

Editorial Introduction

Volume 1, Issue 1 of the *International Journal of Educational Review* focuses on the development of higher education in China, aiming to present the latest research findings and scholarly reflections in this field. This issue features one research note and one research article, covering topics such as the profile of Chinese university presidents and mental health education for Chinese college students. Xu Ying's research note provides a detailed summary and analysis of the key characteristics, educational and academic backgrounds, and appointment patterns of presidents at 42 "Double First-Class" universities in China. Her work also offers suggestions for future university leadership selection. Tu Siyu's article, based on empirical data collection, offers a comprehensive analysis of the positive and negative impacts of social networking on the mental health of Chinese university students. The contents of this issue not only reflect ongoing theoretical advancements but also provide valuable insights for practical application. We hope these contributions will inspire readers and promote continued academic dialogue and collaboration. We extend our sincere gratitude to all authors, peer reviewers, and editorial staff for their dedicated efforts. We warmly welcome readers to continue following the journal and submitting their work, contributing to the growth and excellence of this publication.

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Analysis and Reflections on the Group Characteristics of Presidents of Double First-Class Universities

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ABSTRACT

University presidents, as the highest leaders of university administrative affairs, play a crucial role in the realization of good governance in universities. Double First-Class universities, to some extent, represent the highest level of universities in China; researching the group characteristics of the presidents of Double First-Class universities is of important theoretical and practical significance. This paper takes the presidents of 42 Double First-Class universities as the research subjects and conducts a survey and analysis of the current situation using basic characteristics, educational and academic background, and appointment situation as the main indicators of their group characteristics, in an attempt to provide a reference for the future selection of university presidents in China.

University presidents are the “leaders” of a university. As the highest executive in charge of university affairs, the president is not only the CEO of the university but also its soul (Sun, 2010). They represent the spirit of the university and determine the direction of the university’s reform and development. In recent years, an increasingly competitive and complex external environment has intensified the demand for strong leadership in universities. At the same time, there are great drawbacks in the current selection and appointment system of presidents in China, and the “multiple identities” of presidents have been highly questioned.

As the benchmark of Chinese higher education, Double First-Class universities play a leading role. Therefore, researching and analyzing the current group characteristics of presidents of Double First-Class universities, and proposing constructive suggestions to improve the selection methods of university presidents based on China’s national conditions, are of great practical significance for improving the current governance of Chinese universities, enhancing the core competitiveness of Chinese university



presidents, and advancing the development of world-class universities.

Therefore, this study collects case studies of 42 university presidents in China, analyzes their educational background and positions, answers current doubts about the multiple identities of Chinese university presidents, and puts forward policy recommendations based on the analysis.

I . Research Subjects and Data Sources

This research is based on the Notice on Announcing the List of World-Class Universities and First-Class Disciplines and the List of Their Construction Disciplines, jointly issued by the Ministry of Education, the Ministry of Finance, and the National Development and Reform Commission on September 21, 2017. That document announced the first batch of universities included in the “Double First-Class” construction initiative, totaling 137 institutions: 42 World-Class University construction institutions and 95 World-Class Discipline construction institutions.

Compared to the World-Class Discipline construction universities, the World-Class University construction universities better represent the level of China’s top universities. Therefore, this paper selects the current presidents of 42 World-Class University construction institutions as the research subjects. The research data were obtained mainly through channels such as the official websites of each university, Xinhua News, and People’s Daily, with a data collection cutoff of November 2020. A small amount of missing information was supplemented by author information in journal papers found via CNKI (China National Knowledge Infrastructure).

II. Empirical Analysis

(1) Basic Characteristic Analysis

The basic characteristic analysis of the president group mainly includes four aspects: gender, age, place of origin, and political affiliation.

Gender: According to Table 1, out of 42 Double First-Class university presidents, only 2 are female, accounting for 4.8%. This is significantly lower than the data showing that 15% of the top 100 universities in the world have female leaders (Liu, 2018). The proportion of women in China’s top university president group is severely low.

The low proportion of female presidents is mainly due to three reasons. First, the overall social status of women is relatively low. In the division of social labor, women’s roles and status are usually lower than men’s. In terms of occupations, women often engage

only in social service work, while men mainly engage in economic and social fields, making it more difficult for women to enter high-level technical management levels (Eagly & Karau, 2002). Second, women's social status was low, so the proportion of women receiving higher education was low (Reis & Grady, 2019). Third, career and family conflicts arise: compared to men, women bear more family responsibilities, and with limited energy and time, they tend to choose relatively easier or more flexible job opportunities (Couzy, 2012).

Age: In China, the age range of the 42 Double First-Class university presidents is 51–65 years, with an average age of 59. The age differences among presidents are not obvious (see Table 1). The remaining years until retirement for these presidents are mostly concentrated in the 3–12 year range, with the highest proportion (16.7%) having five years until retirement (see Table 2).

Both sets of data indicate that Chinese Double First-Class university presidents are all in their late middle age or senior years, and from a physical standpoint, they possess a relatively stable psychological state and ample experience. They are quite energetic, and the stability of their continued tenure as president is high.

Place of Origin: In studies of political elites at home and abroad, there are three different criteria for determining regional attributes: “place of birth,” “place of early growth,” and “place of career concentration” (Jin, 2018). This study mainly uses the place of birth as the criterion. Chinese top university presidents are largely concentrated in the central region of China, as well as the northern and southern coastal areas. Among these, Shandong Province has the most, accounting for 14.6%, and Jiangsu Province ranks second at 12.2%. This suggests that the level of education is related to the local economic level. Moreover, the higher the level of education in a region, the greater the probability that the region produces top university presidents.

At the same time, in this survey, we also compiled the provinces of each president's place of origin and workplace. The data analysis shows that 11 presidents (26.8%) serve in their home province (i.e., their place of origin and workplace are the same). These cases of serving in their home region are mainly in provincial local universities, including Shandong University, Zhejiang University, Nanjing University, etc., showing a characteristic of localized appointments. 31 presidents serve outside their place of origin (their birthplace and workplace differ), in line with the main characteristics of cross-regional cadre appointments. Most of the presidents serving outside their home region come from China's first-tier cities such as Beijing, Shanghai, and Guangzhou. Therefore, the reason that the localized appointment of presidents is not obvious is that the presidents of all 42 Double First-Class universities are appointed by the government rather than through open competition.

Political Affiliation: among the current presidents of Double First-Class universities in China, 38 are members of the Chinese Communist Party, accounting for as high as 90.5%, with 2 being non-partisans and 2 belonging to democratic parties. Among them, 19 presidents who are Party members also concurrently hold the position of Deputy Party Secretary, being responsible for party-related work.

The reason for this phenomenon lies in the fact that Chinese universities currently implement the system of “president responsibility under the leadership of the Party committee” (The General Office of the CPC Central Committee, 2014). The political affiliation of a president can, to a certain extent, reflect their values and political leanings. In order to uphold the socialist orientation of university education, assessing a president’s political inclination is important, and being a Communist Party member has become one of the key selection criteria for presidents.

(2) Educational and Academic Background Characteristic Analysis

1. Education Background Characteristics: The analysis of presidents’ educational background mainly includes their highest degree, disciplinary background, relationship with their current university, and overseas experience (see Table 3).

Graduating Institution: This analysis is mainly based on the universities from which the presidents obtained their highest degrees. In the case, 37 presidents (88.1%) graduated from key institutions under the national “985 Project,” which are top universities in China. Only one president graduated from a “211 Project” university, and one from a regular university, each accounting for 2.4%. In addition, 3 presidents hold doctoral degrees from well-known foreign universities, and there is even one president with dual doctoral degrees (one from abroad and one from China). All presidents of Double First-Class universities graduated from top universities at home or abroad, which once again confirms the significant positive correlation between the caliber of a university and the quality of its talent cultivation. Prestigious universities have more outstanding faculty, deeper institutional heritage, a better academic atmosphere, and more advanced facilities, which collectively have a more positive impact on an individual’s development. The reasons for using an excellent educational background and the halo of a prestigious alma mater as criteria for selecting presidents are mainly twofold. First, educational attainment can to some extent measure a person’s overall ability. Earning a high degree is a long and arduous process during which a president’s learning ability, cognitive ability, and analytical thinking skills are continuously honed. Second, the people that a university president manages include undergraduate students, master’s and doctoral students, university faculty, and administrative staff—groups that differ from typical corporate personnel structures. They possess a certain knowledge base and, on average, higher ability and quality. Therefore, when faced with such a special group of people to manage, a leader must

have a more complete knowledge structure, richer experience, broader insight, and a higher vision.

Disciplinary Background: This analysis is based on the types of disciplines in which the presidents obtained their highest degrees. According to the 1997 Catalogue of Disciplines and Specialties for Awarding Doctoral and Master's Degrees and Training Postgraduates issued by the state, disciplines are divided into 13 broad categories such as philosophy, economics, etc. However, due to the lack of information on National University of Defense Technology's president Lei Xiang, the author only compiled discipline data for the other 41 Double First-Class university presidents, and two conclusions were drawn from the analysis.

First, Chinese top university presidents are mostly academic elites with science and engineering backgrounds. The data show that 20 presidents have engineering backgrounds, accounting for 47.6%, and 12 have science backgrounds, accounting for 28.6%. Other disciplines such as economics, agriculture, and medicine are also sporadically represented. Furthermore, by reviewing the presidents' master's degree experiences, it was found that the disciplines chosen during their master's and doctoral stages highly overlap with their undergraduate disciplines—38 presidents pursued graduate studies in the same field as their first degree, and only 4 presidents chose a different discipline for higher degrees. This phenomenon fully demonstrates the existence of a “engineer” or “scientist” model of governance in Chinese universities. Second, there is a high degree of alignment between the disciplinary background of Chinese top university presidents and the type of university. That is, in China's 10 science and engineering oriented Double First-Class universities, all presidents have science or engineering backgrounds. The presidents of the two agriculture-focused and one normal (teacher-training) Double First-Class universities also come from corresponding backgrounds in agriculture or education. Comprehensive universities that lean towards science and engineering also predominantly have presidents with science and engineering backgrounds. This phenomenon clearly shows that there is a significant industry identity and “threshold” effect in the selection of university presidents in China.

Relationship with Current University: Alumni are a valuable resource and asset to a university, capable of providing various support in terms of human resources, material resources, and financial resources. Statistical analysis shows that as many as 17 presidents, or 40.5%, graduated from the university they currently serve. This indicates that to some extent, the selection of presidents for Double First-Class universities in China tends to be “localized.” The reason alumni have advantages that outsiders cannot match is that, compared to external candidates, alumni understand their alma mater's traditions and culture better, and can leverage their academic and social resources as well as personal networks to more effectively plan and lead the university's

development.

Overseas Experience: Having overseas experience is an important measure of the internationalization of China's universities. Overseas experience includes study or research abroad, overseas collaborative research visits, holding visiting professorships, and other types. Statistics show that although 5 presidents have experience studying abroad, accounting for 12.2%, 28 presidents have overseas visiting or research experience, accounting for as high as 66.7%. This indicates that the number of university presidents with "localized" (domestic-only) careers has been decreasing under the influence of higher education internationalization. The selection of university presidents now incorporates an international vision and perspective as one of the criteria.

2. *Academic Background Characteristics:* The academic (or career) background represents the academic level and professional caliber of a university president, and is one of the important bases for president selection. This paper collected data on two aspects: professional title and academic titles/ honors (see Table 4). Due to incomplete information for National University of Defense Technology's president Lei Xiang, the academic background characteristics of only the other 41 Double First-Class university presidents are discussed here.

Professional Title: By collating the data in Table 4, we find that all Double First-Class university presidents hold the title of Professor and also serve as doctoral supervisors. Nowadays, the criteria for selecting presidents have gradually risen from a purely administrative level to a combination of administrative and academic levels, requiring that a president not only possess administrative management skills but also take on the important responsibility of talent cultivation.

Academic Titles and Honors: Academic titles and honors are important indicators of a president's academic standing, representing the outstanding contributions a president has made in their field. The main academic titles for university presidents include Academician titles, "Changjiang Scholars Program" Distinguished Professor, "New Century Hundred-Thousand-Talent Project," "National Science Fund for Distinguished Young Scholars," etc. According to statistical analysis, 24 presidents have an Academician title, accounting for 57.1% (10 are academicians of the Chinese Academy of Sciences and 14 of the Chinese Academy of Engineering). 9 have the title of Changjiang Scholars Distinguished Professor, accounting for 21.4%. 12 have been funded by the National Science Fund for Distinguished Young Scholars, accounting for 28.6%. 12 have been selected for the New Century Hundred-Thousand-Talent Project, accounting for 28.6%.

Furthermore, in terms of when these titles and honors were obtained, the vast majority were earned before assuming the presidency. It can be concluded, therefore, that having

a high level of academic achievement and prestige is one of the important conditions for selecting a university president, which once again confirms China's developmental path of "those excelling in scholarship will become leaders" (Jiang, 2010).

3. Analysis of Appointment Status: The appointment status mainly includes four aspects: the start date of the appointment, the method of appointment, the nature of previous work units, and social roles. These elements, to a certain extent, symbolize the identity and status of university presidents. (Due to the lack of available information on Li Xiang, President of the National University of Defense Technology, this analysis covers only the other 41 presidents of Double First-Class universities.)

Age at Appointment and Term of Office: The current average age at which presidents assume office at China's 41 Double First-Class universities is 54.8 years—about four years younger than the average age of all presidents. A total of 37 university presidents, accounting for 88%, assumed office between the ages of 51 and 60, indicating a high degree of uniformity in appointment age.

However, the document titled *"Decision of the Central Committee of the Communist Party of China on Establishing a Retirement System for Veteran Cadres"* clearly stipulates that principal officials at the provincial and ministerial level generally should not exceed 65 years of age, while deputy officials should not exceed 60. This means that many university presidents in China, after enduring long professional journeys to reach their positions, are already approaching retirement age when they are appointed—resulting in a relatively short tenure in office.

Regarding average tenure, the current average for presidents of China's Double First-Class universities is 3.7 years. In contrast, university presidents in the United States serve for an average of seven years. This relatively short tenure in China reflects, to some extent, the more frequent turnover of university leadership

Scope and Method of Appointment: At present, the selection and appointment of university presidents in China is coordinated by the Central Organization Department of the Communist Party and the Ministry of Education, among other relevant authorities. This study categorizes the methods of presidential appointment into four types: Lateral Transfer (Across Universities): Transfers between universities at the same administrative level; Lateral Reassignment (From Party Secretary to President): Transferring from the role of Party Secretary to University President within the same institution; Promotional Appointment: This includes internal promotion (within the same university) and external promotion (from another university); Promotion with Transfer: Appointment of individuals from government administrative roles or research institutions to university presidencies.

It is evident that the selection of presidents at China's Double First-Class universities carries strong administrative overtones. Promotional appointments constitute the largest share, with 28 individuals (68.3%). Among these, 12 were promoted internally within their universities, while 16 were promoted from external universities. Additionally, there were 11 cases of lateral transfer, one case of lateral reassignment (Party Secretary to President), and one case of promotion with transfer from a government or research institution. This reflects a narrow scope of appointments: most university presidents are selected from within the existing circle of Double First-Class institutions. Upward mobility for presidents of lower-tier universities is extremely limited. Moreover, the pathway to appointment is highly uniform, with promotion from deputy positions being the primary route.

Nature of Former Employers: The professional backgrounds of presidents at China's Double First-Class universities primarily fall into four sectors: public universities, government agencies, research institutes, and the military. Among them, 25 presidents have worked exclusively in universities, accounting for 61% of the total. Another 18 have experience in both universities and research institutes, making up 44%. One president has worked in both a university and the military, while one has experience in the corporate sector.

Overall, the career paths of Chinese university presidents tend to be relatively homogeneous, with most rising through the academic or research institute systems. They are typically top-performing scholars from these institutions. Their lack of broader social or professional experience reflects a long-standing tradition in Chinese higher education that emphasizes academic scholarship over practical or managerial skills.

III. Selection Recommendations

Chinese universities currently implement a system of president responsibility under the leadership of the Party committee, wherein the president, as the core, is responsible for managing many aspects of the university's teaching, research, and student affairs. The group characteristics and quality structure of university presidents are crucial for achieving a model of good university governance. Based on the above analysis of the group characteristics of Double First-Class university presidents, and in combination with research findings from home and abroad as well as China's current national conditions, this paper offers a few suggestions for the selection and appointment of university presidents in Double First-Class universities.

(1) Pay Attention to Selecting Female Presidents

Drew Faust once pointed out that female leadership styles tend to emphasize collaboration and consensus-building, which makes them particularly well-suited to educational institutions. She highlighted that the approaches of “bringing people along with you” and “quietly making it happen” exemplify this style of leadership (Ignatius, 2018). In fact, there is no significant difference between men and women in either academic ability or leadership ability, and there should be no discrimination. On the contrary, women have unique advantages in becoming presidents. First, women’s innate maternal characteristics make them more affable and tolerant, and they tend to show more concern for their subordinates in their actions. Second, the inclusion of female presidents can enrich the management concepts of the presidential group and diversify management styles. Women think differently from men, and when formulating an educational plan, women can break through the limitations of male presidents’ thinking. The joint participation of both genders allows more factors to be considered, making aspects such as the formulation of educational plans or the setting of teaching philosophies more complete.

To this end, we should increase the proportion of female presidents through the following measures. First, provide institutional and policy guarantees for women to enter the presidential ranks—for example, introduce welfare and security policies favoring female presidents and encourage women to participate in leadership competitions. Second, intensify the promotion of gender equality concepts and encourage men to share family duties with women to reduce women’s burdens. Third, improve training systems for women to enhance their management participation capabilities.

(2) Appropriately Relax Presidents’ Age and Term Limits

Professor Wang Hongcai of Xiamen University once said that it generally takes more than 10 years for a university president to truly achieve results in running a university (Wang, 2007). However, current statistics show that the golden period of service for most Chinese university presidents is only about 10 years. This means some presidents—whose school performance was outstanding and who managed to achieve rapid development for their universities in a short time, and whose own physical condition and health could still fully handle the job—are stepping down solely because of age and term limits. Whether their successors can continue to implement their educational philosophy and reforms is uncertain. This is undoubtedly a huge waste of the valuable resources that outstanding university presidents represent.

Therefore, we can implement flexibility in the tenure of university presidents. We can conduct democratic evaluations and metric assessments of a university president’s

performance in running the school. Presidents with excellent evaluation results should have the opportunity to continue in their post without being subject to age or term restrictions. For example, the Education Bureau of Jintan District in Jiangsu recently pointed out that for principals who have reached the statutory retirement age but have outstanding school performance and enjoy high reputation at the provincial or municipal level, they may be rehired after retirement based on work needs (Wang & Ding, 2015).

(3) Broaden the Horizon of President Selection and Use Multiple Selection

Methods

Currently, the limited vision in selecting presidents of Double First-Class universities in China is mainly reflected in two aspects. First, the selection pool for Double First-Class university presidents is narrow: it is primarily carried out within Double First-Class universities and presidents are uniformly appointed by the government. The most commonly used method is internal promotion (within the same university or system), followed by transfers between universities. While this method of selecting personnel is conducive to the government's unified management of Double First-Class universities, it has significant drawbacks. One, many elite managerial talents from universities outside the Double First-Class group are lost to those top institutions. Two, it is not conducive to motivating presidents at lower-tier institutions, as it is very difficult for lower-level university presidents to have the opportunity to move up to higher-level universities. Three, the opaque process of government appointment can affect the level of trust in the president. Second, among Double First-Class university presidents, the phenomenon of "alumnus as president" is common. Whether they are faculty, administrators, or from education authorities, to some extent people tend to choose presidents who have ties to the university. Alumni, comparatively, understand the school's traditional culture, operational model, and characteristics better, so their transition into the role of president is smoother and their adjustment period easier. However, having an alumnus as president also presents many problems. One, such presidents may find it hard to break from entrenched thinking formed by tradition and environment, and thus may not be comprehensive or objective enough in planning the university's development. Two, when an alumnus serves as president, they may be easily influenced by past complex personal relationships, which can interfere with their decision-making.

For these reasons, we should first appropriately expand the selection pool and not limit ourselves to the higher education system. We should explore elite individuals from various sectors, focusing on assessing their abilities in strategic planning and public relations management. Second, we should gradually realize the open and transparent

selection of presidents. Just as in 2011 when an open selection of presidents for Ministry-of-Education-affiliated universities was piloted at home and abroad, we should allow various stakeholders to participate, forming an open and transparent selection system to choose suitable candidates from multiple fields (Ministry of Education of the People's Republic of China, 2012).

(4) Accelerate the Professionalization of University Presidents

The Several Opinions of the Ministry of Education on Deepening the Separation of Management, Operation, and Evaluation in Education to Promote the Transformation of Government Functions, promulgated on May 6, 2015, pointed out the need to “actively create conditions to gradually abolish administrative rankings for schools. During the tenure of university leaders, they should devote themselves to school management; party secretaries and presidents generally should not serve as the primary person in charge of research projects (Ministry of Education of the People's Republic of China, 2015).” The introduction of this document aims to foster university presidents who focus on management and service—an educator-type president. A university president is not only an educator, but also the leader and manager of the school. Therefore, besides being an outstanding scholar, a president should also meet the criteria of being “understanding of education, adept in management, and capable of public activity (networking)”.

However, currently, the presidents of China's Double First-Class universities are still far from this standard, for three main reasons. First, the disciplinary backgrounds of China's top university presidents have become homogenous, predominantly in science and engineering, and not a single university has a president from an education discipline. The academic part-time positions they hold are also within their own professional fields, which greatly limits the breadth of their knowledge in education (Yu, Dong, de Jong & Yue, 2024). Second, the field in which university presidents work is almost exclusively academia; their work experience is lacking in breadth and they have little connection with other sectors, leading to a clearly insufficient ability to secure external resources (Ruan, Cai & Stensaker, 2023). Third, presidents have only short practical experience in absorbing advanced educational philosophies from abroad and learning from the governance experience of world-class universities, with low levels of overseas study or training; their international vision and experience in university management need improvement (Lin, Zhang, Liu, & Lyu, 2024).

To accelerate the professionalization of university presidents, we can proceed in the following two ways. First, improve the market-driven competitive mechanism for the university president profession. On the basis of implementing a qualification accreditation system for university presidents, establish a talent mobility mechanism

for university presidents. Second, establish and improve the education and training system for university presidents. Various forms such as forums, workshops, and training programs can be adopted to develop training across all aspects of presidents' leadership abilities and management skills.

Conflict of interests

The authors declare that they have no conflict of interest.

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Table 1. Age Structure of Current University Presidents

Age Range (years)	Number	Percentage (%)	Gender	Number	Percentage (%)
51~55	14	33.4	Male	40	95.2
56~60	18	42.9			
61~65	10	23.8	Female	2	4.8
Total	42	100	Total	42	100

Table 2. Remaining Years to Retirement of Current University Presidents

Years until retirement	2	3	4	5	6	7	8	9	10	11	12	13
Number of presidents	1	4	3	7	1	4	4	4	6	4	3	1
Percentage (%)	2.4	9.8	7.3	17.1	2.4	9.8	9.8	9.8	14.7	9.8	7.3	2.4

Sources: Websites of each university

Table 3. Education Background of Presidents of Double First-Class Universities





University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
Peking University	Hao Ping	Peking University	Ph.D.	Political Science	Yes	Visiting Scholar at the University of California, Berkeley (USA)
Tsinghua University	Qiu Yong	Tsinghua University	Ph.D.	Science	Yes	
Renmin University of China	Liu Wei	Peking University	Ph.D.	Economics	No	
Beihang University	Xu Huibin	Berlin Institute of Technology (Germany)	Ph.D.	Engineering	Yes	Ph.D. from Berlin Institute of Technology (Germany); Postdoctoral fellow at the University of Munich (Germany)
Beijing Institute of Technology	Zhang Jun	Beihang University	Ph.D.	Engineering	No	
China Agricultural University	Sun Qixin	China Agricultural University	Ph.D.	Agriculture	Yes	Visiting Scholar at Colorado State University (USA)



University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
Beijing Normal University	Dong Qi	Beijing Normal University	Ph.D.	Science	Yes	Visiting Scholar at the University of Sydney (Australia)
Minzu University of China	Huang Taiyan	Renmin University of China	Ph.D.	Economics	No	
Nankai University	Cao Xuetao	Second Military Medical University (China)	Ph.D.	Medicine	No	
Tianjin University	Jin Donghan	China Ship Research Institute	Ph.D.	Engineering	No	
Dalian University of Technology	Guo Dongming	Dalian University of Technology	Ph.D.	Engineering	Yes	Visiting Professor at Chuo University (Japan); Visiting Scholar at Oregon Institute of Technology (USA); Served as Professor at the University of Melbourne (Australia),

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
						conducting academic research
Jilin University	Zhang Xi	Jilin University	Ph.D.	Science	Yes	Jointly supervised doctoral student at Jilin University and the Johannes Gutenberg University Mainz (Germany)
Harbin Institute of Technology	Zhou Yu	Harbin Institute of Technology, University of Portsmouth (UK)	Ph.D.	Engineering	Yes	Visiting Scholar at Hokkaido University (Japan)
Fudan University	Xu Ningsheng	Aston University (UK)	Ph.D.	Science	No	Ph.D. from Aston University (UK); engaged in research and teaching at Aston University (UK)

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
Tongji University	Chen Jie	Beijing Institute of Technology	Ph.D.	Engineering	No	Visiting Researcher at Tokyo Institute of Technology (Japan); Visiting Scholar at California State University (USA)
Shanghai Jiao Tong University	Lin Zhongqin	Shanghai Jiao Tong University	Ph.D.	Engineering	Yes	Visiting Scholar at the University of Sydney (Australia)
East China Normal University	Qian Xuhong	East China University of Science and Technology	Ph.D.	Engineering	No	Engaged in postdoctoral research in the United States and Germany
Nanjing University	Lu Jian	Nanjing University	Ph.D.	Engineering	Yes	Visiting Scholar at the University of Manchester (UK)

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
Southeast University	Zhang Guangjun	Tianjin University	Ph.D.	Science	No	Advanced study at North Dakota State University (USA)
Zhejiang University	Wu Zhaohui	Zhejiang University	Ph.D.	Engineering	Yes	Studied at the German Research Center for Artificial Intelligence
University of Science and Technology of China	Bao Xinhe	Fudan University	Ph.D.	Science	No	Visiting Scholar at the Fritz Haber Institute of the Max Planck Society (Germany)
Xiamen University	Zhang Rong	Nanjing University	Ph.D.	Science	No	Conducted collaborative research at the University of Maryland and the University of Wisconsin (USA)

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
Shandong University	Fan Liming	Research Institute for Fiscal Science, Ministry of Finance (China)	Ph.D.	Economics	No	Senior Visiting Scholar at Duke University, Sanford School of Public Policy (USA)
Ocean University of China	Yu Zhigang	Ocean University of China	Ph.D.	Science	Yes	Visiting Scholar at the Institute of Marine Chemistry and Biogeochemistry, University of Hamburg (Germany)
Wuhan University	Dou Xiankang	University of Science and Technology of China	Ph.D.	Science	No	Ph.D. in Remote Sensing Physics from Paris Diderot University (France)
Huazhong University of Science and Technology	Li Yuanyuan	South China University of Technology	Ph.D.	Engineering	No	Visitor at Berlin Institute of

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
						Technology (Germany)
Central South University	Tian Hongqi	Central South University	Ph.D.	Engineering	Yes	Visiting Scholar at the National University of Singapore
Sun Yat-sen University	Luo Jun	Institute of Geodesy and Geophysics, Chinese Academy of Sciences	Ph.D.	Engineering	Yes	Visiting Professor at the University of Colorado, Boulder (USA)
South China University of Technology	Gao Song	Peking University	Ph.D.	Science	No	Ph.D. in Economics from the University of Portsmouth (UK)
Sichuan University	Li Yanrong	Chinese Academy of Sciences	Ph.D.	Science	No	Senior Visiting Scholar at Arts et Métiers ParisTech (France)
University of Electronic Science and Technology of China	Zeng Yong	Tsinghua University	Ph.D.	Management	No	

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
Chongqing University	Zhang Zongyi	Chongqing University, University of Portsmouth (UK)	Ph.D.	Engineering, Economics	Yes	Ph.D. from the University of Portsmouth (UK)
Xi'an Jiaotong University	Wang Shuguo	Harbin Institute of Technology	Ph.D.	Engineering	No	Visiting Scholar at the Fritz Haber Institute of the Max Planck Society (Germany)
Northwestern Polytechnical University	Wang Jinsong	Tsinghua University	Ph.D.	Engineering	No	Distinguished Professor of the Changjiang Scholars Program; National Candidate of the New Century Hundred-Thousand-Talent Project
Lanzhou University	Yan Chunhua	Peking University	Ph.D.	Science	No	Visiting Scholar at the University of Michigan (USA)

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
Northeastern University (China)	Zhao Ji	Jilin University of Technology	Ph.D.	Engineering	No	Engaged in research at Hokkaido University (Japan)
Zhengzhou University	Liu Jiongtian	China University of Mining and Technology	Ph.D.	Engineering	No	National Candidate of the New Century Hundred-Thousand-Talent Project; Recipient of the National Science Fund for Distinguished Young Scholars
Hunan University	Duan Xianzhong	Huazhong University of Science and Technology	Ph.D.	Engineering	No	Visiting Professor at the University of Manitoba (Canada)
Yunnan University	Lin Wenxun	Yunnan University	Ph.D.	History	Yes	National Candidate of the New Century Hundred-

University	Name	Alma Mater	Highest Degree	Discipline	Alumnus	Overseas Experience
						Thousand-Talent Project
Northwest A&F University	Wu Pute	Institute of Soil and Water Conservation, Chinese Academy of Sciences & Ministry of Water Resources	Ph.D.	Agriculture	Yes	National Candidate of the New Century Hundred-Thousand-Talent Project
Xinjiang University	Yao Qiang	Zhejiang University	Ph.D.	Engineering	No	

Table 4. Academic Background of Presidents of Double First-Class Universities

University	Name	Title	PhD Supervisor	Academician	Talent Programs
Peking University	Hao Ping	Professor	Yes	No	—
Tsinghua University	Qiu Yong	Professor	Yes	Academician of the Chinese Academy of Sciences	Recipient of the National Science Fund for Distinguished Young Scholars; Distinguished Professor of the Changjiang Scholars Program

University	Name	Title	PhD Supervisor	Academician	Talent Programs
Renmin University of China	Liu Wei	Professor	Yes	No	Distinguished Professor of the Changjiang Scholars Program; National Candidate of the New Century Hundred-Thousand-Talent Project; Selected for the Cross-Century Excellent Talents Training Program; Recipient of the National Science Fund for Distinguished Young Scholars
Beihang University	Xu Huibin	Professor	Yes	Academician of the Chinese Academy of Engineering	Distinguished Professor of the Changjiang Scholars Program; National Candidate of the New Century Hundred-Thousand-Talent Project; Recipient of the National Science Fund for Distinguished Young Scholars
Beijing Institute of Technology	Zhang Jun	Professor	Yes	Academician of the Chinese Academy of Engineering	Distinguished Professor of the Changjiang Scholars Program
China Agricultural University	Sun Qixin	Professor	Yes	No	Recipient of the National Science Fund for Distinguished Young Scholars
Beijing Normal University	Dong Qi	Professor	Yes	No	–
Minzu University of China	Huang Taiyan	Professor	Yes	No	Distinguished Professor of the Changjiang Scholars Program

University	Name	Title	PhD Supervisor	Academician	Talent Programs
Nankai University	Cao Xuetao	Professor	Yes	Academician of the Chinese Academy of Engineering	—
Tianjin University	Jin Donghan	Professor	Yes	Academician of the Chinese Academy of Engineering	—
Dalian University of Technology	Guo Dongming	Professor	Yes	Academician of the Chinese Academy of Engineering	National Candidate of the New Century Hundred-Thousand-Talent Project; Selected for the Cross-Century Excellent Talents Training Program; Recipient of the National Science Fund for Distinguished Young Scholars
Jilin University	Zhang Xi	Professor	Yes	Academician of the Chinese Academy of Sciences	—
Harbin Institute of Technology	Zhou Yu	Professor	Yes	No	Recipient of the National Science Fund for Distinguished Young Scholars
Fudan University	Xu Ningsheng	Professor	Yes	Academician of the Chinese Academy of Sciences, Academician of the National Academy of Sciences	Distinguished Professor of the Changjiang Scholars Program; Recipient of the National Science Fund for Distinguished Young Scholars

University	Name	Title	PhD Supervisor	Academician	Talent Programs
Tongji University	Chen Jie	Professor	Yes	Academician of the Chinese Academy of Engineering	National Candidate of the New Century Hundred-Thousand-Talent Project
Shanghai Jiao Tong University	Lin Zhongqin	Professor	Yes	Academician of the Chinese Academy of Engineering	—
East China Normal University	Qian Xuhong	Professor	Yes	Academician of the Chinese Academy of Engineering	National Candidate of the New Century Hundred-Thousand-Talent Project; Recipient of the National Science Fund for Distinguished Young Scholars
Nanjing University	Lu Jian	Professor	Yes	Academician of the Chinese Academy of Sciences	National Candidate of the New Century Hundred-Thousand-Talent Project
Southeast University	Zhang Guangjun	Professor	Yes	Academician of the Chinese Academy of Engineering	Distinguished Professor of the Changjiang Scholars Program; National Candidate of the New Century Hundred-Thousand-Talent Project
Zhejiang University	Wu Zhaohui	Professor	Yes	Academician of the Chinese Academy of Sciences	Recipient of the National Science Fund for Distinguished Young Scholars
Xiamen University	Zhang Rong	Professor	Yes	No	—
Shandong University	Fan Liming	Professor	Yes	No	—

University	Name	Title	PhD Supervisor	Academician	Talent Programs
Ocean University of China	Yu Zhigang	Professor	Yes	No	—
Wuhan University	Dou Xiankang	Professor	Yes	Academician of the Chinese Academy of Sciences	—
Huazhong University of Science and Technology	Li Yuanyuan	Professor	Yes	Academician of the Chinese Academy of Engineering	—
Central South University	Tian Hongqi	Professor	Yes	Academician of the Chinese Academy of Engineering	—
Sun Yat-sen University	Luo Jun	Professor	Yes	Academician of the Chinese Academy of Sciences	Distinguished Professor of the Changjiang Scholars Program
South China University of Technology	Gao Song	Professor	Yes	Academician of the Chinese Academy of Sciences	—
Sichuan University	Li Yanrong	Professor	Yes	Academician of the Chinese Academy of Engineering	Recipient of the National Science Fund for Distinguished Young Scholars

University	Name	Title	PhD Supervisor	Academician	Talent Programs
University of Electronic Science and Technology of China	Zeng Yong	Professor	Yes	No	Selected for the Cross-Century Excellent Talents Training Program
Chongqing University	Zhang Zongyi	Professor	Yes	No	National Candidate of the New Century Hundred-Thousand-Talent Project; Recipient of the National Science Fund for Distinguished Young Scholars
Xi'an Jiaotong University	Wang Shuguo	Professor	Yes	No	Distinguished Professor of the Changjiang Scholars Program; National Candidate of the New Century Hundred-Thousand-Talent Project
Northwestern Polytechnical University	Wang Jinsong	Professor	Yes	No	Distinguished Professor of the Changjiang Scholars Program; National Candidate of the New Century Hundred-Thousand-Talent Project
Lanzhou University	Yan Chunhua	Professor	Yes	Academician of the Chinese Academy of Sciences	—
Northeastern University (China)	Zhao Ji	Professor	Yes	No	—

University	Name	Title	PhD Supervisor	Academician	Talent Programs
Zhengzhou University	Liu Jiongtian	Professor	Yes	Academician of the Chinese Academy of Engineering	National Candidate of the New Century Hundred-Thousand-Talent Project; Recipient of the National Science Fund for Distinguished Young Scholars
Hunan University	Duan Xianzhong	Professor	Yes	No	—
Yunnan University	Lin Wenxun	Professor	Yes	No	National Candidate of the New Century Hundred-Thousand-Talent Project
Northwest A&F University	Wu Pute	Professor	Yes	No	National Candidate of the New Century Hundred-Thousand-Talent Project
Xinjiang University	Yao Qiang	Professor	Yes	No	—



The Impact of Online Social Networking on the Interpersonal Relationships of Chinese College Students

Tu Siyu

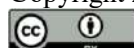
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KEYWORDS	ABSTRACT
Chinese students College students, Interpersonal communication, Social networks	The popularization of social networks provides a new form of interpersonal communication, and its appearance has profoundly changed the way and environment of contemporary college students' interpersonal communication. This article focuses on the influence of social networks on the interpersonal relationships of college students. Through the analysis of the behavioral psychological state of college students, this article puts forward research questions and studies from three aspects.
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This article is divided into four parts. The first part introduces the purpose and significance of this topic and puts forward three research questions: about the extent to which online socialization affects college students' self-confidence, the advantages of online socialization, and the ethical dilemmas and implications of online social connectivity for college students. The second part is a critical literature review of the research on this topic in other countries. The third part collects and summarizes the data through qualitative research methods. The fourth part answers three questions separately through the analysis of the data. About the characteristics of interpersonal communication of Chinese college students in the past 15 years and the influence of online social interaction on interpersonal communication, as well as some difficulties faced by college students in online social interaction.

Through this research, it is found that social networking has both positive and negative impacts on the interpersonal communication of Chinese college students. The positive impact lies in the fact that online social interaction has brought closer interpersonal relationships among college students, further satisfying the expression of college students' emotional appeals, and the sense of belonging that college students are more likely to find on the Internet. The negative impact is that college students are prone to social dependence on online social interaction, and online violence also affects the mental health of college students to a certain extent.



1. Introduction

In the last decade, interpersonal communication has witnessed changes with the development and advancement in information technology, which has revolutionized the mode of people's traditional interpersonal relationships and communication. Therefore, online social networking has emerged as a brand-new way of interpersonal communication (Liu & Baumeister, 2016). Online social networking has been widely used in many countries in the world.

Social networks are the most popular among people aged 18 to 24 (Tancer, 2007). College students are in the stage of adolescence and emerging adulthood, so they are the main group of people who use smartphones and are the most sensitive group to reflect changes in social development. Various social networks can quickly become popular among college students, and have a certain degree of influence and change on college students' learning, entertainment, communication, and lifestyle (Chayko, 2002).

Compared with real social networking, online social networking has more diverse methods and communication channels. In addition to ordinary social software, people can also make friends in games. Various mobile phone software has developed rapidly through the Internet and has been widely promoted among mobile phone users. Among them, various mobile phone software for the purpose of social networking is the most common (Mazur & Richards, 2011). Obviously, there are many differences between online social networking and traditional communication methods, and it is these differences that have brought new changes and stimuli. Therefore, the influence of social networking on college students' interpersonal relationships is multifaceted. College students are basically adults, and they are in the transition from adolescence to adulthood. However, due to a lack of education during their upbringing or the impact of their living environment, some people's moral standards may not reach the average level of their age group (Porter, 1972). However, in China, the number of relevant academic studies is insufficient. In order to fill the relevant academic gaps, this research will mainly study the influence of social networking as a new type of interpersonal relationship on Chinese college students from the perspective of psychology and sociology.

1.1 Aim and Objectives

The aim of this study is to investigate and analyze the current situation of college students' uses of mobile phones for social intercourse, and to deeply explore the communication mode, behavior, and psychological issues of college students through the theoretical research of their online social behavior. This study adopted a qualitative method and conducted a more detailed study through the collection of literature. This research is divided into three thematic analyses that have a clear connection with the

overall research question, but each is a different topic as my research direction in the next part. These three themes are (1) the use of online social networking to escape from real life, (2) the practicality of social apps, and (3) the neglect of online social cyber ethics. Through these three themes, I will analyze the positive and negative effects of social networking on college students' interpersonal relationships and explore and understand the characteristics of college students' social interactions.

In order to achieve the research aim, this research will focus on the following goals:

1. To what extent does social networking help college students build self-confidence?
2. What advantages does online social interaction have for students compared to face to face communication?
3. What are the ethical dilemmas and implications of online social connectivity for college students?

2. Literature Review

Nowadays, online social networking platforms have become very popular among college students. Many studies have looked at how websites like Facebook, Instagram, and WeChat affect students' social lives. Some researchers think online social networks help students talk to friends more easily, especially those who are far away. This can make students feel more supported and less lonely (Ellison, Steinfield, & Lampe, 2007). Also, online platforms help students keep both close and not-so-close relationships. They can have a big and wide network of friends. This can increase students' confidence and help them build more social connections (Valenzuela, Park, & Kee, 2009). For students who are shy or not good at talking face-to-face, social media gives them a way to feel they belong to a group (Manago, Taylor, Greenfield, & Brown, 2012). But some researchers also say there are bad sides. If students spend too much time online, they might find it hard to build deep and real friendships. Their social skills in real life may become worse (Turkle, 2011). Sometimes, students may feel lonely or nervous when they compare their lives to others on social media (Chou & Edge, 2012). Another problem is that students may have many online friends, but not many of them are real or close. This can hurt their emotional health (Subrahmanyam & Greenfield, 2008). These studies show that social media can be both helpful and harmful for college students' relationships. In short, online social networks bring both chances and challenges to students' social lives. If used in a smart way, they can help students connect better. But if used too much or in the wrong way, they might hurt real communication. Future research can look at how to help students use social media more wisely.

In the literature search on this topic, most of the research backgrounds are carried out in the United States, Europe, and some other countries. However, China's research on

this aspect is not rich, so this chapter will pass the analysis of other research mainly in the United States. The country's research is reviewed and then compared with the Chinese research. In the past 15 years, the popularity of the Internet in China has significantly improved, and society's attention to people's mental health has gradually increased. Internet social networking is constantly impacting traditional social models and people's ideas, and it has also played an important role in the study and life of college students. Especially, the brand-new virtual world built for its audience affects college students' lifestyles and interpersonal communication patterns. Therefore, the selection of literature is mainly based on these several reasons. Through a review of the literature, these readings will also provide information on research issues and give us an in-depth understanding of the current and past debates.

2.1 Research on social networking tools

The number of active users of mobile phones exceeds the total population of the world, and almost all of the world's population lives within 97% of the mobile signal range (Cerwall & Jonsson, 2020). Social networking sites provide new ways for interpersonal communication and self-expression. It is estimated that 4.1 billion people will use the Internet in 2019, an increase of 5.3% over 2018 (ITU, 2019). The popularity of mobile phones means that these devices often appear in public and private settings, as well as in casual and intimate interactions, and are usually important contextual objects. Although they are ubiquitous, people do not know how the existence of mobile communication technology affects face-to-face interaction (Calabrese et al., 2011). The research on mobile phones in this section can be roughly divided into two categories, one is about mobile phone addiction Sex (Körmendi, 2016; Salehan, 2013; Walsh et al., 2008), the second category is research on mobile applications (Kim, 2011).

The first is the study of addiction to mobile phones. In research on mobile phone use, the mainstream view is "addiction and dependence" (Salehan, 2013). In a study on the relationship between New Zealand teenagers and mobile phones, they described their understanding of mobile phone "addicts" as those who allowed their use of mobile phone technology for communication purposes to escalate to interfere with real-life social interactions (Vacaru, Shepherd & Sheridan, 2014). A study on the use of mobile phone self-control in the United States found that compared with using a mobile phone, it is more difficult to concentrate and more distracting when there is no equipment. Resisting the use of mobile phones resulted in greater perceived concentration ability. Compared with sitting in a room without a mobile phone (not having external stimulation), these participants were less excited than those without a mobile phone (Markowitz, et al. 2019). However, some scholars have shown that it is difficult to classify mobile phone dependence as an addiction. The mobile phone itself does not have any inherent addiction, and continuous communication and interaction may be addictive (Reid and Reid, 2004). Some scholars believe that they are not only related to physical factors, but also social and psychological factors (Lee, Ahn, Choi & Choi,

2014). And long-term company will make humans have a biological tendency to form attachments to social partners, or even non-human and inanimate goals (Konok, Gigler, Bereczky & Miklósi, 2016). In addition, different personality traits may have different manifestations. People with low self-esteem, high narcissism, and high loneliness use more SNS. Further analysis found that the performance of high narcissism is highly correlated with SNS (Social Networking Services) activities (Liu & Baumeister, 2016), such as posting photos or commenting on social media platforms.

The second is the research on mobile phone applications. The mobile phone social media applications have profoundly changed the communication between people. Park and Valenzuela (2009) believe that social interaction, entertainment, self-seeking, and information are the four major needs for users to use social applications. Some scholars have studied the motivations of American and Korean college students using SNS. The results show that for American students, they mainly use social applications to find friends and entertainment on the Internet, so the convenience of SNS is the most important. However, U.S. college students have also shown that they prefer face-to-face interactions and perceive social media as having a degree of inauthenticity. (Kim, Sohn & Choi, 2011). In addition, from the perspective of mobile application developers, psychological motivation is the key to determining the attitude of social media users (Hsiao et al., 2016). When technicians develop social applications, checking users' psychological needs helps marketers understand people's motivations for using the media. An effective questionnaire analysis by Taiwanese scholars shows that users' continuous use of social applications is driven by their satisfaction with the applications, close connections with others, and hedonic motivation (Limayem et al., 2007). As an application developer, the user's continued use intention is very important, and how to retain customers for a long time may determine the service life of a mobile app.

2.2 Online social interaction and interpersonal relationships

For the interpersonal relationships of college students, different researchers have put forward corresponding theories and viewpoints from different angles. Throughout the history of human evolution, communication and social interaction have always been the focus of human life, and they have always been an important core aspect of human motivation (Dunbar, 2010). The traditional way of communication usually involves one or two people, and the innovation of the way of communication creates new ways for people to communicate. The emergence of social networks has formed a new way of interpersonal communication. Compared with the elderly, young mobile phone users learn and use new technologies faster and more extreme (Brickfield, 1984). Information technology supports a high degree of interactivity and has stimulated the rapid development of the Internet. The Internet has gradually replaced traditional mass media communication methods. The maintenance of interpersonal relationships is considered to be the main reason for using social networking sites (Roy, 2009). Many experts and

scholars have conducted extensive investigations and studies on social networks, but their research focuses are different. The research is conducted here from the perspective of psychology and sociology.

From the perspective of psychology, relevant research experts and scholars pay attention to the mental health problems that people generate and reflect in the process of online social interaction, and then analyze the reasons for the psychological problems caused by online communication. Hollenbaugh (2014) and her colleagues experimented on 301 Facebook users and found that these people who rely on social networks have common personality weaknesses, low self-evaluations, and poor memory. People with these personality traits may rely more on social networks. Other scholars have also found that excessive use of mobile phones is associated with anxiety (Augner, 2011).

In addition, Weidman (2012) conducted an online questionnaire survey on 108 subjects to measure their subjective anxiety in online social interaction and found that most of the subjects indicated that their stress and anxiety during online social interaction were low. Therefore, they believe that reducing psychological stress in online social interactions can help reduce the level of social anxiety of Internet contacts. He believes that self-evaluation and social skills play a key role in social anxiety. College students are the fastest adopters of mobile phone technology, and emerging research shows that mobile phone use is positively correlated with the anxiety of American college students, and high-frequency mobile phone use may affect their health and behavior (Lepp et al., 2014). Poirier and Cobb (2012) further explained that people need to like and comment to communicate with others on the Internet. If an activity cannot stimulate discussion among members or show an impact on social groups, individuals will quickly lose interest. Therefore, individual participation in certain activities may be affected by social group activities, and only enough individual participation can stimulate social influence.

From the perspective of sociology, sociology experts and scholars pay more attention to people's behavior, motivation, and behavioral characteristics in online social interaction. Socialization refers to the process by which individuals gradually form their unique personality and personality in the process of interacting with society, and gradually adapt to social life (Morrison, 2002). Tang (2016) believes that participating in online social networks is also the act of sharing one's own or self-established identity with others. Social networks on the Internet are more open, providing college students with more communication options. They can communicate freely according to their hobbies and characteristics. College students are in a critical period of personal growth. They are eager to be respected and recognized by others, and have a strong desire to showcase themselves and communicate with others. People with similar hobbies and

common topics can easily agree on sharing information. So, the social network used for interpersonal communication meets the social needs of college students.

In addition, a review article by Kuss, Griffiths, and Binder (2013) shows that social networking sites are mainly used to maintain relationships with offline acquaintances, and college students use social networking sites more to connect with real friends. Many teenagers who frequently use the Internet to socialize claim that they mainly use social networking sites to maintain existing friendships, but about half of the teenagers explain that they use these sites to make new friends and talk to people they don't know. (Pempek, Yermolayeva & Calvert, 2009). Because the definitions of social network data are interrelated, they can help teenagers and emerging adults maintain various social connections through convenient communication. Therefore, they can establish and maintain relationships with their friends, some acquaintances, and even people they have never met (Chayko, 2012).

3. Methodology

Sikes (2004) defines methodology as the theory of knowledge acquisition, which considers the best methods, procedures, or approaches. The data obtained through these methods, methods, or procedures will provide the basis for the knowledge construction of the researched knowledge. Methodology is related to the description and analysis of research methods. Since research is subjective, even the most scientific, empirical, objective, and quantitative researchers will make subjective choices (Jackson, 2013). The purpose of this research is to explore the multiple effects of mobile phones on college students' interpersonal communication, especially the behavior and psychological state of college students when they communicate on the Internet. Through this research, I can think more about the life experiences of college students, especially interpersonal communication, and have a clearer understanding of them.

3.1 Qualitative Research and the Interpretivism Approach

Aiming at the research problems of college students' social interaction and interpersonal relationships through the Internet, this research chooses to use qualitative research methods to conduct in-depth research and exploration of college students' cognition through interpretivism and the induction approach.

First, qualitative research is suitable for asking questions and making decision plans during the research process (Willig, 2013, and Hennink, 2020). Compared with quantitative methods, the advantage of qualitative research methods is that they can conduct a more in-depth evaluation of specific phenomena and more complex problems (Camic, 2003). Therefore, this study can use the information and observations recorded

by other authors from the literature to understand the psychological characteristics of college students, and then conduct a qualitative analysis of these data. Through qualitative research, a wealth of information can be obtained, and there is more room for interpretation of research topics.

Second, there are many forms of interpretivism, and it identifies several different variants, such as conservatism, constructivism, criticalism, and deconstructionism. The central idea of interpretivism is to work with, acknowledge, reconstruct, and deconstruct already existing subjective meanings in society and to use them as a cornerstone of theorizing (Goldkuhl, 2012). The reason for using interpretivism in this article is that different scholars have different forms and groups of research backgrounds. The different concepts, ideas, and language studied will help them to develop diverse cognitive perspectives on the social phenomenon of college students' online socialization. Therefore, this research can understand and capture more subtle and diverse changes in interpersonal interaction among college students, rather than drawing conclusions based on absolute and objective research. Therefore, interpretivism is suitable for this research.

In addition, this study will use induction to sort out the collected literature. Induction is to allow data to guide research and theoretical construction. It is also based on reflections on specific past experiences and forms abstract concepts, theories, and generalizations that explain the past and predict future experiences (Carson et al., 2001). Induction can help me learn from Individual and special cases of college students, generalize, and draw generalized conclusions. From the collected part of the research cases for Chinese college students, the study will analyze the results of previous studies on the relationship between online social networking and college students' interpersonal communication, and finally draw a general conclusion.

3.2 Method of Data Collection

Researchers can use a variety of methods to collect qualitative data, such as surveys, interviews, case studies, and observations. In this research, thematic analysis is the main data analysis method (Braun & Clarke, 2006). The research topic is about the connection between college students' online social interaction and their real interpersonal relationships. According to the three research themes of this research, the data collection was carried out, which are the extent to which social networks help college students build self-confidence, the advantages of online social networking compared with face-to-face communication, and the ethical dilemma and influence of online social networking on college students. The collected data is mainly based on field surveys conducted by different scholars in different regions. They collected interviews, questionnaires, or other forms of research data, and combined their research conclusions for integrated analysis.

3.2.1 Data collection

College students are the main group of people who use smartphones, the main group of social networking, and the first to try out the latest software, so the group of college students is very representative. The research selected for this study is based on the research conducted on Chinese college students as the main population. The time interval of the literature is related to the research conducted by researchers on the groups of Chinese college students in different regions in the past 15 years.

First of all, from the perspective of establishing college students' self-confidence through online social networks, this study collected research on college students' self-confidence and college students' social anxiety. This part involves literature related to psychology. A large part of the literature comes from academic search websites such as China's National Knowledge Infrastructure and Google Scholar. There are also some from different psychology journals, such as "Acta Psychologica Sinica" and "Psychological Development and Education". Then, data is collected on the interpersonal communication status of college students, the frequency and purpose of college students using online social networks, and the relative satisfaction degree of college students with the needs of online social networks. Finally, in the topic of moral dilemma and the impact of online social interaction on college students, it is found that online violence and online privacy leaks are often ignored by college students in social networks, but they may cause huge hidden dangers and problems to their mental health. Therefore, the data in this area also comes from the research of scholars from different regions of China.

3.2.2 Data analysis method

Thematic analysis is mainly used for qualitative research, where researchers collect descriptive data to answer their research questions (Guest, 2011). After collecting data, researchers need to check the data repeatedly, looking for new patterns, topics, and subtopics to strengthen the establishment of a logical structure (Braun & Clarke, 2006). Researchers can then categorize the data into different parts. In addition, the themes are interrelated in the thematic analysis to establish the final structure. Braun and Clarke (2006) divided the thematic analysis steps into six steps: familiarizing yourself with your own data, generating initial code, searching for topics, reviewing topics, defining and naming topics, and making reports. This research uses these six steps to organize and analyze the data step by step.

Based on the six steps mentioned above, this study first needs to be familiar with my data. After determining my research direction, this study searched a lot of literature and extracted opinions and data related to this research topic. These data are formed into a data set for subsequent research and analysis by researchers. In the process of coding

and summarizing the data with research value, the data set is gradually formed, and after the data is sorted, it establishes its research content on three themes. To determine the topic of the study also conforms to these three interrelated but different topics to determine the topic of this study. After these steps, targeted literature and data collection and sorting were carried out, which finally formed this research. Therefore, the application of topic analysis in this study provides a good logical structure for the study.

4. Data Analysis and Addressing the Research Questions

The research literature in this part only focuses on the research on college students' online social interaction and interpersonal relationships in some areas of China in the past 15 years. This section will gradually discuss the three themes involved in the analysis of this research, and the data analysis will only focus on papers to meet the research question.

4.1 Addressing Research Question One

Topic 1: To what extent does social networking help college students build self-confidence?

Sun (2009) surveyed college students of Zhengzhou University and found that among them, the number of college students with mental disorders accounted for about 30%. Among them, interpersonal relationships and anxiety problems are more serious problems affecting the psychological health of college students. First of all, this research needs to explore the reasons for the lack of self-confidence and even social anxiety in face-to-face social interaction. Qian (2005) believes that the specific manifestations of social anxiety are fear of participating in social activities such as parties and fear of speaking in front of people. In other words, social anxiety is actually tension and fear of interpersonal situations. The following content will analyze the reasons for the lack of self-confidence in interpersonal communication of college students from two aspects: their evaluation and their social skills (Guo, 2000).

4.1.1 Self-evaluation and social anxiety

Self-evaluation is an individual's positive or negative attitude towards the self, which will affect how the individual interacts with others in social situations (Yen, 2009). Zhang (2019) conducted a data analysis on 183 college students from Yanbian University in China through a questionnaire. Regarding college students' social interactions on the Internet, she believes that the degree of self-affirmation is strongly negatively correlated with the importance of the interaction and feedback of friends on

the Internet. This result can show that people with lower self-evaluation are more concerned about others' views and impressions of themselves, so they will deliberately attract others' attention and recognition through impression management and beautification of themselves. People with higher self-evaluation are more able to affirm themselves and have a stronger sense of self-efficacy. Because these people can fully realize their self-worth in real life, they are less dependent on online social networking as a platform for self-expression.

Huang (2014) surveyed 4,014 Chinese college students. The results found that the psychological problems of Internet dependents are more extensive, and those with low self-evaluation are more dependent on social networks. People with social anxiety often view and evaluate themselves from the "observer's point of view", believing that others know their performance (Liu & Zhang, 2010). The reason for the low self-evaluation can be found through this research. People are not confident and even have social anxiety in face-to-face social interaction largely because they are not in a good social environment (Huang, 2014). Especially in some Asian countries, the lively and outgoing character is highly regarded (Qian, 2005). Many college students are deeply troubled by their inability to have a perfect social image in social situations. This is just a small part of people with social anxiety disorder who may be more inclined to use mobile phones for social networking.

Therefore, the family has a great influence on personal growth education (Li, 2015). This kind of personality evaluation almost represents the preference of most people for extroversion, and it also makes those with a keen personality and introversion deeply troubled, resulting in the low self-evaluation of some people who are not confident in socializing (Tang, 2016). Self-consistency and Congruence refer to the coordination within the self and the coordination between self and experience (Jiang & Ruan, 2006). The author believes that if the individual feels too large a gap between the self and self-experience, it will cause tension and confusion in the heart. Therefore, regardless of their needs, this part of college students socializes by the requirements of society, which completely violates their physiological characteristics. They often cannot tolerate detecting their shortcomings in social situations. This has its psychological reasons for the pursuit of perfection, and it is also related to the lack of acceptance and recognition in acquired education (Chen et al., 2010). Parents can try to see the uniqueness of their children, instead of insisting on making these sensitive children give up their uniqueness and become a person generally recognized by society (Wang, 2008). In these circumstances, these children often ignore their true character and psychological needs under such strict education. However, the Internet provides them with a relatively open environment. When some college students reduce their anxiety in face-to-face social interactions, their rich sensibility in online social interactions will have a positive impact on their lives.

4.1.2 Social skills

Online communication allows more time for students to react and reflect (Jiang, 2006). In virtual networks, most speech is in text form, so when students communicate or comment on the Internet, they can think before they send, making the text relatively logical and structured as opposed to being expressed directly without thinking. Many software programs (e.g., WeChat and QQ), as well as some e-mails (e.g., qqmail) (Tencent, 2020), also have an undo function that allows users to choose whether or not to undo sent messages within three minutes of hitting send. Using the Internet, instead of giving instant answers, college students have a longer period to think and then give answers to the text they send. Words that are constantly reworked are certainly better than words that are sent in times of extreme stress. On top of that, text in the web does little to slow down the speed at which a message recipient can visually receive a text message and still read it over and over again (Lien & Cao, 2014).

While the anonymity of online social networking poses some security risks, it also allows college students to be bold in their self-expression. And its lack of directness helps to give the impression of being socially adept to their peers. Once the fear of evaluation is overcome, college students will believe they will be well received by their peers and have higher expectations for successful social outcomes. This social performance allows individuals to validate the appropriateness of their self-presentation and make adjustments to perform better in the next online social encounter, resulting in higher achievement motivation (He et al., 2014). Thus, this virtuous cycle of social experiences may gradually provide individuals with a sense of control that they lack in real-world social interactions and reduce their anxiety levels during online social interactions (Chang & Zhou, 2011).

However, complete and effective interpersonal communication involves language, tone of voice, facial expressions, and body language that cannot be achieved through online chat. Only 7% of the information people communicate is conveyed through words, 38% through our tone of voice, and 55% through our body language (Xu, 2018). In face-to-face communication, people mobilize these three aspects to convey information and emotions, and as a result, online social networks have lost some of the essential communication elements of face-to-face social interaction (Wang & Hu, 2013). Nowadays, a wide variety of Internet communication tools have emerged in our lives. Social networks can help college students gradually build self-confidence in their social status, and slowly combine the confident state under online social networking with the social status in face-to-face communication, can transform the new communication tools in our lives into optimal tools in communication rather than replacements.

4.2 Addressing Research Question Two

Topic 2. What advantages does online social interaction have for students compared to face to face communication?

The social needs of college students will be explored here in three areas: social interaction, entertainment, and self-seeking. Themes related to the research questions extracted from the data will be described in the following subsections.

4.2.1 Meet the social and entertainment needs

Xu (2018) surveyed the social anxiety of college students at Nanjing Forestry University. 77.68% of students said they would be more lively in online social interaction than in real social interaction, and only 4.96% of students thought they would be lively in face-to-face social interaction. It can be seen that traditional telephone and face-to-face communication methods can no longer meet the communication needs of university students, and online social networking, with its convenient form and low price, has become the main way for university students to communicate emotionally. Traditional social networking methods often require consistency between the two parties, and the absence of either party will lead to social failure. While online social networking is instant and pluralistic, people can socialize with more than one person at the same time without interrupting each other (Wen, 2014). Online social networking brings people closer together and allows us to participate in other people's lives through compliments and comments, which is not possible with traditional face-to-face and phone social networking.

By 2016, WeChat had reached 69.1% of China's internet users (Lu, 2017). About WeChat According to the survey, more than 50% of college students believe that WeChat can make contact with friends faster and more conveniently (Wen, 2014). This social application that allows for closer contact with friends provides college students with the opportunity to communicate more easily. The WeChat account allows for a direct channel of information exchange and can also be used in Tencent's games. College students can also use their WeChat accounts to log in to play games with their friends in the game. In addition, users can entertain strangers and convert that part of their friends they met in the game into frequent contacts for WeChat (Xu, 2018). This not only satisfies the social needs of college students, but also their entertainment needs. For students who are not good at interpersonal communication, in reality, social applications provide a better platform for them. In the virtual environment, they can ignore external objective realities and communicate with people on the Internet to express their opinions without restrictions (Wen, 2014). Interpersonal communication can also be improved and solved through the Internet.

4.2.2 Meeting the self-seeking needs

Public information on the Internet is intended for most users throughout the Internet, so college students are free to access information from the Internet and are free to choose their information sources and providers (Wang & Hu, 2013). As a result, providers of high-quality information usually attract a lot of attention, and these excellent statements are more likely to impress college students. However, ordinary conversations in real life are usually information exchanges. In some cases, there is no subjective choice of information. The general quality of the information exchanged tends to make people feel that the real-life exchange is not effective.

The emergence of virtual communities based on the Internet and mobile networks has provided more convenient conditions for college students to engage in social interaction. The free, indirect and anonymous nature of social interaction in virtual communities provides a space for students to socialize. College students with the same interest or interests form virtual communities and receive emotional support from them (Zheng, 2014). On the Internet, college students can search for relevant topics to find interesting content and can easily find and interact with others with similar views. As a result, they gradually become dependent on this level of satisfaction and engagement. Compared to other groups, college students have a certain level of knowledge, and they often unconsciously pursue a higher level of human psychological needs when communicating on the Internet (Li, 2013). They want to be recognized by others to achieve self-worth. The details of their lives and comments that college students share on social networking sites also establish their self-image and even their ideal status.

4.3 Addressing Research Question Three

Topic 3. What are the ethical dilemmas and implication of online social connectivity for college students?

The impact of the virtual nature of the Internet will be analyzed here in relation to the specific forms of cyber violence and the impact it has on college students.

4.3.1 Virtuality and Anonymity

Xu (2018) found that about 20% of college students fabricate personal information while socializing online and are reluctant to reveal any real information about themselves to others; about 5% of college students fill in personal information that perfectly matches their real identities; and most of the remaining students have some personal data that is real and some that is fake, and they only want to disclose personal information that is irrelevant. The reasons for this phenomenon can be divided into two areas.

The advantage of university students choosing to log in anonymously on the Internet is that they can eliminate the interference of various factors such as identity, age, social status, and religious beliefs on the subject of communication, which makes communication more relaxed and frank (Zhao, 2008). Since it is very simple to apply a symbol for oneself online, subjects can experience different feelings of interaction by portraying oneself as numerous images that one expects according to one's preferences.

In addition, due to the virtual and anonymous nature of online social networks, there is a lot of false information (Zhao, 2008). In some online media, negative and false news can easily deceive college students, and they may even be led astray by the influence of negative comments. In illusory online social interactions, people use words and symbols to communicate with each other via mobile phones, so it is difficult to determine whether people's words and actions are reliable. Although many college students are enthusiastic about social networking, the virtual nature of social networking sites discourages most students from expressing their true selves when using social networking tools to communicate. People create virtual identities so that they can communicate and express their opinions freely with little or no responsibility (Li & Qiu, 2004). This leads many to fail to adopt a serious and honest attitude when using the Internet for communication. These may cause a crisis of trust among university students and make them suspicious of interpersonal communication on the Internet.

4.3.2 Cyber violence

Privacy refers to the state of freedom that people enjoy in their private lives relative to the public sphere, which is hidden, undisclosed, and free from outside interference (Young & Quan, 2013). The crisis of privacy caused by social networks hides the depths of conflict in the interpersonal relationships of contemporary college students.

College students basically cannot live and study without the Internet. The Internet not only provides them with access to information and resources, but also allows them to participate in various large-scale activities. The network has become a place for some people to vent their emotions, and more and more radical and illegal remarks appear on the network. Among them, verbal violence, fabrication and dissemination of false information, and life attacks are the most common (Xie, 2014). As users are less constrained online, they make irresponsible statements to vent their emotions. It is more common to post false information about an object or individual, or to use abusive language (Cui, 2018).

Cyberbullying (Cyberbullying refers to any behavior committed by an individual or group of individuals through electronic devices or digital media that repeatedly conveys hostile or aggressive messages designed to cause harm or discomfort to others (Zhu et

al., 2016). Cyberbullies commit bullying in the online environment because some of the characteristics of the online environment create unique conditions for them, such as the non-immediate feedback and anonymity of the Internet. (Zhao, 2008). Compared to face-to-face behavior, cyberbullies have no way to receive immediate reactions from the bullied, which reduces the psychological burden of cyberbullies when committing bullying behaviors. The anonymity of the online environment, which makes bullies hide behind the virtual Internet and hide their true identities, greatly reduces their sense of responsibility to bear the consequences of bullying (Xu, 2018). Anonymity stimulates more frequent bullying and expands the scope of bullying from the former school-based forms to all corners of society.

5. Discussion

This chapter is a specific discussion of the research section of this article, which provides a brief analysis of the social status of university students in different parts of China. In addition, the study summarizes the limitations of this study and the expectations for future research.

5.1 Findings

By summarizing and reviewing the research on social networking and interpersonal relationships of Chinese college students, it is found that college students' fear and lack of confidence in face-to-face social interaction mainly come from low self-evaluation and lack of social skills. Social networking provides them with a freer and more open environment, allowing them to avoid external influences when communicating with others.

Then, compared with face-to-face communication, research on the advantages of college students choosing online social interaction is summarized from three aspects. First, the convenience of online social networking allows college students to get along and increases the opportunities for communication with their friends. Secondly, social networks can help college students maintain friendships in reality and communicate with their friends in games. Third, it can realize the self-needs of college students and help them find a group of friends with the same hobbies.

Finally, the moral dilemma brought by social networks to college students is summarized into two parts. First, the virtual nature of the Internet makes it easy for college students to be deceived by false information on the Internet. Second, online violence often occurs. The dissemination of verbal violence or false information will cause certain harm and influence the psychology of college students.

5.2 Limitations and perspectives

Although this study attempts to find the correlation between online social interaction and interpersonal relationships among Chinese college students, it must be admitted that there are certain limitations. Due to the limitations of my research methods, only a few case studies were conducted using qualitative analysis methods, and the primary research for participating in interviews or investigating college students in the form of questionnaires was missing. In addition, compared with research in countries where the field of psychology is more developed and popular, China has only begun to pay more attention to psychology-related subjects in the past 10 years. Therefore, compared with the research in the United States, there are fewer relevant Chinese documents. Therefore, the richness and diversity of references in the research process are lacking, which may affect the research results.

In the future, I hope to use primary research in the form of interviews or questionnaires to explore related issues from a more in-depth perspective on the psychological or behavioral habits of college students, combined with the characteristics of social media to complement the research.

6. Conclusion

In this research, the study used qualitative research to study the correlation between Chinese college students' online social interaction and interpersonal communication by induction. This study conducted research on this topic through three themes and found that the openness of the Internet and an open environment are helpful in easing Chinese college students' social worries. The convenience of online social networking helps college students communicate with others, expand their social scope, and help them find a group of friends with the same hobbies. But in the meantime, it also found that social networks have brought some moral dilemmas to college students. It mainly lies in the occurrence of cyber violence caused by the virtual nature of the Internet.

The combination of the emergence and development of social networking and interpersonal relationships provides new channels for interpersonal communication and expands the scope of interpersonal communication. The research on this subject will help people better carry out interpersonal communication in the Internet age. Internet social interaction has certain positive effects on college students. For example, it can broaden the scope of college students' communication, provide them with a space for self-discovery, help them gain more knowledge and information, and provide them with a new environment. The formation and development of college students' self-knowledge make communication between college students more convenient and faster. However, at the same time, it also brings an inevitable negative impact: online social

networks may trigger a crisis of trust in the interpersonal relationships of college students in real interpersonal interactions, and even weaken the interpersonal skills of college students, leading to a crisis of privacy among college students. The psychological development of college students is inseparable from their living environment, which has an important impact on their psychological growth of college students. College students are a representative group, so the research on them can help us to better think about the problems existing in society.

Conflict of interests

The authors declare that they have no conflict of interest.

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¹ * Translated from Chinese literature (same below).

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