A Q Study of Mainland Chinese English Language Learners' Epistemic Beliefs

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Article information	Abstract
	This study explored epistemic beliefs held by Mainland Chinese learners of English. Studies that investigate language learners' personal epistemologies, which include beliefs about the nature of knowledge and the process of knowing, are scarce. For the most part, such studies are quantitative. This paper employed Q methodology, an approach that blends quantitative and qualitative research paradigms, to present a more systematic analysis of and deeper insights into the language learners' subjective opinions. The participants were 20 undergraduate students who learned English in a university in China. They sorted 42 statements pertaining to language-related epistemic beliefs on a grid ranging from -5 (most disagree) to +5 (most agree). During the factor analytic procedure similar Q-sorts formed three factors, each representing a unique set of epistemic beliefs shared by the students. The qualitative interpretation of these factors revealed the following viewpoints: firstly, learning the English language requires time, effort and perseverance; secondly, learning English requires critical thinking; thirdly, it requires talent and hard work. Pedagogical implications of these findings are discussed.

INTRODUCTION

Epistemic beliefs are worldviews and opinions that people have about the nature of knowledge, the process of acquiring knowledge and the legitimacy of knowledge. These beliefs represent a considerable interest for philosophers, educators and linguists. Noam Chomsky, for example, raised such important questions as "What constitutes knowledge of languages?" and "How is knowledge of language acquired?" As he proposed, knowing a language involves achieving a mastery of "a set of rules and principles that determine an infinite, discrete set of sentences, each of which has a fixed form and a fixed meaning or meaning potential" (Chomsky, 1975, p. 303).

Besides the scholarly discussions there exist 'folk beliefs' or opinion held by ordinary people regarding what having, and gaining, knowledge of a new language involves. Many people have their own experience of learning a second or a foreign language either in formal or informal

settings. However, empirical studies on language learners' epistemic beliefs are scarce; moreover, the available studies are mostly quantitative in nature (e.g., Kahsay, 2019; Mori, 1999; Nikitina & Furuoka, 2018). Among methodologies that allow delving deeper into subjective opinions that individual people hold on a variety of issues Q methodology has been rarely adopted in studies on epistemic beliefs. The current study addresses this gap. It adopts Q methodology (Q) to explore language-related epistemic beliefs held by Mainland Chinese learners of English.

Gaining deeper insights into Chinese students' personal epistemologies goes beyond a purely scholarly interest and has notable pedagogical implications. This is because epistemic beliefs, even if held unconsciously, are deeply rooted in a cultural context where the teaching and learning takes place. Such beliefs form 'cultures of learning' as they permeate the classroom proceedings and shape pedagogical practices (Cortazzi & Jin, 2013). Against such a background, the current Q methodology study addresses the following questions:

1. What language-related epistemic beliefs do Mainland Chinese learners of English language have?
2. Do groups of language learners who share similar epistemic beliefs consist of individuals at the same level of English language proficiency?

The next section offers a review of relevant for this Q study scholarly literature. It begins with a brief overview of Q methodology, proceeds with a discussion of earlier explorations of students' epistemic beliefs and considers studies on cultural influences on these beliefs.

LITERATURE REVIEW

Q studies on L2 beliefs

The topic of beliefs about language learning that students bring into the foreign language classroom has attracted much interest among researcher and language educators since the pioneering research conducted by Horwitz (1985, 1988) was published in the 1980s. Studies on beliefs about learning a new language were done in various educational and cultural context including Asian countries, such as Malaysia (Nikitina & Furuoka, 2006), Thailand (Apairach & Vibulphol, 2015) and China (Tang & Tian, 2015). However, studies that take a wider perspective and include epistemic beliefs held by language learners remain scarce. In one such study, Mori (1999) used a modified Epistemological Questionnaire (Schommer, 1990) to explore epistemic beliefs that students hold about learning *kanji* or the logographic Chinese characters used in Japanese writing system. In another study, Nikitina and Furuoka (2018) developed the "Language Learners' Epistemic Beliefs" (LLEB) questionnaire and proceeded to use the instrument to examine dimensionality within foreign language learners' epistemic beliefs.

Q methodology has been rarely employed in research on language-related beliefs. Only one such study was available at the time of writing this article. It was done by Rock (2013) who explored vocabulary-related epistemological beliefs held by Italian learners of English. Many valuable insights could be gained from conducting Q studies on the issues pertaining to

language-related beliefs, including beliefs about L2 learning as well as language learners' and educators' personal epistemologies. This lack could be due to the problem of identifying appropriate areas and dimensions within epistemic beliefs in the context of L2 learning, which was noted and addressed by Y. Wang et al. (2022).

Furthermore, a search of literature revealed a lack of studies that examined links between language learners' proficiency in a target language and their language-related epistemic beliefs. This is a notable omission especially in view that it is plausible to suggest that individual peoples' beliefs about learning a new language might be influenced by their past language learning experiences and achievements, such as reaching a certain level of language proficiency. As has been noted by researchers, the majority of non-English language majors in Chinese universities have an intermediate level of proficiency with a substantial share of the students at a lower-intermediate level (Y. Li, Nikitina & Riget, 2022). This study addressed the gaps in research literature outlined in this subsection. The next subsection discusses dimensions within epistemic beliefs.

Research on epistemic beliefs

Empirical research on personal epistemologies in Western educational settings dates back to a series of pioneering studies conducted in the 1950s by Perry (1970) who observed that these beliefs consist of discreet but interlinked dimensions. Influential studies by Hofer (2000, 2006) proposed that epistemic beliefs consist of "interrelated dimensions" which cluster in one of the two vast areas, namely, beliefs about "the nature of knowledge" and beliefs pertaining "the nature or process of knowing". The former dimension of epistemic beliefs is comprised of subjective opinions that people have as to what constitutes knowledge and how people come to know what they know (p. 380); it incorporates their opinions about the certainty of knowledge and the simplicity of knowledge. The latter dimension – the 'nature or process of knowing' – relates to the sources from which knowledge is obtained and justification of knowledge legitimacy.

As the current empirical study was done in Mainland China a search of relevant literature indicated that the composition of Confucian notions of gaining knowledge, which comprise the ideals about 'concepts of learning', 'attitudes towards learning', 'aims of learning' as well as 'methods of learning', 'roles of the teacher', and 'modes of teaching'" (J. Wang & Lin, 2019, p. 196), do not greatly divert from the Western viewpoints. One notable difference is that some western researchers consider peripheral the epistemic beliefs about the 'process of knowing'. As a result, as Hofer (2000, 2006) noted, these beliefs were excluded in a number of studies. This exclusion is not entirely justified. As Pritchard (2006) pointed out, success in gaining knowledge "must genuinely be the result of one's efforts" (p. 6), which validates the importance of the process of gaining knowledge.

Upon consulting theoretical literature and empirical studies done in various educational contexts Y. Wang et al. (2022) proposed to consider several dimensions within Chinese language learners' epistemic beliefs including beliefs pertaining to the process of learning. Specifically, the researchers identified such dimensions as beliefs in certainty of knowledge, beliefs in simplicity

of knowledge, beliefs regarding the source of knowledge, beliefs in authority of knowledge, beliefs pertaining the innate or fixed ability for learning a new language, beliefs in quick learning and beliefs in learning effort. Moreover, Y. Wang et al. (2022) sought the opinions of Mainland Chinese students and English language instructors regarding what constitutes knowledge of a foreign language, such as the English language. The researchers then proceeded to develop and test a Q-sample on language-related epistemic beliefs that could be used, with some modifications, in future Q studies.

Cultural influences on epistemic beliefs

Being part of personally-held worldviews, epistemic beliefs are rooted in and shaped by cultural contexts. While recognizing inherent controversies of discussing the impact of culture on the notions of learning and the danger of reverting to stereotypical perceptions of an 'Asian learner', scholars and educators agree that conceptions of education that stem from the Confucian heritage remain deeply ingrained in most East Asian societies. Moreover, these conceptions not only shape education policies at a macro level but they determine classroom proceeding at a micro-level, even if education managers, teachers, students, parents and other important stakeholders remain unaware of their origin (W.O. Lee, 1996; E. Li, 2017, p. 10). Expanding a thesis on cultures of learning put forward by Jin and Cortazzi (2006) it can be argued that culturally ingrained epistemologies are at the core of cultures of learning and teaching, which are "taken-for-granted frameworks of expectations, attitudes, values and beliefs about how to teach or learn successfully (p. 9).

There is a rich body of literature on differences in the perceptions of knowledge and gaining knowledge (i.e., learning) between Western societies and societies influenced by Confucian philosophy, such as China, Japan and Korea (Biggs, 1996; C.K.K. Chan & Rao, 2009; W.O. Lee, 1996; E. Li, 2017; J. Li & Fischer, 2004). Confucian philosophy, which is a culmination of the teachings of Confucius (551 BC – 479 BC), Mencius (372 BC – 289 BC) and Hsün-tzu (c. 300 BC – c. 230 BC), places a high premium on education and learning. It emphasizes the concepts of will power and effort (W.O. Lee, 1996). Moreover, empirical studies have demonstrated that students in societies influenced by Confucian thinking tend to believe that it is possible to enhance one's ability through perseverance and effort (Heine et al., 2001 cited in J. Li & Fischer, 2004). As J. Li and Fischer (2004) put it, in contrast to the dominant in Western societies perceptions that intelligence, talent and personal ability are the key ingredients for achieving success in studies, "Chinese adults and children are more inclined to view ability as something that they achieve through personal effort" (p. 388).

Another feature commonly associated with Chinese and more broadly East Asian learners is a great respect accorded to the teacher (W.O. Lee, 1996; E. Li, 2017, p. 7). Referencing Cortazzi and Jin (2013), J. Wang and Lin (2019) noted that despite commanding great authority within the classroom, teachers are expected to care about their students, understand their character and learning needs and develop an effective methodology to facilitate the students' learning and academic success. Clearly, cultural epistemologies have notable implications for pedagogical practice.

Preferred and societally-endorsed approaches to learning is another key area in research on learners' personal epistemologies. Empirical studies report that Asian learners tend to favour slower but more thorough strategies; they also tend to practice rote learning. Despite the negative connotations assigned to memorization and rote learning there is ample empirical evidence that East Asian learners use these strategies as a stepping stone to a deeper understanding of a study topic with all its complexities (J. Li & Fischer, 2004; Marton et al., 1996). In sum, notwithstanding differences in beliefs about learning and approaches to learning across cultures, having a set of personally-held epistemic beliefs is a universal phenomenon.

METHOD

The method adopted in this study, the research instrument as well as the data collection and data analysis procedures were approved by the Universiti Malaya Research Ethics Committee (UMREC; UM.TNC2/UMREC_1677).

The origins and distinctive features of Q methodology

Q methodology was introduced almost 90 years ago by a physicist and a psychologist William Stephenson (1935a). Q methodology, which is often referred to as Q, is an approach to systematically examining individual people's subjectivity on a certain issue, event or phenomenon. Stephenson proposed Q in order to counter some notable contradictions in psychology studies on individual differences. He pointed out that a highly popular at the time analytical method of factor analysis, which relied data collected using Likert-type scales, yielded the findings that actually provided insights into the latent structure of a study's variables for an average person in a bigger population. The findings did not yield insights into subjective views and opinions held by the participants. Stephenson pointed out the need to 'reformulate' the factor analysis so that individual participants in a study – and not the study variables – would be grouped together based on similarities of opinions shared by them (Stephenson, 1935b, 1953).

Despite its long history Q methodology has gained a wider recognition only in the recent decades. Applied linguistics researchers employed Q methodology to explore a wide range of issues, including L2 motivation, learning strategies, learner autonomy, multilingualism, language education policy, boredom in the language classroom, language teachers' mindset and beliefs (Alkhateeb & Alshaboul, 2022; Caruso & Fraschini, 2021; Damio & Hashim, 2014; Fong, 2021; Gyenes, 2021; Irie et al., 2018; Kruk et al., 2022; Lundberg, 2019; Rock, 2013; Slaughter et al., 2022).

Participants

A large number of participants is not required in a Q study as the researcher's main aim is to identify the participants' personally-held viewpoints and to explore these views at a deeper level (Brown, 1980; Watts & Stenner, 2012). Twenty (N=20) Mainland Chinese university students in Chifeng university took part in the current study. All of them were in the same English language class taught by the first author of this article. The students majored in

engineering and urban planning and English was a compulsory subject. They students were between 19 and 20 years old. Participation in this study was voluntary, which was stated when the students were invited to take part in this study. The students were interested in this research and agreed to share their views and opinions about learning the English language.

The participants were at an intermediate level of English language proficiency, which is typical for non-English major undergraduates in China (Y. Li, Nikitina & Riget, 2022). In order to answer research question #2, this study used the median value (or the middle-most test score) of the students' performance in the two latest English language tests. The median, and not the mean, was chosen because the sample was small; calculating the mean value could further exacerbate the problem of possible outliers or a few students who had performed considerably better or considerably worse in the two tests. The median mark was 72 for this cohort of students. The participants who scored above the median were considered as having a higher level of English language proficiency.

Research instrument

The Q-sample consisted of 42 statements on language-related epistemic beliefs. The development of the research instrument is described in detail in Y. Wang et al.'s (2022) article. In brief, following advice in methodological literature on Q, a large concourse of statements on epistemic beliefs was created first. Of the 385 concourse statements, 290 had been sourced from various empirical studies in the field of general education (K.W. Chan & Elliott, 2002; Hofer & Pintrich, 1997; Jehng et al., 1993; Schommer, 1998; Schraw et al., 2002; Wood & Kardash, 2002) and applied linguistics (Nikitina & Furuoka, 2018). To incorporate the 'conversational' element, the opinions of English language learners in Chifeng University were collected. The students were asked the question "What does knowing a foreign language mean personally to you?". Also, language instructors in the same university were asked the question "What do we know when we know a foreign language (English)?". The students' and the teachers' opinions contributed additional 95 items to the concourse. We then removed the repetitive statements while taking care to retain the items that were relevant in a Chinese educational context and that pertained to each of the dimensions in the epistemic beliefs in this study. The resulting Q-sample included 45 statements. The statements were translated into Chinese and printed on small cards. Next, the Q-sample was piloted. Upon piloting the instrument, 3 items that the students considered either less clear or repetitive were removed. This resulted in a 42-statement Q-sample that was used in this study. An English translation of the Q-sample is given in the Appendix.

Data collection

The data were collected by the first author of this article. The participants worked individually to sort the 42 statements in the Q-sample on a fixed quasi-normal distribution grid which ranged from -5 ("most disagree") to +5 ("most agree"). The Q-sorting procedure lasted between 30 and 45 minutes. Each completed Q-sort was photographed and retained in a specially designated folder for further analysis.

Immediately following the Q-sorting task, a semi-structured interview in the students' mother

tongue was conducted with each participant. During the interviews the students were asked to explain the configuration of their respective Q-sorts. A particular attention was given to the items placed very near to or at the extreme ends of the grid. The interview protocol contained the questions such as: "Can you explain why you have most agreed with these statements", "How about these statements here?". Each interview lasted between 20 and 30 minutes. The interviews were recorded and transcribed for further analysis.

Analytical procedure

Q methodology incorporates quantitative statistical analysis (i.e., correlation test and factor analysis of the Q-sorts obtained from a study participants) and qualitative content analysis. KADE software (Banasick, 2019) aided with the analysis of the quantitative data. Firstly, the correlation matrix was extracted to show the relationships between the 20 Q-sorts. Following this, the factor loadings matrix was obtained using the centroid extraction method.

To make a decision regarding the number of factors to retain for further analysis, we considered the eigenvalues (EV) of each factor. The Kaiser–Guttman criterion sets the EV benchmark at or greater than 1.00. We also examined the Scree plot and combined the statistical results with our own understanding of the educational context and issue at hand, as advised in literature on Q methodology (Watts & Stenner, 2012). In short, the decision regarding the number of factors to retain was based on the application of the objective criteria with our own subjective understandings. As an outcome of these deliberations, three factors were retained; they were then rotated using the varimax technique. The findings were checked for the presence of confounded Q-sorts (i.e., those with significant loadings on more than 1 factor) and insignificant loadings.

Factors interpretation

To answer research question #1, we used a reflective reiterative approach and the logic of abduction in order to identify the peculiar character of each of the three factors (Brown, 1980, 1993; Watts & Stenner, 2012). Specifically, during the interpretation stage, apart from the statements at the extreme ends of each factor we also noted how these statements were supported or disputed by the other statements on the factor. In addition, we considered the statements that were ranked higher or lower in a particular factor relative to the other two factors. The statements that expressed undecided or neutral attitudes (i.e., placed at 0 or close to 0) were taken into consideration as well. We also examined the consensus statements (i.e., the statements whose scores between any two factors were not statistically different at the 0.01 significance level).

To address research question #2, we checked the language proficiency level of the Q- sorters that were highly associated with each factor. To do this, we used the benchmark median value 72 of the test scores and divided the students into those having a lower- and those having an upper- proficiency level. Finally, to clarify the 'whys' of the students' viewpoints and get a better understanding of each factor's meaning, we analyzed the students' comments that they had given during the post-Q sort interviews.

FINDINGS

Three factors were retained for further analysis; they accounted for 65% of total variance and contained neither confounded nor insignificant Q-sorts. Each factor was assigned a label according to the prevalent viewpoint it expressed. Presentation of the findings on each factor in the following subsections proceeds as follows. Firstly, statistical information on the factor's eigenvalue and the total variance explained is given.

This is followed by a qualitative summary of each factor essence where the epistemic beliefs shared by the students are explained. Some Q-sample statements are provided in support of the factor interpretation; they are supplied with their number (see the Appendix) and the ranking on this particular factor. For example, the Q-sample statement "Effort is overshadowed by talent" (40: +2) numbered #40 received the ranking +2. In addition, the p-values are reported for the distinguishing statements. Excerpts from the post Q-sorting interviews with some students are given to further elucidate the nature of a factor.

Factor 1: Learning the English language requires time, effort and perseverance

Factor 1 has an eigenvalue of 11.481 and explains 57% of the total variance. Six students had a higher proficiency in English, i.e., their average exam score was above the benchmark value 72, while seven students were at a lower level of proficiency (<72). Therefore, we could tentatively conclude that the epistemic beliefs of the students associated with this factor did not depend on their English language proficiency level. Thirteen participants were significantly associated with this factor. Figure 1 presents the factor array.

Figure 1 Factor 1 array

Note: Consensus statements are highlighted in blue; distinguishing statements at $p< 0.05$ are highlighted in light grey; distinguishing statements at $p< 0.01$ are highlighted in dark grey.

The group of students associated with Factor 1 was distinguished by the views that language learning is a slow and gradual process (34: +5). They disapproved the opinion that language learning is a quick process and that if a person cannot learn the language fast it is not worth keeping trying to learn it (36: -4). Furthermore, this group of students shared the views that, firstly, if a language learner cannot immediately understand a new grammar rule, he or she should keep trying to understand it (35: +2; $p<0.01$), which highlights a strongly shared viewpoint of the importance of patience and perseverance in learning. Secondly, the factor supports the idea that people can study the English language for years and still not achieve a good knowledge of it (statement 38: 0; $p<0.05$). These opinions can be exemplified by the statement

"*From grade 3 until now we have received more than ten years of English education. Learning English requires patience and is acquired step by step: vocabulary, grammar and text. But our overall English proficiency level is not very high for most of us can't communicate with foreigners fluently. Personally, there always exists new knowledge to learn. English is a language that never stops growing.*" (Participant 1)

The factor structure also revealed that instead of acquiring knowledge from one single source, the language learners tended to seek knowledge of English from multiple sources (23: +4). Interestingly, the students did not endorse the opinion regarding the major sources of knowledge. This is evident from their neutral attitudes to the views that knowledge of English mainly comes from the textbooks (24: 0) and language teacher (25: +1), and that the Internet and language apps are reliable sources of knowledge (26: -1). As one student mentioned,

"*English knowledge not only comes from English teacher and textbooks but also from other sources including novels, movies, videos… As the fast development of information, a variety of commonly-used applications such as* Youdao *dictionary,* TikTok *are available as easy as a pie. Additionally, online lectures explaining different aspects of English knowledge attract me now that they are not only interesting but also useful.*" (Participant 2)

Importantly, the students considered that to gain knowledge one needs to discover how to learn (28: +4) and that learning English entails a lot of hard work (39: +4). Quite logically, the students opposed the viewpoint that "Effort is overshadowed by talent" (40: -4, $p<0.01$). All of this indicates that the participants in this study placed high premium on being an active learner and making one's own effort.

Factor 2: Learning the English language requires critical thinking

Factor 2 has an eigenvalue of 0.978 and explains 5% of the study variance. The factor array is presented in Figure 2.

-5	-4	-3	-2	-1	0	1	2	3	4	5
5.Memorizing vocabulary and grammar is all that is needed to know	8.The English language teacher's explanations and answers	21.The most authoritative knowledge of English comes from linguists	11.There are no puzzling problems in English grammar.	35.If a language learner cannot immediately understand a	31.Good study skills make little difference if you are not	13.Having a good knowledge of English means to know lots of grammar	17.English language teachers are the ones who can help	38.People can study English language for years and still not have a good	34.Language learning is a slow and gradual process.	12.English language is constantly evolving and changing.
10.English language never changes. In the future, it will be the same as	16.I never doubt information about English language use	2.An English language teacher's job is to give the students	7.There is only one correct answer for any problem regarding	26.Internet and language apps are reliable sources of English	27.Language knowledge comes from one's own experience of using it rather	40.Effort is overshadowed by talent.	28.To gain knowledge you need to discover how to learn.	41.Even for a smart student, it takes a lot of perseverance to learn	3.Knowing English requires combining textbook	9.Even if a person knows English well, there still remain many
	33.If someone cannot learn new English vocabulary fast this person	36.Language learning is quick. If you cannot learn it fast it is not	6.Most English words have one clear meaning.	42.Everyone can learn English well if they work hard enough.	20.I do not have to believe everything that native speakers say about	19.In order to learn a foreign language well, language learners need	29.Some people have a talent for language learning, and others do not.	39.Achieving high proficiency in English requires a lot	23.Knowledge of English comes from multiple sources rather than one single	
		24.Knowledge of English mainly comes from textbooks.	25.Knowledge of English mainly comes from language teachers.	30.A poor language learner can be trained to learn English	14.When people learn new English grammar, this knowledge is	1.English language is not so complex as many people might think.	4.Connecting new knowledge, such as grammar and vocabulary, with existing	15.It is ok to doubt what English language teacher says.		
				32.Students who are "average" in learning English will be remain	37.If a language learner reads explanations about difficult	18.Not every English language teacher has a perfect				
					22.Language learners who disagree with native speakers about English					

Figure 2 Factor 2 array

Note: Consensus statements are highlighted in blue; distinguishing statements at *p*< 0.05 are highlighted in light grey; distinguishing statements at *p*< 0.01 are highlighted in dark grey.

Four students were significantly associated with Factor 2. Two of them had a higher and two had a lower proficiency level of English, which indicates that the views expressed by this factor were shared by the students regardless of their language proficiency. Factor 2 strongly supports the view that the English language undergoes constant change as it keeps developing over the time (statement 12: +5) and that there are many things left to be discovered even though one might have been learning English for many years (9: +5). Quite logically, the factor expressed a strong opposition to the opinion that the English language will be similar in the future as it is today (10: -5). This finding highlights the students' sophisticated epistemologies on the nature of knowledge that are expressed in this factor. As one student explained,

"*I strongly disagree with the saying that language never changes on account that language has been always evolving since ancient times, just as some English usage in the last century is no longer common now.*" (Participant 11)

Furthermore, the students demonstrated their sophisticated beliefs regarding the authority and source of knowledge. They shared the opinion that it is acceptable to doubt information received from the teacher (15: +3) and strongly disproved the statement about never doubting information about English received from a native speaker of that language (16: -4). As one student clarified,

"*Even native speakers may make mistakes sometimes, therefore critical thinking is of great necessity to learn language knowledge.*" (Participant 7)

As to the source of knowledge, the language learners did not support the viewpoint that knowledge of English mainly derives from the textbooks (24: -3) and language teachers (25: -2). As noted by one student,

"*My opinion is that learning English requires combining the textbook explanation with my own understanding. To learn English better, integrating our won understanding contributes a lot apart from acquiring knowledge from the textbook.*" (Participant 6)

Interestingly, students strongly associated with Factor 2 did not assign great importance to innate talent. For example, they held neutral attitudes regarding the opinion "Good study skills make little difference if you are not naturally good at learning languages" (31: 0, $p<0.01$). Neither did the students believe in the value of effort expended for learning English, which is evidenced by their disagreement with the proposition that "Everyone can learn English well if they work hard enough" (42: -1, $p<0.01$). The students' beliefs about acquiring knowledge expressed by Factor 2 were also advanced. Thus, the students disagreed that knowing English was about memorizing vocabulary and grammar (5: -5). As one respondent explained,

"*On the one hand, rote memorizing is not effective. For example, there are different ways to memorize vocabulary. As for grammar, it should be understood and applied. On the other hand, it would be exaggerated to say that vocabulary and grammar is all that is needed to know English. These are the foundation, but factors such as culture and context are also of great importance to learn new language.*" (Participant 7)

Factor 3: Learning the English language requires talent and hard work

Factor 3 has an eigenvalue of 0.615 and explains 3% of the study variance. Figure 3 presents the factor array.

-5	-4	-3	-2	-1	0	1	2	3	4	5
33.If someone cannot learn new English vocabulary fast this person	20.I do not have to believe everything that native speakers say about	15.It is ok to doubt what English language teacher says.	27.Language knowledge comes from one's own experience of using it rather	37.If a language learner reads explanations about difficult	12.English language is constantly evolving and changing.	26.Internet and language apps are reliable sources of English	40.Effort is overshadowed by talent.	4.Connecting new knowledge, such as grammar and vocabulary, with existing	3.Knowing English requires combining textbook	39.Achieving high proficiency in English requires a lot
2.An English language teacher's job is to give the students	36.Language learning is quick. If you cannot learn it fast it is not	7.There is only one correct answer for any problem regarding	5.Memorizing vocabulary and grammar is all that is needed to know	21.The most authoritative knowledge of English comes from linguists	23.Knowledge of English comes from multiple sources rather than one single	13.Having a good knowledge of English means to know lots of grammar	25.Knowledge of English mainly comes from language teachers.	28.To gain knowledge you need to discover how to learn.	41.Even for a smart student, it takes a lot of perseverance to learn	29.Some people have a talent for language learning, and others do not.
	32.Students who are "average" in learning English will be remain	31.Good study skills make little difference if you are not	11.There are no puzzling problems in English grammar.	14.When people learn new English grammar, this knowledge is	1.English language is not so complex as many people might think.	30.A poor language learner can be trained to learn English	17.English language teachers are the ones who can help	9.Even if a person knows English well, there still remain many	38.People can study English language for years and still not have a good	
		8.The English language teacher's explanations and answers	10.English language never changes. In the future, it will be the same as	22.Language learners who disagree with native speakers about English	16.I never doubt information about English language use	19.In order to learn a foreign language well, language learners need	42.Everyone can learn English well if they work hard enough.	34.Language learning is a slow and gradual process.		
				24.Knowledge of English mainly comes from textbooks.	35.If a language learner cannot immediately understand a	6.Most English words have one clear meaning.				
					18.Not every English language teacher has a perfect					

Figure 3 Factor 3 array

Note: Consensus statements are highlighted in blue; distinguishing statements at $p< 0.05$ are highlighted in light grey; distinguishing statements at $p< 0.01$ are highlighted in dark grey.

Three participants were significantly associated with this factor. Two of them had a higher level of English language proficiency, which might indicate a possible difference in the epistemic beliefs between the higher- and lower- proficiency students. However, it would not be plausible to advance a definitive opinion due to a very small number of the students. Generally, the opinions that conglomerated in Factor 3 pertain to the process of learning, which distinguishes this factor from the other two. At the same time, the epistemic beliefs pertaining to the nature of knowing and the certainty of knowledge were not strongly endorsed. This is reflected by the position of the statements "Knowledge of English comes from multiple sources rather than one single source" (23: 0) and "English language is constantly evolving and changing" (12: 0).

The findings revealed that Factor 3 comprises two somewhat discrepant viewpoints, namely, the belief in innate ability and also the belief in working hard. To be more specific, the students did believe that some people have special talent for learning languages (29: +5; $p<0.05$). However, besides the benefit of having a natural talent for learning languages the students also recognized the value to working hard in order to achieve a high proficiency in English (39: +5). This viewpoint is exemplified in these opinions,

"*As for me, I believe that I don't have the talent for learning English. For example, I was confused about phonetic alphabet letters when I began learning English. So I believe I am not naturally talented in languages. I am interested in science and mathematics and I am good at science. Although the fact that I lack aptitude for language learning, I still believe hard work can make up for it, and I am willing to put much more effort in English learning.*" (Participant 18)

"*Some people may have talent, but for me effort is much more important. I really don't care about whether there is talent or not.*" (Participant 4)

Furthermore, the respondents pointed out that even linguistically gifted students would need dedication and perseverance in learning English (41: +4). This is evident in the following opinion,

"*To Chinese, after all, English is a new language, not a native language. Thereafter it is always difficult to learn English. Even very smart people still need consistently invest time and energy to achieve a higher level of proficiency or a higher achievement. The appropriate learning strategy also exerts great influence on improving their learning efficiency.*" (Participant 18)

Interestingly, the language learners did not consider that being "average" and less successful in learning the English language would determine one's ability to master other languages (32: -4; $p<0.05$). Some students shared the viewpoint that being interested in a new language and expending effort in learning it will bring success. As one of the respondents put it,

"*Saying this is absolutely wrong. Personally, the performance in learning a foreign language is influenced by one's own interest to a great extent. So if you're more interested in another language, you're likely to devote much more time and effort to learn it.*" (Participant 3)

While acknowledging the role of talent and recognizing the value of working hard the students endorsed the importance of having effective learning skills and of being patient. They disapproved

the viewpoint that "Good study skills make little difference if you are not naturally good at learning languages" (31: -3). They believed that learning English is not a fast process (36: -4) and they shared a view that one may not be able to master English even after learning it for many years (38: +4). Quite logically, the respondents disagreed that, failing to master the English language fast, one should give up learning it (33: -5). These views were aptly expressed by one of the participants who said,

"Whether we can learn a new English vocabulary is not determined by learning speed. While it may take a great deal of time, concentrating 100 percent together with the right approach will pay off. For me, if I can't master a new word immediately, I'll keep trying until I get it." (Participant 6)

A feature that distinguishes Factor 3 form the other two factors is the recognition accorded to the authority of knowledge, such as the teacher and native speakers of English, and the reluctance to challenge this authority. The statements "It is ok to doubt what English language teacher says" (15: -3) and "I do not have to believe everything that native speakers say about English" (20: -4) generated strong disagreement.

Consensus opinions in Chinese students' personal epistemologies

The findings revealed that there were 22 consensus statements; these are the statements whose scores between any two factors are not significantly different at the 0.01 significance level. A comparatively large share of the consensus statements provided additional empirical evidence regarding a homogeneous nature of the language learners' epistemic beliefs. Specifically, the students agreed that learning a new language requires time and effort and that even talented learners need to have good study skills and work hard. Also, the respondents shared the viewpoint that language learners need to synthesize new linguistic input with their current knowledge. Furthermore, the students recognized a complex nature of knowledge and knowing and were aware of the vastness of language-related knowledge where a definitive answer may not always exist.

DISCUSSION

This study has addressed an underexplored topic in L2 research, namely, epistemic beliefs held by language learners. While a considerable number of academic studies has explored beliefs about learning a new language, including studies in Asian educational contexts (e.g., Apairach & Vibulphol, 2015; Nikitina & Furuoka, 2006; Tang & Tian, 2015), very few of them explored epistemic beliefs held by the language learners (e.g., Mori, 1999; Nikitina & Furuoka, 2018; Rock, 2013).

Research questions raised in this study were aimed at exploring language-related epistemic beliefs held by Mainland Chinese learners of English and at assessing whether these beliefs were different among the language learners at different levels of English language proficiency. The study adopted Q methodology to address this aim and answer the two research questions.

Q methodology is particularly appropriate for investigating people's subjectively held beliefs and their collectively shared viewpoints.

As an outcome of this research endeavour, we have discovered that the language learners' epistemologies were quite uniform, which aligns with the earlier study by Y. Wang et al. (2022). In the two studies, there was a strong consensus in the students' beliefs regarding the nature and source of knowledge and approaches to learning. The students' English language proficiency level did not play a role in shaping their epistemic beliefs, which adds some empirical evidence to the earlier pilot study (Y. Wang et al., 2022). Notwithstanding remarkable uniformity of the current study respondents' epistemic beliefs, three distinct dimensions within these beliefs were distinguished. This result aligns with the proposition regarding a multi-dimensional structure of language learners' epistemic beliefs (Mori, 1999) and supports the findings concerning the language-related epistemic beliefs reported in Nikitina and Furuoka's (2018) study.

The findings of this study indicate the presence of cultural influences on the epistemic beliefs held by the participants. It should be noted that not all of the notions about learning associated with East Asian societies and learning cultures were supported by this study's findings. Among them is a lack of evidence for the predilection for rote learning. As Participant 7 aptly put it, memorizing without critical thinking is "not effective". Furthermore, the students in this study did not show a particular reverence to authority of knowledge, such as their language teachers and native speakers of English. Some students were aware that "even native speakers may make mistakes sometimes" and some of them held an opinion that knowledge of a new language comes from different sources "including novels, movies, video" (Participant 2).

Philosophies of learning associated with Confucian-heritage cultures that *did* find empirical support in this study are, firstly, the belief in the value of effort, willpower and perseverance in the process of learning a new language and, secondly, the view that one's ability for learning English can be enhanced through perseverance and effort. During the interviews that sought to elucidate the rationale for the language learners' epistemic beliefs the students reiterated an opinion that one's ability for learning English can be enhanced through perseverance and effort. As Participant 18 eloquently stated, "hard work can make up" for a lack of natural talent. These viewpoints align with predominant within Confucian-heritage cultures beliefs about learning and gaining knowledge (Biggs, 1996; C.K.K. Chan & Rao, 2009; W.O. Lee, 1996; E. Li, 2017) and are in contrast with the views about the role of aptitude, talent and intelligence prevalent in Western societies (see J. Li & Fischer, 2004).

To further unpack the factors that transpired during the statistical analysis, Factor 1 endorsed the viewpoint that learning English requires time, effort and perseverance. Factor 2 expresses rather sophisticated views concerning the nature and sources of knowledge and notions of gaining knowledge (i.e., learning). The factor composition reflected a high level of the students' critical thinking skills; it conveyed their doubts regarding the existence of an omnipresent authority, the availability of a single answer and the existence of one main source of knowledge. At a first glance these views might appear subversive to the century old cultural practices of learning in Confucian heritage cultures. However, in fact, exercising one's critical thinking is

encouraged in the Confucian traditions of seeking knowledge where the teacher is expected to nudge the student to critically assess newly acquired knowledge (W.O. Lee, 2006). Factor 3, even though it indicated a stronger belief in and support of the innate ability for language learning, still endorsed the view that expending efforts or, as Participant 18 stated making conscious effort to "invest time and energy", will eventuate in a higher level of proficiency in English. Also, while Factor 3 endorsed the status of language educators as the source of knowledge this factor also conveyed the belief that the teachers should not just dispense knowledge; they also must strive to develop the students' ability to seek knowledge.

In sum, the students' epistemic beliefs reflected some deeply rooted in Confucian heritage cultures notions of and approaches to gaining knowledge, such as the importance of effort, perseverance and reflective attitudes. A notable finding is that the students were aware that memorizing is not the ultimate outcome of the learning process. Furthermore, they realized that though learning a new language by necessity requires a lot of memorizing (e.g., one must memorize new vocabulary) it is also important to synthesize the newly-gained knowledge and combine it with a prior linguistic input.

CONCLUSIONS AND PEDAGOGICAL IMPLICATIONS

The findings of this study align with the proposition that personal epistemologies are shaped by deeply rooted within a society philosophies of education and by the traditions and cultures of learning. All of these, as Jin and Cortazzi (2006) pointed out, would determine what happens in the classroom. Pedagogical implications that could be drawn from the findings of this study are that, firstly, language educators should encourage and nurture in their students such traits and learning habits as perseverance, willpower and active intellectual involvement in the process of gaining knowledge. The importance of these personal traits is recognized in various cultures. For example, the concept of grit, of which perseverance is a core element, has been promoted in Western educational settings (Duckworth, 2016). Practical advice on how to nurture perseverance and gritty traits of language learners can be found in empirical studies (e.g., Lan et al., 2021; J.S. Lee, 2020).

The focus of foreign language pedagogical practice must be on the learning-centered approaches rather than on making choices between the learner- and the teacher- centered approaches. As noted by Cortazzi and Jin (2013) such a shift would entail profound changes in both the classroom dynamics (e.g., the teacher's role) and the nature of classroom tasks. For example, the teacher would need to not only present new material to the students but also guide them how to effectively learn it. One of the ways to achieve this is to demonstrate the use of mnemonics and encourage the students to develop their own mnemonic aids (and, possibly, share these with their classmates). Furthermore, language educators might want to devise a variety of complex tasks that require synthesizing new information with linguistic knowledge that the students already have.

As any research effort, this study has some limitations. For example, it did not include beliefs pertaining to self-perfection and contribution to society, which are prominent in the Confucian

traditional views on learning and education. Among the reasons for this omission is that while being highly salient within Confucian philosophy (W.O. Lee, 1996) these beliefs are goal-oriented and as such they do not align with the current conceptualizations of epistemic beliefs in education research. Future studies might include such beliefs and consider them as motivational factors. Despite these limitations this Q study offers some worthwhile insights into Mainland Chinese language learners' personal epistemologies, a topic rarely explored in L2/SLA literature.

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APPENDIX

Q-sample statements

1. English language is not as complex as many people might think.
2. An English language teacher's job is to give the students answers and not ask them to find the answers for themselves.
3. Knowing English requires combining textbook explanation with our own understanding.
4. Connecting new knowledge, such as grammar and vocabulary, with existing knowledge is a good way to learn English.
5. Memorizing vocabulary and grammar is all that is needed to know English.
6. Most English words have one clear meaning.
7. There is only one correct answer for any problem regarding English grammar.
8. The English language teacher's explanations and answers must be exactly the same as in the textbook.
9. Even if a person knows English well, there still remain many things to be discovered about this language.
10. The English language never changes. In the future, it will be the same as today.
11. There are no puzzling problems in English grammar.
12. The English language is constantly evolving and changing.
13. Having a good knowledge of English means to know lots of grammar rules.
14. When people learn new English grammar, this knowledge is certain and has been agreed upon by linguists and language experts.
15. It is ok to doubt what English language teachers say.
16. I never doubt information about the English language use that I receive from native speakers of English.
17. English language teachers are the ones who can help students when they have difficult problems with English.
18. Not every English language teacher has a perfect knowledge of the language they teach.
19. In order to learn a foreign language well, language learners need to be able to distinguish reliable sources of knowledge from unreliable.
20. I do not have to believe everything that native speakers say about English.
21. The most authoritative knowledge of English comes from linguists and language experts.
22. Language learners who disagree with native speakers about the English language usage are over-confident.
23. Knowledge of English comes from multiple sources rather than one single source.
24. Knowledge of English mainly comes from textbooks.
25. Knowledge of English mainly comes from language teachers.
26. The Internet and language apps are reliable sources of the English language knowledge.
27. Language knowledge comes from one's own experience of using it rather than from textbooks.
28. To gain knowledge you need to discover how to learn.
29. Some people have a talent for language learning, while others do not.
30. A poor language learner can be trained to learn English well.
31. Good study skills make little difference if you are not naturally good at learning languages.
32. Students who are "average" in learning English will remain "average" in learning other languages.

33. If someone cannot learn new English vocabulary fast this person will never learn it.
34. Language learning is a slow and gradual process.
35. If a language learner cannot immediately understand a new grammar rule he or she should keep trying to understand it.
36. Language learning is quick. If you cannot learn it fast it is not worth trying.
37. If a language learner reads explanations about difficult grammar rules many times, he or she will be able to understand and learn these rules well.
38. People can study English language for years and still not have a good knowledge of it.
39. Achieving high proficiency in English requires a lot of hard work.
40. Effort is overshadowed by talent.
41. Even for a smart student, it takes a lot of perseverance to learn English.
42. Everyone can learn English well if they work hard enough.