when discussing history education. For instance, as mentioned in the chapter on analysing epistemic beliefs (see Chapter 4), one student (Mike) demonstrated a more relativist perspective towards historical knowledge (i.e., there is no absolute single truth), yet shifted to a copier stance with a more objective perspective regarding the source of knowledge, in which historical knowledge is clearly defined and provided by an expert in history, such as a highly experienced history teacher (Havekes et al., 2012; Kuhn, 1991; Maggioni et al., 2004). A similar contradiction was found by the teachers' discourse analysis. Teacher Chou confessed that for a substantial amount of class time, she taught students historical knowledge to prepare them for exams without any active engagement due to the pressure to achieve the curriculum goals, despite her strong beliefs regarding critical engagement in history.

The other possible explanation is the degree of familiarity with the questions. For most of the students, questions related to the nature of knowledge and knowing of a domain-specific discipline were quite novel (Hsiao, 2009), as is evident from their inconsistent responses during the interviews. Therefore, this aspect posed difficulties and complexity regarding placing an individual into a decisive category of epistemic belief (see also Greene and Yu, 2014). This study also found that the students tended to display more sophisticated epistemic beliefs (e.g., from copier stance to criterialist stance, see Havekes et al., 2012) when asked to clarify or elaborate their own responses. A few examples are found in the students' simple responses, such as from '*History is like a story*' to '*But I mean not everything in history is true*'. Regarding the teachers, such questions about the nature of history and the nature of history education had been asked and explored quite often during their own academic journeys. No inconsistency was found in their discourse; thus, it was easier to identify their personal epistemologies. However, one exception was Teacher Hsu's beliefs towards the existence of absolute truth in history. He reflected and revised his own response numerous times during the interviews. Such uncertainty might be due to his limited teaching experience and his beliefs not being fully fixed and developed (see also VanSledright and Reddy, 2014 for similar findings on prospective history teachers).

Regarding individual's trajectories of personal epistemology during an academic year, the results reveal that 28% of the participants ($N=8$: $N[Student]=7$, $N[Teacher]=1$) demonstrated significant change (i.e., $p<0.05$) in their epistemic beliefs. Among the students' changes, three major themes emerged from the findings. First, aligned with the studies by Havekes et al. (2012) and Maggioni et al. (2004), the students shifted from a more naïve and simple perspective about the nature of history, such as believing in the notion of '*History is like a fixed story*' (similar to copier stance) or '*History can be found in the historical texts*' (similar to borrower stance) to a more sophisticated stance in which they started to acknowledge the complexity of history due to the consideration of historical contexts.

Regarding the process of knowing, the students also became more aware of the subjectivity in the formation of historical knowledge and, thus, the limitation and uncertainty of the objective truth. The second major shift is related to the first one. To be able to identify the subjectivity in historical narrative, the students became more critically engaged with the use of historical thinking (van Drie and van Boxtel, 2007, 2018). In particular, by highlighting the source of knowledge, they considered the implicit personal ideology of the authors when asked to reason with conflicting historical texts. Even in class, the students reported they were more critically engaged with not only the narratives from the textbooks, but also the authority of the teachers. Such criticality resulted also in the last major shift in attitude towards history class. For instance, one student (Winnie) held a more positive attitude towards history class after the academic year because the pedagogical approach employed in class had been more dialogic. Winnie used to believe that history was merely about memorising historical knowledge (e.g., dates or names of historical figures), but the dialogic approach provided her with more space for thinking deeply and engaging in class, which she found '*really interesting*'.

Overall, regarding the changes in the teachers, only one (Teacher Chou) shifted significantly in her epistemic beliefs. This transition is clear in her teaching practice, in which she adopted a more dialogic approach to co-explore historical inquiry (Lévesque and Clark, 2018) with the students to accommodate the latest curriculum (NAER, 2018). She also placed greater emphasis on developing the students' historical thinking, such as contextualisation and historical empathy (Seixas, 1996, 2017). This change is evident in her increasing use of dialogue in class (see Chapter 5 for the analysis and results), which aligns with studies on the relationship between teacher beliefs and teaching practices (e.g., Clarke and Hollingsworth, 2002; Patrick and Pintrich, 2001; VanSledright and Reddy, 2014).

6.1.2 Model for historical epistemic beliefs

In this study, I employed ENA to analyse personal epistemologies of history as a discipline. Using ENA enabled the analysis to generate a model in accordance with the coding instrument, which was reconceptualised and synthesised from previous literature (e.g., Hofer & Pintrich, 1997; Maggioni et al., 2004; Schommer-Aikins, 2002). The model, as stated in the research aims, is not an attempt to provide a developmental category for each individual's epistemic beliefs (e.g., see King and Kitchener, 1994; Kuhn, 1991); instead, this study aims to provide a conceptual model for exploring the complexity and nuances in personal epistemologies with visualised patterns from ENA. In the rest of the chapter, I discuss some key patterns that emerged from the results of the analysis.

Pattern 1: 'Mirror' belief (CKO-SiKO-SoKO)

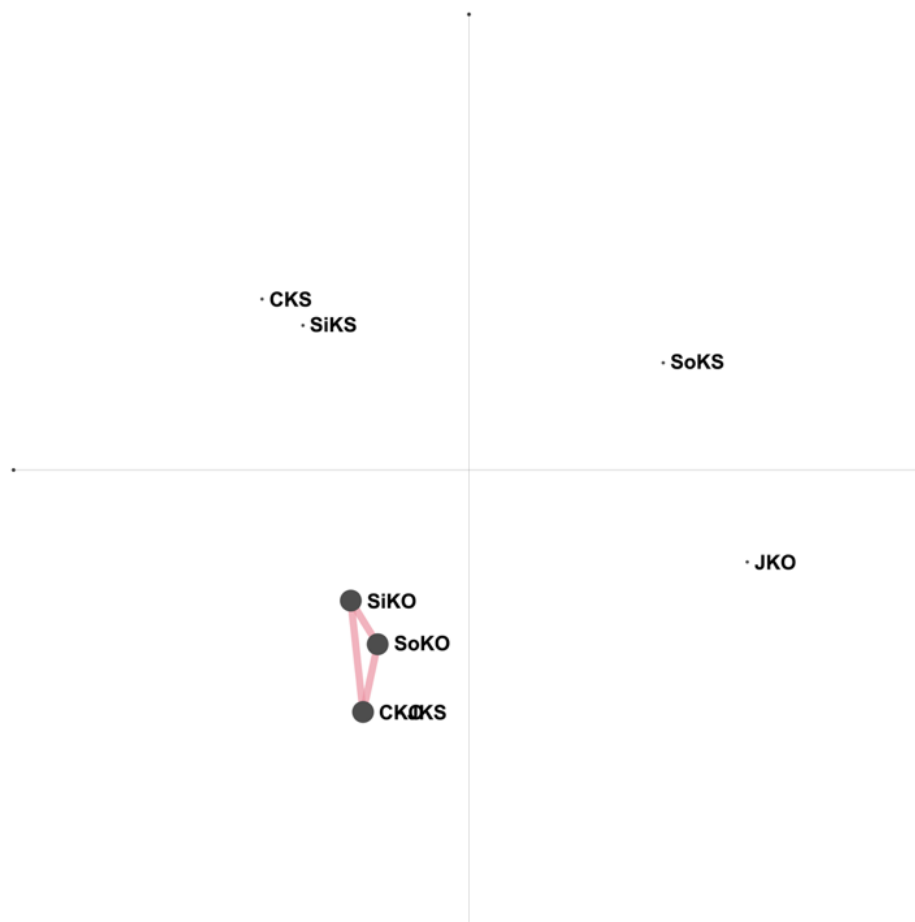


Figure 6.1 The pattern for 'Mirror belief'

The first key pattern found in this study aligns with what Kuhn (1991) refers to as *absolutist* and Maggioni et al. (2004) identified as *naïve realist*, which means the

individual believes that knowledge is certain and there is a perfect correspondence between the past and history (the connection of CKO-SiKO). Some of the students even displayed an omniscient perspective about what happened in the past when reasoning with conflicting historical texts. This perspective was reinforced by an unquestioning belief toward the authoritative voice, such as those in textbook narratives or from history teachers (CKO-SoKO). These students had very rigid, dichotomous thinking, with their judgement confined to what they had learnt from the experts (SiKO-SoKO). This perspective reflects the Chinese traditional view of history as a ‘mirror’, which can be used as a lesson and moral compass for judgement. As suggested by the findings, the students who displayed this pattern more strongly were generally those with lower academic performance. Furthermore, these students were less verbally active during the interviews, and their reasoning tended to be underdeveloped. However, the analysis also found that, sometimes, this absolutist perspective could be changed towards less certainty about the truth of historical knowledge by introducing the students to contradictory perspectives of the same historical account. For instance, one student (Betty) initially displayed a strong pattern of absolute certainty about historical knowledge but soon shifted to a more subjective and ‘criterialist’ stance (Havekes et al., 2012; Maggioni et al., 2004). She began to be aware of how sources could be biased due to personal ideology and various complicated contextual backgrounds when examining two conflicting texts. This result could have implications for enhancing pupils’ historical epistemic beliefs (this is further discussed in the Conclusion chapter).

Pattern 2: Multiple and relativist beliefs (CKS-SiKS-JKS)

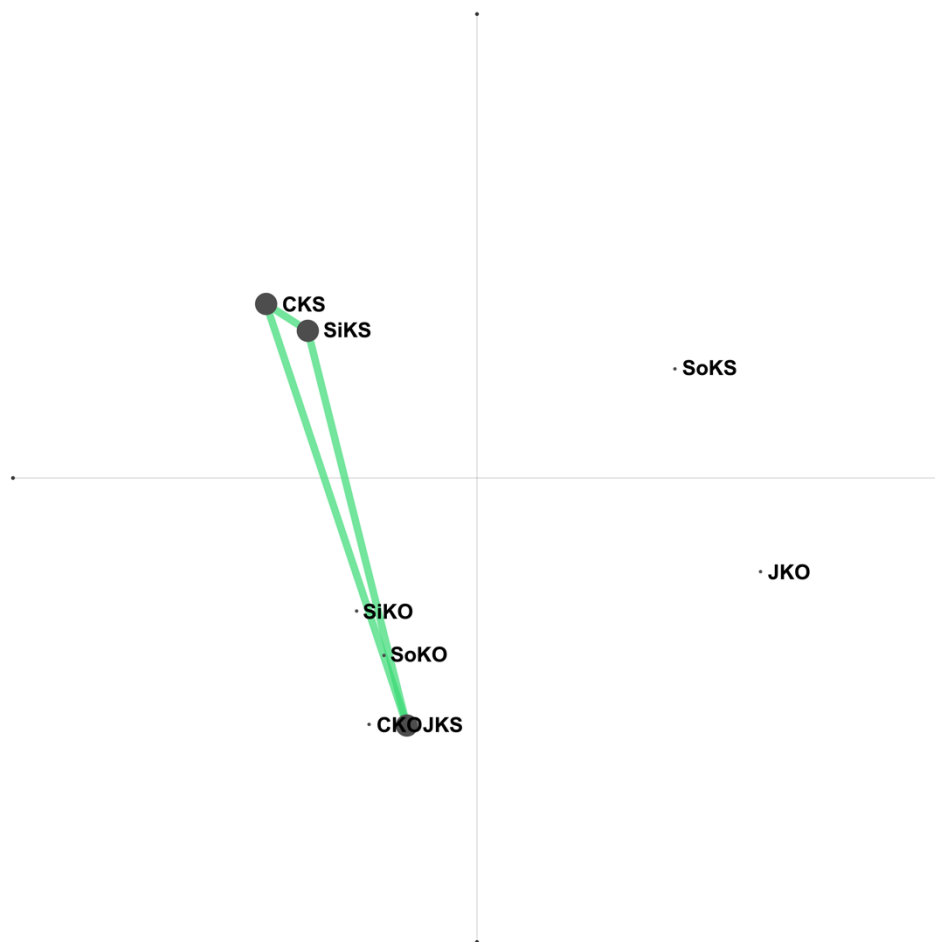


Figure 6.2 The pattern for multiple and relativist beliefs

In the second key pattern found in the analysis, the strong connections between CKS, SiKS, and JKS indicate that, in contrast to the first pattern, some individuals held a subjective perspective about historical knowledge. The findings suggest that individuals with this pattern usually believed in the uncertainty of historical knowledge for two reasons. First, they were sceptical about an absolute truth about historical accounts because no historians witnessed the incidents, meaning they could not know nor figure out everything from the past. Some of the students argued that the uncertainty of history could be only solved with a ‘time machine’, enabling historians to go back in time and record everything firsthand (see Hsiao, 2009 for similar findings regarding Taiwanese students’ historical thinking). In this case, the students also considered history to be a complex continuum consisting of various inter-related concepts that needed to be situated in context (CKS-SiKS). Since historical knowledge is too uncertain and complex to be judged right or wrong, the students also tended to believe that every opinion and theory proposed by historians is equally valid and valuable

(CKS-SiKS-JKS). This pattern is similar to what Maggioni et al. (2004) refer to as relativist, and it is a vital transition to a more advanced epistemic stance (Kuhn, 1991). However, I agree with the caution regarding teaching students to be cynical relativists (VanSledright, 2002), because the results from this study suggest that once they have fallen into such a stance, it is more challenging for them to move away from it, which could result in a very negative attitude toward history as a discipline (e.g., *History is just personal opinion, so why should I learn it?*).

Pattern 3: Absolute and constructivist beliefs (CKO-SoKS-JKO)

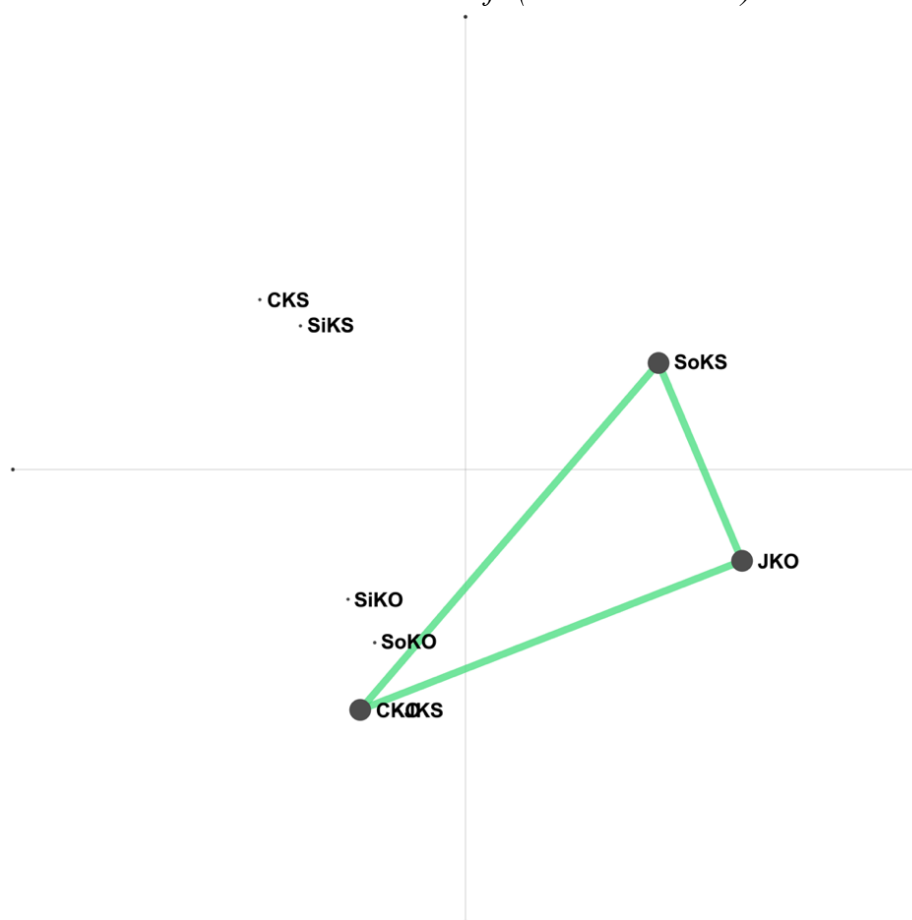


Figure 6.3 The pattern for absolute and constructivist beliefs

The third key pattern from the findings suggests that individuals held an objective perspective about the certainty of historical knowledge, meaning believing in the existence of absolute truth (CKO). However, unlike other patterns and findings from relevant studies (e.g., Havekes et al., 2012; Hsiao, 2009; Maggioni et al., 2004), individuals with this pattern also believed that history is constructed by a group of people, including oneself (SoKS). For instance, some of the students agreed there is one true history, but the construction of such history is based on the consensus of the

vast majority of experts, such as historians and archaeologists (CKO-SiKS). Therefore, to reach a consensus, certain criteria should be met to make an objective judgement (JKO). It is noticeable that this is the first pattern in which individuals started to acknowledge the importance of evidence-based arguments, and historical interpretations were required to be examined carefully using historical sources, either firsthand or second-hand. The result also indicates that students who initially had mid-level academic performance and held epistemic beliefs of the second pattern, displayed a greater tendency towards this pattern following the intervention programme designed in this study. According to the response from the teachers and students, the possible explanation for this change might be due to not only many historical sources being presented by teachers, but also a certain framework of criteria being introduced to students to engage them in historical thinking, using sources in particular (van Drie and van Boxel, 2008; van Boxtel and van Drie, 2018).

Pattern 4: Expert-like beliefs (SiKS-SoKS-JKO)

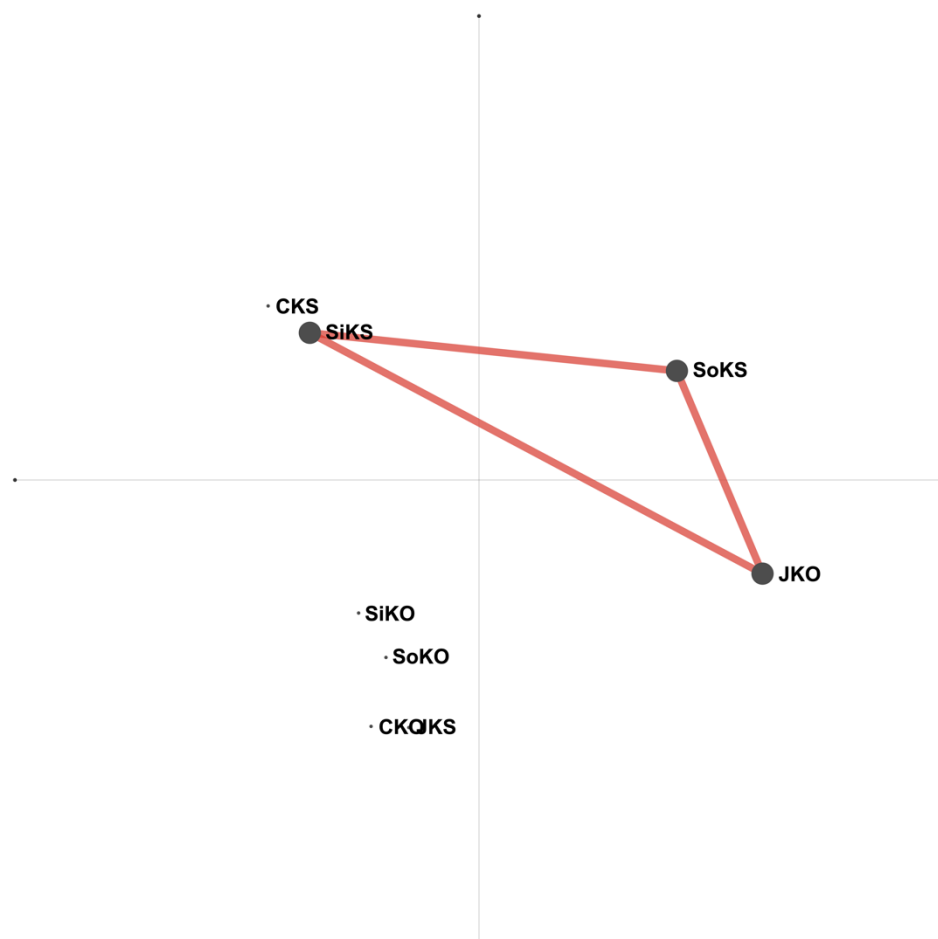


Figure 6.4 The pattern for expert-like beliefs

The final key pattern indicates more sophisticated epistemic beliefs, described as *criterialist* by Maggioni et al. (2004; see also Havekes et al., 2012 for similar findings on the notion of a *criterialist stance*). Individuals with this pattern were usually teachers and students with high-level academic performance. These individuals acknowledged that history is a complex set of inter-related accounts situated in a specific historical and cultural context (SiKS); however, they also emphasised the importance of how evidence, such as historical texts, construct more objective historical knowledge, which should also be evaluated and carefully examined using a rigorous historical research methodology (SoKS-JKO). Having a well-developed understanding about history as a discipline, these individuals often cited well-known historians as examples to provide the theoretical foundation for their own responses. A few individuals even demonstrated holistic viewpoints on some well-debated topics in historiography to provide a clear and impartial argument. For instance, when asked about the nature of history, Teacher Lin started to introduce the comparison between Western and Chinese traditional views on history and discussed the inevitable subjectivity involved in history writing, using a famous quote from the Italian historian Benedetto Croce. This finding echoes Wineburg's (2001) study on the differences between experts' and novices' historical thinking (see also VanSledright, 2002). Although the students with this pattern might not have been able to include as many names of historians as the teachers did, they still articulated their argument and reasoning in a comparatively more comprehensive manner than others in the study.

These four key patterns emerging from the findings provide a potential model for analysing an individual's historical epistemic beliefs using quantitative analysis. However, as emphasised above, this study is not an attempt to generate a category-like model in which each individual's personal epistemology can be clearly categorised into a box. The main purpose of presenting these four patterns is to illustrate the complexity and subtlety through visualisation in the course of analysing epistemic beliefs. This model could be used to identify the major dimension of an individual's epistemological stance by examining the pattern-matching (i.e., to see which of the four patterns appears most significant in the analysis results). Moreover, with the statistical analysis, the means of each line could provide a quantitative measurement to examine the strength of the connections to provide more objective evidence for the qualitative analysis, which complementarily could yield rich, fine-grained analysis on discourse. The pattern-like model could also deeply explore the nuances and diversity of an individual's historical epistemic beliefs, even the contradictory ones. For instance, according to the results of the analysis, some students had mixed beliefs regarding the nature of history, depending on whether this aspect was considered a subject in school.

On the one hand, one student acknowledged that historical knowledge is constructed by a group of people including oneself; on the other hand, regarding school, he also believed that teachers were responsible for organising knowledge for students. This contradiction could be observed in the strong connection between SoKO and SoKS, which might have been neglected in another relevant study (e.g., Havekes et al., 2012). Finally, this model could be used to form an illustrative ‘picture’ of the trajectory of change in an individual’s epistemic beliefs over a certain period. This ‘picture’ contains rich information about a person’s personal epistemology, and it is easy to perform a comparative analysis with other ‘pictures’ via both quantitative and qualitative analysis. Therefore, although it was not the main aim of this study, future research could, for instance, examine the epistemological differences regarding gender or between different grades.

6.2 Discussion on dialogue in Taiwanese history classroom

As discussed in the literature review, empirical evidence emerging in the past two decades has acknowledged that good-quality classroom dialogue can positively impact student learning (e.g., Alexander, 2004; Boyd & Markarian, 2011; Cazden, 2001; Howe & Abedin, 2013; Littleton & Mercer, 2013; Wegerif, 2007). Two recent large-scale studies have identified that some aspects of dialogue are related to learning gains (Alexander, 2018; Howe et al., 2019). Through dialogic teaching (Alexander, 2004), teachers can probe and promote students’ higher-thinking skills (Wegerif, 2018). However, how dialogue is used in history class is a salient gap in current research, and so is the cultural context of dialogic education. Therefore, in this research, I proposed the concept of hybrid dialogue and a reconceptualised coding instrument as an attempt to explore educational dialogue in the Taiwanese history classroom. In the following sections, I first discuss the findings from using the coding framework, and then discuss some key characteristics emerging from the findings regarding this hybrid form of talk.

6.2.1 Discussion of the coding scheme

From the results of the analysis informed by the coding scheme, the findings suggest that most of the teachers heavily employed the use of ‘Invite to contribute or build on ideas’ (*coded IB*) and ‘Asking questions’ (*coded Q*), as demonstrated by the high percentages of these two codes. These codes represent two major aspects of Taiwanese history classrooms. First, in ordinary Taiwanese classrooms, the implicit ground rules are that teachers initiate a question and invite pupils to respond. At times, teachers may use some techniques to motivate students to answer the questions, as revealed in the analysis (e.g., giving bonus points or drawing lots). The students in this study seemed passive rather than active in class engagement (Watkins and Biggs, 1996, 2001).

Therefore, the teachers were required to ask many follow-up questions to continue the dialogue. However, when explored more deeply, this aspect could suggest another interesting aspect of Taiwanese classrooms. From the analysis, it is evident these two discursive techniques (coded IB and Q) were mostly used at the start of the dialogue to open up the dialogic space (Wegerif, 2013). Although the questions might be closed or prescribed to a certain answer by teachers, they can still reflect a dialogic stance (Boyd and Markarian, 2015), supporting teachers and pupils to think cooperatively and explore possible historical explanations with careful scaffolding from teachers. Linguistic difficulties, such as historical terminology (Berti, 1994; Edwards, 1978; Husbands, 1996) can also be solved and addressed within this space. A few examples from the analysis of Teacher Fang's class and Teacher Chen's class demonstrate this point. For instance, Teacher Chen discussed the term 'nationalism' with students with a series of questions. Some of the teachers reported similar observations in their interviews, in which they mentioned that dialogue often failed when they asked an open-ended question. A possible explanation for this situation is that the students' Taiwanese cultural influences, underpinned by Confucian heritage, implicitly encourage them to explore their reasoning within the teachers' guidance (Guan, 2012). Hence, the students embark on an inner reflection when the question is asked to them and carefully articulate their thoughts (Starr, 2012). This silent reflection might not be observable in class and yet, according to the interviews with pupils, some expressed quite positive views about the teachers' use of dialogue, which had helped them to think more critically and develop a different perspective about historical accounts.

Another main theme emerging from the analysis informed by the coding scheme is the different major proportions of coding frequency for each teacher, as demonstrated in the diversity of the teachers' practices and teaching beliefs. For instance, Wu believed some of the main goals in history education are to immerse students fully in history, to cultivate historical empathy in a deeper sense, and to connect with their own life experience (Lee, 2005). It is evident from the results of the analysis that the most prominent feature, according to its high percentage, was the code AC (Make historical analogy and comparison). Wu employed different pedagogical methods to achieve her teaching goals, such as using everyday life examples to explain a complex historical terminology and telling personal stories to connect the past to the present. She also used video testimony to promote historical empathy and contextualisation (Norgan, 2020; Seixas, 1996, 2017; van Drie and van Boxel, 2008, 2018). Another example is apparent in the high frequency of the strategy that guides the direction of dialogue or activity on historical thinking (*coded G*) in Huang's class. In the interviews, she expressed her interest in developing a more dialogic stance in her classroom to foster pupils' historical

thinking. I observed many cooperative group activities being implemented, meaning Huang quite often adopted discursive techniques to guide the activities. Huang also had the highest frequency of codes in total among all the participating teachers. This result might suggest a pattern of what a dialogic classroom could look like: the frequent use of guidance and questioning methods.

6.2.2 Discussion regarding hybrid dialogue

In this research, I proposed the notion of hybrid dialogue. This hybrid form of talk aims to reconceptualise current dialogic theories (e.g., Alexander, 2004, 2018; Cazden, 2001; Clarke et al., 2016; Jones and Chen, 2016; Littleton and Mercer, 2013; Michaels and O'Connor, 2015; Wegerif, 2007; Wells and Arauz, 2006) and synthesise them with Chinese cultural heritage (i.e., Confucianism and Yin-Yang from Taoism) to be more grounded in the Taiwanese context. Hybrid dialogue is not only a hybrid of the structural forms of monologue and dialogue, but also of the epistemological and ontological perspectives of dialogue. The empirical evidence that emerged from this study suggests three major features of the hybrid form: the hybrid of openness and closedness, the entanglement of hybrid thinking, and the hybrid of short- and long-term dialogue, as illustrated in the further-developed theoretical framework in this study (see Figure 6.2). In the rest of this section, I discuss these features in more detail.

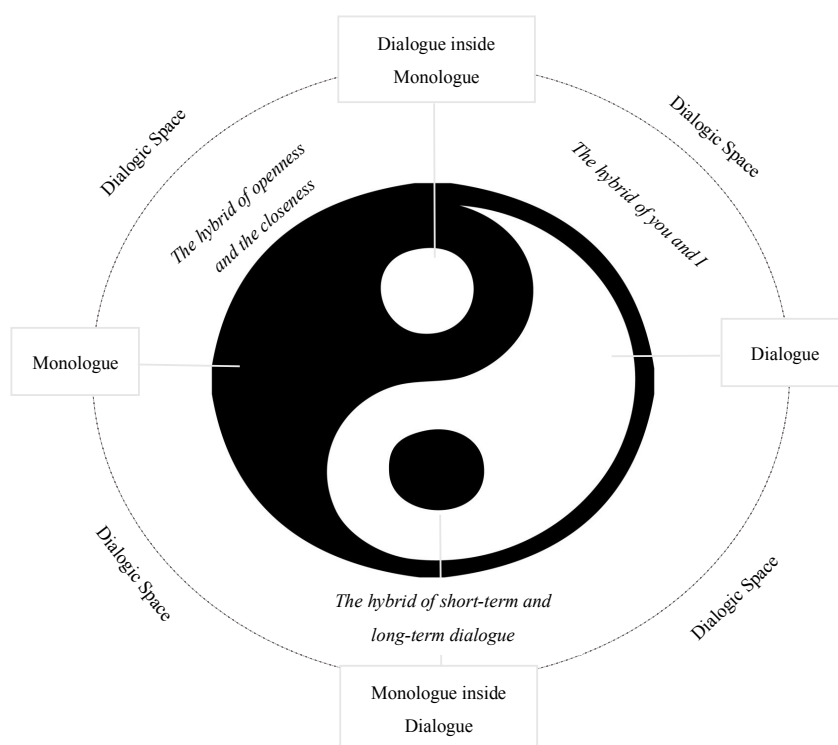


Figure 6.5 The final version of the theoretical framework.

a. The hybrid of openness and the closedness

It has been argued that it is difficult to engage students in genuine dialogue using a closed question (e.g., Alexander, 2004; Matusov, 2009) because, with a single predetermined answer, students merely try to guess the correct answer. Such talk is reduced to a simple IRF structure (Sinclair and Coulthard, 1975), in which education is considered merely the transmission of knowledge from the educated to the ignorant (Matusov, 2009), and no deep reasoning occurs. However, in this study, the results of the analysis suggest that the use of closed questions can provide a dialogic space in which teachers can probe or elicit students' prior knowledge and their epistemic beliefs, as well as build up their substantial concepts (i.e., historical knowledge, see Lee, 2005; van Drie and van Boxel, 2008, 2018). The knowledge introduced to students may then provide a crucial foundation for inner silent reflection (Song, 2018; Starr, 2012), which allows teachers to introduce and co-explore more complex second-order concepts with pupils (i.e., historical thinking, see Lee, 2005; van Drie and van Boxel, 2008, 2018). For instance, Teacher Huang delivered a lesson on the history of Taiwanese indigenous tribes (see Chapter 5). Before asking an open-ended question, Huang employed a substantial number of closed questions to elicit the students' historical knowledge, then used this knowledge as a foundation for critically examining the narratives from the textbook (Chang, 2020). A dialogic space was opened through a series of closed questions in which the teacher facilitated the pupils to reason historically and critically with careful scaffolding. During this scaffolding process, more dialogue was constantly created and redirected to a meaningful discussion. This approach aligns with Confucius's dialogic approach as the facilitation of pupils' self-development and self-reflection (Li and Wegerif, 2013). Although some talk might seem monologic on the surface, it is dialogic in nature, as suggested by Boyd and Markarian (2015), who also argue that it is more vital for teachers' talk to support pupils' epistemic growth and communal functions to create a successful dialogic stance than a structural form.

The hybrid of openness and closeness can also be reflected by the model of Yin and Yang I proposed in this research, in which closeness is represented as Yin (the black side) and openness as Yang (the white side). Yin and Yang suggest the co-emerged, accompanied, and contradictory yet harmonised concepts of openness and closeness. The dynamic of these two ideas is constantly shifting as they are intertwined with each other. There is openness in closeness, and vice versa, and *'that being before and behind give the idea of one following another'* (「前後相隨」, *Tao Te Ching* (1:2) translated by Legge). The intertwined space is created for thinking and reasoning using second-order concepts. In this space, the dichotomy of openness and closeness is superficial and even irrelevant because the opposites transform into each other and are mutually

complementary (see also Matusov, 2009 for a complementary view on the notion of monologue and dialogue).

b. The hybrid of you and I

In the dialogic space created by the hybrid of openness and closedness, the entanglement of teachers' and pupils' thinking occurs and such entanglement fosters hybrid thinking. Hybrid thinking is also echoed in Buber's (1953) notions of 'I-Thou' orientation. In the I-Thou, the important relationship is between you and I, a human-dialogic relationship instead of a material-objective one. I perceive you as an end, not as a means, and vice versa. No isolated 'I' exists in the intersubjectivity relation of I-Thou; 'I' is accompanied by the presence of the subjectivity of you (Lu, 2007). In this sense, for this study, the notion of hybrid dialogue does not suggest that all monologue is dialogue, nor all dialogue is monologue; instead, a crucial aspect of this hybrid form of talk lies at the centre of the intersubjectivity of the interlocutors (Dafermos, 2018).

In hybrid dialogue, dialogic space is only created if a teacher considers his or her pupils' subjectivity and transcends it into 'Thou' in the light of I-Thou orientation. With 'Thou' in mind, a teacher can transform the talk, either monologic or dialogic, to become more genuinely dialogic, more inclusive, and even more open to polyphonies (Bahktin, 1991). In one of Teacher Chen's classes, for example, on the discussion of Nationalism (in Chapter 5), Chen attempted to open a dialogue with pupils to embrace different voices and answers. Throughout the dialogue, Chen constantly reshaped his questions to include more pupils in the dialogue. Such an attempt can demonstrate how a teacher takes an I-Thou stance. In return, once the students sense how their subjectivity is acknowledged, appreciated, and respected by the teacher, they transform the image of the teacher into 'Thou' and engage in the dialogic space created by the intersubjectivity of both the teacher and pupils. The model of Yin and Yang could also illustrate such an I-Thou orientation, in which the black and white spheres represents one and another. In each sphere, the embedment of the other sphere depicts how intersubjectivity is crucial for opening up a dialogic space. The notion of mutual respect in I-Thou orientation (Kaufman, 1970; Lu, 2007) is also highlighted in the Confucianist perspective on human relations, in which 'virtue' (*Ren*, 「仁」) lies at the core of all relations (for a more detailed discussion, see Chapter 2). Virtue provides moral and ethical guidance regarding how an individual interacts with another in different social relationships. On this matter, the Master said: '*...when the prince is prince, and the minister is minister; when the father is father, and the son is son*' (「孔子對曰：「君君，臣臣，父父，子子。」」, Confucius, 1893, 12: 11, translated by Legge).

However, in hybrid dialogue, the notion of I-Thou also attempts to challenge such a linear and authoritative way of regarding human interactions. Instead, as mentioned above, this orientation promotes more inclusion and equality among interlocutors (Matusov, 2009). In the dialogic space, mutual respect then does not merely mean to put oneself in others' shoes; instead the concept could be further realised through the idea of 'Shu' (「恕」, meaning reciprocal consideration). The genuine dialogue occurs when the relationship of two individuals become a balanced reciprocity as a shared identity (Wang, 2018). Therefore, in this research, a dialogic and dynamic interpretation of Confucianism in hybrid dialogue can also be considered an attempt to reconceptualise how Confucianism influences the implicit ground rules in Taiwanese classrooms and to open up more genuine educational dialogue to foster students' higher-order thinking and diversity. Examples were demonstrated in numerous lessons from class observations. For instance, in Wu's one lesson, when discussing on the Tiananmen Square Massacre with the whole class (see Table 5.7), it is noticeable how she included students' subjectivity in her talk and respected responses from students. By doing so, the teacher demonstrated the concept of reciprocity and moreover how such concept could be employed in learning taking alternative historical perspectives.

c. The hybrid nature of short- and long-term dialogue

In this research, the last major features informed by the findings centre on the hybridity of short- and long-term dialogue. Short-term dialogue highlights the temporal and structural aspects of hybrid dialogue, which can foster pupils' historical thinking (van Drie and van Boxtel, 2008, 2018) by employing various discursive techniques (Mercer, 2008). In this study, the findings also suggest how long-term dialogue can be crucial for teachers to deliver and scaffold well-established historical knowledge to students (Li and Wegerif, 2013; Guan, 2012). With short-term dialogue, a more interactive form of talk (e.g., question and answer) is usually conducted to engage pupils in discussion. Using discussion, teachers can question, challenge (either their own opinions or narratives from authorities), or invite students to build on ideas. In return, students have opportunities to articulate their historical reasoning and even challenge teachers. This process of 'doing history' (Havekes et al., 2012; Lee, 2005) is promoted by the latest curriculum reform, which can be considered progressive and inquiry based. For instance, as is evident in the analysis, in one of Teacher Lin's classes, the hybrid use of short- and long-term dialogue was employed not only to scaffold students' historical knowledge about the 228 Massacre, but also to facilitate their historical empathy and the ability for historical perspective-shifting.

The current heated debate regarding the history curriculum in Taiwan also focuses on

the two poles of history education: the traditionalist (emphasising teaching substantial knowledge) and the progressionist (emphasising teaching historical thinking; Huang et al., 2011; Lin, 2019; Chuang, 2019). Informed by the coding scheme employed in this study, short- and long-term dialogues were observed in the history classrooms. Long-term dialogue attempts to introduce a long-term cultural voice of humankind (Guan, 2012; Oakeshott, 1960; Wegerif, 2020) into the dialogic space created by hybrid dialogue. This voice includes external, static historical knowledge, cultural traditions, and knowledge of history as a well-established discipline. In this space, the voice are transformed into dynamic, constantly shifting, live conversations between teachers and pupils; conversations employing historical knowledge from long-term dialogue as material for open discussion to include polyphony and exploration of the diversity of historical interpretations. By proposing the notion of hybrid dialogue, this study also aimed to provide a ‘midway’ to address such a dilemma with the hybridity of short- and long-term dialogue. The concept of *midway* (*Zhongyong* 「中庸」) in Confucianism suggests not only finding a middle ground between two extreme perspectives, but also subscribing to a holistic perspective to transcend from the bipolar towards a greater form (Chang et al., 2001). The middle ground, as Gadamer (2004) argues, always ‘involves rising to a higher universality that overcomes not only our own particularity but also that of the other’ (p. 304). Therefore, the midway emerges from the synthesis, which is constantly changing. By adopting this concept, one must overcome a monological self to consider others’ voices, meaning empathy is required. In other words, a midway stance opens up a dialogic space to synthesise and integrate monologue and dialogue toward a new form of talk: hybrid dialogue. On the one hand, such a concept resonates with the idea of dialectic proposed by Hegel (2010), in which two opposite notions (i.e., thesis and antithesis) merge to form a higher level: a synthesis (see also Dafermos, 2018). As Bakhtin (1986) argues, ‘Dialectics was born of dialogue so as to return to dialogue at a higher level (a dialogue of personalities)’ (p. 162). On the other hand, this synthesis of the higher-level form is not a reduction of meaning to a single text, but instead offers a dialogic space in which short- and long-term dialogue constantly entangle and transform into new meaning. To address the dilemma in the current debate between traditionalist and progressionist, the concept of hybrid dialogue might provide a possible solution regarding finding a balance between two educational philosophies.

These three major features of hybrid dialogue offer a synthesised perspective on how dialogic education look in Taiwanese history classrooms. The concept not only challenges the predominant Western dialogic theories (Alexander, 2004, 2018; Cazden, 2001; Clarke et al., 2016; Jones and Chen, 2016; Littleton and Mercer, 2013; Michaels

and O'Connor, 2015), but also challenges the Confucianist perspective regarding the notion of human interactions. In this hybridity, intersubjectivity is mutually recognised within teachers and pupils. Long-term cultural dialogue (i.e., historical knowledge) is brought into the dialogic space and transformed into a dynamic live conversation in which teachers and students explore higher-order concepts in history (i.e., historical thinking). A midway found in hybrid dialogue is then considered a solution for dealing with the paradigm war between traditionalist and progressive perspectives in history education created by the latest curriculum reform (NAER, 2020). To adopt a stance of hybrid dialogue in a history class is to be willing to explore constantly a never-fixed midway between different perspectives (polyphonic voices), as well as learning, acknowledging, and respecting an external static monologic voice in history as a discipline.

6.3 Discussion on the design of TPD

A TPD programme was designed and implemented in this DBR. In this section, I discuss some important findings of this programme. The ‘end products’ of the DBR are also discussed and reviewed (Bakker, 2018).

6.3.1 Important findings of the teacher professional development

One of the main goals of implementing TPD was to promote dialogic teaching in Taiwanese history classrooms and explore how it can facilitate historical thinking, which is a crucial goal in the latest national history curriculum (NAER, 2018). As discussed previously, there was an overall increase in the use of dialogue by most of the teachers following the implementation of TPD. There might be three possible explanations for the successful TPD.

First, prior to TPD, the participating teachers had limited knowledge and/or experience of dialogic education. However, after being introduced to the concepts in the workshops, the teachers were more familiar with and more willing to experience this new pedagogical approach. This explanation is in line with the study conducted by Vrikki et al. (2017), who suggest that by emphasising the dialogic approach in PD for dialogic teaching, there will be a positive trend regarding teachers’ use of dialogue. This study also found that to increase the willingness of teachers to adopt a new teaching method, addressing and dealing with any concerns or confusion is essential. For instance, during workshops, one concern was constantly raised by the teachers. With high pressure from the exams, the teachers feared that adopting this teaching method would mean an overwhelming amount of time devoted to endless discussion, leaving only limited time for teaching historical knowledge. To address this concern, as a researcher, I first

proposed the idea of hybrid dialogue, then cooperatively explored this idea with practitioners to refine the theoretical model (see also Hennessy et al., 2011, on *dialogic co-inquiry and joint theory building with practitioners*) and explore how this model could address their concern. The results indicate that this approach led to a positive attitude toward the change in practice (Clarke and Hollingsworth, 2002).

Another possible explanation is the more contextual aspect of this research. When this research began, the latest national curriculum was just being implemented. This new curriculum strongly emphasised core competences, which aim to foster students' 21st-century skills and make them lifelong learners (NAER, 2018). In the history curriculum, inquiry-based activities are particularly favoured and highly emphasised (Wang, 2021). For such activities, teachers are required to be more dialogic than previously in the sense of co-exploring history with pupils by employing different aspects of historical thinking. However, the teachers expressed their concerns about failing at such teaching practice, which most of them were unfamiliar with. Therefore, one of the major reasons of the teachers participating in this timely research was that they wished to learn more about a different pedagogical approach to be more confident in adapting to the new curriculum. With such strong intrinsic and extrinsic motivation, the participating teachers were more engaged in experimenting with new teaching methods (Clarke and Hollingsworth, 2002). For instance, in Teacher Chou's interview, she expressed her enthusiasm and some anxiety towards the new curriculum, which she believed offered her greater freedom to have more dialogue with pupils. This stance resulted in the significant change in her practice (i.e., the increased use of dialogue), as well as her epistemic beliefs (see *Section 6.1* for more detailed discussion). Similar findings were confirmed in Trotter's (2006) theories of effective PD, in which adults chose their learning opportunities based on interest and their own classroom experiences or needs (see also Darling-Hammond et al., 2017 for an overview of elements of an effective TPD).

However, regarding personal epistemology, the result of this programme is mixed, with only 28% of the participants ($N=8$: $N[Student]=7$, $N[Teacher]=1$) displaying significant change (i.e., $p<0.05$) in their epistemic beliefs after one academic year. In *Section 6.1*, I discussed the differences in individual trajectories of epistemic beliefs and the possible model for historical epistemic beliefs. In this section, discussion centres on explaining the rather limited effectiveness of the TPD conducted in this research. One reason for this result could be that this programme paid more attention to developing teachers' confidence in experimenting with a new pedagogical approach (i.e., dialogic education) than exploring historical epistemic beliefs. This explanation is

suggested also by a study conducted with preservice teachers (VanSledright and Reddy, 2014). The researchers found that to change teachers' epistemic beliefs toward different stances, such as *criterialist* (see also Maggioni et al., 2004), the TPD should include explicit instruction on and discussion of the concept of personal epistemology and how this is linked to history teaching and learning. A similar suggestion is made by Voet and De Wever (2016), who also call for more direct and effective workshops to introduce the topic of epistemic beliefs to history teachers via not only an education programme, but also policymaking. In this research, I also found that the teachers were quite unfamiliar with their own personal epistemology despite them having strong and firm beliefs (see also Voet and De Wever, 2016). Such unfamiliarity resulted in them paying less attention to how exploring and changing pupils' epistemic beliefs in history classrooms could have beneficial effects for promoting second-order concepts (Lee, 2005; van Drie and van Boxel, 2007, 2018), which requires a more sophisticated stance of epistemic beliefs (Hsiao, 2009; Maggioni et al., 2004; VanSledright, 2002; Wineburg, 2001).

Regarding pupils' trajectories of epistemic beliefs before and after one academic year, the results indicate that one-third of the participating students ($N=7$) displayed significant change. Since the literature provides limited insights into how TPD addressing dialogic education and historical personal epistemology could impact changing pupils' epistemic stances, only a few explanations are provided. First, studies (e.g., Havekes et al., 2012; Maggioni et al., 2004) have suggested that to advance students' development of domain-specific epistemic beliefs, explicit instruction and exposure to the heuristics of history (as 'historians') are needed. The teachers who participated in this research became more confident regarding teaching and exploring the concepts of 'doing history' and 'learning history', which is reflected in the increasing use of classroom dialogue and in the students' thoughts about the change in the classrooms. Therefore, it is reasonable to assume that with more explicit instruction regarding historical thinking, such as contextualisation and using sources for argumentation (van Drie and van Boxel, 2008, 2018), some pupils' epistemic beliefs would have experienced a greater change towards a more sophisticated epistemic stance. For instance, Teacher Chou displayed the most significant change in her teaching beliefs and practice, and two out of three participating students in her class also changed significantly in their personal epistemology. Another explanation might be related to the student's academic stage. The findings indicate that most of the students ($N=5$) who experienced change were in their first year of high school. In their responses in the interviews, they acknowledged the differences in the level of depth in history class between high school and junior high school, as well as how teachers' pedagogical

methods became more inquiry based. Such a difference could have positively impacted their personal epistemology.

6.3.2 End products of the teacher professional development

In any DBR, the main goal is to produce an end product or some design principles (Bakker, 2018; Reeves, 2006). In this research, responding to the research aims, the products include both theoretical and pragmatic outcomes. Regarding theoretical principles, this DBR developed a model for analysing individuals' epistemic beliefs towards history as a discipline (see Section 6.1), and a coding framework for analysing teacher's talk to facilitate pupils' historical thinking (see Section 6.2). In this section, I discuss the final product: the design principles of the TPD in this study. In the spirit of DBR, the TPD design was informed by relevant studies (e.g., Hennessy, 2014; Hennessy et al., 2018; Guskey, 1985; Clarke & Hollingsworth, 2002), in which inquiry was conducted in dialogic and collaborative manners between the researchers and the participants (Hennessy et al., 2011; Jaworski, 2006). The process of design (see Table in Chapter 3) contained five phases with two cycles. In the first cycle, the monthly workshops with teachers were well received. In the workshops, I adopted two frameworks: DVC (see Gröschner et al., 2014) and the self-coding sessions informed by T-SEDA (Vrikki et al., 2018). These two models of TPD enabled the teachers to develop a better understanding of the concepts of dialogic education and to refine their own teaching practice, as well as learn from others. The teachers responded quite positively toward these models, which they believed offered a rare opportunity to learn from colleagues by watching and analysing the video of their classroom. They also felt more empowered and more confident to experiment with new pedagogical methods after being inspired by colleagues. The professional dialogue in the workshops was friendly but critical (Hofmann, 2020). Senior teachers with greater teaching experience were open to different voices from their junior coworkers.

However, the findings from the results of the analysis also include some suggestions about improving the TPD. Regarding the model of DVC, short video excerpts (less than 10 minutes for each clip) from each teacher's classroom observation were presented as the discussion material. The teachers suggested that the clips should be longer to provide a more holistic context of the lessons, which might be more useful for a deeper analysis of classroom dialogue. Moreover, due to COVID-19 guidelines, the TPD in the second semester (i.e., the second cycle) was conducted using an online platform. After consulting their opinions regarding how to adapt to the new guidelines, most of the teachers agreed to the online asynchronous workshops, which they believed would allow them to have greater flexibility and be less restrained by their schedules.

Materials such as video clips from class observations and blog posts about the topics in this study (written by me) were uploaded onto the platform for discussion and analysis. However, as discussed in Chapter 3, the participating teachers believed this online form of workshop was not as effective and interactive as the original. Only a few teachers actively engaged in the discussion. Many teachers in the post_interviews reflected that they found themselves rather unmotivated in the online workshops due to there being no in-person dialogue present to create a dialogic and friendly environment to support the co-exploration of their teaching practice. Therefore, this finding suggests that creating a supportive face-to-face environment is crucial for effective TPD regarding promoting a new pedagogical approach, such as dialogic education (Hennessy, 2014). This point is supported by other recent research revealing that without relationship building, PD via virtual coaching can lose efficacy (Cilliers, Fleischz, Kotzex, Mohohlwanex, Taylor, and Thulare 2020).

Chapter 7 Conclusion, limitations and contributions

7.1 Main conclusion

This study explored teachers' and students' historical epistemic beliefs and investigated how educational dialogue can foster pupils' historical thinking in Taiwanese history classrooms. In the spirit of DBR, a TPD programme was designed and administered over the course of one academic year with seven high school teachers. The programme consisted of two cycles within five phases, including designing, class observations, group meetings, refinement, and retrospective analysis. Three students from each participating teacher's classes were picked for semi-structured interviews to explore their personal epistemologies, which were later analysed using an innovative discourse analysis method: ENA. This method provided visualised network graphs depicting the relative frequencies of co-occurrence, or connection, between codes.

In this study, the first overarching research question aimed to explore both teachers' and students' historical epistemic beliefs and the trajectories of their beliefs over the course of the programme. The findings suggest a mixed result, with only a few students displaying a significant change in their epistemic beliefs following the programme. However, this study also provided a pattern-based model generated from ENA for analysing historical epistemic beliefs that might be applicable for future research. This model, differentiated from the predominant stage-like developmental models, enables researchers to investigate the complexity and multidimensions of an individual's trajectory of epistemic beliefs in a holistic and comprehensible manner. Four major patterns (*'Mirror' belief*, *Multiple and relativist beliefs*, *Absolute and constructivist beliefs*, and *Expert-like beliefs*) emerged from the analysis. The findings (e.g., traits about different patterns of personal epistemology) suggest that using this model for analysis generally agreed with previous studies on historical epistemic beliefs (e.g., Havekes et al., 2012; Maggioni et al., 2004). However, in this study, using the innovative ENA to analyse qualitative data, the findings also provide deeper insight to explore the nuances and diversity of an individual's historical epistemic beliefs, even the contradictory ones, which have often been neglected in previous studies.

Regarding the second research question on exploring the teachers' use of classroom dialogue to facilitate students' historical thinking, the findings report a positive trend in the teachers' frequency of use of dialogue. Complementing the quantitative analysis on frequency, the fine-grained qualitative analysis yielded rich insights into how dialogic education can be applied in the Taiwanese context. Most of the teachers heavily employed the use of 'Invite to contribute or build on ideas' (coded IB) and 'Asking questions' (coded Q). Although the questions might be closed or prescribed a certain

answer by teachers, they could still create a dialogic stance (Boyd and Markarian, 2015), supporting teachers and pupils to think cooperatively and explore possible historical explanations via careful scaffolding. The analysis with the coding scheme also demonstrated the different proportions of coding frequency among the teachers, highlighting the diversity of each teacher's practice and teaching beliefs. Finally, this study also proposed a new, synthesised form of talk – hybrid dialogue – grounded in the Taiwanese cultural context of Confucianism and Taoism. Regarding this form, three main features emerged from the analysis: *the hybrid of openness and closeness*, *the hybrid of you and I*, and *the hybrid of short- and long-term dialogue*. These features can help address the paradigm war between traditionalist and progressionist perspectives in history education, which was prompted by the latest curriculum reform (NAER, 2020). By implementing TPD in the DBR, the findings from the teachers' own reflections indicate that creating a supportive face-to-face environment is crucial for effective TPD regarding promoting a new pedagogical approach such as dialogic education.

7.2 Limitations

Due to time constraints and other practical issues, there are three major limitations of this present study that may inform future research. First, regarding exploring epistemic beliefs of history as a discipline, although this study aimed to report a pattern-based model using ENA (Shaffer, 2017), it suffers from some methodological problems. In this research, semi-structured interviews were conducted using complex questions to probe individuals' personal epistemologies (Boyes & Chandler, 1992; Chandler, Boyes, & Ball, 1990; DeBacker et al., 2008; Greene and Yu, 2014; McCrum, 2013; Voet and DeWever, 2016; Yilmaz, 2010). However, despite the rich and complex information about epistemic beliefs yielded by the interviews, one limitation is the rather small sample size. Such techniques are usually labour intensive and time-consuming; therefore, considering the limited time available for this doctorate study, only 28 participants (teachers and students) were recruited. Wood and Kardash (2002) argue that this size in qualitative research represents a lack of statistical power (which they describe as '*underpower*' p. 163) to generate a reliable and valid generalisation. To achieve greater statistical power, a larger sample size would be necessary, and the research design should consider other more appropriate techniques, such as questionnaires (The Beliefs about Learning and Teaching of History questionnaire, see Maggioni et al., 2004; the EQ, see Schommer, 1990; the EBI, see Schraw et al., 2002; the Epistemological Beliefs Survey, see Wood and Kardash, 2002). This method could provide easy-to-administer and objectively scorable measures.

Another limitation concerns the design of the questions for the interviews. Some questions proved difficult and challenging for the students, which might have resulted in distortion when analysing their personal epistemic beliefs. However, Elby and Hammer (2010) suggest that researchers should not assume stability in students' epistemic beliefs since they can vary in different situations. Some questions were found to be misleading, in that the students had a tendency to guess a 'correct answer' to them (Murphy et al., 2010), which could also pose difficulties for assessing students' epistemic beliefs accurately. This study also lacked diversity in the sampling strategy in terms of geography and type of school. Due to time constraints, the schools were all selected from high-profile public schools in cities; however, samples from public schools in the countryside or private schools could also be considered. Moreover, although the ethnicity factor is relatively small in the Taiwanese context, with 96.5% of the population being Han (Executive Yuan, 2021), a sample from minority groups (e.g., indigenous groups and migrant families) should also be considered to add greater diversity to alleviate potential methodological issues (Greene et al., 2010).

The limitations concerning exploring classroom dialogue are twofold – one of which is also due to the sampling strategy. All the teachers voluntarily participated in this study, and thus, had a very strong motivation and high interest in experimenting with a new pedagogical approach, which could have yielded an overly positive outcome. Moreover, as mentioned above, the teachers were all from high-ranking schools, and in two cases the culture was more open than normal regarding teachers experimenting with new ideas. The students of these teachers were, therefore, also more likely to adapt easily to new teaching methods and lesson designs. All these factors might have contributed to a successful TPD. For possible improvement in a future study, a more inclusive sampling strategy might be needed.

Another limitation concerns the coding scheme in this study. The aim of employing the coding instrument was to explore how teachers' talk can facilitate and scaffold pupils' historical thinking; therefore, the analysis primarily centred on the teachers' actions. Although the students' responses were also considered to provide a complete context for analysing the teachers' talk, it is arguably more reliable to develop a holistic coding instrument to analyse both teachers' and students' talk to yield not only a better understanding of how whole-class dialogue can impact pupils' historical thinking from their own utterances, but also to deepen the understanding of the notion of hybrid dialogue proposed in this study. Regarding the reliability of the scheme, although an inter-rater reliability measure (Cohen's kappa) was used to minimise inference levels and maximise the communicability among coders (Hennessy et al., 2020), the size of

the dataset was too small to produce strong statistical reliability. Therefore, a larger scale in a future study might be needed. In addition to reliability, Hennessy et al. (2020) stress the importance of addressing validity. The concept of validity in this context is to ensure the coding instrument corresponds to what is really measured. Hennessy et al. (2020) suggest an approach called theoretical triangulation, in which the same transcript of classroom dialogue is analysed using different coding schemes underpinned by different theoretical perspectives to yield ‘deeper, complementary insights from each’ (p. 8; see also Hennessy, 2020, for the example of applying three different coding frameworks to the same transcript). Hence, to improve upon the coding scheme in this study, more research is needed to address reliability and validity.

Regarding the design and effectiveness of the TPD, one major limitation is the impact of other variables. This DBR was conducted in a real and complex educational setting; therefore, it was difficult to control all the variables. This issue might have compromised the results regarding the effectiveness of the TPD. Although the TPD was successfully implemented in this study in terms of increasing the teachers’ use of dialogue in classrooms, this programme was probably not the only factor that contributed to this positive result, which might be due to other variables. Future research, such as a large-scale RCT, might draw a more decisive conclusion about the effectiveness of the TPD.

7.3 Contribution and future applications

Despite the limitations mentioned above, this study still makes some major theoretical, methodological, and practical contributions.

7.3.1 Contribution to theory and implications

First, previous research related to personal epistemology has largely focused on nondomain-specific personal epistemology or domain-specific epistemic beliefs in science, whereas the field of historical epistemic beliefs has been relatively neglected. This PhD study contributes insights into the understanding of epistemic beliefs in history as a discipline, especially a cultural contribution. Culturally, this study fills the salient research gap regarding exploring epistemic beliefs in the Taiwanese context, particularly for the subject of history, with targeted students aged 16–18. By filling the gap, this study offers advice on investigating teachers’ and pupils’ personal epistemologies in East Asia, as well as addressing how Confucianism influenced their beliefs about history (e.g., viewing history as a lesson to learn from in the pattern of ‘Mirror’ belief). All these findings and the model provide a solid foundation for future large-scale research to explore this topic further. Furthermore, the use of ENA could be

applied to other domain-specific or even interdisciplinary epistemic beliefs. For instance, building on the findings from this study, future research could explore how pupils' epistemic beliefs impact their academic performance in history. Moreover, given the latest national curriculum reform (NAER, 2020), this study provides a strong foundation to examine whether teachers could advance pupils' historical epistemic beliefs to teach historical thinking, as prescribed in the curriculum goals, which also require extensive future attention.

Another major contribution concerns the theoretical foundation of dialogic education. In this study, I proposed a conceptual framework regarding hybrid dialogue informed by current dialogic theory (e.g., Alexander, Bahktin, Mercer, Wegerif) and synthesised with Confucianism (the Confucianist perspective on dialogue and 'Midway') and Taoism (the concept of Yin and Yang). This concept reconceptualises current dialogic theory and provides an alternative and culturally based perspective regarding monologue and dialogue. Three features of hybrid dialogue emerged from this study (namely, the hybrid of openness and the closedness, the hybrid of subjectivity and the hybrid nature of short- and long-term dialogue) and contribute to dialogic theory. Moreover, previous studies on classroom dialogue have paid little attention to domain-specific dialogue, especially in the subject of history. A large-scale RCT could investigate the relationship between the quality of classroom dialogue and pupils' academic achievement in history. With further adaptation, this coding instrument for dialogic education could also be used to analyse other disciplines, such as mathematics and science. In Taiwan, studies related to dialogic education are a significantly new field in education research, including its effect on historical thinking and other higher-order concepts. Therefore, the findings from this PhD study could be important for future research with a relevant research focus.

7.3.2 The contribution to methodology

In this study, an innovative new coding instrument for historical epistemic beliefs was developed, but it is underpinned by previous studies. This research employed an alternative mixed methods s approach (i.e., ENA) to explore epistemic beliefs, which combines the strengths of qualitative and quantitative analysis. The data collected from the semi-structured interviews yielded fine-grained analysis that provided rich insights into the complexity of personal epistemology. Moreover, using the innovative quantitative analysis ENA, the results identified four major patterns of historical epistemic beliefs, offering a pattern-based model instead of a stage-like model to capture the diverse dimensions of epistemic beliefs in history.

Data concerning classroom dialogue were collected from monthly class observations and then analysed using a reconceptualised coding framework informed and synthesised from T-SEDA (Hennessy et al., 2019), in addition to an observational instrument for teaching historical thinking (Gestsdóttir et al., 2018). Although T-SEDA has been used and adapted by practitioners in many country contexts for different purposes (Hennessy et al., 2021), this was the first attempt to integrate it with a domain-specific tool. This attempt is a significant methodological contribution to the field, with potential applications for subject learning through dialogue in other disciplines and cultural contexts. The findings informed by the coding framework for analysing teachers' talk in the history classroom provided a practical tool for addressing and investigating how teachers' use of dialogue can facilitate pupils' historical thinking. Major refinements, such as revising with the participating teachers and testing with inter-rater reliability, were undertaken to ensure the coding instrument is reliable for such analysis and investigation. This coding framework could also be applied to develop an observational instrument for analysing and assessing students' historical thinking from their oral responses, which might be a very useful tool for promoting higher-order thinking as highlighted in the new national curriculum (2020).

7.3.3 The contribution to practice and future application

The TPD employed in this research contributed to the understanding of the teacher PD programme design for promoting dialogic education. This study drew on and confirmed the value of some features for an effective TPD, such as engaging participating teachers in a dialogic inquiry (Hennessy et al., 2011), through which teachers learn by participating in a professional community in which researchers and practitioners work together to explore professional growth in an ethos of mutual trust and respect (ibid.; Nind, 2014). Another effective approach for conducting TPD is through hands-on workshops with teachers demonstrating their own teaching practice. For instance, by employing the concept of DVC (see Gröschner et al., 2014), the teachers were able to review their own teaching practice, and that of colleagues, through a friendly but critical lens. The discussion also involved self-coding using the coding instrument, which enabled teachers to explore a deeper understanding of their use of talk in the classroom (Hennessy et al., 2011). This approach proved quite successful among the teachers, who found the experience empowering and invaluable. These findings could also illustrate how to design and implement an effective TPD for developing dialogic education, not only in history, but also in other disciplines. Finally, the pragmatic perspective regarding employing DBR provides a relatively innovative approach for educational research in Taiwan, where DBR is rarely used or explored. The tested design principles generated from this DBR contribute to the practical use of future teacher development

programmes in Taiwan. First, the DBR was tailored to the timeline for Taiwanese academic semesters. Second, an advantage of the design principles is the DBR's flexibility, which enables researchers to adapt and tailor their research aims in line with teachers' needs. This perspective could be useful for not only addressing the issues of conducting research in complex educational settings, but also for bridging educational theories and the teaching practice (Ong and Tang, 2012). The design principles summarised below formed part of the success for the PD programme in this study:

- The design of the research timetable is crucial, especially when participating teachers already have a highly intensive class schedule. It is better to have workshops during the teachers' free time at school rather than after school. For instance, for Taiwanese high school history teachers, Wednesday mornings are so-called 'lesson-preparation periods' when they do not have any classes. Taking advantage of this time was found to increase the teachers' motivation to attend the workshops.
- Practitioners are aware of their own agency in the process of research and how their input is valued in the study.
- Regarding workshops, hands-on activities, such as using the coding scheme to code their own or other colleagues' lessons, aided by video clips of the lessons, are more likely to engage practitioners than researcher-led lectures.
- Teachers are critically engaged in reflective inquiry and open to adapting their own teaching practice (Hennessy et al., 2021) in a friendly but professional environment.
- In-person communications and meetings are beneficial for building relationships between researchers and practitioners.

In this final concluding remark for this dissertation, I quote Wegerif's (2021) perspective on dialogic education:

Educational dialogue or a 'dialogic education' often promotes dialogue as an end in itself, usually alongside other educational goals such as acquiring content knowledge. The phrase 'dialogue as an end in itself' means that, as a result of participation in educational dialogue or in 'dialogic education', students are expected to become better skilled at dialogue, which means getting better at learning things together with others.
(p. 13)

By promoting dialogic education in the Taiwanese context, I am not merely proposing a new pedagogical approach for teaching practice; instead, this study aims to promote an alternative educational philosophy for the future of education in Taiwan. That is to

say, education is dialogue. Learning through hybrid dialogue is a process of engaging in short- and long-term dialogue. This hybridity can transcend the dilemma of traditionalist and progressionist perspectives in education. In the dialogic space within this hybrid form of talk, an individual learns how to become better at dialogue with others, which means how to become more empathetic, more open-minded, and more inclined to employ higher-order thinking. In line with the latest Taiwanese national curriculum, in which the emphasis is also on teaching pupils to become more competent in communication and interaction, this PhD study has laid some firm foundations for further exploration.

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APPENDIX 1A: Interview Protocol (Teacher)

1. Introduction

- Thank the interviewee for participating in the study.
- Explain that the goal of the research is to investigate epistemic beliefs about history.
- Emphasize my interest in the interviewee's own opinion, and that there are no right or wrong answers.
- Ask permission to tape the interview, and explain that all data will be treated confidentially.

2. Background

- What is your age?
- How long have you been teaching history in secondary school?
- What higher education courses did you follow prior to teaching?
- Why did you ultimately become a history teacher?

3. Beliefs about the nature of history

- How would you describe history as an academic discipline?
- [Show drawing of a line with 'art' and 'science' opposite to each other] Where on this line would you place history and why?
- How would you describe a good historian?
- What is he/she able to do?
- Does he/she follow a certain procedure? Why (not)?
- Is he/she allowed to draw on imagination and creativity? Why (not)?
- Is there, according to you, a difference between a historical theory and an opinion? Why (not)?
- Do you think that one historical theory can be superior to another? Why (not)?
- [If yes] Can you explain what criteria can be used to determine which theory is preferable?
- Historians studying the same remains of the past sometimes draw strikingly different conclusions. How would you explain this phenomenon?

4. Beliefs about the teaching of history

- According to you, why should pupils be taught history?
- What are the most important goals of the subject?
- Which competences should students attain during the history course?
- What kinds of knowledge should they acquire?
- What type of skills should they become proficient in?

- Which pedagogical approach is most fit for teaching history, and why?
- What is the main strength of this approach?
- What are weaknesses of this approach?
- Can you describe your own teaching approach during a 50-minute period of history?
- Which phases can be distinguished in each lesson?
- What are you doing during each phase?
- What are the pupils doing during each phase?
- How do your pupils view the subject of history?
- 5. Beliefs about historical thinking and reasoning.
- How does school history differ from historical research?
- Are there also similarities between school history and historical research? Please explain why you think so.
- What do you think historical thinking is?
- Do you think school history should make students proficient in applying the reasoning skills that historians use to investigating the past? Why (not)?
- [If yes] What should students know and be able to do?
- [If yes] How do you teach these skills in the classroom?
- 6. Beliefs about dialogic teaching
- Can you tell me what do you think dialogic teaching is?
- Do you think it's a plausible teaching method for history class?
- [If yes] Have you ever tried this approach in class? How?
- [If no] What do you think the challenges might be?

Part 2: Conflicting historical accounts for probing reasoning

1. Are these accounts same or different? Why?
2. Which one do you think is closer to the truth? Why?
3. To what extent, do you agree or disagree with these accounts? Why?

End

- Say that this concludes the interview, and ask whether the teacher has additional comments related to the topics of the interview, or more general remarks or questions.
- Again, thank the teacher for participating in the study.

APPENDIX 1B: Interview Protocol (Student)

1. Introduction

- Thank the interviewee for participating in the study.
- Explain that the goal of the research is to investigate epistemic beliefs about history.
- Emphasize my interest in the interviewee's own opinion, and that there are no right or wrong answers.
- Ask permission to tape the interview, and explain that all data will be treated confidentially.

2. Background

- What is your age?
- Which year are you in?
- Are you interested in history as a subject?

3. Beliefs about the nature of history

- How would you describe history as an academic discipline?
- [Show drawing of a line with 'art' and 'science' opposite to each other] Where on this line would you place history and why?
- How would you describe a good historian?
 - What is he/she able to do?
 - Does he/she follow a certain procedure? Why (not)?
 - Is he/she allowed to draw on imagination and creativity? Why (not)?
- Is there, according to you, a difference between a historical theory and an opinion? Why (not)?
- Do you think that one historical theory can be superior to another? Why (not)?
 - [If yes] Can you explain what criteria can be used to determine which theory is preferable?
- Historians studying the same remains of the past sometimes draw strikingly different conclusions. How would you explain this phenomenon?

4. Perceptions about the teacher's teaching practice in class

- According to you, what do you think your teacher's teaching style is?
 - Do you think this style is fitting your beliefs about the nature of history?
- Can you briefly describe a typical 50-minute period of history class?
 - What does teacher do during each phase?
 - What does students do during each phase?
- To you, what is the most important component in history class?

5. Beliefs about historical thinking and reasoning.
 - How does school history differ from historical research?
 - Are there also similarities between school history and historical research? Please explain why you think so.
 - What do you think historical thinking is?
 - Do you think school history should make students proficient in applying the reasoning skills that historians use to investigating the past? Why (not)?
 - [If yes] What should students know and be able to do?
 - [If yes] How do you teach these skills in the classroom?
6. Beliefs about dialogic teaching
 - Can you tell me what do you think dialogic teaching is?
 - Do you think it's a plausible teaching method for history class? Why or why not?

Part 2: Conflicting historical accounts for probing reasoning

1. Are these accounts same or different? Why?
2. Which one do you think is closer to the truth? Why?
3. To what extent, do you agree or disagree with these accounts? Why?

End

- Say that this concludes the interview, and ask whether the student has additional comments related to the topics of the interview, or more general remarks or questions. Again, thank the teacher for participating in the study.

APPENDIX 2: T-SEDA

The Teacher Scheme for Educational Dialogue Analysis (T-SEDA) is derived from SEDA (Hennessy et al, 2016), which was developed through the collaboration of British (led by Sara Hennessy) and Mexican scholars (led by Sylvia Rojas-Drummond) at the University of Cambridge. It was adapted for practitioners. It comprises a 12-category coding scheme and rating scales, some categories of which show significant relationships between dialogic teaching and student reasoning and attitudes within a large dataset (Howe et al., 2019); the codes have been tested intensively to ensure reliability and validity.

The T-SEDA resource pack aims to provide teachers support to generate high quality classroom dialogue with the use of specialised tools including a self-audit, reflective cycle of classroom inquiry in any subject area, and observation templates, as well as the coding scheme itself. The pack – and accompanying video exemplars – can be used to investigate and develop classroom dialogue via teacher inquiry. Hence, in this research, this pack provides rich materials (all of them have been translated into [Traditional Mandarin](#)) for PD workshops for dialogic education. More details are available here: [T-SEDA PACK \(V7\)](#)

Coding categories	Contributions and Strategies	What do we hear? (Key Words)
IB – Invite to build on ideas	<i>Invite building on ideas, elaboration or clarifying own or others' ideas</i>	'What?' 'Tell me', 'Can you rephrase this?' 'Do you think?' 'Do you agree?'
B – Build on ideas	<i>Build on, elaborate or clarify own or others' ideas</i>	'it's also', 'that makes me think', 'I mean'
CH - Challenge	<i>Question, disagree with or challenge an idea or opinion</i>	'I disagree', 'No', 'But', 'Are you sure...?'
IR – Invite reasoning	<i>Invite others to explain, justify, and/or use possibility thinking relating to their own or another's ideas</i>	'Why?', 'How?', 'Do you think?'
R – Make reasoning explicit	<i>Explain, justify and/or use possibility thinking relating to own or another's ideas</i>	'I think', 'because', 'so', 'therefore', 'in order to', 'if...then', 'it's like...', 'imagine if...', 'could',

CA - Coordinate and agree with ideas	<i>Contrast and synthesise ideas, express agreement and consensus</i>	‘I agree’, ‘I changed my mind’, ‘to sum up...’, ‘So, we all think that...’
C – Connect	<i>Make pathway of learning explicit by linking to contributions / knowledge / experiences beyond the immediate dialogue</i>	‘last lesson’, ‘earlier’, ‘reminds me of’, ‘next lesson’
RD – Reflect on dialogue or activity	<i>Evaluate and reflect “metacognitively” on learning activity</i>	‘dialogue’, ‘talking’, ‘sharing’, ‘collaborating’, ‘groupwork’, ‘pairwork’, ‘task’, ‘activity’
G – Guide direction of dialogue or activity	<i>Take responsibility for shaping activity or focusing the dialogue in a desired direction or use other scaffolding strategies to support dialogue or learning</i>	‘How about’, ‘focus’, ‘concentrate on’, ‘Let’s try’, ‘no hurry’
E – Express or invite ideas	<i>Offer or invite relevant contributions to initiate or further a dialogue (ones not covered by other categories)</i>	‘What do you think about...?’, ‘Tell me’, ‘your thoughts’, ‘your opinion’, ‘your ideas’

APPENDIX 3: An observation instrument for HTR

This instrument, developed by Gestsdóttir and colleagues (2018), aims to provide further professional development for history teachers and researchers in interest who wish to foster and investigate the quality of historical thinking and reasoning in their own teaching practice. It consists of seven categories of teaching historical reasoning and 33 items. The instrument has been piloted in 10 history lessons in Iceland and subsequently in 10 lessons in the Netherlands, which showed very strong intraclass correlation coefficients (ICCs) and percentage of agreement.

In this research, I have adapted this scheme and integrated it with T-SEDA coding scheme to investigate and track participating teachers' change of practice in dialogic teaching and how they foster HTR in classroom.

Categories	Items
1. The teacher communicates learning objectives that focus on historical thinking and reasoning goals.	The teacher communicates learning objectives that focus on: 1. knowledge about historical thinking and reasoning strategies (e.g. how to ask questions, examine sources, construct an argument), second-order concepts (e.g. cause, change, evidence) and/or the nature of historical knowledge (e.g. in history knowledge is constructed, it is often insecure and not fixed)
	2. a deeper understanding of some historical phenomena (e.g. causes and consequences, changes, significance)
2. The teacher demonstrates (components of) historical thinking and reasoning (without an explanation or explicit instruction)	The teacher 3. asks historical questions, problematises
	4. provides historical context (e.g. time, place, developments, societal characteristics/ contextualises events, objects or actions of people in the past)
	5. makes clear that people in the past thought differently than we do now
	6. makes causal connections (identifies causes and/or consequences)
	7. discerns/describes aspects of change and/or continuity
	8. compares historical phenomena and/or periods (e.g. a comparison with the present)
	9. assigns historical significance to persons, places, events or developments.

3. The teacher uses historical sources to support historical thinking and reasoning.	The teacher
	10. sources (e.g. who wrote the document?)
	11. contextualises
	12. does a close reading of sources
	13. compares information from different sources
	14. evaluates the usefulness/reliability of sources in relation to a specific question
4. The teacher makes clear that there are multiple perspectives and interpretations	15. uses information from a source as evidence in an interpretation/to support a claim uses historical documents, pictures and/or objects merely to illustrate the content makes no use of historical documents, pictures and/or objects
	The teacher
	16.presents different historical interpretations, for example, of causes/consequences, changes, historical significance or shows that interpretations change through time
	17.presents and explores the perspectives of different historical actors regarding the same event/in the same period
	18. presents two or more perspectives: local/ regional/ national/ global
	19. presents two or more perspectives: economic/ political/ sociocultural
5. The teacher provides explicit instruction on historical thinking and reasoning strategies	20.makes clear that the perspective presented is only one of many or changes through time.
	The teacher gives explicit instructions on how to
	21.contextualise the events or actions of people in the past/take a historical perspective
	22. explain historical phenomena
	23. identify/describe processes of change and continuity
	24. compare historical phenomena and/or periods
	25. evaluate and use historical sources as evidence
	26. assign historical significance to a person, place, event or development
6. The teacher engages students in historical thinking and reasoning	27. identify multiple perspectives and interpretations
	28.formulate arguments (pro and contra) and/or use evidence to support view-
	Assignments that require
	29. asking historical questions, constructing a historical context, explaining, com- paring or connecting historical

by individual or group tasks.	phenomena or concepts, describing aspects of change and continuity, assigning historical significance and describing/comparing multiple perspectives and interpretations
	30. the evaluation of historical sources
	31. argumentation: supporting claims about the past or sources with arguments.
7. The teacher engages students in historical thinking and reasoning by a whole-class discussion	A whole class discussion 32. in which students are provoked to think/reason historically in order to activate prior knowledge and/or to deepen a particular topic
	33. in which the teacher debriefs tasks and requires students to verbalise (and compare or evaluate) their historical thinking and reasoning.

APPENDIX 4: Adapted coding framework (Version 1 & Version 2)

T-SEDA Version		Adapted Version (V.1)		Adapted Version (V.2)	
Codes categories	Contributions and Strategies	Codes categories	Contributions and Strategies	Codes categories	Contributions and Strategies
IB Invite to build on ideas	Invite others to elaborate, build on, clarify, comment on or improve own or others' ideas / contributions	IB Invite to build on ideas	1. Invite building on ideas, elaboration or clarifying own or others' ideas	IB Invite to build on ideas	1. Invite ideas responding to the questions initiated by teachers 2. Invite building on ideas, elaboration or clarifying own or others' ideas in a general area
B Build on ideas	Build on, elaborate, clarify or comment on own or others' ideas expressed in previous turns or other contributions	B Build on ideas by using historical sources	1. Build on, elaborate or clarify own or others' ideas by using historical sources 2. Use information from a source as evidence in an interpretation/to support a claim uses historical documents, pictures	BH Build on ideas by using historical sources	1. Build on, elaborate or clarify own or others' ideas by using historical sources 2. Use information from a source as evidence in an interpretation/to support a claim uses historical documents, pictures
CH Challenge	Questioning, disagreeing with or challenging an idea	CH Challenge and Question	1. Question, disagree with or challenge an idea or opinion 2. Support claims about the past or sources with arguments	CHQ Challenge, disagree and Question	1. Question, disagree with or challenge an idea or opinion (including from the textbooks) 2. Support claims about the past

			3. Invite others to challenge		or sources with arguments to challenge or disagree an idea 3. Invite others to challenge 4. Ask a historical question which required students to employ higher level of historical thinking
IRE Invite reasoning	Invite others to explain, justify, and/or use possibility thinking relating to their own or another's ideas	IHR Invite historical reasoning	1. Invite others to explain, justify, and/or use historical thinking relating to their own or another's ideas	HT Make historical thinking explicit to pupils	1. Explicitly explain the notion of historical thinking 2. Demonstrate the skills of historical thinking 3. Scaffold to use academic disciplinary language
R Make reasoning explicit	Explain, justify and/or use possibility thinking relating to own or another's ideas	HR Make historical causal reasoning explicit	1. Makes causal connections (identifies causes and/or consequences) 2. Discerns/describes aspects of change and/or continuity	TC Provide notions on time and continuity	1. Discerns/describes aspects of change and/or continuity 2. Describe notions of time in history (e.g. timeline, historical period, era)
CA Coordination of ideas and agreement	Contrast and synthesise ideas, confirm agreement and consensus; Invite coordination/synthesis	CA Coordination of ideas and activity	1. Contrast and synthesise ideas, express agreement and consensus 2. Describe/Compare multiple	CA Coordination of ideas and activity	1. Contrast and synthesise ideas, express agreement and consensus

			perspectives and interpretations 3. Rephrase and synthesise others' idea		2. Rephrase and synthesise others' idea 3. Connect to prior knowledge or previous lessons
C Connect	Make pathway of learning explicit by linking to contributions / knowledge / experiences beyond the immediate dialogue	C Connect	1. Make pathway of learning explicit by linking to contributions / knowledge / experiences beyond the immediate dialogue		
RD Reflect on dialogue or activity	Evaluate or reflect “metacognitively” on processes of dialogue or learning activity; Invite others to do so	RD Reflect on dialogue or activity	1. Evaluate and reflect “metacognitively” on learning activity	RE Reflect on dialogue or activity or evaluate on pupils' response	1. Evaluate and reflect “metacognitively” on learning activity 2. Evaluate on pupils' response.
G Guide direction of dialogue or activity	Take responsibility for shaping activity or focusing the dialogue in a desired direction or use other scaffolding strategies to support dialogue or learning	G Guide direction of dialogue or activity or strategy on historical thinking	1. Take responsibility for shaping activity or focusing the dialogue in a desired direction 2. Use other scaffolding strategies to support dialogue or learning on historical thinking	G Guide direction of dialogue or activity or strategy on historical thinking	1. Take responsibility for shaping activity or focusing the dialogue in a desired direction 2. Use other scaffolding strategies to support dialogue or learning on historical thinking
E Express or invite	Offer or invite relevant contributions to initiate or further a				

ideas	dialogue (ones not covered by other categories)				
		CX Contextualisation	1. Contextualise the events or actions of people in the past/take a historical perspective 2. Compares information from different sources 3. Evaluates the usefulness/reliability of sources in relation to a specific question	CX Contextualisation	1. Contextualise the events or actions of people in the past/take a historical perspective 2. Compares information from different sources 3. Evaluates the usefulness/reliability of sources in relation to a specific question
		MP Multiple perspectives and interpretation	1. Present different historical interpretations 2. Present and explore the perspectives of different historical actors regarding the same event/in the same period	MP Multiple perspectives and interpretation	1. Present different historical interpretations 2. Present and explore the perspectives of different historical actors regarding the same event/in the same period 3. Describe/Compare multiple perspectives and interpretations
				BC Build up causality	1. Invite students to build up causality through historical knowledge 2. Explore multiple dimensions

		of causal relation 3. Makes causal connections (identifies causes and/or consequences)
	AC Make historical analogy and comparison	1. Make connections to student's daily life experience 2. Compare different/ similar historical account

APPENDIX 5A: Information sheet (Mandarin Version)

研究者 招募

教師專業發展- 對話式歷史教育研究



各位老師您好：

此博士論文研究旨在探討「對話式教育」(dialogic education)對於歷史思維(historical thinking)上的運用以及影響。並，透過深入探究老師與學生們對於歷史學與歷史教育本質的「知識信念」(epistemic beliefs)來建立模組，從根本做起改變。



研究設計：教師專業發展

- 工作坊：一同探討「對話式教學」、「歷史思維」等概念，並探討如何運用至教學當中
- 例行月會：老師們一同針對上課內容進行討論與改善。



研究方法：訪談、課堂觀察

- 老師訪談：老師們在研究前與研究結束時都會接受訪談以了解老師們的「知識信念」。
- 學生訪談：同時，每班會選出3位同學進行焦點訪談。
- 課堂觀察：每月一次課堂觀察用以分析研究課堂對話。



招募人數：8名高中歷史老師
(高一及高二為佳)

- 招募地區：大台北地區
- 研究時程：2019/8月-2020/8月



如何報名：[請點我報名](#)

有興趣參與研究的老師們，歡迎填寫[連結表單](#)。同時，對此研究還有任何問題，或是還想進一步了解的老師們，也歡迎在表單上填寫自己的疑問，我將會親自與您聯繫！若想面對面了解，我也很樂意拜訪老師您所在的學校，為老師您做進一步的解釋！



- 聯絡人：張至慶
- 所屬：劍橋大學教育系博士班
- 連絡信箱：[\[email address redacted\]](#)



UNIVERSITY OF
CAMBRIDGE

Faculty of Education

APPENDIX 5B: Information sheet (English Version)

1. Research Project Title

Teacher professional development for changing epistemic beliefs through dialogic history education: A design-based research study

2. Invitation

You are being invited to take part in this research project. Before you decide to do so, it is important you understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

3. What is the project's purpose?

This research project aims to propose a Design-Based Research (DBR) study, located in Taiwanese high schools, to first explore teachers' and students' epistemic beliefs then to implement an intervention as a form of Professional Development (PD).

4. Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be able to keep a copy of this information sheet and you should indicate your agreement to the consent form. You can still withdraw at any time. You do not have to give a reason.

5. What will happen if I take part?

You will be asked to to:

1. Attend workshops (4 three-hour workshop in 08/2019)
2. Be interviewed (pre- and post- intervention)
3. Apply new pedagogical approach to lesson plans
4. Attend monthly group meeting

6. What are the possible disadvantages and risks of taking part?

Participating in the research is not anticipated to cause you any disadvantages or discomfort.

However, if you feel any stress from applying new teaching approach, do let the researcher know and you could choose not to do so.

7. What are the possible benefits of taking part?

Teachers are expected to take advantages of PD in this research and grow personally and professionally. Hence, teachers will be familiar with the theoretical and practical perspectives about dialogic teaching as well as historical thinking, which might be beneficial to ones' professional career.

8. What if something goes wrong?

If you have any complaints about the project in the first instance you can contact the researcher immediately. All complaints will be considered seriously and handled as soon as possible.

9. Will my taking part in this project be kept confidential?

All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified or identifiable in any reports or publications. Your institution will also not be identified or identifiable. Any data collected about you will be stored online in a form protected by passwords and other relevant security processes and technologies. Data collected may be shared in an anonymised form to allow reuse by the research team. These anonymised data will not allow any individuals or their institutions to be identified or identifiable.

10. Will I be recorded, and how will the recorded media be used?

Yes, you will be recorded during interviews and class. However, if you are not comfortable with being recorded, do let the researcher know. All the recorded media will only be used for data analysis. They won't be published in any way.

11. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

1. The interviews will ask you about your perceptions and beliefs about dialogic teaching and the nature of history (including the rationale of your teaching practice).
2. In class observations, teacher-pupil dialogues will be the main data to be collected for further analysis.

12. What will happen to the results of the research project?

Results of the research will be presented in my PhD dissertation. You will not be identified in any report or publication. Your institution will not be identified in any report or publication. If you wish to be given a copy of any reports resulting from the research, please ask us to put you on the circulation list.

18. Contacts for further information

Researcher: Chih Ching Chang

Affiliation: Faculty of Education, University of Cambridge

Email: *[email address redacted]*

Tel: *[phone number redacted]*

18. Who else can I contact to if I have further complaints?

If you would like to speak to someone else about complaints, you can contact to the gatekeeper of this research:

Name: 張肇祥 老師

Affiliation: Panciao Senior High School

Tel: *[phone number redacted]*

Thank you for taking part in this research.

APPENDIX 6A: Consent Form (Mandarin version for teachers)

研究參與知情同意書

感謝您熱心參與英國劍橋大學教育學院 (Faculty of Education, University of Cambridge) 博士生：張至慶 的博士論文研究計畫。請您仔細閱讀以下文字，同意後請簽上您的大名。

■研究目的

此博士論文研究旨在共同與老師們一起探討對話式教學 (dialogic teaching) 在歷史思維 (historical thinking) 上的影響。並透過教師專業發展的模式，與老師們一起深入探究關於老師以及學生們「知識信念」(epistemic belief) 對於歷史教學與思維上不同的形態。

■研究活動

(一) 時間及地點：2019 年 8 月到 2020 年 8 月

(二) 參與方式：此研究將會需要老師們出席討論、工作坊，並在每個月時研究者會到教室觀課錄影。此外，每班有三位學生將會被選出，當成訪談的研究對象。

■可能承受的風險及因應的措施

若您參與本研究不幸受到任何與研究相關傷害，我們將依責任歸屬負擔損害賠償。請慎重考慮是否接受參與的風險，不要勉強。

■研究資料之保存期限及運用規劃？

1. 您所提供的資料，我們將在輸入電腦且編碼後，妥善保存在設有密碼的硬碟或電腦裡，且於多久研究結束四年後刪除銷毀，並只使用在本研究。課堂錄影檔案也將會進行編碼，請放心此資料只會用於本研究。
2. 未來研究成果呈現時，您的真實姓名及個人資料與學生的個人資料將不會出現在報告上；若您有興趣瞭解研究結果，完成研究後，可提供您摘要報告。

■您可自由決定參與及退出

過程中，若您感到不舒服，想要暫停或退出研究，我們會完全尊重您的意願。先前已蒐集的資料將會進行銷毀。即便研究結束，有任何問題，都歡迎聯絡我們。

■申請專利或商業應用的利益分配

無衍生的商業利益。

■參與權益諮詢管道

若有任何疑問，歡迎來電詢問研究人員：張至慶

手機：[phone number redacted] 信箱：[email address redacted]

■雙方簽名欄位

研究參與者：

錄音 (或錄影)： ☐ 同意-錄音 (或錄影) ☐ 不同意-錄音 (或錄影)

成果回饋：☐ 無需 ☐ 研究完成請提供報告，寄至 (電子信箱或地址) _____

簽名：_____ 日期： 年 月 日

研究人員簽署欄：

☐ 本同意書一式兩份，將由雙方各自留存，以利日後聯繫

研究人員簽名：_____ 日期： 年 月 日

APPENDIX 6B: Consent Form (English version for teachers)

Consent Form to Participate in Research

I have been asked to participate in a research study conducted by **Chih Ching Chang** from Faculty of Education at University of Cambridge.

INTRODUCTION: Below is a description of the research procedures and an explanation of my rights as a research participant. I have been asked to read this information carefully. If I agree to participate, I will sign in the space provided to indicate that I have read and understood the information furnished on this consent form. I am entitled to and will receive a signed copy of this form.

PURPOSE: This research project aims to propose a Design-Based Research (DBR) study, located in Taiwanese high schools, to first explore teachers' and students' epistemic beliefs then to implement an intervention as a form of Professional Development (PD).

DURATION AND LOCATION OF STUDY: If I agree to participate in this study, my participation will last for approximately one academic year (08/2019-08/2020) and will take place at the high school.

PROCEDURES: During this study, I'm aware I will have to:

1. Attend workshops (4 three-hour workshop in 08/2019)
2. Be interviewed (pre- and post- intervention)
3. Apply new pedagogical approach to lesson plans
4. Attend monthly group meeting

I'm also aware all the activities mentioned above will be recorded for data analysis.

POTENTIAL RISKS AND DISCOMFORTS: I understand there are no known or anticipated risks associated with participation in this study.

CONFIDENTIALITY: I understand the data collected in this study will be kept confidential unless disclosure is required by law. All names on this study will be pseudonymous. Raw data will only be seen only by the researcher and research supervisor. Video and audio files will be encrypted and will only be viewed by the researcher and supervisor on a personal computer in a private location, such as office or home.

RIGHT TO REFUSE OR WITHDRAW: I understand that my participation is voluntary. I may refuse to participate or discontinue my participation at any time; there will be no penalty for doing so and I will still receive my compensation as explained above. Some details of this project may not be made known to me until my session is completed. I realize at the completion of the session that I have the option of withholding the responses I have provided from subsequent analysis. I also understand that the researcher has the right to withdraw me from participation in the study at any time.

OFFER TO ANSWER QUESTIONS: If I have any questions about this study, I may call the researcher, **Chih Ching Chang** (Faculty of Education, University of Cambridge, Email: [email address redacted])

***I CERTIFY THAT I AM AT LEAST 18 YEARS OLD AND I AGREE TO PARTICIPATE IN THIS RESEARCH PROJECT.**

PARTICIPANT'S SIGNATURE

DATE

PERSON OBTAINING CONSENT:

I have allowed the individual named above the time to read this consent form and have answered any questions that have been asked. I will provide the participant with a copy of this consent form.

RESEARCHER'S SIGNATURE

DATE

APPENDIX 7A: Consent Form (Mandarin version for students)

青少年參與研究意願書暨家長知情書



親愛的同學您好：

◆ 我是目前就讀於劍橋大學教育所的博士生。此研究旨在深入探究關於老師以及學生們「知識信念」)

(epistemic belief) 對於歷史教學與歷史思維 (historical thinking) 上不同形態的影響。您的參與能夠幫忙此研究進行地更加順利，也進一步為臺灣的歷史教育注入更多元的教學教法。

◆ 所屬單位：

劍橋大學教育系所)

研究聯絡人：張至慶

聯絡電話:[phone number redacted]，E-mail:[email address redacted]

研究內容

許多研究指出「對話式教學」(dialogic teaching)能有助於啟發學生更高層次的認知思考與學習發展。同時,另有學者指出,將對話式教學運用於歷史教學當中,能夠讓學生培養歷史思維。此研究目的在於透過觀察與分析老師所運用的對話式教學法,檢驗其對於學生歷史思維建構的成效與影響。同時,也會透過訪談來了解學生們對於歷史知識本質與教學的看法。

◆ 這個研究將會怎麼進行呢?

(一) 時間及地點：歷史課堂

(二) 參與方式：1. 正常上課方式

2. 訪談 (每班將會有3)位學生隨機抽選為訪談對象))

(三) 錄音 (或錄影)：為了正確記錄資料，如果您不願意或中途想停止，可隨時提出，不用有壓力或不好意思。

(四) 您的資料將受到妥善保密!

1 關於您提供的資料 (採取「匿名」的無記名問卷，用代碼取代真實的姓名)，我們會負起保密責任，不會向任何人透漏。

➤ 我們會保護您的福祉，且尊重意願：

參與這個研究，不會對您的身體或心理造成傷害，過程中，若您想要退出研究，我們會完全尊重您的意願。即使調查結束，有任何問題，都歡迎連絡我們。

➤ 您提供的資料將被如何使用?：

1. 您所提供的問卷資料，我們將在輸入電腦且編碼後，妥善保存在設有密碼的硬碟或電腦裡，並只使用在本研究。
2. 未來研究成果呈現時，您的真實姓名及個人資料將不會出現在報告上；若您有興趣瞭解研究結果，完成研究後，可提供您摘要報告。

上述內容，您有任何問題，請儘管提問。

如不同意，也請不用為難，歡迎來信提出！

APPENDIX 7B: Consent Form (English version for students)

Consent Form to Participate in Research

- ◆ Project Title: Teacher professional development for changing epistemic beliefs through dialogic history education: A design-based research study in Taiwan
- ◆ I agree that my child(full name of child) for whom I am a guardian may take part in the above University of Cambridge research project. The project has been explained to and to me, and I have read the Information Sheet, which I may keep for my records.
- ◆ I understand that agreeing to take part means that I am willing to allow.....to:
 - be interviewed by the researcher
 - be observed in class
 - allow the interview and classes to be videotaped/audiotaped
 - make her/himself available for a further interview should that be required
- ◆ **Data Protection**

This information will be held and processed for the following purpose(s): I understand that any information (full name of child) provides is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published.

Signature Date.....

Participant's Name:

Participant's Age:.....

Parent's/Guardian's Name

Your relationship to participant:

If appropriate, reason(s) why s/he cannot give written consent.....

.....

Signature of Parent/Guardian:Date:.....

- ◆ **OFFER TO ANSWER QUESTIONS:** If I have any questions about this study, I may call the researcher, **Chih Ching Chang (Faculty of Education, University of Cambridge**
Number:[number redacted] or Email: [email address redacted])

Thank you for your participation.