Self-authorship development in Chinese college students: a grounded theory approach

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Abstract

Chinese higher education institutions would be more effective in assisting college graduates to meet the requirements of an increasingly complex society if they had a better understanding of Chinese college student development. Self-authorship theory, which was initially developed for use in the USA, is relevant to contemporary Chinese society's college graduate expectations. However, due to possible limitations on the application of this theory to different cultures, it is necessary to examine Chinese college students' self-authorship development rather than presuming there is a similarity to US students. In this study, we used a grounded theory approach to explore the self-authorship development in Chinese college students. Using purposeful and theoretical sampling, we asked 13 junior and senior college students to share their significant college experiences, after which we conducted a constant comparative analysis. We found that while Chinese college students developed self-authorship during their undergraduate college years, they did not achieve full self-authorship by graduation. While the overall patterns of development in the epistemological, interpersonal, and intrapersonal domains were similar to those found in US students, there were distinctive aspects in each domain that were specific to Chinese higher education. We used the students' narratives on their college experiences to illustrate their journeys toward self-authorship.

Keywords Self-authorship development · Chinese college students · College student development · Epistemological development · Identity development · Interpersonal development

Introduction

With 38.33 million enrolled students in 2018, the Chinese higher education system has the largest college student population in the world (Ministry of Education, 2019). To improve education quality and better prepare students for their own and the nation's future, higher education institutions in China have begun to pay greater attention to student development. However, Chinese college student development requires a clear and comprehensive understanding of the students' growth, which requires empirical evidence based on developmental theories.

College student development theories have been widely applied to US college populations. Baxter Magolda (2001) conducted an integrated exploration of young adult development and found that "…self-authorship has become a central theory in understanding college students' ability to make meaning of the world and their lives in it" (Patton et al., 2016, p. 307). Self-authorship involves the three domains of epistemology, interpersonal relationships, and identity and is closely related to multiple collegiate learning outcomes, such as critical thinking, intercultural competence, and moral and ethical development. Self-authorship enables students to "understand what and how they are learning," how to "discern and understand who does what in the educational process," and how to weigh "sources of information and insights to decide what to believe" (Baxter Magolda & King, 2012, p. 4).

Self-authorship is therefore relevant to contemporary expectations of Chinese college graduates. Increased self-authorship development could assist college graduates make independent plans and decisions, gain a clearer understanding of themselves, behave ethically, establish healthy

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boundaries inside and outside the family, and take on part-nering and parenting responsibilities.

Chinese college student development has attracted some research in the past decade. For example, Cen (2012) examined Chinese college student development using "borrowed" popular US student development theories, such as the Baxter Magolda's self-authorship theory. She found that the Chinese college students were transitioning from external meaning-making structures to a mixture of external and internal meaning-making structures, which demonstrated the applicability of self-authorship as a learning outcome to Chinese college students.

However, Cen (2012) and Kodama et al. (2002) recognized that student development theories may not easily transfer across cultural contexts. Therefore, it should not be presumed that self-authorship development in Chinese college students is similar to self-authorship development in US students. This paper explored the characteristics of Chinese college student self-authorship development to inform Chinese college student development research and practice.

Literature review

Self-authorship theory accounts for parallel epistemological, intrapersonal, and interpersonal development processes (Patton et al., 2016). Kegan divided human consciousness development into five sequential orders: instinct and perception, needs and desires, group agreement, "self-authorship," and "interindividualism" (p. 227). The first, third, and fifth consciousness orders slightly favor inclusion, while the second and fourth consciousness orders slightly favor independence, with lifelong development involving continual tension and movement between these two small imbalances. Kegan (1982) labeled the achievement of the fourth consciousness order as *self-authorship*.

> In separating itself from the context of interpersonalism, meaning-evolution authors a self that maintains a coherence across a shared psychological space and so achieves an identity. This authority—sense of self, self-dependence, self-ownership—is its hallmark. In moving from "I am my relationships" to "I have relationships," there is now somebody who is doing this having, the new I, who, in coordinating or reflecting upon mutuality, brings into being a kind of psychic institution (p. 100).

Baxter Magolda (1992) expanded the self-authorship concept to college students, and defined self-authorship as "an ability to construct knowledge in a contextual world, to construct an internal identity separate from external influences, and to engage in relationships without losing one's internal identity" (Baxter Magolda, 1999, p. 12).

Self-authorship development

Baxter Magolda (1992) conducted a longitudinal study of students' epistemological development on 101 women and men, beginning in their first year of college in 1986. The findings of this study provided the empirical basis for her model of self-authorship (Baxter Magolda, 2001). The model includes intertwined dimensions of epistemological, intrapersonal, and interpersonal dimensions and collectively represents how people make sense of their experiences and the world around them. The self-authorship model identifies four developmental phases: *following formulas, the crossroads, becoming the author of one's life,* and *internal foundation*. People navigate the challenges of adult life differently as they advance through these phases.

Pizzolato (2005a) and Baxter Magolda and King (2012) tested the model, with the latter study expanding the original model using two sets of data: Baxter Magolda's longitudinal study and a four-year longitudinal Wabash National Study of Liberal Arts Education (WNS). In the refined model, there are ten positions grouped into three major meaning-making structures: external meaning-making, crossroads (a mixture of external and internal), and internal meaning-making. "[T]he three major structures are developmentally ordered, representing increasing complexity and adaptability" (p. 17).

Self-authorship development beyond the USA

Self-authorship development is an important college outcome. However, most research on college student self-authorship development has been conducted in the USA, which has raised the question as to whether self-authorship development is similar in other countries, especially in China where the culture is very different.

Studies on self-authorship development in other western cultures, however, have found patterns similar to those identified in the USA. For example, Brownlee et al. (2010) used scenario-based interviews to examine self-authorship development in Australian college students, finding that their development had been fostered by "healthy social relationships" (p. 113) and by critical personal reflections on "how new knowledge is constructed in relation to existing personal beliefs" (p. 113). Weinstock (2010) found Israeli Jews, who have autonomy-oriented cultural values, showed epistemological development trajectories that eventually led to self-authorship.

However, self-authorship studies in more collective or authoritarian cultures have found different self-authorship development patterns, especially in the epistemological component. For example, Weinstock (2010) found that

Israeli Bedouins, who come from an authority-oriented culture, gave fewer multiple responses, more absolutist or evaluative responses, and had no grade differences, and Hofer (2010) explored the development of epistemic beliefs in Japanese college students and found that while the students showed less sophisticated beliefs than US college students, they also had higher academic achievements. Hofer then asked "whether [epistemic] beliefs predict differently in different environments" (p. 142) and argued that as self-authorship had been conceptualized from college student studies in western cultures, it had privileged the "idea of a self that is autonomous and independent, common in individualist cultures" (p. 144). Hofer then hypothesized that the interdependent self that was more common in Asian cultures might have self-authored epistemic beliefs that the current model did not recognize.

Elshimi (2015) used the self-authorship survey developed by Pizzolato (2005b) and an interview protocol adapted from several sources to explore the experience of self-authorship development in first-year college students attending an American liberal arts university in Egypt, finding that "[c]ultural norms may create patterns of expression of self-authorship in one culture that appear to characterize non-self-authored ways in other cultures" (p. 146). While some study participants chose to disagree with their peers and protest government actions, they also chose not to articulate their disagreements with their parents and elderly relatives, which showed that an indicator of self-authorship, consistency between knowing and acting, possibly varied in different cultural contexts.

Weinstock (2010) suggested that the different patterns shown by Israeli Bedouins and Israeli Jews could "reflect underlying cultural differences in epistemological development, or that the instrument cannot capture what is essentially a different epistemology" (p. 127). Hofer (2010) also concluded that epistemological development varied across cultures. English and Chen (2007) found that Asian Americans had self-concepts that were more tailored to specific relationship contexts than were found in western European and US cultures.

The findings from these studies focused attention on the critical role of cultural variation in self-authorship (Elshimi, 2015), the epistemological domain (Hofer, 2010; Weinstock, 2010), and the interpersonal and intrapersonal domains (English & Chen, 2007) and raised questions as to whether self-authorship was possible in cultures in which a deference to authority and elders is expected. Kegan, as cited in Baxter Magolda (2010, p. 269), claimed that self-authorship was possible in both individual and collective cultural contexts. "[I]t is possible to go through all the constructive-developmental stages in a connected way or a separate way." For example, an employee with connected style preference "exercises personal authority on behalf of inclusivity,

keeping communication open for maximum participation and input, preserving connections and surfacing threats to colleagues' collaborative capacities" (Kegan, 1994, p. 225), while an employee with a separate style preference "exercises personal authority on behalf of advancing or enhancing one's own position, status, advantage, agenda, mission, or profile; relates to others on behalf of furthering unilateral ends rather than deriving ends out of relationship" (p. 225). Baxter Magolda (2010) invited researchers to explore "the extent to which the internal authority of self-authoring, with its capacity to coordinate external expectations, can be shaped around interdependence and authentic relationships rather than around autonomy" (p. 275). This study also addressed this need.

Chinese college students' self-authorship development

Knowing that "cultural difference must be considered when applying western psychological development models to diverse contexts" (Bohon, 2015, p. 36), Bohon examined the self-authorship development of 12 mainland Chinese students attending a US university. With a focus on the role collectivism and filial piety played in their development, she used both individual and group interviews to collect qualitative data, employing the WNS Phases 1 and 2 Summarizing Training Manual (Baxter Magolda & King, 2012) to analyze the interview transcripts. Bohon found that Chinese students' development followed the self-authorship model and that the intrapersonal and interpersonal domains were closely coupled.

> When the participants talked about themselves, their descriptions were often in the context of relationships. Participants often discussed their identity in terms of the collective, particularly regarding filial piety and their Chinese friendships. Decisions were often made by and for the collective. These closely coupled domains indicated principles of collectivism (p. 289).

However, this finding did not mean that the two domains were in the same developmental phases. For example, Bohon (2015) found that five of the six participants who were at an external position showed slightly more advanced cognitive and intrapersonal domain development than interpersonal domain development.

To explore student development in Chinese colleges and universities, Cen (2012) developed a student growth model focused on the epistemological, intrapersonal, and interpersonal domains. She identified six contexts in which students developed: curricular, co-curricular, extra-curricular, work, recreational, and relational. She used an interview protocol developed from the WNSLAE interview (Baxter Magolda

& King, 2008) to interview senior college students, with participants' developmental statuses depicted as follows.

> [C]ollege students are transitioning from following external formulas to the crossroads where internal voices begin to emerge. They attempted to construct their own knowledge, either disciplinary knowledge or knowledge about real life in society, from questioning assumptions and examining evidence. They were anxious to define and redefine themselves through external identifications as well as through an internally grounded sense of self that is forming. They [had an] independence never experienced before; yet they found interdependence with all those around them was more desirable for survival and success in college and in society (p. 245).

Yu et al. (2020) developed an interview protocol and conducted individual interviews to explore medical students' decision-making process when they chose to give up their medical career. Six of the eight students were in the external meaning-making phase when deciding to major in the medical field.

Compared to students in the USA, Chinese college students have been found to be more influenced by Chinese traditional cultural factors, such as collectivism and filial piety (Deutsch, 2004). Deutsch interviewed 84 senior college students in southeastern China, finding that the participants seriously considered their parents' expectations when making career decisions as they felt more independent and autonomous when their decisions were supported by their parents. However, many gave up their initial career plans when their parents disapproved. Parental influence appeared to play an important part in Chinese college students' life.

The above studies began the important work of studying Chinese students' self-authorship development. However, because of the distinct cultural differences, more empirical work on the full model is needed before it can be fully accepted for use in China. The purpose of this study, therefore, was to provide insights into how undergraduate Chinese university students develop self-authorship.

Methodology

In this study, we used a grounded theory approach within a social constructivist paradigm. Like the participants in this study, the first author received a college education in China and therefore had an insider's perspective on Chinese college student life, a rich knowledge of Chinese culture and Chinese higher education culture, and an understanding of the day-to-day life of the participants, which increased the study's credibility. Because of this knowledge, it was also easier to communicate with the participants as there was

less need for a clarification of terms or explanations about cultural differences, which helped develop rapport during the data generation. The first author was a native Mandarin speaker and also proficient in the English language.

The second author is a higher education faculty member at a US university who was born and raised mostly in the USA. They have been a visiting faculty member at a Chinese university, have studied student service work in China, and have written about student service developments beyond the USA; however, their basic perspective was grounded in a US context. They are a native English speaker and have studied elementary Mandarin. The first author designed and conducted the research with analytical and editorial guidance from the second author.

Sampling

We used multiple sampling strategies in this research. The target participants were Chinese college students at four-year institutions in their junior or senior years as we speculated that they would have had more college experience than first-year and sophomore students and could possibly have proceeded further in their development. The participants attended one of three higher education institutions in one province in China. As there is a high level of academic program and curriculum homogeneity in China ("A Brief Overview" n.d.), the specific province chosen was based on convenience. To maximize institutional diversity, we employed purposive sampling to choose institutions having different levels of selectivity, with one institution being affiliated with the Ministry of Education, one with the province, and one with the Provincial Education Department.

Teachers and administrators in the three selected institutions acted as gatekeepers, all of whom were personal contacts of the first author and had the capacity to share the survey link to larger student populations in their respective institutions. Initially, the gatekeepers sent out a preliminary demographic survey link with interview invitations to junior and senior college students. To identify the first six participants, we used purposive sampling to pick volunteers with diverse ethnicity, gender, geographic origin, socio-economic backgrounds, institutions, and majors. We anticipated that the students would feel comfortable sharing this information as these data were often collected by schools, government bodies, and other researchers. We also considered diversity in only-child status given the importance in Chinese culture of being an only child versus being one of several children. Grounded theory requires "maximiz[ing] opportunities to discover variations" (Strauss & Corbin, 1998, p. 201). From our personal knowledge and the literature review, we felt that these characteristics had the potential to influence self-authorship development in Chinese college students. We considered it important to include diverse participants from

diverse institutions to develop a more comprehensive self-authorship development theory for Chinese college students.

We then used theoretical sampling, which is "the process of identifying and pursuing clues that arise during analysis in a grounded theory study" (Birks & Mills, 2015, p. 68), to select the subsequent seven study participants. The initial six interviews suggested that socioeconomic status and changes in majors were salient to self-authorship development; that is, the data analysis made us "aware of issues that require expansion, clarification, or confirmation" (Birks & Mills, 2015, p. 68). Therefore, the final seven participants were selected to explore these tentative hypotheses until theoretical saturation was reached with the twelfth and thirteenth participants.

All participants were traditionally aged students, with eight being juniors when interviewed, five being seniors, eight self-identifying as women, and seven as men. Eleven self-identified their ethnicity as Han, one as Miao, and one as Dong. They majored in nine different areas, from physical education to accounting to physics. Based on the urbanicity of the participants' homes and the information given in the interviews (especially about their parents' jobs), we concluded that six participants were from lower socioeconomic backgrounds and seven were from higher socioeconomic backgrounds. Four were from Institution A, six were from Institution B, and three were from Institution C, with six being the only child in their family.

Data generation

The first author conducted the interviews using synchronous video conferencing because of being located geographically distant from the participants. All interviews were conducted in Mandarin, using a modified version of the Wabash National Study (WNS) interview protocol. To ensure that all translated information was fully and conceptually conveyed, we checked whether participants in pilot interviews understood the translation of terms and questions in the interview protocol; where necessary, we changed wording to ensure understanding.

The interviewer began by asking participants to introduce themselves and give any information they felt important. They were then asked "to share … their expectations going into the particular college year, and the extent to which those expectations [matched] their experiences to date. Prompts [solicited] meaning-making clues as the opportunity [arose]" (Baxter Magolda & King, 2012, p. 33). Then, the researcher asked participants to come up with five phrases to describe their first year in college, considering their "best or worst experiences, challenges or dilemmas they encountered, situations in which they were unsure of what was right, their support systems, conflicts or pressures they encountered, and interactions with people who differ from them" (Baxter

Magolda & King, 2007, p. 501). After participants gave five phrases for the first year, they were then asked to provide another five phrases for the second year in college, followed by the third year, and the fourth year if they were seniors. This process allowed the participants to brainstorm material that was relevant to subsequent parts of the interview. We then asked participants to describe the experiences relating to those phrases and if participants showed difficulty in coming up with anything, a list of contexts was provided that the participants could think about, such as family, romantic relationships, part-time jobs, academic life, and peers. In this way, participants recounted the experiences they regarded as significant, which made it possible to access the meaning-making structures underlying these experiences.

During the interview process, the interviewer made notes on the key words each participant used and important points for follow-up questions. Each interview was closed with a summary of the interview, after which the participants were invited to synthesize the collective experiences they had shared.

Data analysis

We used constant comparative analysis to facilitate theoretical sampling and data generation, combining inductive and abductive thought to make decisions, as suggested by Charmaz (2014). Abductive reasoning is a distinctive feature of grounded theory, "a mode of imaginative reasoning researchers invoke" (p. 200) when they come up with and then test various hypotheses to explain data. Recognizing the possible influence of prior knowledge when interpreting the data, we kept an open mind about what we sensed in the data. The two authors maintained close communication during data analysis to ensure a theory fully emerged. The interviews were transcribed into Mandarin. Using a slightly modified version of the procedures for conducting grounded theory analysis across languages and cultures recommended by Nurjannah et al. (2014), the first author coded the Mandarin text using English codes and translated those portions of the text to English. The second author reviewed the parts of the transcripts translated into English and the initial analysis and provided comments and revisions. We also consulted a peer debriefer during data analysis. The peer debriefer was a native Chinese speaker, proficient in English, had a doctorate in Higher Education Administration, worked as a higher education practitioner, and had taken courses related to college student development theories and assessment.

We conducted initial, intermediate, and advanced coding (Birks & Mills, 2015). In the initial coding, the first author examined the transcriptions and field notes line by line and developed codes to define the participant actions and meanings and the evolution of these actions and meanings. As the coding progressed naturally to a higher level

of conceptual analysis, we began intermediate coding, organizing the initial codes into categories and subcategories and identifying conceptual patterns. The core category was identified after analyzing the first six participants: *development within the three domains*.

In the advanced coding phase, we used storyline techniques and theoretical coding to advance the analysis and theoretical integration. Charmaz (2014) asserted that if used wisely, theoretical coding could be immensely helpful in moving analytic stories toward a theory, but that care needed to be taken to avoid the possibility of "[forcing] data into old boxes" (p. 153), that is, applying theoretical codes without thinking. With full recognition of the need to let the analysis be grounded in the data, to facilitate moving the empirical data to theorization, we compared theoretical notions derived from the college student development field, including Baxter Magolda's self-authorship model (2001) and Baxter Magolda and King's updated self-authorship model (2012), with our data. For example, we compared the codes derived from the data regarding the participant reflections on strengths, interests, disadvantages, feelings about themselves, and goals with the theoretical notions related to identity in existing literature, enabling us to identify new dimensions.

We conducted member checking by providing all participants, in both English and Mandarin, with a summary of their individual analyses and, based on participants' collective experience, a summary of the factors that promoted self-authorship development. Participants were then asked to assess the extent that these descriptions fit their reported experiences, with ten of the 13 participants agreeing that the summaries were accurate. For example, one participant said they knew the summary was about them, but claimed they were unable to describe themself as accurately or deeply. The remaining three participants, however, did not respond. However, as the ten who responded showed consistent agreement, this process demonstrated that the analyses resonated with the participants. Because some participants also claimed that their participation in the research and the reading of the summaries had helped them gain a better understanding of their development and a clearer sense of who they were, this process also served to support their self-authorship development.

Findings

All participants displayed evidence of epistemological, interpersonal, and intrapersonal domain development, which is detailed in the following paragraphs.

Epistemological domain

We identified two categories in the epistemological domain: *depending on external sources' thinking* and *beginning to construct knowledge*, reflecting two different levels of epistemological development. *Depending on external sources' thinking* is a less complex structure and *beginning to construct knowledge* is more complex.

Depending on external sources' thinking

All participants showed evidence of relying on external sources and did not recognize the possible shortcomings of this approach. For example, Tracy, a junior majoring in English, commented that the vice president's lecture and some senior students had been her source of inspiration in her second year. She stated,

> We seldom have chances to communicate with those outstanding people who deserve our admiration in our daily life. But we listened to [the vice president]'s lectures. I feel like in higher positions, there are more people who are worth learning from. When you meet them all together, you will feel you are nothing, you are ordinary, they are cool, and you really need to learn from them.

Tracy had trusted and valued the vice president's words and had looked up to the excellent students in the higher grades in an effort to learn the "right" formula from them. These statements indicated that Tracy assumed that the authorities, the vice president, and the excellent students in higher grades had absolute knowledge.

Beginning to construct knowledge

The category *beginning to construct knowledge* has several subcategories: *accumulation of evidence leads to truth*, *different opinions than authorities*, *expressing own understanding*, *knowledge as subjective and contextual*, *some authorities are fallible*, and *trusting own judgment*. All participants eventually recognized that knowledge was subjective and contextual; they found external knowledge sources to be unreliable and that it was better to trust their own judgment.

Dawkin, a junior majoring in physical education, claimed that when exposed to the new college environment and the new information, he became conflicted about whether a college diploma was worth the effort and expense. Therefore, he wanted to prove to society and his community that a college diploma could lead to a successful career, or more accurately, he could achieve success with a college diploma. Dawkin had tried different paths in the first two years to prepare for a successful career. He ran for positions in student organizations to assess whether he could prepare for the civil

service or government jobs; however, he lost these elections. "I reflected on the reason for my failures. Perhaps my overall strength is not competitive. But I have to admit there is an inherent inequality [in educational opportunity resulting from poverty]. This was a new experience and insight for me." Dawkin also tried to see if he could start a career in business and tried to establish a few businesses but failed for different reasons, commenting,

> Now I believe the best way to go into the business world is to work in a big company first, so that you could learn about their culture and how they run the business. Then you could go to explore your own way based on these experiences. This way might be easier than just starting my own from the very beginning. This is my takeaway from the experiences.

Dawkin's reflections show that he had started to understand that knowledge of himself and the world was constructed through his experiences, a more advanced epistemological development level than when he had entered college.

After trying different things, at the end of his junior year, Dawkin developed his own answer to the question as to whether attending college worth it, saying,

> What college education has brought me, first of all, is trying new things in interpersonal communication, and other new things, which could help me with my future. It also allows me to practice my ideas and know more about myself.... I am surer on the purpose of attending college. These three years prove that my decision to attend college is correct.

Dawkin had developed meaning-making structures focused on the purpose/value of his college education. He had developed from trusting external sources to trusting his own insights and valuing his own experiences as a valuable source of knowledge, indicating epistemological and intrapersonal development.

Interpersonal domain

We identified *serving either others' or one's own needs* and *serving both others' and one's needs* as two different interpersonal development levels.

Serving either others' or one's own needs

All participants showed evidence of giving others' needs precedence over their own. Yang, a junior majoring in finance, explained why she had chosen the finance major, saying,

> At first, I really wanted to work in banks.... My parents played a part as well. They wanted me to apply

for bank-related programs. I think it is important for me to get my parents' support.... If they support me on something, I feel more strength inside.

Yang had sought her parents' validation of her future career before entering college, letting her parents' desires take precedence over her own.

Two participants showed evidence of only serving their own needs in some relationships, even if they gave others' needs precedence in other relationships. For example, Dawkin showed this tendency in his relationships, saying,

> If there is any conflict, I may put my girlfriend slightly as less prioritized, and other people slightly ahead. Why? I believe she would support me, and she would want me to do my thing. That is to say, my lover would probably try to think from my perspective, and she understands me.

In this case, Dawkin put his needs over his girlfriend's needs and expected his girlfriend to sacrifice and to understand him, rather than work toward a mutual relationship.

Serving both others' and one's own needs

All but one participant came to show evidence of striving for mutual relationships. Tendo, who had majored in accounting, had just graduated when interviewed. He had not liked his accounting major, which had been chosen by his parents, so he decided to apply for a graduate program in art, a field he liked, saying,

> But the decision they made [majoring in accounting] was the best in their mind at the time and the safest choice for me. I think I can understand the decision that they made for me at the time. After I communicated with her [my mother], she also knew my thoughts that the field I wanted to do [art] was not a bad thing, that I really loved it. After this communication, we felt that we could talk about it, and then we could understand each other. Then I think that it is good to communicate like this. Why do we have to quarrel? After that our relationship has become better. It has changed a lot.

Before going to college, despite his love of art, Tendo had relied on his parents to choose his future field as he put his parents' needs over his own. After four years of college, Tendo was able to make his own decisions based on what he liked to do and at the same time show an understanding of his parents' perspectives, which illustrated development in the constructing of relationships based on mutual respect and interest.

Intrapersonal domain

The intrapersonal domain showed evidence of three dimensions—*self-defined goals*, *self-efficacy*, and *self-knowledge*—each of which was divided into two categories. *Unclear self-defined goals, low self-efficacy,* and *little self-knowledge* are the starting points for intrapersonal development, while *clear self-defined goals*, *high self-efficacy*, and *robust self-knowledge* indicate a more advanced intrapersonal position.

Unclear self-defined goals, low self-efficacy, and little self-knowledge

All participants showed evidence of having unclear self-defined goals, low self-efficacy, or little self-knowledge. Tracy listed being "lost" as a key phrase for her first year in college, saying, "I did not know what to do, and what direction to go next when at college. I was approaching the job market gradually but could not figure out what I need to do to meet society's requirements. I was lost." Tracy did not know her goals or purpose.

Qiqi, a junior majoring in visual communication, showed low self-efficacy when talking about plans after graduation, saying that she had thought about taking the Graduate Entrance Exam and the Civil Service Exam rather than trying to find a job. However, she gave up the thought of taking the Graduate Entrance Exam because, "I can hardly face that kind of failure." She also was not confident about finding a job in her field, saying "I like my field [Design], but I am afraid that I cannot do it well." Qiqi demonstrated low self-efficacy in the intrapersonal domain of the job search process, which indicated that she did not trust her internal voice.

Yan, a senior majoring in physics, said,

> Upon entering college, I was very ignorant. I didn't know anything. I felt that girls in science and engineering were cool, so I chose a major in the science and engineering field. However, I usually like to do quiet activities like reading, writing, and calligraphy. But I just thought that science and engineering girls were a bit cool, without considering what I like to do.

This statement demonstrated that when Yan began college, she had not recognized the importance of following her own interests, thinking that because girls [sic] majoring in science and engineering were "cool," she should choose to major in physics. Yan was focusing on external source's viewpoints and depending on external sources to define who she was.

Clear self-defined goals, high self-efficacy, and robust self-knowledge

All participants showed evidence of developing clear self-defined goals, high self-efficacy, and robust self-knowledge in their later college careers. Tendo, the senior majoring in accounting, developed clearer vocational goals while at college as he came to understand himself. On entering college, Tendo had had an emerging internal voice indicating a love for the arts; however, this internal voice was too weak to follow as his parents' preferences were that Tendo study accounting. Further, early in Tendo's college experiences, his less-developed external interpersonal and epistemological meaning-making structures also had limited his intrapersonal development. Tendo clarified his career goals after completing a financial accounting internship in third year. He recalled how boring the repetitive work had been, saying, "After the internship, I really disliked it. That was not the life I wanted, not the job I wanted." Tendo then decided to apply for a graduate program in art even though he was disadvantaged because most applicants had majored in art, while he had not. When preparing for the Art Graduate Entrance Exam, Tendo was not sure he could get a good result, but reflected, "I was super excited, because after living for more than 20 years, I was finally striving for what I wanted to do. This feeling was totally different from what I felt in previous academic work." The excitement Tendo felt by working on what he wanted to do regardless of the result was strong evidence of the development of an internal voice.

Duanlinxi, a junior majoring in business English, came from the remote countryside where teachers had not focused on spoken English. Duanlinxi found that her spoken English was not adequate for college-level classes and especially those taught by foreign teachers. She said,

> At the beginning, I was wondering if I am well suited for learning English and considered if I had to switch to another major. But as I kept learning, I felt that I was making progress gradually. Then I had the motivation to keep learning. Now I feel that my previous knowledge gaps can be made up by my current efforts.

Duanlinxi's lack of preparedness presented her with a challenge, which made her doubt her abilities during her identity exploration process. However, Duanlinxi developed a strong sense of self-efficacy guided by the belief it was possible to make up for what was lacking in her previous experience.

Leon, a junior majoring in marketing, faced a choice in his second year between taking a business administration or a marketing major. Leon finally chose marketing saying, "I am more for marketing with my personal characteristics and working in sales after graduation. I like this more. So, I did not hesitate." Despite being influenced by other people

at the beginning of college, Leon had grown and was able to articulate his own rationale, which included looking inward to understand his own characteristics and interests. This indicated that Leon was able to make decisions based on getting to know himself better.

The trajectory of development in the epistemological domain moved from depending on external sources to beginning to construct knowledge. The trajectory of development in the interpersonal domain moved from serving either others' or one's own needs to serving both others' and one's own needs. The intrapersonal domain has three dimensions: self-defined goals, self-efficacy, and self-knowledge. The trajectory of development in the intrapersonal domain moves from unclear self-defined goals to clear self-defined goals, low self-efficacy to high self-efficacy, and little self-knowledge to robust self-knowledge.

We outline the patterns of development within the three domains and self-authorship overall in Table 1. To examine their development, we calculated the number of participants in each category and sub-category in each domain at the beginning of their college life (as they recollected) and the time of the interview. In a few cases, such as Miss. P, participants provided no indications of their epistemological and interpersonal positions at the start of college.

Meaning-making structures became more complex as participants progressed through college. As shown in Table 1, on entering college, all participants had only used simple meaning-making structures. However, by the time of the interview, all participants not only used more-complex structures but also used some less-complex structures. Note that only selected subcodes are discussed in this article. For discussions about different rates of development across domains, see Li (2019).

Discussion and implications

We found that the Chinese college participants developed toward self-authorship during their college years, consistent with earlier studies investigating college students' self-authorship development in multiple national and cultural contexts (Baxter Magolda, 2001; Bohon, 2015; Cen, 2012). We discuss the developmental patterns that emerged from the data in the following sections. We identify consistencies and inconsistencies with prior research in the patterns of development within specific domains and self-authorship overall in Table 2.

Epistemological domain

We found that Chinese college students' epistemology moves from depending on external sources to constructing knowledge. This finding is consistent with the developmental

trajectories of epistemological models that describe people moving from viewing knowledge dualistically and as objective to viewing knowledge as more subjective and relative to eventually seeing it as contextual and constructed (Hofer & Pintrich, 1997, 2002). This conclusion is consistent with Perry's scheme (1999) that found that students developed from dualism (Position 1–2) to multiplicity (Position 3–4) and then to contextual relativism (Position 5 and beyond). However, no participant in this study viewed truth as absolute (Position 1). The participants showed development from Position 2 to Position 5 in Perry's scheme. That no participant in this study showed Position 1 was not surprising, as Position 1 seldom has been found empirically (Hofer & Pintrich, 2002). The finding that no participant in this study developed beyond Position 5 was also consistent with previous findings that undergraduate students rarely have post-contextual relativistic thinking (Hofer & Pintrich, 2002).

However, our finding of development toward self-authorship contradicts Zhang and Watkins's finding (2001) that Chinese college students showed epistemological development in the reverse order of Perry's model. Zhang and Watkins found that first-year students showed the most relativistic and least dualistic reasoning and that the third-year students showed the least relativistic and most dualistic reasoning, suggesting that their development was the reverse of Perry's findings. These contradictory results may be because the Zhang Cognitive Development Inventory did not address the context of college students' life in China or in the USA. A lack of consideration of specific contexts could also explain why "the cognitive-developmental pattern expected by Perry's theory was not identified in the present American sample, either" (p. 253). Another possible explanation for the contradictory findings is that the Chinese college students' epistemological development may have shifted in the roughly two decades since Zhang and Watkin's (2001) study due to a greater exposure to western ideas and an evolving Chinese higher education system.

Interpersonal domain

We found that the trajectory of development in the interpersonal domain moved from serving either others' or one's own needs to serving both others' and one's own needs. All participants were initially dependent on external influences, but over time became less dependent. This trajectory was consistent with Chickering and Reisser (1993)'s vector, Moving Through Autonomy Toward Interdependence. While the Chinese college students in this study became more independent, even the most independent participants were still fairly dependent on authorities' or respected peers' approval, consistent with Deutsch's (2004) finding that senior college students in China consider their parents' expectations when deciding on their career plans.

	Start of college	Time of interview
Epistemological		
Depending on External Source's Thinking (less developed)	11	8
Authorities are right	10	3
Learning from excellent people	2	3
Needing external validation	1	5
No appreciation of different views	1	3
No internal criteria	0	2
People around do the same	1	1
Trusting parents keep best interest for self	1	1
Beginning to Construct Knowledge (more developed)	0	13
Accumulation of evidence leads to truth	0	2
Different opinions than authorities	0	9
Expressing own understanding	0	5
Knowledge as subjective and contextual	0	10
Some authorities as fallible	0	6
Trusting own judgment	0	3
Interpersonal		
Serving Either Others' or One's Own Needs (less developed)	12	9
Serving only own needs	1	1
Deferring to external ideas	10	6
Fitting in	3	1
Giving others' needs precedence over own	2	2
Needing to get external approval	2	4
Viewing people at different ranks	2	3
Obeying	3	1
Reliant on parents	3	1
Serving Others' and One's Own Needs (more developed)	0	12
Accepting self when facing disapproval	0	2
Communicating own perspective	0	4
Considering own needs in relationships	0	9
Disobeying authorities	0	7
Tolerant of differences	0	2
Understanding others' perspectives	0	4
Intrapersonal		
Less developed	12	8
Unclear Self-defined Goals	10	5
Busy without purpose	4	0
Unclear goal for college years	10	0
Not sure what to do	4	1
Unclear plan after graduation	0	5
Low Self-efficacy	6	3
Fear of not meeting requirements of society	0	2
Not confident	6	3
Little Self-knowledge	8	5
Externally defined self	3	2
Not knowing self	4	1
Negative feeling about self	4	3
Value commitment without rationale	1	1
More developed	0	13
Clear Self-defined Goals	0	11

Table 1 Number of participants in categories and sub-categories at the start of college and at interview

Table 1 (continued)

	Start of college	Time of interview
Clear plan after graduation	0	7
Goal based on own interest	0	9
High Self-efficacy	0	11
Confident	0	5
Supportive self-talk	0	4
Willing to take risk for the choice	0	4
Robust Self-knowledge	0	13
Decision based on personal characteristics	0	6
Feeling fulfilled	0	6
Seeing the need to look inwardly	0	13

The participants in this study had not achieved interdependence, which is not surprising given Chickering and Reisser's (1993) explanation that interdependence "cannot be experienced until a measure of independence has been achieved" (p. 140). However, the findings in this study differed from Kodama et al.'s (2002), who found that Asian American students followed a developmental trajectory from interdependence to independence, rather than from independence to interdependence, due to Asian cultures valuing family. The participants in this study moved from dependence to greater independence but had not yet achieved interdependence.

Our finding of a less complex interpersonal meaning-making structure of serving only one's own needs in relationships was not part of Baxter Magolda's model (2001) nor Baxter Magolda and King's (2012) updated model. However, Baxter Magolda (2001) referenced a similar idea, stating that a focus on "increasing individuation and separation from others to achieve control, autonomy, and independence in relationship to others often [led] to sacrificing others' needs in relationships to others" (p. 19). This is similar to our finding of serving only one's own needs in relationships.

Intrapersonal domain

We found that the Chinese college students' intrapersonal domain was comprised of three dimensions: self-defined goals, self-efficacy, and self-knowledge. The developmental trajectory moved from unclear self-defined goals to clear self-defined goals, low self-efficacy to high self-efficacy, and little self-knowledge to robust self-knowledge. The dimension of self-defined goals and the developmental trajectory in this dimension are consistent with Erikson's (1994/1959) and Chickering and Reisser's (1993) theory. Erikson described identity as a gradual process of "really know[ing] what you want to be" (p. 98). Chickering and Reisser also stated that it was important for college students to define personal goals, develop self-determined directions,

and change directions, or clarify goals, as these were essential parts of "becoming one's own person and taking increasing responsibility" (p. 115).

The dimensions of self-efficacy and self-knowledge and the associated developmental trajectories found in this study are consistent with Chickering and Reisser (1993)'s components of identity development. Chickering and Reisser acknowledged that self-acceptance and self-esteem development, which are part of the fifth vector, Establishing Identity, were marked by a greater positive sense of self-worth "on internal, personal standards" (p. 199). Chickering and Reisser also found that an increasing ability to assess one's interests was part of the sixth vector, Developing Purpose.

Different from previous literature on identity development in the US context, the participants in this study did not address any aspects of social identity, such as gender, sexual orientation, or ethnicity. This was probably because in the Chinese context, where homogeneity is encouraged, people are not used to talking about their social identities. Further, this study was not specifically designed to explore the participants' identity dimensions.

Self-authorship as a whole

As a whole, the developmental trajectories of the Chinese college participants were consistent with Baxter Magolda and King's (2012) updated model of self-authorship. Baxter Magolda and King found that students developed from Solely External Meaning-Making to Crossroads, where their internal voices competed with the external influences. However, Baxter Magolda and King's last level, Solely Internal (Self-Authoring) Meaning-Making, did not appear in these participants. That being said, Baxter Magolda and King acknowledged that only a small group of WNS participants had shown internal meaning-making by their senior year in college. Therefore, it was not surprising that the participants in this current study did not show any signs of the last stage of the revised model. Our findings regarding developmental

trajectories also are consistent with Cen's (2012) study of Chinese college students. Cen found that Chinese college students "are transitioning from following external formulas to the crossroads where internal voices begin to emerge" (p. 245). Given that only 13 participants took part in this study, additional research on Chinese student self-authorship development is needed to validate these findings.

Implications for practice and future research

The evidence from this study that all participants felt lost or lacked direction when they began college suggested that extra support should be provided for first-year Chinese college students. Perry (1999) suggested that students in the dualism and early multiplicity phases needed structures provided by an authority to support their development. Higher education institutions in China, therefore, need to provide greater structural support for first-year students, such as first-year seminars and college success courses, to accommodate the transition to college. In these seminars or courses, instructors should seek to normalize the experience of feeling lost by encouraging all students to find and express their voices rather than just focusing on the voice of the students who perform well academically. With structured support and encouragement, students would feel less anxious about exploring their options and interests, which would promote greater self-authorship development, especially in the intrapersonal domain. As well as easing their exploration process, by giving information on navigating college, such as information about switching majors, these seminars or courses could serve as a structured way to help students define their own goals.

The study findings also indicated a need to shift Chinese educational practices from knowledge-based to inquiry-based. Current knowledge-based educational practices in Chinese higher education enhance the hierarchical interpersonal relationship orders embedded in Chinese culture, hindering students' self-authorship development. The core of inquiry-based educational practices is that self is central to knowledge construction and that faculty, student affairs staff, and peers are colleagues in this process. Scholars have recognized the need to consider cultural variations when shifting to inquiry-based education practices (Kaur, 2020; Liang & Matthews, 2021). In Asian contexts, practices such as regarding students as partners redefine the traditional roles of teachers and students, expose students to multiple knowledge sources, and help students develop positive self-concepts in the intrapersonal domain (Kaur et al., 2019), thus promoting self-authorship development.

Professionals and practitioners in Chinese higher education should acknowledge students' capacities to construct knowledge and make decisions for themselves, which is essential in inquiry-based education. Specifically, students

Table 2 Consistencies and inconsistencies of developmental patterns of the study compared with literature

Domain	Consistent with	Inconsistent with
Epistemology	Developmental trajectories in Hofer and Pintrich (1997) and Hofer and Pintrich (2002); order of positions in Perry (1999)'s intellectual and ethical scheme	Direction of Chinese college students' epistemological development in Zhang and Watkins' (2001)
Interpersonal relationships	Chickering and Reisser (1993)'s Moving through Autonomy Toward Interdependence; Deutsch's (2004) finding that Chinese senior college students considered parents' expectations when deciding their career plan; sacrificing others' needs in interpersonal domain in Baxter Magolda (2001)'s model	Asian American students' developmental trajectory from interdependence to independence in Kodama et al. (2002)
Intrapersonal domain	Developmental trajectory of self-defined goals in Erikson (1994/1959)'s identity development; Developmental trajectory of self-defined goals, self-efficacy, and self-knowledge in Chickering and Reisser (1993)'s identity development	Social Identities such as gender being salient among US samples
Self-authorship	Developmental trajectory in Baxter Magolda and King (2012)'s self-authorship development model; developmental trajectory in Cen (2012)'s Chinese college students' self-authorship development	N/A

need to be presented with multiple sources of knowledge. Evaluation should encourage students to inquire rather than rely on rote memorization. In both classrooms and co-curricular activities, students should be encouraged to explore their beliefs, relationships, and values in discussions with peers and educators in environments where everyone's voice is equal and valued. Educators, including instructors and student affairs staff, should see themselves as facilitators who are willing to share authority and expertise with the students during their academic and career planning exploration processes.

Future research could include explorations of Chinese college student post-graduation experiences to look at their further self-authorship development. Studies on different cohorts and longitudinal studies on a single cohort would also be good avenues for further investigations into self-authorship development as the participants may be able to recall more experiences in the past year than in the past few years, which would provide rich data. It would also be helpful to examine the underlying mechanisms of the cultural influences on epistemological and interpersonal development as well as the multiple dimensions of identity and the intersection of multiple identities in Chinese college students.

Declarations

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