
Research on Doctor Study Habits Based on Content Analysis

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Abstract – Study habits are related to learning outcomes or not is a research topic in the field of education. The research on study habits focuses on the stage from elementary school to university, and there is relatively little research on doctor study habits. To fill the gap, this study focuses on the study habits of doctoral students. The aim of this research is to identify the elements highly correlated with doctor study habits. Content analysis was adopted as the research method. This study used content analysis to collect, analyze, and process text data on posts related to doctoral study habits on a social media platform named xiaohongshu in China. The research results indicate that "Breaking learning tasks and setting thematic learning periods"; "insist reading literature every day"; and "maintain a good teacher-student relationship" have a high frequency in context. Words like time, literature, scientific research, tutors, etc. closely related to doctoral study habits. The results of co-occurrence word analysis indicate that managing mobile phone usage time, cultivating exercise habits, completing scientific research work, and maintaining teacher-student relationships have high correlation in doctor study habits. The research results indicate that reasonable handling of learning tasks, adherence to literature reading, maintaining good teacher-student relationships, regular physical exercise, keeping good physical and mental states, and managing time well are important influencing factors of doctoral study habits.

Keywords – Doctor, Study Habits, Content Analysis, Literature, Insist, Exercise.

I. INTRODUCTION

In most cases, a doctoral degree is the final stage of higher education. It represents that those pursuing a doctoral degree have higher academic qualifications (Crabbe, 1925). Only a few countries, including Germany, redefine doctoral degrees as high-level job training outside of academia (Cyranski et al., 2011). The Doctor of Philosophy (Ph.D.) degree was initially awarded by universities to individuals who had garnered the recognition of their academic peers and exhibited an extensive, fruitful career within the realm of philosophy, understood in its broadest sense as the quest for knowledge (Wikipedia contributors, 2024). A PhD needs to learn professional knowledge and complete research tasks. In the process of doctoral studies, study habits are an issue that cannot be ignored. Everyone has their own different study habits when completing learning tasks. So, are there any factors that are important components of doctor study habits when completing research and learning tasks? These are problems needs to be solved regarding doctor study habits.

Study habits can be described as methods and means of obtaining information. This occurs on a conscious or unconscious level. Generally, study habits refer to the extent of a student's consistent engagement in learning activities. These activities are marked by established routines, such as the regular review of educational material, and take place in an environment that supports effective studying (Crede & Kuncel, 2008). It helps students spend their efforts to solve problems encountered in learning, develop skills, acquire knowledge, and complete school tasks (Carter et al., 2002; Urh & Jerb, 2017). Study habits are a highly personalized concept, where everyone has their own preferences when completing learning tasks, such as prioritizing tasks, attitudes towards collaborative learning, and whether they tend to solve learning problems independently or seek help

from tutors. These phenomena vary between different persons. Many researchers have come to different conclusions after studying students at different stages of learning. Good study habits positively enhance academic achievement for students (Gahir et al., 2022). Israr et al. (2023) proposed that study habits significantly predicted academic achievement. Tus et al. (2020) found that there was no significant relationship between study habits and academic performance. Although researchers have different conclusions towards the relationship between study habits and academic performance, there is no doubt that study habit is an essential part of every learner's learning process.

The innovation of this article lies in the selection of doctor study habits as the research object, which has been relatively rare in previous studies. The original intention of the research is to obtain authentic data on the study habits of doctoral students. This study used data source from a public online platform Xiaohongshu in China. On this platform people actively share their views or their own experiences, attitudes, etc. Researchers search for posts related to doctor study habits on this platform. In the process of obtaining data, the investigated individuals are not disturbed by the observers. The data that is closer to their true intentions. After obtaining text data on the Xiaohongshu social platform, the data was processed to gain clean data. Then researcher analyzed the clean data using content analysis methods to obtain quantitative analysis results of doctor study habits.

II. RESEARCH QUESTION

Doctoral education belongs to adult education because most people who pursue doctoral studies have gone through at least five learning stages, namely primary school, middle school, high school, university, and master's stage. The time span is as long as 15 to 18 years. During the long learning process, most people have formed their own specific learning habits. From the perspective of learning details, people engaged in doctoral studies has different study habits. Do doctoral study habits have any commonalities? This study aims to answer this research question.

Research question: What elements are important components of doctor study habits?

III. RESEARCH METHOD

In this study, content analysis was adopted as a research method to study the learning habits of doctoral students. This study developed a coding table based on three categories: study/research habits, regular work and rest, and maintaining a healthy mental state. The reliability of the coding was ensured according to the Holsti reliability system, and the Di VoMiner text data mining and analysis platform was used to analyze the samples. During the process of analyzing text data and drawing graphs, Python programs were also used as analysis tools.

Samplpe

The data used in this study comes from the self-media software named Xiaohongshu. Xiaohongshu is a platform that integrates lifestyle sharing and consumption decision-making in China. Users can post short videos and pictures to record their daily lives, share their lifestyles, and interact based on common interests. As of January 2023, Xiaohongshu has more than 350 million users in China. This study used "doctor" + "study habits" as search terms to search for posts on the Xiaohongshu platform. The screening principle is to select posts that are highly related to doctoral study habits, in the form of articles, pictures, or both. At the same time, the data was cleaned to exclude posts with the same content but different titles, and posts with only titles. Finally, 52 po-

-sts were collected as research content.

Coding Category Construction

The coding work was done by the author and another coder in this study. The encoding is first divided into three major categories, including study/research habits, regular work and rest, and maintaining a healthy mental state. Then subcategories are set under each category to detect whether the text contains relevant content of the subcategories.

There are 10 branch subcategories the category of learning/research habits. They are: completing daily learning tasks according to the plan; recording group meetings or inspirations timely; being able to complete research work independently; critical thinking; insisting on writing papers every day; mastering some auxiliary technologies such as Python programming, AI writing, etc.; actively asking for help from tutors or classmates when encountering difficulties; insisting on reading literature every day; using literature management software to organize and summarize literature; and insisting on learning English.

There are 7 branch variables under the category of work and rest rules. They are setting time for effective study; eliminating delays and internal waste; managing the time spent on the phone; breaking down study tasks and setting themed study periods; ensuring sleep and energy; healthy eating habits; and exercising regularly.

There are 8 branch variables under the category of maintaining mental health. They are: keep optimistic; not pursuing perfection; finding a suitable way to relieve stress; timely psychological intervention; keep the teacher-student relationship in a good state; keep communicating with classmates; cooperation; and eliminating ineffective social interaction.

Coding and Data Analysis

This paper uses the DiVoMiner text data mining and analysis platform to conduct data analysis by combining machine automatic coding and manual proofreading coding. The coding work was completed by the author and another coder. To avoid possible understanding problems and subjective tendencies in interpreting samples about doctoral study habits, before coding all samples, 7 articles were randomly selected from the total sample and coded independently two coders. The coding results were compared, and the interactive reliability calculated according to the Holsti method was 0.98. For individual inconsistencies, they were re-read to determine the information type to which they belonged and assigned values. On this basis, the coding work of subsequent samples was continued.

IV. FINDINGS

Word Cloud

Keywords in the post content were extracted to detect the high-frequency words and usage frequency used in the post. Frequency analysis showed that the most frequently used word was "Myself", which was used 51times. Table 1 lists some words that appear more frequently in posts. The frequency of time, doctor, and learning is also relatively high, at 41, 39, and 38, respectively.

Word clouds is a visually engaging way to visualize textual data. These cloud-like images highlight the most frequently occurring words in various contexts, providing a snapshot of the dominant themes or topics (Heimerl

Table 2. The frequency and occurrence of items under the “study/research habit” category.

Item	Count	Frequency
Insisting on reading literature every day	40	26.1%
Insisting on writing papers every day	22	14.4%
Actively asking for help from tutors or classmates when encountering difficulties	19	12.4%
Critical thinking	18	11.8%
Completing daily learning tasks according to the plan	14	9.2%
Recording group meetings or inspirations timely	13	8.5%
Mastering some auxiliary technologies such as Python programming, AI writing, etc.	9	5.9%
Using literature management software to organize and summarize literature	8	5.2%
Insisting on learning English	5	3.3%
Being able to complete research work independently	5	3.3%

Table 3 is obtained by counting the items under the category of “regular work and rest”. The data source from Di VoMiner text data mining and analysis platform. “Breaking down study tasks and setting themed study periods” appears the most frequently in the research materials, 47 times, with the highest frequency of 30.3%. This indicates that setting different themed study periods based on different stages of learning tasks has a higher recognition among doctoral students. The frequency of “setting effective learning time” is also relatively high, at 20.6%, with a frequency of 32 occurrences. Setting effective study time and managing one's own time is highly recognized in doctoral studies.

Table 3. The frequency and occurrence of items under the “regular work and rest” category.

Item	Count	Frequency
Breaking down study tasks and setting themed study periods	47	30.3%
Setting time for effective study	32	20.6%
Exercising regularly	23	14.8%
Ensuring sleep and energy	18	11.6%
Healthy eating habits	17	11%
Managing the time spent on the phone	11	7.1%
Eliminating delays and internal waste	7	4.5%

Table 4 is obtained by counting the items under the category of maintaining mental health. The data source from Di VoMiner text data mining and analysis platform. Item “keep the teacher-student relationship in a good state” 1 has the highest frequency of occurrence at 27.5%, with 39 occurrences. Maintain good relationships with tutors and have a high level of recognition in doctoral study habits. This is closely related to the learning tasks during the doctoral period. Secondly is item” not pursuing perfection”, which occurs 29 times with a frequency of 20.4%. Not pursuing perfection in everything helps maintain a positive mindset during doctoral studies, reducing psychological stress and emotional fluctuations.

Table 4. The frequency and occurrence of items under the “maintaining mental health” category.

Item	Count	Frequency
Keep the teacher-student relationship in a good state	39	27.5%
Not pursuing perfection	29	20.4%
Keep communicating with classmates	24	16.9%
Cooperation	16	11.3%
Finding a suitable way to relieve stress	15	10.6%
Keep optimistic	13	9.2%
Timely psychological intervention	4	2.8%
Eliminating ineffective social interaction.	2	1.4%

Word Co-Occurrence Analysis

Word co-occurrence analysis is a content analysis technique that examines the frequency with which pairs of terms, such as words or noun phrases, appear together within a body of literature. This approach is utilized to uncover the connections and associations between concepts or themes present across the texts in a given subject domain (Qin He, 1999). By mapping these co-occurrences, researchers can visualize and analyze the intellectual structure and thematic evolution within a field of study. This technique has since been widely applied in various disciplines to understand the dynamics of scientific and academic phenomenon.

In this study, the researchers first set keywords based on the category of classification and the items under the category. After that Python programs (Python 3.12.4 Version) was used for word segmentation, natural language processing, and drawing to obtain a co-occurrence graph of keywords, showing the relationships between keywords. Figure 2 shows the co-occurrence of keywords.

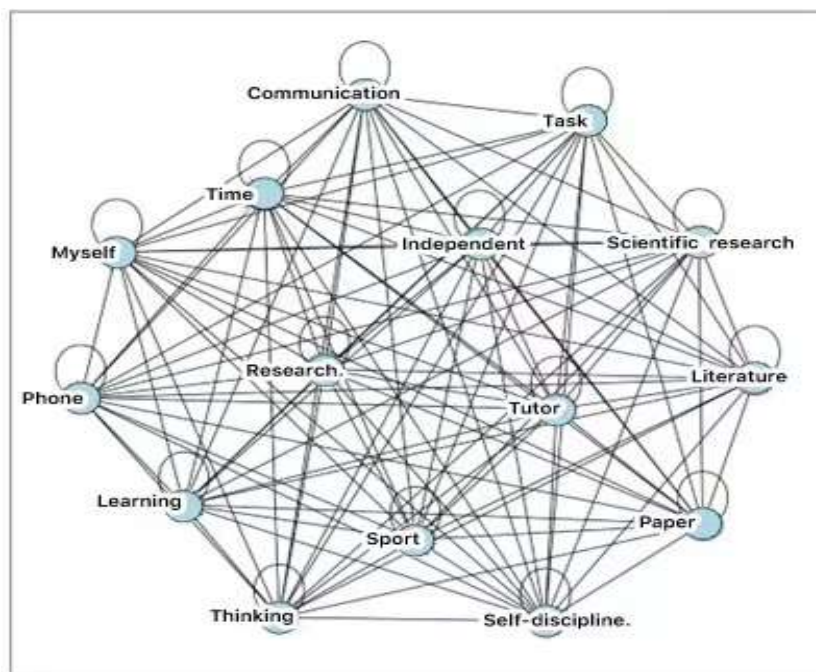


Fig. 2. Word co-occurrence analysis.

From the information in the figure 2, it can be seen that the co-occurrence weights of self-discipline and learning, phones, sport, time, tasks, and scientific research are relatively high. This indicates that in the context of analyzing materials, self-discipline in doctoral study habits is more frequently associated with these co-occurring factors. According to the result of co-word analysis, there is a high correlation between self-discipline and learning, mobile phones, exercise, time, tasks, and scientific research. The co-occurrence weights of scientific research, tasks, papers, time, literature, tutors, and research are also relatively high, indicating that the meanings represented by these words are highly correlated in the context of research materials. Overall, the co-occurrence weights of scientific-research, tasks, research, papers, time, literature, tutors, and thinking are relatively high, indicating a high correlation between the meanings represented by these words and doctoral study habits.

V. DISCUSSION

This study conducted a survey on the doctoral study habits of a Chinese social app, Xiaohongshu, and analyzed the text data using content analysis. The analysis results indicate that the subcategory "Breaking learning tasks and setting thematic learning periods"; "insist reading literature every day"; and "maintain a good teacher-student relationship" have high mention rate in the secondary dimension. The word cloud diagram displays words with a high occurrence rate in the text, such as time, literature, scientific research, tutors, etc., which reflects content closely related to doctoral study habits. Word co-occurrence analysis indicates the degree of association between words with higher co-occurrence weights. The co-occurrence of word such as self-discipline, mobile phones, learning, exercise, scientific research, and tutors has a higher weight, indicating that these contents are closely related to doctoral study habits.

From the results of this research, breaking learning tasks, setting up thematic learning time, insisting reading literature every day, and maintaining a good teacher-student relationship are important components of doctoral learning habits. In the process of doctoral study, the preliminary literature research, the construction of the theoretical framework of the paper, and finally the enrichment of the specific content of each part are different learning topics. It is necessary to adopt different learning strategies for different learning topics. A good teacher-student relationship is conducive to solving learning difficulties. Good interpersonal relationships are necessary. Establishing personal and supportive teacher-student relationships evidently requires teachers to engage emotionally. For students, the emotional aspect of relationships significantly influences the school performance, wellbeing, and academic achievements (Roorda et al., 2011; Spilt et al., 2011). From the word cloud diagram and keyword co-occurrence diagram, we can observe that words such as time, scientific research, self-discipline, mobile phones, sports and tutor appear frequently in the text, indicating that the representative meanings of these words are closely related to doctoral study habits. Self-discipline helps to form good study habits, and exercise can keep both physical and mental health. People have found that there is a close relationship between exercise and health (Hegde, 2018). Words such as scientific research and mentors represent elements related to specific doctoral studies.

There are some limitations to the research. Because the data is obtained from public social media platforms, some posts content may not be entirely related to doctor study habits, which can affect the segmentation processing and statistical analysis results of text data. Some posts have very specific content and are difficult to be covered by category, such as processing experimental data or unique experiences of a certain profession.

Therefore, the category cannot fully cover all the content of doctor study habits mentioned in the post. In future research on doctoral study habits, other research methods can be considered as supplements to obtain clearer classification data. For example, the structured interview method can obtain more detailed information about doctoral study habits. Future research may also consider using multiple research methods or data sources for triangulation. This will make the study of doctoral study habits more comprehensive.

VI. CONCLUSION

The analysis results of the word cloud map show that the frequency of vocabulary occurrence is higher in terms of time, learning, literature, scientific research, tutors, tasks, etc. This shows that the meanings represented by vocabulary have a high level of recognition in doctoral study habits. Among them, literature, scientific research, and learning represent the learning and work content during doctoral studies. Frequent literature reading, completing scientific research work, and studying are the main tasks during the doctoral period. The vocabulary of a tutor indicates a mentor who has a close relationship during their doctoral studies. Doctor students should have at least one to two tutors to guide them in completing their studies, who can answer questions and provide guidance on the direction of their studies.

This study conducted content analysis on the three categories of "learning/research habits", "regular work and rest", and "maintaining a healthy psychological state" in the text, and separately counted the frequency of the three categories and frequency of sub-categories appearing in the post content. The subcategory "Breaking learning tasks and setting thematic learning periods" under the category of "Regular work and rest" has the highest frequency, and it appears 47 times in the text. Secondly, under the category of "study/research habits", "insist reading literature every day" appears 40 times in the text. The third is the subcategory of "maintaining a good psychological state", which belongs to "maintain a good teacher-student relationship". It appears 39 times in the text. It can be concluded that breaking down learning tasks and treating learning stages of different topics differently is the most important component of doctoral study habits. It is also very important to read literature every day, which helps doctors understand the latest trends in their research field. Maintaining a good teacher-student relationship is also important in the study habits of doctoral students. The supervisor is responsible for guiding the doctoral research direction, answering questions, and resolving confusion.

The word co-occurrence analysis results indicate that words such as self-discipline, learning, mobile phones, sports, scientific research, and tutors have higher co-occurrence weights. It shows that self-discipline is important in doctoral study habits. Managing mobile phone usage time well, cultivating exercise habits, completing scientific research work, and maintaining teacher-student relationships have a high correlation with doctoral study habits. Doctoral study habits integrate the situations that may be encountered during doctoral studies, and the co-occurrence weights of these words indicate that the meanings represented by these words are an important component of doctoral study habits.

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