

Article

How Doctoral Students Understand Academic Identity in China: A Qualitative Study Based on the Grounded Theory

Huirui Zhang ¹, Lingyu Liu ^{2,*}, Xiaoxiao Li ³ and Yongzhen Sun ⁴¹ Faculty of Education, The Open University of China, Beijing 100039, China; zhanghuirui@ouchn.edu.cn² China Academic Degrees and Graduate Education Development Center, Beijing 100083, China³ Development and Plan Office, Tsinghua University, Beijing 100190, China; xiaoxiaoli@tsinghua.edu.cn⁴ Department of Student Affairs, Peking University, Beijing 100871, China; yzsun@pku.edu.cn

* Correspondence: liulingyu@pku.edu.cn

Abstract: The process of doctoral students transitioning from being knowledge learners to being knowledge researchers is beneficial for personal growth and career development. This study explores how doctoral students at Chinese research universities understand academic identity from a psychological perspective based on grounded theory. Understanding academic identity for doctoral students involves three psychological activities: situation recognition, psychological interaction, and reflective positioning. The sense of academic meaning and the sense of academic efficacy shape doctoral students' understanding of academic identity, resulting in four patterns: Adeptness, Academic Pursuit, Alienation and Powerlessness, and Struggling for Meaning. Academic meaning serves as the internal driving force for developing academic identity, while academic efficacy acts as a psychological condition for maintaining academic identity. Therefore, it is crucial to enhance doctoral students' recognition of academic meaning and academic efficacy.

Keywords: doctoral students; academic identity; academic meaning; academic efficacy



Citation: Zhang, H.; Liu, L.; Li, X.; Sun, Y. How Doctoral Students Understand Academic Identity in China: A Qualitative Study Based on the Grounded Theory. *Educ. Sci.* **2024**, *14*, 575. <https://doi.org/10.3390/educsci14060575>

Academic Editors: Haisheng Pan, Xinqiao Liu, Geng Wang, Wenjuan Gao and Amber Simpson

Received: 3 March 2024

Revised: 30 April 2024

Accepted: 3 May 2024

Published: 27 May 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The experiences and professional socialization of doctoral students have long been regarded as a black box [1]. In China, doctoral students assume multiple roles. On the one hand, they are regarded as learners with sufficient knowledge and skills. Through rigorous academic training, they have been capable of professional knowledge and enhanced research abilities, all with the main aim of cultivating innovation capability. Doctoral students are also treated by universities as regular recipients of education [2]. On the other hand, doctoral students are also junior researchers. With the advent of the knowledge economy, universities are playing a strategic role in enabling innovation and economic growth, and graduate education programs are the key to long-term growth and the future of the innovation economy, with doctoral students serving as knowledge workers [3]. Doctoral education not only forms a part of the education system, but also serves as a vital component of the knowledge production system [4]. The training of doctoral students has been closely combined with research, making it the main procedure of doctoral education [5]. Doctoral students are not only recipients of information, but also producers of knowledge.

The role of a doctoral student can be seen as a transitional role between undergraduate and faculty status [6]. Within doctoral programs, the simultaneous presence of multiple roles can easily cause ambiguity and confusion regarding doctoral students' self-positioning. Higher education institutions require doctoral students to engage in academic activities, while simultaneously treating them as managed students, creating potential confusion about their self-identity [7]. Doctoral studies require entering the academic community as a contributing researcher, a transition that often poses challenges for many prospective doctoral students [8]. Failure to recognize their role as researchers and establish a research

identity may negatively impact individual development, leading to frustration, disappointment, lack of self-confidence, and other problems during their doctoral journey [9]. This can result in a deficiency in the attitude required for scientific research and may lead to inappropriate ways to participate in academic competition [7]. The failure of identity formation is related to the attrition of doctoral programs [10], and will cause difficulties and challenges in the socialization of doctoral students [11]. In the context of doctoral writing, identity development primarily involves learning how to communicate within the discipline and situating one's work within the larger field [12]. The establishment of a research identity upon entering a doctoral program can significantly influence their academic performance during their doctoral studies [13]. For doctoral students pursuing careers in academia, failure to establish an identity as researchers may affect their career development in the academic field after graduation.

Academic identity refers to an individual's identification as a member socialized into the values, norms, practices, and belief systems of their particular epistemic community and disciplinary culture [14]. For doctoral students, this entails defining themselves as academic researchers. Although doctoral education cannot facilitate identity transformation for all doctoral students, successfully constructing an academic identity is important for the personal growth and future careers of PhD recipients. However, within doctoral programs, many students are in the process of transitioning from being learners of knowledge to independent researchers. Their individual differences in cognitive development, skill enhancement, and integration into the community lead to variations in their perceptions of academic identity. This study utilizes grounded theory to explore the process of understanding the academic identity of doctoral students at Chinese universities, aiming to reveal how doctoral students become researchers through academic training.

2. Literature Review

Academic identity is an ambiguous term within the literature and seems to appear most commonly as referring to research work and positioning. Other phrases including "professional identity", "scholarly identity", "researcher identity", and "disciplinary identity" also refer to how researchers position themselves within their particular fields and exhibit skills and thinking [12,15] which are often used interchangeably. Identity is shaped by the interplay between micro-level individuals and the larger and macro-level contexts within which they exist [16]. Academic identity, built upon this foundation of personal identity, incorporates both the professional role within academia and the broader social identity within the academic community [17]. The discipline and academic freedom, which are in many cases the sources of meaning and self-esteem, as well as being what is most valued, emerge as most important for academic identities [18]. Academic identity is regarded as the definition that broadly conceptualizes the construct in terms of beliefs, attitudes, and efficacy related to scholarly research [19], and often appears in the literature on doctoral students as a key outcome of graduate education [20]. For doctoral students, who are involved in an ambiguous and confusing complex roles, such as students, researchers, teachers, and departmental members [6], academic identity entails both skill and independence, demonstrated through how one reads, writes, speaks, and acts [12]. From the perspective of Sweitzer, doctoral students' professional identity is related to their perceptions about and development of the three key roles of doctoral student, research assistant, and teacher [21]. Choi et al. regarded professional identity as an individual's felt and recognized association with a vocation requiring specialized knowledge and skills and pertinent values, activities and norms, and they then defined identity as scholar as a specific type of professional identity and as an individual's felt or recognized association with communities doing scholarship pertaining to an academic discipline in doctoral programs [22].

As identities are not fixed but fluid and continuously constructed, co-constructed, and reconstructed over time [23], academic identity is not stable with clear-cut boundaries; instead, it is constantly rebuilt, reshaped and renegotiated in social interaction [14]. The development of a researcher requires doctoral students to internalize their identification

with and commitment to the professional role [24]. Ulriksen et al. recognized identity as always being embedded in culture, and newcomers had to understand the social and cultural setting which they entered and relate that to their identity [25]. Several studies have described the process of constructing a doctoral academic identity by exploring the different stages of socialization [20,26], which equates identity development with the process of socialization. As indicated by socialization models, independent academic identities are pursued only after the socialization of doctoral students and do not emerge during progression toward professionalism [27]. Other studies regard the construction of academic identity as an iterative process shaped primarily by social structures and interaction [12,28]. For example, Jazvac-Martek found that construction, development, or changes to academic identity were interactive, based on continuous reflexive dialogue and relations with significant others, and remained a dialogic process throughout the doctorate [29].

Previous studies have explored the factors influencing the academic identity of doctoral students. Several scholars emphasized the crucial role of supervisors (advisors, mentors) as interactive partners in the construction of doctoral students' academic identity. Weiss suggested that the frequency and nature of contact with faculty members were significantly related to the amount of professional role commitment [30]. Curtin et al. found that advisor support was associated with a stronger sense of belonging and academic self-concept for doctoral students [31]. The informal peer group was also an interacting group that created the potential for change in or development of students' identification [32]. Foot et al. highlighted the importance of students undertaking self-reflection and dialogue with peers and suggested that peers could provide support to each other through socialization and identity transition [33]. In addition, disciplines and institutions provide environments that influence doctoral students' academic identity [34–36], from which students experience a sense of belonging to a collective community. Smith and Hatmaker developed a multi-level model of the organizational, relational, and individual level tactics through which doctoral students learned to become researchers, and offered insight into the students' own proactivity [37]. The socialization model emphasizes knowledge acquisition, investment, and involvement as the core elements to promote the role identity of graduate students [27].

The recognition and development of academic identity is an important aspect of doctoral education [38]. Generally, previous studies have focused on exploring doctoral students' academic identity from external environments, while paying less attention to the psychological mechanisms of academic identity. Therefore, to further uncover the black box of doctoral students' identity construction, it is necessary to explore how Chinese doctoral students understand academic identity at the psychological level.

3. Methodology and Data

This study adopted the grounded theory as the research method to explore how doctoral students develop an academic identity. Grounded theory, as a qualitative research approach, is discovered, developed, and provisionally verified through systematic data collection and analysis of data pertaining to the phenomenon [39] (p. 23). It provides researchers with a framework to generate a theory from the context of a phenomenon and offers a process to develop a model to be used as a theoretical foundation [40]. This study collected and analyzed data using the grounded theory proposed by Strauss and Corbin, referencing Chen and Wang's coding method in practice [41]. Pre-existing studies on the construction of doctoral students' academic identity have yet to establish a universally accepted and definitive analytical framework. The process of identity construction is iterative, unstable, and diverse for doctoral students, making it challenging to describe in a uniform manner. Grounded theory assists in generating a theory from the data that can illuminate the phenomena of academic identity construction among doctoral students, and also provides this study with a robust analytical tool to explore the characteristics manifested by doctoral students as a group.

3.1. Data Collection

This study collected data through semi-structured individual interviews. When selecting participants who could provide the maximum amount of information for the research question, factors such as doctoral stage, gender, discipline, and institution were considered. Multiple interviews were conducted with 21 doctoral students from research universities (see Appendix A). The semi-structured interviews consisted of nine open-ended questions asked in sequential order; these questions were developed based on the literature. Examples of the questions included the following: (1) How would you describe your identities? (2) Describe what happened when you thought of yourself as a researcher, and (3) talk about what helped you form an academic identity and the experiences that created doubts or hesitations about becoming a researcher. The participants were from three Chinese research universities and included 11 males and 10 females, with 4 from natural science, 6 from engineering, 4 from humanities, and 7 from social science. The interviews, which lasted approximately 60–120 minutes, were audio recorded. After all the interviews were conducted, a member of the research team transcribed and translated them into English. Memos were written throughout the research process to document theoretical ideas.

3.2. Data Analysis

This study adhered to the grounded theory data analysis procedures outlined by Strauss and Corbin [39], which proceed in three coding steps: open coding, axial coding, and selective coding.

For a grounded theory study, data analysis begins with the open coding of transcripts. In this stage, we suspended all preconceived notions and analyzed the data in an open and theoretically sensitive manner. Careful reading and deconstruction of the interview transcripts, notes, and memos revealed key concepts and allowed us to establish labels. Through this process, we identified seven categories. These categories, including their properties and dimensions, are conceptualized in Table 1.

Table 1. Results of the open coding.

Categories	Properties	Dimensions
Becoming “doctoral student”	Role transition	Learner—researcher
	Action transition	Learning knowledge—learning how to conduct research—producing knowledge
	Relational transition	Dependence—independence
Perceiving “doctoral student”	Perceiving roles	Roles in reality, symbolic role
	Perceiving tasks	Knowledge production tasks, course learning tasks, knowledge dissemination tasks, administrative management tasks, project execution tasks
	Perceiving academic profession	Career choice possibilities, academic career content, academic career benefits, academic career challenges
	Perceiving self	Efforts for the degree, doctoral life status
Evaluating “doctoral student”	Evaluating academia	Instrumental evaluation—intrinsic evaluation
	Evaluating self	Academic-self fitting, academic agency
Feeling “doctoral student”	Sense of academic meaning	Realistic transformation effect, affirmation from others, achievement of preferences, self-identification
	Sense of academic efficacy	Cognition of academic talent, cognition of academic ability, evaluation of significant others, evaluation of self-involvement
	Mental pressure	Pressure of completion, pressure of academic pursuit, pressure of academic career, pressure of non-academic infringement, pressure of physical overload
	Academic pleasure	The joy of knowledge exploration, the joy of discovering results, the joy of interpersonal interaction

Table 1. Cont.

Categories	Properties	Dimensions
Reflecting “who I am”	Position of academic identity	“I am a researcher”, “I am an immature researcher”, “I might be a researcher in the future”, “I am not yet a researcher”, “I am not a researcher”
Context of academic identity	Academic life rehearsal	Participation in research, academic exchanges, teaching practices
	Stepping out of the ivory tower	Life beyond academia, social interpersonal communication
Interaction of academic identity	Demonstration	Positive demonstration—negative demonstration
	Incentives	Positive incentives—negative incentives
	Integration	Strong self-consciousness—weak self-consciousness

Axial coding is a set of procedures in which data are reassembled in new ways after open coding, by making connections between categories. This is performed by utilizing a coding paradigm involving conditions, context, action/interactional strategies, and consequences [39] (p. 96). Based on this paradigm model, as shown in Table 2, this study gathered the scattered categories generated by open coding, reorganized and conceptualized data around the central phenomenon, and established initial associations between categories and their properties.

Table 2. Results of the axial coding.

Paradigm	Categories
Causal conditions	Role transition, action transition, relational transition
Phenomenon	Becoming “doctoral student”
Context	Academic life rehearsal, stepping out of the ivory tower
Intervening conditions	Interaction of academic identity
Action/Interaction	Perceiving “doctoral student”, Evaluating “doctoral student”, Feeling “doctoral student”
Consequences	Reflecting “who I am”

Selective coding is the process of identifying the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development [39] (p. 116). Selective coding involves clarifying the core category that integrates other categories through explicating the story line to generate a grounded theory. In this study, after conceptualizing the research topic through the story line, the core category “Doctoral students’ understanding of academic identity” was determined based on theoretical sensitivity. “Sense of academic meaning” and “sense of academic efficacy” were identified as two properties of the core category. As illustrated in Table 3, guided by these properties, the core category was divided into four patterns: Adeptness, Academic Pursuit, Alienation and Powerlessness, and Struggling for Meaning.

Table 3. Patterns of selective coding.

Sense of Academic Meaning	Sense of Academic Efficacy	
	High	Low
Strong	Adeptness	Academic Pursuit
Weak	Struggling for Meaning	Alienation and Powerlessness

These four patterns represent diverse types of student understanding the academic identity. “Adeptness” characterizes doctoral students who have a strong sense of academic meaning and efficacy, generally positioning themselves within or near the academic community. “Academic Pursuit” applies to doctoral students with strong academic meaning

but low efficacy; they usually position themselves on the periphery of the academic community. “Alienation and Powerlessness” refers to individuals with a low sense of both academic meaning and efficacy, who often feel alienated and incompetent. “Struggling for Meaning” describes doctoral students who have a weak sense of meaning but a strong sense of efficacy, frequently encountering conflicts and internal struggles about meaning.

Finally, after validating these relationships against the data, it appeared that this study achieved theoretical saturation. Therefore, the grounded theory generated in this study is that the extent to which doctoral students perceive a sense of academic meaning and efficacy influences their understanding of academic identity.

The primary researchers for this study were former doctoral students, with divergent perspectives on academic culture, ranging from viewing it as a noble pursuit to merely a means of livelihood. Due to the diversity of researchers’ personal positions, this study performed the data analysis with reflexivity and collaboration. Recognizing the varied backgrounds and viewpoints of the researchers, the analysis was conducted with a critical eye, acknowledging individual biases. Meanwhile, researchers strived to adopt the perspectives of the participants during data analysis, extrapolating their view and methods of constructing meanings from their words and actions, thereby ensuring that the researcher’s interpretation was as close to reality as possible. To ensure the trustworthiness of the findings, peer debriefing and member checking sessions were undertaken, with preliminary interpretations presented to academic supervisors and fellow doctoral students. This collaborative process facilitated rigorous scrutiny of the interpretations and enriched the analysis, ultimately enhancing the credibility of this qualitative research.

In this study, to thoroughly present the grounded theory generated by the data, we first describe the psychological process by which doctoral students understand their academic identity. We then analyze the various patterns of this understanding and discuss the reasons for differences in Chinese doctoral students’ understanding of academic identity.

4. Psychological Processes of Doctoral Students’ Understanding Academic Identity

The understanding of academic identity by doctoral students is a process in which they perceive, evaluate, feel, and reflect upon their academic selves in their academic situation and interactions. This process encompasses three psychological operations: situation recognition, psychological interaction, and reflective positioning.

4.1. Situation Recognition

Situation recognition is the initial step in doctoral students’ understanding of academic identity. They recognize role transition, action transition, and relational transition in current academic situations.

In terms of their roles, doctoral students believe that they must fulfill the dual role expectations of being a learner and a researcher, and that they need to transition from being a learner to being a researcher. As NS-10 (Chemistry, male) describes, “Pursuing a PhD degree is a processing phase: it transforms you from an undergraduate to a highly mature researcher”. Only after experiencing those role transitions can doctoral students achieve a sense of identity as researchers. EN-20 (Computer Science, male) states, “When I just started my program, I still saw myself as a student, and felt the need to understand and learn about my chosen field. However, midway through my research, my role shifted to a researcher”.

In regard to the action transitions associated with situation recognition, doctoral students perceive a shift in their primary task: moving from acquiring knowledge and skills, to producing knowledge. In the early stages of their doctoral training, students are required to complete a rigorous course load and establish the foundational knowledge necessary for their research. As NS-1 (Physics, male) notes, “The breadth and depth of knowledge can greatly promote research work”. The process of learning how to produce knowledge signifies a transitional stage for doctoral students, one that sees them moving from a pure learning phase to a phase of knowledge production. This transition necessitates

that doctoral students not only master professional knowledge, but also learn how to apply this knowledge, understand research paradigms, and develop research abilities. Being directly involved in knowledge production represents a crowning task for doctoral students, where their educational and research experiences converge. As NS-10 (Chemistry, male) realizes, “My research life is essentially synonymous with my life as a doctoral student”.

In terms of interpersonal relationships within the academic situation, doctoral students perceive a transition from dependence to independence, particularly in their relationships with academic support groups, especially their supervisors. At the early stages of the program, doctoral students rely heavily on their supervisors. This is noted by EN-7 (Computer Science, male) who observes, “As a novice in the field, I still need guidance”. Meanwhile, EN-9 (Engineering, female) attributes a loss of academic interest to the lack of early guidance from a supervisor, stating, “A master leads the way, and apprentices cultivate themselves. But I never had anyone guide me in research, and as a result, pursuing a PhD was exhausting. For me, the research was not going well, and eventually, I no longer enjoyed it”. Doctoral students realize they have to transition from relying on their academic support group to being able to conduct research independently. As SS-4 (Education, female) states, “Getting a PhD is indeed different from earning a master’s or bachelor’s degree. For supervisor doesn’t hold your hand and teach you how to do things. Most of it, you have to explore on your own”.

4.2. Psychological Interaction

Situation recognition leads to psychological interaction between doctoral students and their environment. This interaction includes perceiving, evaluating, and feeling their academic selves in different situations, through which doctoral students enhance their understanding of academic identity.

Doctoral students perceive their academic selves in the context of their interaction with the environment. Their self-perception varies at different stages of their program, depending on their actual work content. For example, doctoral students at the initial research stage perceive themselves as “learners of research”, with “immature” or “inexperienced” academic abilities (EN-21, Environmental Engineering, female). Doctoral student EN-20 (Computer Science, male), who is deeply engaged in knowledge production, views himself as an explorer of the unknown, and collaborates with his supervisor as a competent research partner.

In several instances, some doctoral students in the STEM field perceive themselves as academic employees and inheritors of knowledge. The former perspective is evident as these students interpret the material incentives provided by their supervisors as “compensation” for their labor (EN-7, Computer Science, male). On the other hand, the latter perspective is revealed in the transfer of tacit knowledge from doctoral students at advanced stages to those at earlier stages (NS-6, Biology, female). For example, EN-7 perceives himself as operating in the capacity of an employee while working on research projects for his supervisor, “I call my supervisor ‘boss’, and he pays me”. NS-6 views it as her responsibility to guide the juniors, “my supervisor assigned a junior student to me, and I had to impart the basic skills and knowledge to him”.

Through their interaction with the environment, doctoral students evaluate the value of their academic selves. There are two perspectives for evaluating academics: instrumental evaluation and intrinsic evaluation. Instrumental evaluation refers to students’ assessment of academia based on its utility and interests, while intrinsic evaluation prioritizes the inherent value of academia and disregards other external value and purposes. The evaluation of academic selves by doctoral students encompasses both instrumental and intrinsic evaluation. On the one hand, they appreciate the role of academic research in generating practical benefits and enhancing their job prospects. On the other hand, they believe that academic research promotes knowledge accumulation and the satisfaction of curiosity. For example, EN-7 (Computer Science, male), embraces an instrumental evaluation perspective, believing that his doctoral academic training could position him to contribute to cutting-

edge projects in corporations, consequently earning considerably more than those with a master's degree. Conversely, HU-11 (Philosophy, male), from an intrinsic evaluation perspective, believes that his engagement in research within his discipline is driven by his interest and ambition in academia.

Doctoral students undergo a range of emotional experiences through their interactions with the environment. The sense of academic meaning refers to the feeling of meaning and satisfaction that doctoral students experience when engaging in academic activities. This sense is typically bolstered by positive feedback from the external environment as well as the student's internal motivation. These feedback experiences often occur when doctoral students recognize the substantive impact of academic research, receive validation from important others, achieve academic accomplishments, and strive toward self-actualization. For example, SS-3 (Education, male) experiences a strong sense of academic meaning when he realizes the impact his research has on others. The sense of academic efficacy refers to the student's belief in their capacity to accomplish specific academic tasks. Positive evaluations of one's capabilities, both from external environment and through personal self-assessment, can lead to an enhanced sense of academic efficacy. These experiences potentially extend from assessments of academic talents based on past experiences, self-evaluations of one's academic capability when engaging in scholastic activities, feedback from important others in their academic life, and increases in academic engagement. For instance, SS-14 (International Relations, female) expresses confidence in her research skills, stating, "Doing research is not particularly challenging; I seem to have a bit more talent in this area than most people".

4.3. Reflective Positioning

After situation recognition and psychological interaction with their environment, doctoral students reflect on whether they are researchers and whether they belong to the academic community. This study reveals that not all doctoral students at Chinese research universities manage to establish a strong academic identity, as the students approach self-reflection differently. Those students who view themselves as researchers have effectively incorporated the concept of academic identity into their self-image, suggesting that academic identity has been successfully transformed from an institutional identity authorized by higher education institutions [42] into a part of their self-identity. For example, EN-7 (Computer Science, male) identifies himself as a researcher following the production of original research outcomes. Similarly, SS-13 (Management, male) feels that he is embodying the role of a researcher due to his developed inquisitiveness.

The development of academic identity is notably influenced by a doctoral student's progression within their program. Doctoral students in the academic training stage recognize themselves as participating in research but do not yet see themselves as independent or mature researchers. SS-3 (Education, male) points out that "when it comes to writing papers, I view myself as a researcher, but not as an independent, mature researcher, instead, I'm more of a 'novice researcher'". These still-developing researchers are in a transitional phase, shifting from being students to becoming researchers. Doctoral students with such self-position often believe that they will eventually mature into full-fledged researchers.

There are some participants in this study who do not possess a defined academic identity. Instead, they identify themselves as students or exist in a state of uncertainty about pursuing a career as researchers. Doubts also arise regarding their ability to independently complete academic tasks. For example, NS-6 (Biology, female) feels that she still lacks the ability to conduct independent scientific research and requires further experience and assistance. Therefore, she identifies herself as "still a student". Some doctoral students exhibit a negative attitude toward engaging in academic activities and display a weak inclination toward choosing academia as a career, given their hesitation about becoming researchers. For instance, HU-16 (Archaeology, female) considers herself a non-researcher due to her perception that academic research lacks meaningful essence.

5. Different Patterns of Understanding Academic Identity

Due to the differences in the acquisition of academic meaning and academic efficacy during the process of doctoral programs, as shown in Table 3 and Figure 1, different doctoral students exhibit different characteristics in the patterns of understanding the academic identity, including Adeptness, Academic Pursuit, Alienation and Powerlessness, and Struggling for Meaning.

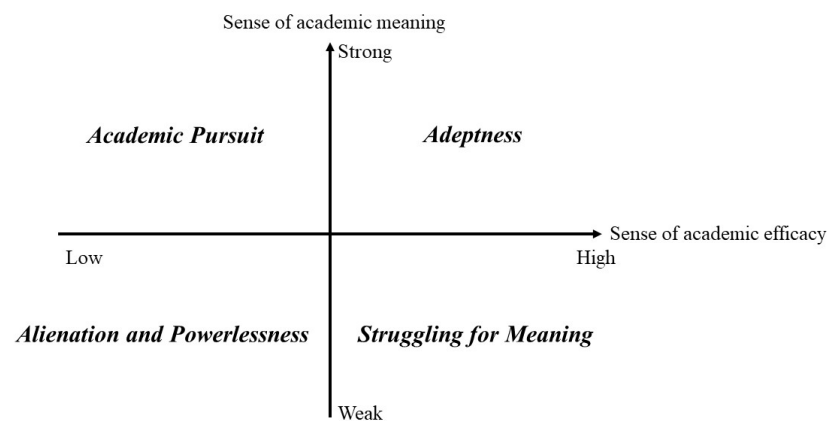


Figure 1. The patterns of understanding the academic identity.

5.1. Adeptness

Doctoral students in the “Adeptness” category can obtain a strong sense of academic meaning and efficacy from their academic experiences. These students hold a strong conviction that pursuing an academic career is a worthwhile endeavor, and they have confidence in their ability to conduct and complete scholarly research. Generally, they tend to position themselves within or in close proximity to the academic community. They also perceive their academic self to be well-placed within this sphere, and they express competence when navigating the relationship between academia and their personal selves.

“I have a passion for philosophy because I find it is interesting. Making breakthroughs in research means a great personal achievement for me. Moreover, I see myself as a worker in this era, comparable to my peers. I feel proud to be an outstanding contributor. Personally, I prefer to call myself a researcher”. (HU-11, Philosophy, male)

“I have always been particularly interested in computers, and pursued my PhD to be able to do creative work in the future. Though it requires a lot of effort to do the researches, in the end, I manage to solve important issues. I believe that the research issues must be significant; otherwise, they are meaningless. Moreover, not only academia, but also the companies can utilize my research findings. I also have confidence in my abilities and have good publications. I have considered myself as a researcher from a very early stage”. (EN-20, Computer Science, male)

5.2. Academic Pursuit

Doctoral students in the “Academic Pursuit” category obtain a relatively strong sense of meaning from their academic work, but their sense of efficacy is low. They believe that academic research is valuable and meaningful, but they lack confidence in their own ability to successfully achieve research results. These students position themselves on the periphery of the academic community and view the completion of academic tasks as a distant goal.

“Even if the research project is obscure or very fundamental, and it may not have direct or immediate practical applications. I still firmly believe it provides answers to the unknown. However, I feel that my research abilities are still

insufficient, and I may need to read more articles published by others and conduct more experiments by myself. In my opinion, I am still a student". (NS-6, Biology, female)

"I believe that academia is very meaningful, and the research in our field is extremely significant to both the nation and society. It can directly benefit mankind. However, I feel that I'm not particularly suited for academia. Scientific research requires a huge amount of physical and mental effort, which I find exhausting. Experiments can't be interrupted, lasting at least 14 hours each time, and I am really worn out. Furthermore, I have bad luck. My hard-won paper was scooped by others, and I feel that I am still far from being a researcher". (EN-9, Engineering, female)

5.3. Alienation and Powerlessness

Doctoral students in the "Alienation and Powerlessness" category often have low levels of both sense of meaning and efficacy in academia. They struggle to recognize the value of academic research and suffer from a lack of confidence in their own academic abilities. They position themselves on the fringes of the academic community, lacking a sense of control over their academic work. This contributes to a sense of alienation and incompetence in regard to understanding their academic identity.

"There are too many ineffective, useless, and tedious affairs in our current scientific research. I used to think that engaging in academia was a very pure and sacred experience, where one could express his or her true ideas. Reality, however, has proven otherwise. In my long doctoral journey, I have realized that my mastery of knowledge may be inferior to my classmates and peers. You can work hard, spare no efforts to write articles every day, but can you produce good results? Maybe you can't. I have always considered myself as a student, still learning how to be a researcher". (SS-19, Politics, male)

"The reason I am pursuing a doctorate is simply to earn a higher salary after graduation. The value of research hardly matters to me, and I seldom appreciate the sense of meaning it brings. Therefore, I don't feel I need to become one of the members of the academic community. However, in order to graduate, I need to have publications. My supervisor seldom guides me and my ability of innovation is limited, which makes doing research extremely difficult for me. It is very likely that I will postpone my doctorate. I feel like I can't control the future, let alone be a researcher". (EN-12, Computer Science, Male)

5.4. Struggling for Meaning

Doctoral students in the "Struggling for Meaning" category have a weak sense of meaning obtained from academia but a high sense of efficacy. Despite their firm belief in their competence, they harbor doubts about whether academic research provides sufficient spiritual value. As a result, they experience conflicts and internal struggles when participating in academic activities. These doctoral students typically identify themselves as "non-researchers" or "researchers questioning the meaning of academia". They believe in their competent academic abilities and academic publications, while they derive less satisfaction from their research, leading to conflicts stemming from this perceived lack of meaning and value.

The participants' questioning of academic meaning is manifested through their doubts about the practical impact of research and the fairness of academic rules. When they cannot reconcile their research with their personal standard of meaningful work, they experience cognitive and behavioral dissonance, resulting in a struggle for meaning.

"About one-third of my work is just for publication, just to find a good position in academia. Much of this work is merely repetitive labor. I know that a part of my work is useless. We make attempts to solve very practical problems, yet its impact

on reality seems negligible. I don't experience excessive pressure in scientific research due to my research capability. If I fully devote myself to my research, I can produce a high-quality article within a month. I view myself as a researcher, yet the feedback received from my research endeavors often leaves me unsatisfied. The articles I publish are mostly due to employment pressures, which tends to render the process somewhat meaningless to me". (EN-15, Engineering, male)

"I feel that I have mastered research skills and have published an amount of academic achievements during my doctoral studies. While I perceive myself as a researcher, I am suffering from doubts. Research in our field should serve to address real-world challenges in businesses, but the academic community seems unable to respond to these requirements and ignores the criticisms from the business sector. The current academic evaluation system has resulted in a frenzy of publication for publication's sake, creating a frivolous academic atmosphere that I find meaningless. Hence, I choose to resist the prevailing academic rules by temporarily withdrawing myself from academia". (SS-13, Management, male)

In conclusion, doctoral students in China display significant differences in their process of understanding academic identity. This is due to the varying degrees of perceived meaning and efficacy they derive from academic situations and interactions. Consequently, this variation leads to different ways in which students position themselves.

6. Discussion

6.1. Academic Meaning: Internal Driving Force to Develop Academic Identity

The sense of academic meaning is related to the spiritual satisfaction experienced by doctoral students in their academic activities. From a psychological perspective, individuals are motivated not only by material rewards but also by the pursuit of meaning and spiritual value from their career. They desire to be able to express their true and complete selves at work and connect work and life with spiritual experiences [43]. Zhao and Guo pointed out that many young people hold the belief of "being anything they want to be" and have strong expectations for the meaningfulness of their career development [44]. Wellman and Spreitzer suggested that many organizational scholars were interested in making their careers more personally meaningful, while in academic careers, doctoral students and junior scholars may feel less autonomy to job craft, thereby creating negative impacts on the increasing meaning of work [45]. For doctoral students, the obtainment of academic meaning implies difficulties and challenges. Socialization is the process through which the doctoral students acquire the knowledge and skills, the values and attitudes, and the habits and modes of thought of the society to which they belong [10]. Therefore, the meaning they pursue must be generated during socialization. The experiences of doctoral students interacting with the discipline and institution significantly influence their evaluation of academic value.

Constructing scientific knowledge and deriving meaning from the experience of attending a doctoral degree are fundamental aspects making doctoral education unique [46]. The discipline, centered within academia [47], serves as an important context for the construction of doctoral students' academic identity. Academia is the soul of the discipline, and the process of knowledge exploration can generate a sense of value and dignity. Just as Weber regarded "inward calling for science", "enter into the idea that the destiny of his soul depends on his being right about this particular conjectural emendation at this point in this manuscript", "Without this strange intoxication (which appears faintly ridiculous to outsiders), without this passion, and without this feeling that 'thousands of years had to elapse before you entered life, and more thousands of years are silently waiting' to see whether or not your conjecture will be confirmed, one has no vocation for science and should do something different" [48]. As a researcher in reality, doctoral students' perception of the "inward calling" in academic community allows them to gain a sense of meaning and promotes the formation of their academic identity. Higher education institutions also provide doctoral students with the drive to undertake knowledge production and

interact with supervisors, peers, and important others who motivate doctoral students to perceive meaning in academic research. In addition, financial support from institutions significantly contributes to the success of doctoral students [49]. In terms of doctoral student socialization, meaning making related to money, which shapes doctoral students' identities as students and future professionals, may play a significant role in shaping whether doctoral students adopt the financial and monetary values, norms, and behaviors of their fields of study, departments, advisors, peers, and research laboratories [50].

In summary, the sense of academic meaning serves as the driving force for doctoral students, enabling them to perceive the value within their academic environment and facilitating the integration of their academic identity into their self-image. Conversely, a lack of academic meaning can result in insufficient motivation for doctoral students to construct their academic identity and engage in professional socialization processes.

6.2. Academic Efficacy: Psychological Conditions for Maintaining Academic Identity

Academic efficacy is a crucial psychological condition for doctoral students in forming their academic identity. Representing the power of positive thinking, self-efficacy has been consistently shown to exert a profound influence on individuals' motivation, achievement, and self-regulation [51]. Perceived self-efficacy refers to individuals' beliefs regarding their capabilities to produce designated levels of performance that influence events affecting their lives [52]. Individuals with high self-efficacy perception demonstrate greater resilience in their behavior, experience less anxiety and depression, maintain mental well-being, and achieve higher academic performance [53] (pp. 44–45). When confronted with stress, individuals with low self-efficacy tend to feel powerless, whereas those with high self-efficacy believe they can effectively control and cope with stress, thus perceiving it as less threatening [54]. According to Bong and Skaalvik [55], self-efficacy acts as an active precursor of self-concept development. When doctoral students perceive themselves as capable of academic tasks, they are motivated to embrace the role of a researcher. Therefore, a sense of academic efficacy contributes to the construction and maintenance of doctoral students' academic identity.

The environment and situation can significantly influence the level of self-efficacy [56]. For doctoral students, the environment that affects their sense of academic efficacy includes the disciplinary environment and institutional environment. Research conditions, academic atmosphere, and support from supervisors all impact on doctoral students' cognition and confidence in research activities [57]. Through interacting with key figures in the academic and institutional communities, doctoral students develop self-efficacy through the cognitive integration of the following four information cues: enactive mastery, vicarious experience, verbal persuasion, and emotional arousal [58]. Performances interpreted by doctoral students as successful make them receive positive feedback from academic activities, thus contributing to the maintenance of high levels of academic self-efficacy. Conversely, academic self-efficacy can influence their behaviors in academic research, potentially enhancing their overall sense of academic efficacy. According to Pasupathy and Siwatu, research self-efficacy is a significant predictor of research productivity among graduate students, and it also influences their research outputs by affecting their interest in conducting research [59]. As doctoral students produce more research output, they receive more positive feedback, reinforcing the relationship between research activities and performance interpretations, thereby strengthening their academic self-efficacy. Furthermore, academic self-efficacy also supports them to cope with academic pressure and challenges, which they usually face in academic training and knowledge production.

Doctoral students with a strong sense of academic efficacy are more likely to recognize their academic competence, facilitating the integration of their academic identity into their self-image. Conversely, a lack of academic efficacy makes it difficult for students to identify themselves as members of the academic community. Therefore, the sense of academic efficacy serves as a crucial psychological condition for doctoral students to construct and maintain their academic identity.

7. Conclusions and Implications

Improving doctoral education requires facilitating the transformation of doctoral students into independent researchers. Constructing an academic identity is highly important for the personal growth and future academic development of doctoral students. This study discusses how doctoral students in Chinese research universities become researchers from a psychological perspective and explores the psychological process and different patterns of academic identity comprehension. Based on the grounded theory, this study reveals that the sense of academic meaning and academic efficacy profoundly impact doctoral students' understanding of their academic identity. Throughout the dynamic process of academic identity construction, the sense of academic meaning and efficacy acquired from the interaction with the environment determine whether doctoral students can establish themselves as researchers. This provides an analytical perspective and research framework for exploring the doctoral students' identity formation. As doctoral students transition from students to researchers, their self-identity exhibits considerable fluidity and variability. Analyzing their academic meaning and efficacy can elucidate the characteristics of doctoral students' identity development and help to reveal the mechanisms underlying academic identity construction. In an era characterized by diverse employment opportunities for doctoral graduates, although academic professions are no longer the sole destination for all doctoral students, high-quality doctoral education should enable students to recognize their identity as researchers to fulfill educational objectives effectively.

The sense of academic meaning and efficacy serves as a driving force and psychological conditions for doctoral students to enter academic careers. Disciplines and institutions provide fields and contexts for doctoral students to acquire academic meaning and efficacy. As a member of an academic community, an academic is an individual who integrates into this community and constructs their academic identity. For most scholars, the doctoral stage is a period in which they form their academic identity. By deepening the knowledge in their discipline and engaging in academic interactions, doctoral students can cultivate a sense of academic meaning and efficacy, strengthen their identification within their discipline and institution, and naturally establish their academic identity. Conversely, without acquiring a sense of academic meaning and efficacy from their environment, doctoral students may struggle to realize their academic identity. The findings of this study expand the socialization model, enrich the socialization process of postgraduates that used to be analyzed from an external perspective by using the intrinsic perspective of doctoral students, explore the self-transformation of doctoral students in the socialization process by using the concept of "identity", and establish the direct connection between knowledge acquisition, investment, involvement, and doctoral identity.

The conclusions of this study could provide some suggestions for the advancement of doctoral education. The psychological state of doctoral students warrants attention from both supervisors and administrators. In today's academic profession, where excessive workloads and stress are increasingly prevalent, it is essential to assist doctoral students in dealing with stress, adapting to their surroundings, and solving psychological problems to maintain their mental health and foster a positive approach to challenges. In doctoral education, particular emphasis should be placed on enhancing the sense of academic meaning and efficacy. Only when doctoral students perceive the value of the scientific research they undertake can they establish a psychological recognition of their academic identity and subsequently embrace the responsibilities and obligations of researchers. When doctoral students have a high sense of efficacy, they can actively confront setbacks and failures in their academic research endeavors, fostering a stronger commitment and sense of belonging to the academic community. Therefore, supervisors and administrators should guide doctoral students in actively pursuing the meaning of research activities and conducting meaningful research. Moreover, they should prioritize enhancing doctoral students' sense of academic efficacy, especially during the early stages of doctoral socialization. Supervisors should provide guidance and support to help doctoral students understand the norms of the academic community, master the knowledge and skills necessary for academic research,

and integrate them into professional life. Doctoral students should also prioritize their mental well-being, consciously maintain and pursue meaning from academic activities, and proactively enhance their academic self-efficacy. Since all the interviewees came from research universities, this study did not identify any significant institutional differences. Furthermore, while we acknowledged how doctoral students understood academic identity from a psychological perspective at Chinese research universities, our study did not explore the diverse career paths these students may follow. An increasing number of PhD graduates are opting to leave academia. Future research could examine the impact of academic identity on the career decisions of doctoral students, as well as the relationship between academic identity and the performance of these students.

Author Contributions: Conceptualization, H.Z.; methodology, H.Z. and X.L.; software, L.L. and Y.S.; validation, H.Z., L.L. and X.L.; formal analysis, H.Z. and X.L.; investigation, H.Z., L.L. and X.L.; resources, H.Z. and Y.S.; data curation, H.Z.; writing—original draft preparation, H.Z. and L.L.; writing—review and editing, H.Z.; visualization, H.Z. and Y.S.; supervision, H.Z.; project administration, Y.S.; funding acquisition, L.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by National Social Science Found Education Youth Project (Project: A study on the current situation, influencing mechanisms, and improvement strategies of the quality of postgraduate student training in basic disciplines) grant number CIA230320.

Institutional Review Board Statement: Ethical review and approval were waived for this study as we did not collect any information that could identify the participants during the data collection process. Therefore, according to the ethical review regulations, such research does not require ethical review.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data that support the findings of this study will be made available from the authors upon reasonable request.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Table A1. Brief information regarding the interviewees.

Interviewee	Discipline	Gender	Year of Doctoral Program
NS-1	Physics	Male	Fifth
NS-2	Physics	Male	Third
SS-3	Education	Male	Fourth
SS-4	Education	Female	Second
SS-5	Education	Female	Second
NS-6	Biology	Female	Fourth
EN-7	Computer Science	Male	Third
HU-8	History	Female	First
EN-9	Engineering	Female	Fourth
NS-10	Chemistry	Male	Third
HU-11	Philosophy	Male	Fourth
EN-12	Computer Science	Male	Fourth
SS-13	Management	Male	Fourth
SS-14	International Relations	Female	Second
EN-15	Engineering	Male	Fourth
HU-16	Archaeology	Female	Third
SS-17	Law	Female	Second
HU-18	Philosophy	Female	Fourth
SS-19	Politics	Male	Fourth
EN-20	Computer Science	Male	Fifth
EN-21	Environmental Engineering	Female	Third

References

1. Ehrenberg, R.G.; Jakubson, G.H.; Groen, J.A.; So, E.; Price, J. Inside the black box of doctoral education: What program characteristics influence doctoral students' attrition and graduation probabilities? *Educ. Eval. Policy Anal.* **2007**, *29*, 134–150. [\[CrossRef\]](#)
2. Zhang, L. Confirmation of Doctoral Student Identity—Fundamental Issues in Doctoral Education Reform. *Acad. Degrees Grad. Educ.* **2008**, *6*, 28–31. (In Chinese)
3. Stamou, A. Knowledge management in doctoral education toward knowledge economy. *Int. J. Educ. Manag.* **2017**, *31*, 320–331. [\[CrossRef\]](#)
4. Chen, H. The transformation of knowledge production mode and the quality crises in doctoral education. *J. High. Educ.* **2010**, *1*, 57–63. (In Chinese)
5. Zhou, J. Graduate education facing the era of knowledge economy. *Acad. Degrees Grad. Educ.* **1999**, *1*, 4–7. (In Chinese)
6. Crothers, C. The Internal Structure of Sociology Departments: The Role of Graduate Students and Other Groups. *Teach. Sociol.* **1991**, *19*, 333–343. [\[CrossRef\]](#)
7. Miao, X.C.; Hong, Y. The missing and reconstruction of 'researcher' identity consciousness of Ph.D candidate. *J. Hangzhou Teach. Coll. (Humanit. Soc. Sci.)* **2014**, *5*, 126–130. (In Chinese)
8. McPherson, C.; Punch, S.; Graham, S. Postgraduate Transitions from Masters to Doctoral Study: Managing Independence, Emotion and Support. *Stirling Int. J. Postgrad. Res. SPARK* **2018**, *4*, 1–24.
9. Adler, P.A.; Adler, P. The identity career of the graduate student: Professional socialization to academic sociology. *Am. Sociol.* **2005**, *36*, 11–27. [\[CrossRef\]](#)
10. Gardner, S.K. "I heard it through the grapevine": Doctoral student socialization in chemistry and history. *High. Educ.* **2007**, *54*, 723–740. [\[CrossRef\]](#)
11. Bøgelund, P.; de Graaff, E. The road to become a legitimate scholar: A case study of international PhD students in science and engineering. *Int. J. Dr. Stud.* **2015**, *10*, 519–532. [\[CrossRef\]](#)
12. Inouye, K.; McAlpine, L. Developing academic identity: A review of the literature on doctoral writing and feedback. *Int. J. Dr. Stud.* **2019**, *14*, 1–31. [\[CrossRef\]](#) [\[PubMed\]](#)
13. Huang, Y.; Wang, S. Research on the socialization of doctoral students to academic profession and its influencing factors: Empirical analysis based on Nature Doctoral Student Survey in 2019. *China High. Educ. Res.* **2020**, *9*, 21–26. (In Chinese)
14. Ylijoki, O.H.; Ursin, J. The construction of academic identity in the changes of Finnish higher education. *Stud. High. Educ.* **2013**, *38*, 1135–1149. [\[CrossRef\]](#)
15. Archer, L. Younger academics' constructions of 'authenticity', 'success' and professional identity. *Stud. High. Educ.* **2008**, *33*, 385–403. [\[CrossRef\]](#)
16. Bao, J.; Feng, D.; Hu, G.; Wang, J. 'You could make original contributions, just like them!': Supervisory interactions and a doctoral student's academic identity construction. *Stud. High. Educ.* **2024**, 1–16. [\[CrossRef\]](#)
17. Frick, B.L.; Brodin, E.M. A return to Wonderland: Exploring the links between academic identity development and creativity during doctoral education. *Innov. Educ. Teach. Int.* **2020**, *57*, 209–219. [\[CrossRef\]](#)
18. Henkel, M. Academic identity and autonomy in a changing policy environment. *High. Educ.* **2005**, *49*, 155–176. [\[CrossRef\]](#)
19. Limberg, D.; Newton, T.; Nelson, K.; Minton, C.A., B.; Super, J.T.; Ohrt, J. Research Identity Development of Counselor Education Doctoral Students: A Grounded Theory. *Prof. Couns.* **2020**, *10*, 488–500. [\[CrossRef\]](#)
20. Gardner, S.K. "What's Too Much and What's Too Little?": The Process of Becoming an Independent Researcher in Doctoral Education. *J. High. Educ.* **2008**, *79*, 326–350. [\[CrossRef\]](#)
21. Sweitzer, V. Towards a Theory of Doctoral Student Professional Identity Development: A Developmental Networks Approach. *J. High. Educ.* **2009**, *80*, 1–33. [\[CrossRef\]](#)
22. Choi, Y.H.; Bouwma-Gearhart, J.; Ermis, G. Doctoral students' identity development as scholars in the education sciences: Literature review and implications. *Int. J. Dr. Stud.* **2021**, *16*, 89–125. [\[CrossRef\]](#) [\[PubMed\]](#)
23. Egan-Robertson, A. Learning about culture, language, and power: Understanding relationships among personhood, literacy practices, and intertextuality. *J. Lit. Res.* **1998**, *30*, 449–487. [\[CrossRef\]](#)
24. Austin, A.E.; McDaniels, M. Preparing the professoriate of the future: Graduate student socialization for faculty roles. In *Higher Education: Handbook of Theory and Research*; Springer: Dordrecht, The Netherlands, 2006; pp. 397–456.
25. Ulriksen, L.; Madsen, L.M.; Holmegaard, H.T. What do we know about explanations for drop out/opt out among young people from STM higher education programmes? *Stud. Sci. Educ.* **2010**, *46*, 209–244. [\[CrossRef\]](#)
26. Twale, D.J.; Weidman, J.C.; Bethea, K.A. Conceptualizing Socialization of Graduate Students of Color: Revisiting the Weidman-Twale-Stein Framework. *West. J. Black Stud.* **2016**, *40*, 80–94.
27. Weidman, J.C.; Twale, D.J.; Stein, E.L. *Socialization of Graduate and Professional Students in Higher Education: A Perilous Passage?* ASHE-ERIC Higher Education Reports Vol. 28, No. 3; ASHE-ERIC: San Francisco, CA, USA, 2001.
28. Hall, L.; Burns, L. Identity Development and Mentoring in Doctoral Education. *Harv. Educ. Rev.* **2009**, *79*, 49–70. [\[CrossRef\]](#)
29. Jazvac-Martek, M. Oscillating role identities: The academic experiences of education doctoral students. *Innov. Educ. Teach. Int.* **2009**, *46*, 253–264. [\[CrossRef\]](#)
30. Weiss, C.S. The development of professional role commitment among graduate students. *Hum. Relat.* **1981**, *34*, 13–31. [\[CrossRef\]](#)

31. Curtin, N.; Stewart, A.J.; Ostrove, J.M. Fostering academic self-concept: Advisor support and sense of belonging among international and domestic graduate students. *Am. Educ. Res. J.* **2013**, *50*, 108–137. [\[CrossRef\]](#)
32. Becker, H.S.; Carper, J.W. The development of identification with an occupation. *Am. J. Sociol.* **1956**, *61*, 289–298. [\[CrossRef\]](#)
33. Foot, R.; Crowe, A.R.; Tollafeld, K.A.; Allan, C.E. Exploring doctoral student identity development using a self-study approach. *Teach. Learn. Inq.* **2014**, *2*, 103–118. [\[CrossRef\]](#)
34. Pavalko, R.M.; Holley, J.W. Determinants of a professional self-concept among graduate students. *Soc. Sci. Q.* **1974**, *55*, 462–477.
35. Gardner, S.K.; Barnes, B.J. Graduate student involvement: Socialization for the professional role. *J. Coll. Stud. Dev.* **2007**, *48*, 369–387. [\[CrossRef\]](#)
36. Holley, K. Animal research practices and doctoral student identity development in a scientific community. *Stud. High. Educ.* **2009**, *34*, 577–591. [\[CrossRef\]](#)
37. Smith, A.E.; Hatmaker, D.M. Knowing, doing, and becoming: Professional identity construction among public affairs doctoral students. *J. Public Aff. Educ.* **2014**, *20*, 545–564. [\[CrossRef\]](#)
38. Pretorius, L.; Macaulay, L. Notions of human capital and academic identity in the PhD: Narratives of the disempowered. *J. High. Educ.* **2021**, *92*, 623–647. [\[CrossRef\]](#)
39. Strauss, A.; Corbin, J.M. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*; Sage Publications, Inc.: Thousand Oaks, CA, USA, 1990.
40. Charmaz, K. *Constructing Grounded Theory*, 2nd ed.; SAGE: Thousand Oaks, CA, USA, 2014.
41. Chen, X.; Wang, F. A paradox of the double-track promotion for university counselors—A study based on the grounded theory. *Educ. Res.* **2021**, *42*, 80–96. (In Chinese)
42. Gee, J.P. Identity as an Analytic Lens for Research in Education. *Rev. Res. Educ.* **2000**, *25*, 99–125. [\[CrossRef\]](#)
43. Wang, M.; Guo, L.; Fang, L. A review of research on workplace spirituality. *Adv. Psychol. Sci.* **2009**, *17*, 172–179. (In Chinese)
44. Zhao, X.; Guo, C. Job crafting: The new path for meaningful work and personal growth. *J. Psychol. Sci.* **2014**, *37*, 190–196. (In Chinese)
45. Wellman, N.; Spreitzer, G. The Crafting scholarly life: Strategies for creating Incubator meaning in academic careers. *J. Organ. Behav.* **2011**, *32*, 927–931. [\[CrossRef\]](#)
46. Figueiredo, C.; Huet, I.; do Rosário Pinheiro, M. Construction of scientific knowledge and meaning: Perceptions of Portuguese doctoral students. *Procedia-Soc. Behav. Sci.* **2012**, *69*, 755–762. [\[CrossRef\]](#)
47. Yuan, Z. Academic is the soul of the discipline—The historical track and inspiration of university reform. *China High. Educ.* **2016**, *18*, 29–32. (In Chinese)
48. Rao, S.S.; Singh, S. Max Weber’s contribution to the sociology of education: A critical appreciation. *Contemp. Educ. Dialogue* **2018**, *15*, 73–92. [\[CrossRef\]](#)
49. Council of Graduate Schools. Completion and Attrition: Policies and Practices that Promote Student Success. Ph.D. Thesis, Council of Graduate Schools, Washington, DC, USA, 2010.
50. Szelényi, K. The meaning of money in the socialization of science and engineering doctoral students: Nurturing the next generation of academic capitalists? *J. High. Educ.* **2013**, *84*, 266–294. [\[CrossRef\]](#)
51. Bandura, A. *Self-Efficacy: The Exercise of Control*; Freeman: New York, NY, USA, 1997.
52. Bandura, A. Self-efficacy. In *Encyclopedia of Human Behavior*; Ramachandran, V.S., Ed.; Academic Press: New York, NY, USA, 1994; Volume 4, pp. 71–81.
53. Hou, Y. *Social Psychology*; Peking University Press: Beijing, China, 2018; pp. 44–45. (In Chinese)
54. You, F.; Chen, Z. Impacts of academic stress, self-efficacy and optimism on suicide ideation of doctoral students. *Chin. J. Clin. Psychol.* **2012**, *20*, 662–665+696. (In Chinese)
55. Bong, M.; Skaalvik, E.M. Academic self-concept and self-efficacy: How different are they really? *Educ. Psychol. Rev.* **2003**, *15*, 1–40.
56. Li, W.; Zhang, C.; Jiang, X.; Etienne, B. The impact of academic adaptation to learning engagement among international postgraduates in China. *Jiangsu High. Educ.* **2022**, *4*, 67–74. (In Chinese)
57. Wang, S.; Cai, H. Whether the cultivation environment affects the research belief and research performance of doctoral students: Based on the survey of 37 “double first-class” construction universities. *China High. Educ. Res.* **2022**, *4*, 91–96. (In Chinese) [\[CrossRef\]](#)
58. Bandura, A. Self-efficacy mechanism in human agency. *Am. Psychol.* **1982**, *37*, 122–147. [\[CrossRef\]](#)
59. Pasupathy, R.; Siwatu, K.O. An investigation of research self-efficacy beliefs and research productivity among faculty members at an emerging research university in the USA. *High. Educ. Res. Dev.* **2014**, *33*, 728–741. [\[CrossRef\]](#)

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.