

Pre-service Teachers' Conceptualization of "Critical Thinking": a Cross-Cultural Case Study

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Abstract— This study aims to better understand the cultural difference of conceptualization of “critical thinking” concept through the perspectives of U.S. and Chinese pre-service teachers. The result shows that the pre-service teachers’ discussions of critical thinking concept are shaped by their cultural understanding of thinking, educational ideals and the development of agency and professional identity in teaching experiences.

Keywords—pre-service teachers, critical thinking, cultural comparison

I. INTRODUCTION

Critical thinking is widely cherished as one of the goals of Western education [1]. Yet, quite a few studies questioned whether it is a cultural practice foreign to Asian students [2]. Empirical studies show that understanding of critical thinking is influenced by the social, cultural and educational backgrounds of the teachers and the students [2][3]. For instance, Canadians and Japanese teachers have different perceptions of critical thinking concept [4]. Cultural comparison of teachers’ conceptions of critical thinking has the potential to reveals cultural assumptions about education and “good thinking”.

Traditionally, the U.S. and China are reported to represent vastly different educational culture. In the U.S., it is widely accepted that “the link between critical thinking and education is obvious: one can’t learn well without thinking well.” (NEA report) Together with communication, collaboration and creativity, critical thinking is one of the 4c’s to prepare 21st century students. In China, the “core values” of K-12 education contains three groundworks: autonomy development, social participation and cultural foundations. It seems that critical thinking is not one of the explicit goals of K-12 education. How do such differences in policy affect pre-service teachers’ personal learning experiences and their conceptions of critical thinking? The current study examines this research question qualitatively by interviewing 30 Chinese and 30 U.S. preservice teachers. The result shows that there are several differences in U.S. and Chinese teachers’ interview data. The differences are discussed in the following aspects: discourse contexts of critical thinking, epistemology vs. ontology approach to critical thinking, and different cultural views of agency and autonomy reflected in student teaching practices. The cultural and educational implications of such differences are also discussed in the end.

This study is supported by “The thirteenth five year plan project in educational science”, Shaanxi province. SGH17H012.

II. LITERATURE REVIEW

A. Definitions of Critical Thinking

In educational studies, critical thinking is often defined as a set of cognitive skills – for example, the ability to analyze, synthesize, and evaluate information. Such definitions can be found from studies a few decades ago [5] until recently [6]. A large set of concepts have been reported to associate with critical thinking, including self-directed reasoning, reflection and deciding what to believe [7]; analyzing and evaluating thinking with a view to improve it [8]; problem finding as well as problem solving [9]; evaluating evidence or opinions provided by authority figures [10]; and many other cognitive skills. Yet, Vandermensbrugge [11] wrote that the definitions of critical thinking are “unbearably vague”.

Yet, to some researchers, the “vague definitions” mean potentials to explore the practitioners’ assumptions about education. In an examination of conceptualizations of critical thinking through interviews with 17 Australian university professors from a variety of majors, the author concludes that far from being a “buried” and “ineffable” concept, critical thinking is a very alive and engaging concept [3].

Another intercultural comparison study examined Canadian and Japanese secondary teachers’ conceptions of critical thinking [4]. The conceptualizations were compared via surveys quantitatively. The result shows that the Canadian teachers tend to define critical thinking using terms characterized as cognitive strategizing, while Japanese teachers tend to define critical thinking using terms of conscientious judgements and intellectual engagement. Howe’s study demonstrates that the definitions of critical thinking by practitioners are influenced by cultural contexts. Thus, the examination of different conceptualization of critical thinking is at the same time, studies of sociocultural contexts and its influence on educational ideals.

The discussions of critical thinking provide opportunities to discuss the practitioners’ ideals of education, especially in cross-cultural studies.

B. The Construction of Chinese Learners

With the recent economic development, China has witnessed significant increase in number of students studying abroad. As a result, the world is interested in understanding the Chinese learners. The Chinese students are often depicted as relying on extensive memorization for learning; in the classes, the Chinese students show reticence in expressing their opinions in discussion [12]. Other studies further explored whether

excessive memorization and reticence in expressing their opinions are results of cultural differences or difficulties working in an English language environment. Paton suggests that although Chinese students may appear to engage in “mere rote-learning and the lack of overt participation in classroom discussions”, this is not due to cultural heritage but “the difficulties of study in the context of edge-of-knowledge discourse in a second language” [13]. To prove his point, Paton offered evidences that writing instructions which teach some of the regulations in academic writing explicit helped Chinese students improve their essay writing effectively.

Contrary to Paton, Turner claimed that lack of critical thinking is exactly what hindered the Chinese students’ progress in Western countries, not the knowledge of genre in writing [14]. He inquired the Chinese graduate students in a U.K. business school in terms of the obstacles they were facing. Those students mentioned several issues that they deem difficult in academic writing and in joining the class discussions. To the writers’ surprise, Chinese students mentioned rhetorical issues but not the thinking behind writing. Turner believed that lacking critical thinking, or more exactly, the awareness of critical thinking, was the reason that Chinese students continuously struggled with writing. The Chinese students he interviewed could not improve their writing despite continuous effort because the Chinese students were not aware of the underlying assessment criteria of critical thinking. Turner suggested that U.K. faculty should have explicitly discussed their expectation of critical thinking with the Chinese students, in order to help the Chinese students.

While social, cultural and educational contexts influences teachers and students’ conceptualization of critical thinking, overestimate such importance is risky. Are Chinese students socialized into a different way of thinking and learning compared to Western students, or is it merely language differences, different understanding of rhetoric of writing, or stereotypes of Eastern culture? Studies are needed to fill in this gap.

C. Pre-service Teachers

Educational researchers have been interested in pre-service teachers as the concepts and experiences of this initial stage significantly influence the performance of the teachers and their students [15]. Furthermore, a number of issues, including school-university partnership, mentoring, school-culture and macro-contexts like social and cultural contexts influence the development of future teachers. The development of pre-service teachers is situated in local cultures (“an interactive web of meaning, whose meanings are in continuous interaction with each other”), school cultures, administration, the orientation of learning and whether there is a teacher culture available for informal and collaborative learning [16]. Pre-service teachers’ reflections are often examined in studies of teaching [17]. Teachers’ perceptions and beliefs largely defines their teaching.

While contexts is influential, pre-service teachers are active agents in developing their professional identities [18]. When they are working in the field, pre-service teachers are active in using agentic experiences in the making of their professional identity. Whether the pre-service teachers feel themselves as less than a teacher, or as an accepted and productive member of the community largely influences their route of becoming a teacher.

III. METHOD

This study features interviews with 30 U.S. language art preservice teachers, and 30 Chinese ESL pre-service teachers as well as ethnographic observations with U.S. and Chinese pre-service teachers in fieldwork for six months in each site. The interview protocol is attached as Appendix I. The 30 U.S. language art pre-service teachers were from a northeast private university. All of them are females and have completed their student-teaching. The 30 Chinese ESL pre-service teachers were from foreign language major in a Northwest Chinese Normal University. All of the Chinese ESL pre-service teachers have completed their student- teaching for three months in public middle schools.

The interview protocol were developed to illicit the pre-service teachers’ conceptualization of critical thinking concept. In the interviews, the pre-service teachers from both countries were asked to talk about their definitions of critical thinking, whether and how they perceive critical thinking as valuable and relatable in their college studies, as well as how it is relatable in their future job. The participants were given enough freedom to talk about their own experiences and opinions. The interviews in China and in the U.S. were conducted by the same team of researchers to ensure the consistency of the questions.

Permissions were obtained before the interviews. The interviews with U.S. preservice teachers were conducted in English and the interviews with Chinese teachers were conducted in Chinese. All the interviews were recorded and transcribed and coded with a grounded theory approach. Thus, the analysis went through three stages. The first stage was open coding. The authors read through the transcripts in both U.S. and Chinese data for themes and characteristics. The codes at this stage are, for instance, definitions of critical thinking, examples of critical thinking, critical thinking in teaching experiences, critical thinking in school experiences. In the second stage, we compare the coded transcripts in the U.S. and China to develop three themes. The themes are discussed in the result section.

IV. RESULTS

A. The Discourse Contexts of “Critical Thinking Concept”

The U.S. and Chinese pre-service teachers in this study situate critical thinking concept in different discourse contexts. The U.S. pre-service teachers tend to define critical thinking with cognitive terms, for instance: problem solving, analytical skills, decision making etc. Following, an American pre-service teacher said:

One example (of critical thinking) that jumps out to me is when I did a student observation. I was required to observe and work with a student...*I had to read and review materials, then analyze the information to make a determination on how to best meet the student’s needs...*which I believe is critical thinking.

Here, the American pre-service teachers adopts cognitive concepts such as “analyze” “decision making” in her conceptualization of critical thinking. An independent analysis which leads to an applicable decision is her example of critical thinking. Thus, the American pre-service teachers have acquired the discourse of discussing critical thinking as a cognitive skill

and they are ready to implement that concept in their future teaching.

The Chinese pre-service teachers in the interview, however, tend to define critical thinking as an omnipresence of positive and negative aspects of opinions.

Critical thinking for me is to *think about something from both the positive and negative aspects*. In writing, you don't just say something is good, you think about both positive and negative. For instance, a lot of Chinese students order food from online. It is convenient but unhealthy.

She adopted a key concept from her Chinese high school philosophy curriculum to illustrate critical thinking. The key concept was considering a problem by dividing it into two.

The Chinese high school philosophy curriculum covers Chinese Indigenous Philosophy, which was widely misattributed and politically propagated under the cover of Marxism. The Chinese pre-service teachers' understanding of critical thinking was a reflection of Chinese Indigenous Philosophy taught as part of philosophy class [19]. When Chinese pre-service teachers start to teach their students, such understanding of critical thinking is very likely to pass down through her design and organization of educational activities. In the interviews, one pre-service teacher described that when she was asked to organize a morning meeting, she asked her students to debate the pros and cons of using mobile phone. Thus, she considers the problem of mobile phone by dividing it into two, positive and negative. Consequently, her students were further socialized into such philosophy.

B. Epistemology VS. Ontology

The U.S. and Chinese pre-service teachers approach critical thinking with different epistemology. While the Chinese pre-service teachers in this study value critical thinking highly, they discuss critical thinking separately from language teaching and learning. The examples they provided usually concerns their own judgement, rather than teaching experiences. Many of the Chinese participants were unable to provide specific examples of from their educational and teaching experiences even when explicitly prompted to do so. It seems that they do not regard critical thinking as their explicit goals of education.

The American preservice teachers, however, easily offered examples of critical thinking with personal experiences. For instance:

In academic writing, we are required to make a statement and then back it up or go into detail why...

Professor Anne taught me to think differently about students. She has helped open my eyes into considering all of the aspects of the student, backgrounds, home.....

While some of the research based strategies and interventions can be implemented, it is crucial to think beyond the known and devise a personalized approach to being a teacher, which absolutely entails critical thinking.

When I explicitly asked the Chinese pre-service teachers to talk about their education, the Chinese pre-service teachers tend to say:

I develop critical thinking naturally and gradually. It is imbedded within everything we do in this university. We become mature.

In terms of critical thinking, I think during my internship, I learned to have a grasp of the class, be aware of what is happening. I was teaching the contents, and that's all I know. My supervisor, she would finish her teaching and then she knows which student grasped it and whom had no idea of what we taught, whom was absent-minded in the class and need extra attention.

In both quotes above, the Chinese pre-service teachers did not pinpoint which specific courses or events they deemed as a development of critical thinking. However, they regard a holistic development, "becoming mature" and "beaware of what is happening" as example of critical thinking.

In comparison of the answers between American and Chinese pre-service teachers, the U.S. American pre-service teachers discuss "critical thinking" as is related to specific courses, professors and activities. They provide examples of critical thinking in their internship as they are often prompted to write reflectively about their internship. The Chinese pre-service teachers did not adopt the words and concepts that were often associated with critical thinking like "to think differently" or "think beyond." It seems that for Chinese pre-service teachers, critical thinking is more associated with "doing" and "being", rather than thinking.

The difference between the American and Chinese pre-service teachers' definitions of critical thinking might be explained by the different sociocultural contexts in China and in the U.S. For one thing, it is likely that American pre-service teachers received an education that frequently requires reflections of their own practices. The American pre-service teachers were explicitly required to write reflection paper with critical thinking. Chinese pre-service teachers, however, were less familiar with explicit discussion of critical thinking throughout their educational experiences.

On the other hand, Chinese pre-service teachers are able to provide examples of critical thinking in their life and in their development. Their discussion of what they have learned during student-teaching is vital for a teachers' development and it is apparent that after the fieldwork, the Chinese pre-service teachers reconceptualize teaching and they do develop. It seems that the Chinese preservice teachers understood "critical thinking" more ontologically. While epistemology concerns with the nature of knowledge and the question: "How do we go about knowing things."; Ontology is concerned with the kinds of things that actually exist, or "What is existence?" Thus, the Chinese pre-service teachers' perceptions of critical thinking are ontological. It is about their decisions, life and what kinds of teachers they want to be.

C. Agency and Autonomy

While both U.S. and Chinese pre-service teachers reported that they have to follow certain sets of rules in the classrooms, U.S. preservice teachers appeared to exert more agency in their professional identity while Chinese teachers frequently mention that they felt restricted in terms of the educational choices available to them.

For instance, U.S. preservice teachers often discuss that they were required to work with some low level ESL students, they had to come up with a solution. "I was required to observe and work with a student. I did not perform any of the assessment myself, but I was given access to his performance levels...I had to make a decision on how to best meet the student's needs."

The Chinese preservice teachers, on the other hand, often mention that they felt restricted in terms of what they are allowed to do with the students and thus, there was not much "critical thinking" involved in the job.

My students' language proficiency is way below the level of the textbooks, however, I can't slow down the classes for them, I have to cover the curriculum. I am required to finish two textbooks this semester, I just teach according to the requirement.

This Chinese pre-service teachers expressed that while she had judgement of what were the best for her students, it seems that her opinions were not important and thus, she did not deem "critical thinking" as related to their experience in that sense.

The students are just so passive in English and there's not much I can do with them. I think their previous teacher, the teacher before me, drilled them so much that they just hate English.

My students just care about correct answers. When I give them the assignment, they just look at the total score. sometimes, they don't even care about writing down the correct answer. How can I talk about "critical thinking" with them?

Another aspect that the Chinese teachers felt constrained were their interactions with their students. The students' limited interests in English learning dishearted those teachers and thus, they felt "critical thinking" is unimportant. All they need to do was just following the routine in teaching. Thus, the work environments did not allow much freedom in terms of teachers' agency or their professional identity development. As a result, while the pre-service teachers demonstrate their ability in observations and reflections, they could not develop a confident and satisfied teacher identity.

To give another example, during the time period of Chinese students' fieldwork, the high school held a sports events that involves several track competitions, soccer games and some athletic activities. The high school administrators suggests all the pre-service teachers to quit the classroom teaching and "volunteer" in the sports events. The pre-service teachers felt such treatment was unfair and one of the pre-service teachers complained to her mentor and said: "What do you take us to be?" The mentor said: "Well, I take you guys as pre-service teachers." This incidence shows that the Chinese pre-service teachers were not fully taken as capable teachers in their fieldwork.

In this aspect, the U.S. pre-service teachers were given more opportunities to think critically for their students and thus, critical thinking is comparatively valued more highly in the U.S. than in China. However, that does not mean that U.S. teachers are more capable in critical thinking, but rather that the U.S. school contexts allow more agency for the pre-service teachers,

and thus, they tend to develop their professional identity with more criticality.

IV. DISCUSSION

In this study, while the essential construct that started this project was critical thinking concept, the analysis of the U.S. and Chinese pre-service teachers' conceptualization extends beyond "critical thinking concept". The cultural and history of the contexts, and the educational and institutional contexts significantly shape the pre-service teachers' experiences, rather than "critical thinking" concept.

Rather than judging the Chinese pre-service teachers as lack of critical thinking, this study situates such responses in the educational contexts. The difference between the Chinese and American pre-service teachers' perceptions of critical thinking suggests that critical thinking is a socioculturally contextualized concept. The pre-service teachers' critical thinking is largely defined by their social, cultural, educational, and institutional contexts.

This pilot study has a number of limitations that need to be improved in future research. For instance, the participants from one college in the U.S. do not demonstrate the students' experiences all over the U.S. The participants from China conducted their fieldwork in one high school. Their experience in that high school does not speak of all the high schools in China. China and U.S. are large countries with various and complex environments. This is a case study that attempts to shed some light on the issue instead of being representative of all the population in this two cultures.

V. CONCLUSIONS

This study examines 30 U.S. and 30 Chinese pre-service teachers' conceptualization of critical thinking through interviews. While the U.S. pre-service teachers in this study tend to define critical thinking with cognitive terms, Chinese pre-service teachers are more likely to define critical thinking as omnipresence of positive and negative, influenced by the Chinese indigenous culture. However, in Chinese students' understanding, the definitions, experiences and reflections are wholesome. They develop, and reflect, but they don't usually frame teachers' reflections in the framework of cognitive terms. The U.S. pre-service teachers tend to be more epistemological, they regard critical thinking as a path for the end point (best decision for teaching). The Chinese teachers however, describe their ontological development as examples of critical thinking. Finally, the pre-service teachers' experiences is often influenced by the educational policy and institutions. The Chinese teachers found that their agency in teaching is rather limited and the development of professional identity was not supported. Thus, they described that their work does not involve critical thinking.

The implication of this study suggests that the pre-service teachers' conceptualization of critical thinking is socially, culturally and institutionally contexted. Their conceptualizations are shaped by their cultural understanding of thinking, educational ideals and the development of agency and professional identity in teaching experiences.

APPENDIX I.

- Do you know the concept of critical thinking? How will you define it?
- Can you give an example of critical thinking?
- Can you give an example of how your critical thinking is developed in your educational experiences?
- Can you give an example of how you develop your students' critical thinking in student teaching?
- Do you think critical thinking is important to your academic study?
- Do you think critical thinking is important for your future teaching?

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