



**RESEARCH ON THE IMPACT OF COLLEGE  
STUDENTS' SOCIAL MEDIA DEPENDENCE ON  
ONLINE LEARNING EFFECTIVENESS AND  
STUDENTS' SELF-ESTEEM**

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## Certificate of Individual Study Approval to Master Student

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Master of Communication Arts

Title of Individual Study: The Impact of Social Media-caused Negative Emotions on College Students' Rational Thinking and Objective Judgment  
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## **Abstract**

Promoted by the rapid development of the Internet, social media has been integrated into all aspects of people's lives. The popularity of social media has a unique attraction for contemporary college students. It not only brings a lot of convenience and fun to college students' lives, but also satisfies college students' spiritual needs. The demands of social media have led to a certain degree of dependence on social media among college students. However, overreliance on social media may have a negative impact on college students' life attitudes and learning outcomes, especially in the context of the increasing popularity of online learning. The impact of social media dependence on college students has attracted widespread attention from scholars, and research on social media dependence has become more in-depth. Therefore, this study intends to explore the impact of domestic college students' social media dependence on online learning effectiveness and student self-esteem. College students from a college affiliated to a university in Jiangxi Province are the subjects of this study, and the study is conducted through a questionnaire survey method. To understand: the current status of social media dependence, online learning effectiveness, and student self-esteem among domestic college student social media users; the differences in social media dependence, online learning effectiveness, and student self-esteem among domestic college student social media users with gender, grade, and duration of social media use; The correlation between social media dependence, online learning effectiveness and student self-esteem of domestic college students' social media users; the impact of domestic college students' social media dependence on online learning effectiveness and students' self-esteem. Through research on domestic college students' social media dependence, online learning effectiveness and student self-confidence, it can provide

theoretical basis for research in the field of social media dependence and provide reference value for college students to alleviate social media dependence.

**Keywords:** Social media dependence; Media dependence theory; Online learning effectiveness; Community of inquiry theory; Fear management theory of self-esteem

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# **CHAPTER 1**

## **INTRODUCTION**

With the continuous evolution and development of the Internet, social media has become ubiquitous in people's lives, which brings convenience to college students' lives and at the same time gives college students a huge negative impact on their studies and mental health. In this chapter, we will summarize the research background, research objectives, research questions, research significance and research process.

### **1.1 Research Background and Motivation**

Recently, the relationship between digital technology and human communication has attracted much attention from scholars and educators (Li et al., 2022). The origin of this concern can be traced back to the dawn of the information age, during which digital devices, the Internet, and especially social media rapidly became popular (Yang, 2015). The rapid rise of social media has profoundly altered the structure of human interactions, bridged gaps, fostered globalized communities, and reshaped the contours of the pedagogical paradigm. In this evolving digital landscape, China, with its large youth population, has emerged as a prominent research fulcrum. Catalyzed by the integration of social media into the pedagogical framework, the learning styles of the college population, especially in terms of higher education, have changed radically (Huang & Hu, 2017). Online learning has been practiced over the past few years as well as several scholars' studies have confirmed the convenience and effectiveness of online learning (Guo, 2023). Online learning effectiveness, as an assessment of learners' online learning effects, is closely related to learners' learning behaviors, and with the gradual digitization of education, online learning has now become one of the main learning modes for college student groups. Therefore, the primary goal of this study is to identify and deconstruct the effects of social media dependence on Chinese college students' online learning effectiveness and self-esteem.

Although one may think of these digital platforms as mere aids, their role in the field of education is much more nuanced (Hu, 2014). Preliminary investigations have shown that there is a two-way relationship between social media use and educational

outcomes (Jiang, 2018). Central to this discussion is the notion of social media dependency, a phenomenon characterized by a general need to engage with these platforms, sometimes at the expense of other activities. As college students navigate this digital age, questions abound about the true impact of this dependency on the effectiveness of online learning. The level of penetration of social media has become so extensive in all areas of people's lives that it has become almost an integral part of life. People's use of and dependence on social media is increasing, and social media has turned into an important companion in their daily lives. Under this developing trend, the college student group's dependence on social media is especially obvious (Miao, 2022). College students' own ability to discern information and control their behavior is relatively weak, which leads to the phenomenon of dependence on social media use becoming more common in the college student population (Hu, 2021). Are students more engaged by utilizing the interactive features of these platforms? Or are they disturbed and distracted, negatively affecting their studies leading to lower academic performance? There is also a parallel stream of academic inquiry flowing into the psychological realm questioning the impact of this dependency on students' self-esteem. While self-esteem is the most important manifestation of a student's mental health, does the frequent interaction of college students with social media and the decrease in academic effectiveness enhance feelings of belonging and self-worth or catalyze feelings of inadequacy and self-doubt? Delving deeper, subtle stratification emerges when gender, school age (grade level), and temporal dimensions of social media engagement are considered. For example, do boys rely on social media differently compared to girls? Is there a tangible link between the length of time spent using social media and academic effectiveness and self-esteem level outcomes? These are just a few of the myriad questions that this study attempts to address, and by carefully analyzing the differences in these areas, we can gain a comprehensive understanding of the intricate role that social media plays in contemporary Chinese academia.

## 1.2 Problem Statement

At present, scholars from various fields in China have conducted in-depth research on Chinese college students' social media dependence. Academic research in this area

is rich in diversity, covering multiple disciplinary perspectives from psychology to education. They have explored the extent to which college students rely on social media, and the impact of this reliance on online learning outcomes and student self-esteem.

These studies provide a comprehensive understanding of the current status of college students' social media dependence, among which the domestic scholars at this stage of the current status of college students' social media dependence are: Wu (2014) through a review of other literature, open-ended surveys and interviews, constructed a questionnaire with five dimensions about college students' social media dependence on cell phones, and tested the reliability of the questionnaire, and finally obtained a set of reliability of 0.5 percent, with a reliability of 0.5 percent. A set of scales with a reliability of 0.937 was finally obtained. The popularity of mobile social media has become more and more influential on people's daily life. People's exposure to social media, habits of media use and corresponding behaviors have changed with the deepening of the influence. Moreover, the rapid spreading growth in the number of social media users and the more frequent use of social media have shown a situation of dependence on the media (Lu et al., 2016). Taking the social media platform WeChat as an example, the study found that the main reason for college students to use social media for a long time is that the WeChat platform builds a set of network "acquaintance society", which precisely meets the contemporary college students' needs for self-expression, and also conforms to their tendency to negatively escape from the pressure of reality (Zhang, 2017). Studies have shown that social media addiction has an unfavorable negative impact on the aspect of study engagement of contemporary college students, while the level of self-esteem has a positive impact on the aspect of study engagement of college students (Zhao, 2023). Li (2018) et al. through their study concluded that female college students are more prone to develop dependence on cell phone social media dependence compared to male college students. Fu (2017) et al. concluded through their study that sophomore students are more prominent in social media dependence compared to freshman students.

In addition, foreign scholars on social media dependence related research are: (Andreassen, 2012) that social media dependence is mainly manifested by social media users uninterruptedly refreshing to browse the social media, and when in the

unavailability of social media will feel anxiety, the feeling of inner turmoil. (Baran & Davis, 2004) believe that one of the causes of social media dependence is the irrational use of technology, scholars believe that social media itself can not lead to people's dependence on it and abuse of behavior, but in the constant innovation, constantly updating changes in the media technology will lead to constant attraction, influence and amplify the user's own behavior, which in turn produces the irrational use of the technology. irrational use is the main cause of social media dependence.

By analyzing the current status of research on social media dependence by scholars in various fields at home and abroad, it can be seen that scholars have achieved results in their research on social media dependence. Some scholars have developed relevant scales and measurement tools in their theoretical studies, which provide objective and verifiable bases for relevant research, and the research methods of scholars are diversified, such as correlation research, survey research, etc. However, for the social media dependence of contemporary college students, social media dependence is a major cause of social media dependence. However, there are not many studies on social media dependence, online learning effectiveness and self-esteem of contemporary college students, so this paper is very necessary to further explore the social media dependence, online learning effectiveness and self-esteem of contemporary college students on the basis of the existing research.

### 1.3 Objectives of the Study

Through these studies of Chinese college students in social media dependence by scholars in various fields, it is evident that the research on social media dependence, students' online learning effectiveness, and students' self-esteem has received extensive attention and focus.

This study aims to investigate the effects of social media dependence on the online learning effectiveness of domestic college students' social media users and students' self-esteem, as well as the relationship between them, in a social media environment. The specific purposes are as follows:

- 1) To investigate the current situation of social media dependence, online learning effectiveness and students' self-esteem among domestic college students' social media

users.

2) To analyze the differences in social media dependence, online learning effectiveness and students' self-esteem among college students in China in relation to gender, grade level and duration of social media use.

3) To investigate the correlation between social media dependence, online learning effectiveness and students' self-esteem among Chinese college students' social media users.

## 1.4 Research Questions

Based on the purpose of this study, this paper proposes the following 3 research questions:

1) What is the current status of social media users' social media dependence, online learning effectiveness and student self-esteem among college students in China?

2) Is there any difference between the background variables (gender, grade level, and length of social media use) and social media dependence, online learning effectiveness, and student self-esteem among domestic college students' social media users?

3) What are the correlations among social media dependence, online learning effectiveness and students' self-esteem among domestic college students' social media users?

## 1.5 Significance of the Study

### 1.5.1 Theoretical Insights

The impact of social media dependence on a wide range of users has been emphasized and studied by researchers from home and abroad. Some studies have shown that college students have relatively poor information screening ability and behavioral control, which makes it easier for them to form dependence on social media (Hu, 2021). The use of social media brings a lot of convenience and fun to the daily life of college students, but the excessive reliance on social media will bring great negative impact on the attitude towards life and learning effectiveness of college students. Gong (2023) believes that the creation of "virtual self", the illusion of "reality isolation" and the accumulation of "generalized entertainment mentality" are the phenomena of

college students' over-reliance on social media. The phenomenon of "reality isolation" refers to the fact that the convenience of social media for socializing is replaced by isolating college students from socializing in reality. The concept of "virtual self" was first proposed by Prof. Ben Agger of the University of Texas in 2014, who believes that the virtual self is the self of a person who communicates with others through the Internet (Kwong, 2020). Therefore, by conducting a relevant survey and research on undergraduate college students enrolled in a university in Jiangxi Province, this study provides a certain reference for exploring the theoretical path of how college students' social media dependence affects online learning effectiveness and self-esteem, which will help subsequent scholars to conduct relevant research in this field. Through this study, the causal relationship between college students' social media dependence as the independent variable and online learning effectiveness and self-esteem as the dependent variable can be further explored, which can provide theoretical support and theoretical basis for the research in the field of college students' social media dependence.

#### 1.5.2 Practicality Perspective

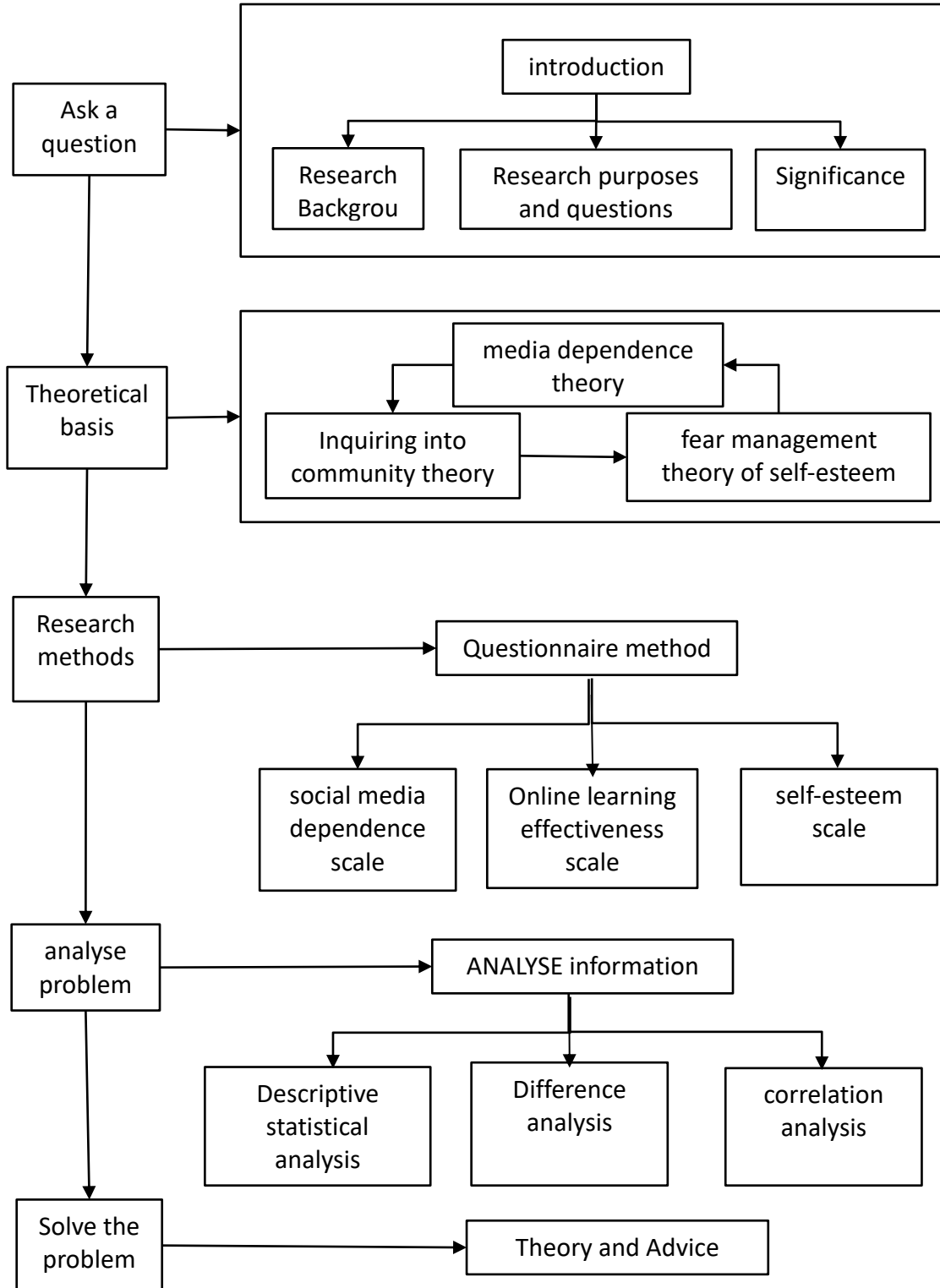
This study explores the relationship between the three variables of college students' social media dependence on online learning effectiveness and self-esteem, as well as the impact of online learning effectiveness on self-esteem, to gain a deeper understanding of the triggers and effects of social media dependence. This study can make institutions and workers engaged in education realize the heavy impact of social media dependence on college students, and should strengthen the psychological counseling and education of students, so as to let students deeply realize how excessive dependence on social media will bring negative impacts on their learning and living conditions, so as to guide students to strengthen their self-control ability, reasonably and appropriately use social media, actively participate in offline activities, and improve students' self-esteem and self-esteem. participate in offline activities, and improve students' self-esteem. The conclusions of this study can provide some reference value for how to alleviate college students' social media dependence and improve the effectiveness of online learning and self-esteem of students.



## 1.6 Research Process

First, it is understood that this study takes the development of social media on the online learning effectiveness and self-esteem of college students as the background of the study. Identify the impact of social media dependence on college students' online learning effectiveness and self-esteem as the research purpose of this study, and formulate relevant research questions in accordance with the research purpose of this study. Explain the theoretical significance of this study in providing theoretical support and theoretical basis for studying the field of social media dependence among college students and the practical significance of providing reference value for alleviating social media dependence and enhancing online learning effectiveness and self-esteem. Secondly, in the process of conducting literature exploration, this study uses the media dependence theory, the community of inquiry theory and the fear management theory of self-esteem as the theoretical foundation of this study, which provides research support for this study on the research between the three variables. Once again, the questionnaire survey method was used, combined with the scales compiled by relevant scholars, the social media dependence scale, the online learning effectiveness scale and the self-esteem scale were compiled, the scales were collected and organized, and finally a questionnaire scale in line with this study was arrived at, and then a network questionnaire was distributed to the group of research subjects through the QuestionnaireStar platform, the data was collected and organized and the data was statistically analyzed through the professional SPSS software to arrive at the analysis results. Statistical analysis was carried out to derive the analysis results. Finally, according to the results of data analysis and the combination of this study, the corresponding research conclusions are drawn and relevant recommendations are put forward. The summarized results of the above contents are shown in Figure 1.1 in the following page.

Figure 1.1  
Research Process Flowchart



## **CHAPTER 2**

### **LITERATURE REVIEW**

This investigation scrutinizes the influence of social media dependency on the efficacy of students' online learning and their self-esteem. For enhanced clarity on the research subject, this chapter systematically reviews and organizes pertinent literature, concentrating on social media dependency, online learning efficacy, and self-esteem. It defines each variable and examines existing research, outlining hypothesized interrelations among them. Structured into five subsections, it commences with an exposition on the foundational theories pertinent to our variables: media dependency theory, community of inquiry theory, and self-esteem's fear management theory. Subsequent sections delve into each variable—social media dependency, online learning efficacy, and self-esteem—offering comprehensive analyses from their definitions and theoretical frameworks to empirical studies. The concluding section discusses the interplay between these variables and posits research hypotheses, engaging with scholarly work on their interrelations.

#### **2.1 Principal Theories Adopted for the Current Research**

This subsection provides an overview of three theories: media dependency theory, community of inquiry theory, and fear management theory of self-esteem. Media dependency theory emphasizes the influence of media on the perceived behaviors and attitudes of individual audience members, which provides a reliable theoretical support for this paper's study of the influence of social media dependency on online learning effectiveness and self-esteem; the community of inquiry theory has far-reaching influence on online learning (Liu, 2022), and has a guiding role to enhance the effectiveness of online learning; and the fear management theory of self-esteem provides a reliable theoretical framework for the study of self-esteem by scholars from the perspective of self-esteem substance.

##### **2.1.1 Media Dependency Theory**

Media Dependence Theory, which was first formally explored and explained by

Ball-Rokeach and DeFleur in 1976 in the article "Dependence Models of Mass Media Media Effects", Media Dependence Theory is also known as Media System Dependence Theory. The theory is a comprehensive study of the influence of psychological factors, social theoretical factors, and user satisfaction to be considered from the perspective of the system concept. The theory emphasizes that the audience maintains existing social relationships through the use of social media, and that the audience is exposed to the information resources provided by the avenue of social media in some special dependency situations to satisfy existing social needs or to achieve personal goals (Ball-Rokeach, DeFleur, 1976). Zhu (2015), through the study of media dependence theory, argued that the dependence relationship that exists between the media and the individual from a theoretical point of view should be bi-directional, but in the process of the development of reality, the media is very strong, and the individual has a unidirectional dependence on the media.

As the information provided by social media can continuously meet the gradually increasing demand, the audience's dependence on social media information is also increased accordingly, the greater the audience's demand, the stronger the dependence on social media. This dependence on social media information is one of the main factors affecting the public's understanding of social media information and influencing their cognition, emotions and behavior. (Zhuang Xiao, 2021).

Ball-Rokeach and DeFleur, in their article "Dependency Models of Mass Media Mediated Effects," parse the two theoretical hypotheses proposed:

The first one is that if the particular information functions provided by social media are relatively centralized in a society or individual, they therefore become closer and closer to the center as the scale of their information activities continues to grow. Accordingly, an individual's or society's reliance on such social media information will gradually increase. This highlights the central role of information resources in the media system and the gradual increase in their dependence for individuals and society.

Secondly, public reliance on media messages increases when there is structural conflict or change in society. "The more change and conflict that exists in the social environment, the greater the uncertainty faced by individuals. This uncertainty drives people to actively seek out information in order to understand what the world is really

like, to understand what is happening in society, and thus to relatively reduce uncertainty. In this process, the media system becomes an indispensable information resource that provides a wealth of information, and the media then becomes an important source of information resources for people to obtain and satisfy their needs for understanding the dynamics of society." (Zhuang, 2021). With the rapid development of the Internet, the new media born on the basis of the development of the Internet have a higher degree of audience dependence compared with the traditional media (Lyu, 2012). In recent years, related scholars have put forward the concepts of Internet addiction (Yang, 2004), cell phone social media dependence, Internet behavioral dependence (Hall, 2001), Internet dependence relationship (Patwardhan, 2003) through the study of media dependence theory.

#### 2.1.2 Exploring Community Theory

The theory of community of inquiry originated at the end of the 20th century, when online learning was first emerging, and was first proposed by Canadian scholars Garrison and Anderson in 2000 (Wan, 2020). After the theory was proposed, a large number of scholars studied the theory in detail, and after much research and discussion, the theory eventually became a mature theory. The theory emphasizes deep and meaningful learning experiences through the promotion of collaborative learning and dialogue rich in critical thinking (Ma, 2016). The theory has been profoundly influenced by the community of inquiry theory in the field of educational technology, where online and blended instruction have helped educators design and implement effective online and blended instruction strategies that provide strong guidance for educational practice (Liu, 2022).

The Community of Inquiry Theory contains three important core elements of Cognitive Presence, Teaching Presence, and Social Presence, which are in a relationship of constant influence and facilitation with each other. Ensuring that teachers and learners are fully integrated into the community of inquiry and strengthening their interaction and communication with each other is an important means of facilitating learners' knowledge absorption and comprehensive competence (Ma, 2018).

(i) Cognitive proximity

Cognitive proximity primarily emphasizes the active participation of learners in the process of knowledge discovery in a community of inquiry, where they develop a comprehensive system of understanding by integrating the perspectives and information of individual learners. They are able to draw insights from different perspectives, think about and propose solutions to problems, integrate what they have learned with practice, and continually scrutinize and reflect on problems through practice. This process not only helps to promote the construction of knowledge, but also develops learners' critical thinking skills, enabling them to apply what they have learned in a targeted manner when facing complex situations, thus promoting their own learning and growth (Garrison, 2001).

(ii) Pedagogical presence

Teachers play an important role in the process of pedagogical presence, and are responsible for guiding the learning process of learners in an inquiry-based learning community, facilitating interactive and collaborative behaviors that increase the level of interaction and cognition of learners. Through such guidance, teachers help learners to successfully achieve their learning goals and enhance overall learning outcomes (Garrison, 2001).

(iii) Social presence

Social proximity mainly emphasizes that learners have the ability to communicate, disseminate information and express themselves with other learners in the community. (Lan, 2018). In the established learning community, learners were able to freely express their inner emotions and jointly discuss their perspectives on academic issues, thus promoting open communication, which in turn achieved the goal of mutual learning and common progress. Through social interaction, learners were able to give full play to their ability to express their emotions, exchange opinions with their peers, complete group tasks, and actively participate in learning activities, demonstrating their personal expression and interaction skills, which in turn enhanced the learning effectiveness of teamwork. This open and cordial learning community atmosphere provides an ideal learning environment for learners. Various scholars have different views on the relevance of the three proclivities in their research on the community of inquiry theory.

Huang Xiaoli (2023), in her research on the community of inquiry theory, argued that the three kinds of presence are interrelated and affect each other, and that instructional presence and social presence have a significant effect on cognitive presence, and instructional presence also affects social presence. The learning experience formed by the combination of the three sense of presence is very meaningful, and can be effective for the conceptual understanding of the learning experience created by the learner, and promote the meaningful development of learning (Yang, 2016). Wu et al. (2018) argued that in communities of inquiry, cognitive proximity plays a role in influencing learning when the performance of both pedagogical proximity and social proximity is sufficiently strong.

### 2.1.3 Fear Management Theory of Self-Esteem

Terror Management Theory of Self-Esteem was proposed by Greenberg et al. in 1986. Since self-esteem is an important research content in the field of psychology, researchers in the field have put forward numerous theories about self-esteem, but these self-esteem theories do not fully show the motivation of human beings for self-esteem, and Greenberg et al. proposed the Terror Management Theory of Self-Esteem (TMTSE) from the angle of the psychological analysis (Zhang, Yangyang, 2006). In this context, Greenberg et al. proposed the Terror Management Theory of self-esteem by analyzing psychology from this perspective (Yangyang Zhang, 2006). The Terror Management Theory of self-esteem was the first theory of self-esteem to adopt an empirical orientation (Pyszczynski T, 2004). Fear management theory has been conducted more than 250 related studies in 9 countries until now, and researchers have validated and analyzed the theory from different perspectives, and concluded that fear management theory can be used as an explanation for psychosocial phenomena such as selfishness, depression, and ego-enhancement, which suggests that the fear management theory has a good explanatory and application ability (Zhang, 2006).

The theory suggests that self-esteem is actually an evaluation and understanding of an individual's own value, a feeling that one is a valuable part of this meaningful world (Pyszczynski T, 2004). Zhao and Guo (2006) through their research on the fear management theory of self-esteem concluded that self-esteem is a psychological

mechanism that individuals develop in order to be able to adapt to the social environment, which is expressed in the individual's perception of the significance and value of the environment in which he or she lives as well as the experience of this perception and understanding. Self-esteem is an individual's self-evaluation of his or her own value, and when others affirm the individual's value, the individual perceives himself or herself as a valuable being in the eyes of others. The feeling that one's own existence is meaningful in relation to this society, and this recognized sense of value is effective in alleviating fear (Ren Yu, 2022).

In the study of fear management theory, some scholars have found that according to the fear management theory of self-esteem, self-esteem, as a buffer against anxiety symptoms, can be satisfied from the network (Yang Fuyi, 2004), and people with low self-esteem can obtain short-term compensation by means of the network, but it will lead to the formation of dependence on the network by people with low self-esteem, and when the individual who is dependent on the network begins to try to reduce the dependence on the network but finds it futile, he or she will be able to reduce the dependence on the network and find it futile, and will be able to reduce the dependence on the network. When individuals who are dependent on the Internet try to reduce their dependence on the Internet but find it futile, they will easily feel powerless to get rid of their dependence, which will further have a serious negative impact on their self-esteem (Huang, Ji-Ying, 2023).

## 2.2 Social Media Dependency (SMD)

### 2.2.1 Concept and Definition of SMD

In order to explore the phenomenon of over-dependence and inability to get rid of when individuals face social media, scholars in the field have conducted a lot of research on this phenomenon. At present, there are relatively few direct studies on social media dependence at home and abroad, and most of the studies are on social network dependence, microblogging dependence, weibo dependence, short video dependence and so on. Scholars also explain the distinction between social media dependence and social network dependence in the study of college students' social media dependence, and the study emphasizes that social media is a communication



medium using Internet technology, which, in addition to having the characteristics of social interaction, also highlights the characteristics of being a communication tool, while social networks highlight the characteristics of social interaction and networking (Zhang, 2015). Between the two, although there is a common characteristic of audience over-dependence and over-attention, the subject and state emphasized by both are different, and the essence is different.

And microblogging dependence, WeChat dependence, short video dependence, etc., are all one of the branches of social media dependence research, emphasizing the audience's dependence on a typical single social media, which is a further subdivision of social media research. At present, the social media software used by domestic and foreign users is different, the social media software used by foreign users are mostly Twitter, Ins, line, etc., while domestic users use QQ, WeChat and other social communication software, Weibo, Xiaohongshu and other information sharing software and Jieyin and other short video software. According to Zhang (2015), dependence can be understood as a "state of inseparability", so the definition of social media dependence can be described as the psychological dependence on the use of social media. This means that individuals form a strong psychological connection and leaving social media leads to a sense of discomfort or loss. According to Lee (2016), individuals use mobile social media to fulfill their interpersonal needs. The higher the degree of satisfaction, the more significant the individual's dependence on mobile social media and the more important its influence on the individual.

Wu (2014) in his study through a questionnaire designed and developed by himself concluded that the constituent factors of cell phone social media dependence cover five elements: salience, social gain, compulsion, conflict, and withdrawal. It is worth mentioning that gender and age were also found to be important factors influencing the degree of an individual's cell phone social media dependence.

According to He (2017), "social media dependence" (social media dependence), refers to the user's excessive reliance on social media, spending a lot of time and energy in relying on social media to seek physical and psychological satisfaction. When not exposed to the use of social media, users often feel anxious, empty, and desire to use social media physiological desire; and once exposed to the use of social media, users

will feel satisfied, peace of mind and pleasure, forming a kind of addiction to the use of social media dependence behavior. Social media dependence is considered to be a special kind of use behavior that individual audience distinguishes from other social media in the social environment of the Internet (Nguyen and Hoang, 2018). Fan (2023) argues that social media dependence is the fulfillment of one's own needs through the medium and at the same time the medium will correspondingly rely on the customer's use of social media to improve itself. The results of these studies have important implications for our understanding of social media use behavior and dependence characteristics. The summary results of the above are shown in Table 2.1 in the following page.

Table 2.1  
Definition of Social Media Dependency

Scholars	Definition
Wu (2014)	The components of mobile social media dependence cover five elements: salience, social gain, compulsion, conflict, and withdrawal.
Zhang (2015)	Described as a state of psychological dependence on the use of social media that cannot be separated from it
Li (2016)	Individuals use mobile social media to fulfill their interpersonal needs
Ho (2017)	Users are overly dependent on social media and spend a great deal of time and energy relying on social media for physical and psychological fulfillment.
Ruan and Huang (2018)	In the social environment of the Internet, the individual audience is differentiated from other social media by a special use behavior.
Fan (2023)	Social media dependency is the use of a medium to satisfy one's own needs and the medium's dependency on the customer's use of social media for its own fulfillment.

*Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023*

Various scholars have defined social media dependence in terms of the factors that constitute social media dependence, psychological dependence state, and fulfillment needs, which provide relevant theoretical support for various studies. This researcher synthesizes the definitions of social media dependence proposed by various scholars and combines them with the research background and purpose of this study, and

proposes that social media dependence is defined as the high dependence on social media platforms by individual audiences to satisfy their needs for socializing and acquiring information,.

### 2.2.2 Theories and scales related to social media dependence

The concept of social media dependence emerged from media dependence theory, which suggests that social media users not only use social media to maintain existing social relationships, but also utilize the information resources provided by social media to satisfy their personal social needs (Ball-Rokeach, DeFleur, 1976). The focus of this study is on the relationship between the individual audience and the medium, and the information resources generated by the medium are uniquely appealing and desirable to the audience, and as the audience becomes more intense in these needs, they become more dependent on social media. With the development of new media, audiences rely on new media not only as a social tool, but also as an information resource, entertainment and self-expression, Lee (2012), in his study of new media from the perspective of media dependency theory, takes the case of users commenting on Michael Jackson's death through YouTube as an example, and finds that users rely on social media to satisfy their needs for emotional content. media information content to fulfill their emotional needs.

College students are relatively weak in terms of their ability to discern information and control their behavior, which makes the phenomenon of social media dependence more common among college students (Hu, 2021). A large number of studies have shown that college students' social ways, social willingness and social needs are gradually influenced by social media, and are changing the way of thinking of the college audience. This study intends to analyze the causes of college students' dependence on social media, and explore ways to alleviate college students' dependence on social media, combined with media dependence theory, in today's era when the Internet is so developed, social media has become an indispensable part of college students, and the media's influence on college students is universal, but each college student receives different influences, and those who have strong needs for the Those who have a strong need for the media will be more dependent on the media, and their

influence will be greater. Therefore, the media dependence theory provides a reliable theoretical support for the study of college students' social media dependence.

In this study, the social media dependence scale developed by Wu Zuhong (2014) and the social media dependence scale developed by Guan Yue (2023) were integrated to develop a new social media dependence scale that is consistent with the present study, and to measure college students' social media dependence. The concept of social media dependence emerged from media dependence theory, which suggests that social media users not only use social media to maintain existing social relationships, but also utilize the information resources provided by social media to satisfy their personal social needs (Ball-Rokeach, DeFleur, 1976). The focus of this study is on the relationship between the individual audience and the medium, and the information resources generated by the medium are uniquely appealing and desirable to the audience, and as the audience becomes more intense in these needs, they become more dependent on social media. With the development of new media, audiences rely on new media not only as a social tool, but also as an information resource, entertainment and self-expression, Lee (2012), in his study of new media from the perspective of media dependency theory, takes the case of users commenting on Michael Jackson's death through YouTube as an example, and finds that users rely on social media to satisfy their needs for emotional content. media information content to fulfill their emotional needs.

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### 2.2.3 Studies related to social media dependency

According to Jin (2017), there are eight manifestations of individual audience's dependence on social media, (1) Individual audience always wants to open social media; (2) Individual audience very easily interrupts their work or what they are doing to use social media; (3) Individual audience's expectation of the time and frequency of using social media is more than the time and frequency of using social media before using it; (4) Individual audience regularly checks the notification of information from social media and is eager to get information and are afraid of missing information; (5) they do not feel satisfied when using social media, and even then they do not put down social media; (6) they tend to delay some normal things (e.g., work, study, etc.) because of using social media; (7) individual audience members try to stop using social media, but the effect is not obvious; and (8) individual audience members feel anxious and discomfort. When a social media user fulfills three of these manifestations, then the user has a dependency on social media, and when five or more manifestations are fulfilled, then the user has a dependency on social media. Gong (2023) conducted a study on the impact of social media dependence on the mental health of college students, and the scholar concluded that social media has attracted a large number of student users, especially college students, who show a strong interest in the various apps, user-generated content, and interactive communication. In addition to the use of technology, college students have shown great enthusiasm for social media in terms of creating a virtual self-image. They aspire to build a unique identity in the digital space, while also seeking a sense of belonging and seeking entertaining experiences through social media. As their over-reliance on social media increases, college students may gradually change their views on self-identity. This may make them more sensitive and vulnerable in their

personalities, and may weaken their connection to real-world peers and social support. In addition, the eye-catching sensory stimulation and entertainment elements of social media can easily capture the limited attention resources of college students, making it easier for them to get caught up in fast-food learning styles, which may lead to a stronger demand for lower-level needs.

## 2.3 Online Learning Effectiveness (OLE)

### 2.3.1 Concept and Definition of OLE

Online learning has only come into the public eye as a result of the outbreak of the epidemic and schools are switching to online learning methods. The concept of e-learning was proposed by Hiltz (1994), who believed that e-learning is a method of virtual learning on the Internet, where students can share learning materials to obtain the same learning benefits as face-to-face learning through e-learning. Compared with traditional offline face-to-face learning, e-learning has the characteristics of "no space and time constraints, can meet individualized needs and high frequency of interaction between teachers and students" (Shen & Wu, 2020).

Learning effectiveness refers to the indicators that measure the learning knowledge, skills and experience acquired by learners in the process of learning. The main indicators to measure learning effectiveness are learning performance, learning self-assessment and learning achievement (Sun, 2014).

Online learning effectiveness refers to the learning outcomes achieved by students after completing an online learning program (Ao, 2016). Some scholars believe that online learning effectiveness refers to the enhancement of students' abilities through the process of learning using online connected digital media (Hongsuchon et al, 2022). Liu (2022) defines online learning effectiveness as being the "basic knowledge, key competencies, and comprehensive literacy" that learners acquire through online learning; the scholar believes that "basic knowledge" is the knowledge that needs to be mastered through online learning (concepts, According to the scholar, "basic knowledge" is the knowledge (concepts, methods, knowledge, etc.) that needs to be mastered through online learning, "key competencies" are the competencies that should be mastered through online learning (the ability to use information tools, the ability to

conduct cooperative inquiry, the ability to learn independently, etc.), and "comprehensive literacy" is the enhancement of self-cultivation in the process of online learning. The summary results of the above contents are shown in Table 2.2 in the following page.

Table 2.2  
Definition of OLE

Scholars	Definition
Ao (2016)	Learning outcomes achieved by students after completing an online learning program
Hongsuchon et al. (2022)	Refers to the enhancement of students' competencies through the use of online connected digital media for learning.
Liu (2022)	Basic Knowledge, Key Competencies and Comprehensive Literacy" acquired by learners through online learning.

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

By understanding the definition of online learning effectiveness by various scholars and combining it with the research questions of this study, this researcher defines online learning effectiveness as the learning effectiveness obtained by learners through online learning through the combination of the two concepts of online learning and learning effectiveness mentioned above.

### 2.3.2 Theories and scales related to online learning effectiveness

The Community of Inquiry Theory states that deep and meaningful learning can be achieved by supporting collaborative learning and leading reflective critical conversations (Yang, 2016). Scholars believe that the theory's elements consisting of pedagogical proximity, cognitive proximity, and social proximity have a positive impact on online learning effectiveness. Scholar Huang Xiaoli (2023) showed through relevant research that the importance of pedagogical presence lies in how teachers plan activities and maintain relationships with students, which directly affects students' engagement and effectiveness in learning; cognitive presence helps students construct and understand what they have learned, as well as stimulating their interest in learning; and social presence supports students to engage in dialog, negotiation, and

communication with peers, which helps to maintain the learners' positive attitudes and enthusiasm for learning.

In this study, the online learning effectiveness scale developed by Liu (2022) and the online learning effectiveness scale developed by Shen, Zhonghua, and Wu (2020) were integrated to develop a new online learning effectiveness scale that meets the needs of this study to measure online learning effectiveness.

Liu (2022) used the community of inquiry theory as the main theoretical guide in his study on the enhancement of college students' online learning effectiveness, and developed a scale on online learning effectiveness and community of inquiry, which was mainly divided into a reference to the well-established Community of Inquiry Scale and Online Learning Effectiveness Scale. Regarding the online learning scale, the research content of online learning effectiveness is mainly divided into three aspects of "basic knowledge, key competencies and comprehensive literacy" for investigation. The KMO value of the scale is more than 0.6, and the Cronbach's alpha reliability coefficient is 0.989, which is good.

Shen (2020) studied the effectiveness and satisfaction of college students' online learning, taking constructivist learning theory as the theoretical guide, and designed a learning effectiveness and satisfaction scale based on the survey questions of Online Learning Report. The scale is mainly divided into five parts: knowledge construction, teacher-student interaction, information processing, learning effectiveness and learning satisfaction. After the reliability and validity test, the scale has good reliability and validity. In this study, one question in the knowledge construction was selected from the scale, which "can be replayed repeatedly and is convenient for knowledge review and consolidation", and was modified and compiled into the scale. .

### 2.3.3 Research related to Online Learning Effectiveness

At present, online learning has become one of the main learning modes of college student groups, and the concept of online learning effectiveness has attracted extensive attention and research from scholars. Sun (2014) pointed out in his study on the impact of online learning environment on students' learning effectiveness that in online learning environments, students usually find it difficult to effectively grasp the course



content and learning progress, mainly due to the lack of face-to-face interactions with the instructor and insufficient learning initiative, which affects the effectiveness of learning. Park et al. (2009), in their study on the impact of personal characteristics of learners on the effectiveness of online learning, used 147 online course learners from a Midwestern university as the subjects of the study. Park et al. (2009) investigated whether learners' personal characteristics have an impact on their online learning effectiveness by taking 147 online course learners from a Midwestern university as the research subjects, and found that personal characteristics have a predictive effect on learners' online learning effectiveness.

## 2.4 Self-Esteem (SE)

### 2.4.1 Concept and Definition of SE

Self-esteem is the most important manifestation of a person's mental health, and scholars in various fields have conducted quite a lot of research on self-esteem, with different definitions of self-esteem.

Foreign scholars Rosenberg (1979) through research that self-esteem includes the individual's feelings about their own value and acceptance, covering emotional, motivational and cognitive elements. Robson (1988) that self-esteem is the psychological manifestation of satisfaction and self-acceptance. Self-acceptance focuses on others' affirmation of one's attractiveness, self-worth, competence, and competitiveness. It has been suggested that self-esteem is formed from when an individual has an interactive experience with others and that self-esteem arises without the role of others (Thompson, 2007). Robson emphasized the importance of self-esteem in his study as a sense of satisfaction and intrinsic self-acceptance that stems from the affirmation of others. This self-acceptance encompasses the individual's attractiveness in the eyes of others, a sense of self-worth, and recognition in terms of competition and competence (Robson, 1988). According to Rosenberg, self-esteem can be viewed as an individual's sense of self-worth, acceptance, and domain-independent self-esteem. Different components such as emotion, motivation and cognition work together in the formation and development of self-esteem, which in turn plays an important role in an individual's mental health and behavioral performance (Rosenberg, 1979).

Domestic scholars and academics Zhu Zhixian (1989) believe that self-esteem is a reflection of an individual's self-esteem needs and social evaluation relationship. The editor-in-chief, Lin Chongde, pointed out in his book *Developmental Psychology* (1995) that self-esteem is a reflection of the interrelationship between social appraisal and the individual's need for self-esteem. Later on, self-esteem was defined again in *Developmental Psychology* (2018), where it is considered to be the evaluative part of self-consciousness and represents the experience of self-relationships related to the need for self-esteem. According to Zhang (2002), self-esteem is a positive emotional experience of the self that a person obtains in society, and self-esteem consists of two parts: self-efficacy (self-competence) and self-acceptance (self-love). According to Lin et al. (2003), self-esteem is at the center of an individual's psychological well-being, and self-esteem correlates with measures of psychological well-being, suggesting that self-esteem is a more appropriate indicator of psychological well-being than emotion. Huang et al. (2003) suggest that self-esteem is an internal feeling generated and shaped by an individual's evaluation of the self, which covers the emotional experience of self-valuing, self-loving, and self-respecting, as well as the need for respect and recognition from others, groups, and society. Self-esteem is a value judgment of individual self-perception and a positive emotional experience of self-worth and importance (Wang, 2006). By combining other scholars' definitions of self-esteem, scholars believe that self-esteem is the attitude of an individual when evaluating his or her own value and ability based on personal experience, which affects the behavior of the individual in the state at the time (Liu, 2023). The summarized results of the above are shown in Table 2.3 below.

Table 2.3

Definition of Self-Esteem

Scholars	Definition
Rosenberg (1979)	Self-esteem consists of an individual's feelings of self-worth and acceptance and encompasses emotional, motivational and cognitive elements.
Robson (1988)	Self-esteem is a psychological manifestation of fulfillment and self-acceptance, and self-acceptance is primarily an affirmation by others of one's own attractiveness, one's own valued abilities and competitiveness.
Thompson (2007)	Self-esteem is formed when an individual experiences interaction with others, and self-esteem is created without the role of others.
Zhu (1989)	Self-esteem is a reflection of the relationship between the individual's self-esteem needs and social evaluation.
Lin (1995)	Self-esteem is a reflection of the interrelationship between social appraisal and the individual's need for self-esteem.
Lin (2018)	Self-esteem is an evaluative part of self-consciousness, an experience of self-attitude linked to the need for self-esteem.
Zhang (2002)	Self-esteem is a positive emotional experience of the self that an individual gains in society.
Lin et al. (2003)	Self-esteem is central to an individual's psychological well-being.
Huang et al. (2003)	Self-esteem is an internal feeling generated and shaped by the individual's evaluation of the self, encompassing the emotional experience of self-valuing, self-loving, and self-respecting, as well as the need for respect and recognition from others, groups, and society.
Wang (2006)	Self-esteem is a value judgment of individual self-perception, a positive emotional experience of self-worth and importance.
Liu (2023)	Self-esteem is the attitude of an individual when evaluating his or her own value and ability based on personal experience, which affects the behavior of the individual in the current state.

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

In summary, combined with previous research definitions of self-esteem by other scholars, this study defines self-esteem as an individual's evaluation and recognition of his or her own abilities and values, and an acceptance and positive state of mind toward others' evaluation of his or her own abilities and values. It is an important part of promoting individual mental health.

#### 2.4.2 Theories and scales related to self-esteem

The fear management theory of self-esteem views self-esteem as an individual's deep awareness of the meaning of life and intrinsic value of his or her existence (Pyszczynski T, 2004). It reflects the level of self-esteem, respect and acceptance that individuals have for themselves. The theory proposes the concepts of "anxiety reducer" and "mortality salience", which refers to the fact that an individual's self-esteem has a moderating effect on his or her mental health and can reduce anxiety for the individual. The concept of "anxiety reducer" and "death salience" refers to the fact that every individual has an innate fear of death and believes that death is inevitable, so in order to alleviate their fear, individuals will try to raise their self-esteem level as much as possible (Zhang, 2006). ). This theory provides effective theoretical help for this research to study college students' self-esteem in depth.

The scale for the study of self-esteem in this research is based on the Self-Esteem Scale (Rosenberg, 1965), which was developed by Rosenberg in 1965 and modified on the basis of this scale. The original scale consisted of a total of 10 questions and utilized a four-point scale, which has a high reliability and has been followed by numerous researchers in their studies. In the present study, 9 questions of the scale were used for the survey and changed to a 5-point scale (strongly disagree, disagree, generally, agree, strongly agree).

#### 2.4.3 Studies related to self-esteem

Zhang (2019) through the study of self-esteem, the scholar understood self-esteem as the overall feeling of value and ability, the feeling of ability is a kind of judgment of the self ability of the individual in the face of a variety of pressures and challenges from life; the feeling of value is based on the feeling of the individual for the ability, and only the feeling of the ability that is recognized by the society can form the feeling of value. Scholar Liu (2017) in the study of the development trend of college students' self-esteem level, through the study shows that with the increase of college students' education time, the level of college students' self-esteem is also increasing, and college students' sense of self-esteem is in a good development trend. At the same time, some scholars believe that there is a grade difference in college students' self-esteem, from

freshman year to junior year, the level of self-esteem is in an upward stage, and senior year will be relatively lower. This is because freshmen are in the stage of exploring the surrounding environment, and then the level of self-esteem gradually rises as they adapt to the surrounding environment, while fourth-year college students have lower self-esteem because they are about to graduate, and the drastic increase in the pressure of life and social pressure will make them doubt their own ability (Zhang, 2019).

## 2.5 Correlations and Research Hypotheses among SMD, OLE and SE

### 2.5.1 Current status and research hypotheses on SME, OLE and SE

Zhang (2015) analyzed through relevant studies and concluded that the overall dependence of college students on social media is moderate and does not affect the daily life of college students. Niu Jingran (2021) concluded that college students generally have different degrees of dependence on social media, and some of them are more strongly dependent on social media.

Xie (2014), in his study of college students' social media dependence on academic procrastination, found that the phenomenon of academic procrastination is more common among college students, and that social media dependence is the main component of college students' academic procrastination.

Wang (2020) concluded that the level of self-esteem of the male group was significantly higher than that of the female group. In the process of socializing, women are more concerned about how others evaluate them than men, and the fear of negative evaluation is higher than that of men, so the level of self-esteem of women is lower than that of men (Ren, 2022). To summarize, this researcher proposes relevant research hypotheses:

H1a: The average status quo of social media dependence of college students is moderately high.

H1b: The average status quo of online learning effectiveness of college students is a medium level.

H1c: The average status of college students' self-esteem is medium level.◦

### 2.5.2 Demographic Variables among SMD, OLE and SE

Some scholars believe that there is a difference between gender and self-esteem, and studies have shown that women's self-esteem is slightly higher than men's, which is different from the view that women's self-esteem is lower than men's according to Yao et al. (2011), who believe that it is due to the weakening of the traditional view of "men are self-reliant and women are dependent" in modern society. Meanwhile, the scholar's research shows that self-esteem is related to grade level. The level of self-esteem of college students from freshman to junior is on the rise (Liu, 2016), which is due to the fact that college students are adapting to their surroundings from the unfamiliar environment, while the level of self-esteem in the fourth year of college declines compared to the third year of college, due to the fact that graduation is about to be faced with the pressure of the society, which leads to the skepticism about the self-efficacy of the students (Zhang, 2019).

Wu (2014) argued that the degree of social media dependence is related to gender, and the scholar concluded that the degree of social media dependence of males is higher than that of females, which is believed to be due to the fact that males have a stronger need to socialize through social media compared to females, and the more hours of use of social media, which in turn leads to a greater degree of social media dependence. Zhang (2015), in a study on the measurement of social media dependence of college students, found that the social media dependence of college students in the dimension of compulsive behavior, the degree of dependence of freshmen and seniors is the lowest, and juniors are the highest, which the scholar believes that it is due to the fact that freshmen have just finished high school life, and have not been exposed to social media for a long time and have not formed a dependence, and juniors are too busy with their schoolwork to indulge in social media. Qiu (2019) argues that there is no significant relationship between the length of social media use and the grade level of the audience, while the gender of the audience has a significant relationship with the length of social media use, and the female audience is much higher than the male audience in terms of the length of social media use. In summary, this researcher proposes relevant research hypotheses:

H2a: There is no significant difference between the background variable gender on social media dependence, online learning effectiveness and self-esteem.

H2b: There is no significant difference in the background variable grade on social media dependence, online learning effectiveness and self-esteem.

H2c: There is a significant difference in the background variable social media use duration on social media dependence, online learning effectiveness and self-esteem.

### 2.5.3 Correlations among SMD, OLE and SE

By reviewing a large amount of literature, this researcher found that there is almost no research on the direct correlation between social media dependence and online learning effectiveness by scholars in various fields, and some scholars have studied the effect of social media dependence on learning procrastination. Learning procrastination is the behavior of students postponing or delaying major learning tasks. Solution (2014) argues that long-term study procrastination behavior makes students' academic performance decline, and college students' use of social media aggravates the degree of study procrastination among students in the social media-dependent group. Through relevant research, it has been shown that students' social media dependence is one of the main influencing factors that lead to academic procrastination, which in turn affects students' learning effectiveness, and in the course of the research, it has been found that self-control can effectively slow down the phenomenon of academic procrastination among students (Gao, 2019).

Scholars have found through research that students who are using social media for the weekly time spent on study is lower than students who do not apply social media, which negatively affects the students' learning engagement and learning effectiveness (Kirscher pa, 2010); Gao (2019) believes that college students' procrastination behaviors are due to the college students' dependence on social media.

Some studies have shown that self-esteem level significantly affects college students' commitment to learning, and a decrease in commitment to learning leads to a decrease in learning effectiveness. Li et al. (2018) pointed out through their study that students with good self-esteem levels have higher motivation and purposefulness for learning compared to those with poor performance, and therefore, these students with good self-esteem levels are more committed to learning, and their learning effectiveness is also relatively better. Therefore, these students with good levels of self-esteem are

more engaged in learning and have better learning outcomes. When students' self-esteem is affected, their mood will be very low, and their academic performance (learning effectiveness) will decline significantly during that time, but students can improve their self-esteem, mood, and motivation for learning through self-regulation, and ultimately, their learning effectiveness will be relatively improved (Wang, 2022).

Research on social media dependence and self-esteem is quite extensive, and many studies have shown that there is a relationship between social media dependence and individual's self-esteem. Zhao and Liu (2019) showed through their research that the level of self-esteem can be reversed to understand the degree of social media dependence of individuals, and the higher the level of social media dependence, the weaker the performance of their self-regulation ability and self-control ability than the individuals with a low level of social media dependence. Kong et al. (2021) used WeChat as an example for their study and found that the more frequently and intensively individuals use WeChat, the lower their self-esteem level accordingly. Through the study of scholar Huang Jiying (2023), it can be seen that the higher the social media dependence of a college student, the higher the likelihood that the student's low self-esteem will be exacerbated, and the degree of social media dependence will be exacerbated.

Cao (2021) argued that negative emotions may trigger a tendency to ruminate thinking, which leads to an increase in the frequency of media use, which may be detrimental to college students' physiological and psychological health due to an over-reliance on social media. In summary, this researcher proposes relevant research hypotheses:

H3a: There is a negative correlation between college students' social media dependence and online learning effectiveness

H3b: There is a negative correlation between college students' social media dependence and self-esteem

H3c: There is a positive correlation between online learning effectiveness and self-esteem of college students



## **CHAPTER 3**

### **METHODOLOGY**

Based on media dependence theory, community of inquiry theory and fear management theory of self-esteem, this study explores the relationship between social media dependence of college students and the influence of online learning effectiveness and self-esteem by designing a questionnaire and recovering the data through a survey method and analyzing it using quantitative statistics. In this regard, this chapter will be divided into seven subsections for detailed explanation, subsection one is the research structure diagram of this study, subsection two is the description of the research object of this study, subsection three is the questionnaire method, subsection four is the operational definition and measurement scale, subsection five is the sampling method, subsection six is the pre-testing analysis of the items, and subsection seven is the method of analyzing the data.

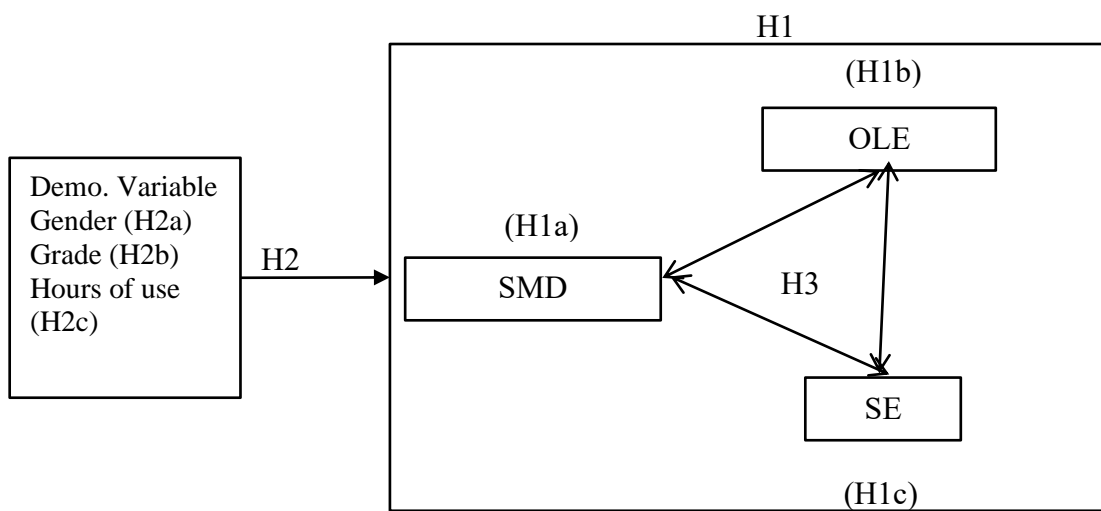
#### **3.1 Research Framework**

In accordance with the research questions and objectives as well as the research hypotheses of this study, a research framework diagram was constructed based on the three variables of this study, in which the gender, grade level, and length of time of social media use of college students were used as background variables in the model of this study, and the independent variable, social media dependence, which is the phenomenon of dependence that an individual develops on social media, was used as the dependent variable. Online learning effectiveness, i.e., the learning effect that students and seekers obtain through online learning and self-esteem, i.e., an internal feeling that is generated and shaped when individuals evaluate themselves, are used as dependent variables. Exploring the current status of social media dependence and online learning effectiveness and self-esteem, so there is hypothesis 1, the current status of social media dependence, online learning effectiveness and self-esteem among college students; analyzing the background variables and the variability of social media dependence, online learning effectiveness, and self-esteem, so there is hypothesis 2, the gender and the length of time of social media use have a significant difference in social

media dependence, online learning effectiveness and self-esteem. Grade has no significant difference with social media dependence, online learning effectiveness and self-esteem; to explore the relationship between the three variables of social media dependence and online learning effectiveness and self-esteem among college students, so there is hypothesis 3, how social media dependence of college students is related to online learning effectiveness and self-esteem as shown in Figure 3.1.

Figure 3.1

Research Framework



Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

### 3.2 Research Sample

In the era of digital information, one of the main users of social media is college students (China Internet Network Information Center, 2023), and social media is an important way for college students to socialize and exchange information in their daily lives. The use of social media is an important means of socializing and information exchange in the daily life of college students. College students' habits of using social media and their ways of learning are different from those of other groups, and the development of mental health in college students' stage is a critical period of

development for individuals, and the use of social media is closely related to the development of mental health, so that the study of college students can provide a more comprehensive understanding of the effects of reliance on social media on the individual's learning effectiveness and mental health, and help optimize the current educational environment. It can help optimize the current educational environment and promote the psychological growth of college students.

This study takes college students of a university in Jiangxi Province as the object of this study. The researcher is familiar with this university, and a number of friends studying in this university have strong social media dependence, which has a certain impact on their study and real-life social life, so the researcher decides to carry out a relevant survey and research on college students in this university. There are 5469 undergraduate students in this university, and many of their friends are studying in this university, which facilitates this researcher's questionnaire placement and collection.

### 3.3 Questionnaire Survey Method

The questionnaire method is a scientific research method widely used in major fields of study, and it is used by various scholars to collect a large amount of data and analyze specified questions. The researcher can design a series of relevant questions to form a scale by combining the research questions and hypotheses on his own, or combine the well-performing basic scales previously developed or adapted by scholars in various fields, and modify some of the corresponding questions on the basis of this to meet the research. A certain number of research subjects are selected for pre-survey to check whether the reliability of the designed scale is up to the standard, and finally these relevant questions are issued to the researcher's research subjects in the form of formal questionnaires so that their attitudes and ideas can be obtained through the questionnaires filled out by the research subjects. The questionnaire of this study is to measure the social media dependence, online learning effectiveness and self-esteem of college students enrolled in a university in Jiangxi Province, and to explore the relationship between the variables through the results of the survey.

### 3.4 Operational Definition and Measurement Tool

#### 3.4.1 Demographic Information

The basic personal data considered in this study contains three aspects of gender, grade level and average length of social media use in the past week, which gives an idea of the background variables of the research participants, while the gender of the research participants is a basic but important variable, and there may be differences in the survey data between male and female students as shown in Table 3.1.

Table 3.1

Demographic Information

A. Gender	Male, Female
B. grade level	Freshman, Sophomore, Junior, Senior
C. Average length of social media use in the past week	Less than 1 hour, 1~2 hours, 3~4 hours, 5~6 hours, more than 6 hours

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

### 3.4.2 Social Media Dependency

#### A. Operational Definition

In the perspective of media dependence theory, the research on social media dependence considers the audience's cognition, emotion and behavior as the main factors of the audience's dependence on social media. In the study of Guan (2020), it is stated that the higher the audience's dependence on social media, the more likely that the information content of the medium will produce changes in the cognitive, affective, and behavioral aspects of the audience. The questionnaire survey of social media dependence in this study contains two dimensions: behavioral predisposition and emotional dependence. In terms of operationalization, this researcher is using the arithmetic mean of social media dependence to represent the overall social media dependence scores of this respondents, and the higher the resultant scores, the higher the degree of social media dependence as shown in Table 3.2 in the following page.

Table 3.2  
Social Media Dependency Scale for College Students

Dimension	Item
behavioral tendency	1. I always want to open short mobile videos and have trouble controlling the time I log on to social media
	2. I use mobile video much longer than expected.
	3. I have tried to reduce the use of mobile video, but have not achieved significant results.
	4. I often interrupt what I am doing to study or work and start using mobile video.
	5. I often delay or interrupt my schedule due to the use of mobile video.
emotional dependence	6. I find it difficult to stop using mobile video because I don't find it interesting or satisfying.
	7. I feel uncomfortable, anxious, or uneasy when I cannot use mobile video.
	8. I use mobile social media to calm myself when I have some problems in my life.

Source : Guan, Yue (2023). Social availability and media dependence of mobile short videos under the influence of online social support [Master's thesis, Beijing Foreign Studies University], China Knowledge [https://kns.cnki.net/ KCMS/detail /detail.aspx?dbname=CMFDTEMP&file name=1023055 682.nh](https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFDTEMP&file name=1023055 682.nh) and Wu, Zuhong (2014). Research on questionnaire development and characteristics of college students' cell phone social media dependence [Master's thesis, Southwest University], <https://kns.cnki.net/KCMS/detail/ detail.aspx?dbname=CMFD201402&filename=1014261397.nh>

## B. Research Tool

For the measurement of social media dependence in this study, we directly adopted the social media dependence scale with seven questions, which was referenced and modified in Guan's (2020) study on the relationship between social availability, online social support, and social media dependence; and we also referenced the college students' cell phone social media dependence scale compiled by Wu (2014), and selected one of the questions from the pool of questions "I will use cell phone social media to calm my emotions when I encounter some troubles in life" as one of the questions in the variable emotional dependence. Guan (2020) showed good reliability by analyzing the reliability of the scale, which had a Cronbach's alpha coefficient of 0.841, which is greater than 0.7 for the social media dependence dimension, and a KMO

value of 0.945, which is greater than 0.7, with a significance of  $P=0.00$ , which is less than 0.05, which is good validity. It shows that the reliability and validity of the questionnaire are good.

### 3.4.3 Online Learning Effectiveness

#### A.Operational Defintion

The effectiveness of online learning consists of three components: basic knowledge, key competencies and comprehensive literacy (Liu, 2022), mastery and expression of acquired knowledge, acquisition of skills and application of competencies, cooperation with the team, and improvement of self-literacy. The effectiveness of online learning is measured by self-assessment of learning, learning performance and learning achievement (Sun, 2014). The questionnaire for the online learning effectiveness of this study, combined with other scholars' studies, contains knowledge retention and recall, expression and interpretation skills, application and prediction skills, critical evaluation and analytical skills, technological competence and information literacy, professional and collaborative skills, and ethical and civic awareness, seven dimensions. In terms of operationalization, this researcher is using the arithmetic mean of online learning effectiveness to represent the score of the overall online learning effectiveness of the current respondents, and the results show that the higher the score, the higher the online learning effectiveness is represented as shown in Table 3.3 below.

Table 3.3

Online Learning Effectiveness Scale for College Students

Dimension	Item
Knowledge retention and recall	1. through online learning, I can memorize the knowledge of materials learned in this chapter
	2. Through online learning, I can narrate and memorize certain knowledge.
	3. Through e-learning, I can play back the material over and over again, so that I can review and consolidate my knowledge.
Expressive and interpretive skills	4. Through e-learning, I can organize and express the content and knowledge taught in words that make sense to me.
	5. Through e-learning, I can explain and illustrate the information communicated to me.
	6. Through e-learning, I can articulate in detail the underlying theories and principles of what I have learned.
	7. Through e-learning, I can break down what I have learned and identify the connections between them.
	8. Through e-learning, I can integrate my fragmented knowledge into a body of knowledge.
Application and forecasting capabilities	9. Through e-learning, I can hypothesize about the future through my current knowledge.
	10. Through e-learning, I can apply the knowledge, rules and methods I have learned into practice.
	11. Through e-learning, I can design a program and apply it to solve a practical problem by reviewing information.
Critical evaluation and analytical skills	12. Through e-learning, I can judge the value of what I have learned, e.g., I can make a rational judgment on the presentation of a certain point of view.
	13. Through e-learning, I can improve my ability to analyze and solve problems.
	14. through online learning, I can improve my critical thinking skills. (Critical thinking is a thinking process that involves interpretation, analysis, evaluation, inference, and reflection. It can be broken down into sub-competencies such as analyzing, evaluating, inferring, and self-regulating.)
	15. through online learning, I can improve my data analysis skills

Table 3.4

Online Learning Effectiveness Scale for College Students(Continuation table)

Dimension	Item
Technological skills and information literacy	16. through online learning, I can improve my ability to use information tools
	17. through online learning, I can improve my ability to learn independently
	18. through online learning, I can improve my ability to understand, access and utilize information and use information technology
	19. Through online learning, I can improve my ability to discover, organize and preserve information, to identify the authenticity of information and judge its value, and to use the media to develop and improve myself.
Professional and collaborative skills	20. Through online learning, I can improve my ability of cooperative inquiry.
	21. Through online learning, I can improve my professional abilities, such as the ability to design and produce multimedia courseware and the ability to design informatized teaching.
	22. Through e-learning, I can improve my information awareness, which can help me solve the problems I encounter in my study and life. (Information awareness refers to people's sensitive feeling, judgment and insight of information.)
Ethics and Citizenship	23. In the process of online learning, I am able to abide by the laws, regulations, provisions of information resources and some conventional rules.
	24. Through online learning, I can broaden my horizons, improve my appreciation, understand the latest scientific and technological developments and cultural developments, collect new knowledge in my specialty in a timely manner, and update my learning content.
	25. Online learning can improve my ideological and political quality.

Source : Shen, Zhonghua and Wu, Daguang (2020). Exploring the Influencing Factors of College Students' Online Learning Effectiveness and Satisfaction - An Empirical Analysis Based on Structural Equation Modeling. *Education Development Research*, (11), 25-36+59.  
<https://doi.org/10.14121/j.cnki.1008-3855.2020.11.006>. and Liu, Bingru (2022). Research on online learning effectiveness improvement strategy for college students based on community of inquiry theory [Master's thesis, Shandong Normal University], China Knowledge



<https://kns.cnki.net/KC MS/detail/detail.aspx?dbname=CMFD202302&filename=1023453345.nh>

## B. Research Tool

For measuring the effectiveness of online learning, this study referred to the relevant scale used in Shen and Wu's (2020) study on the impact of online learning effectiveness and satisfaction of college students, and extracted a question "can be played back repeatedly, so that it is easy to review and consolidate the knowledge" from the independent learning dimension of the knowledge construction part of the scale, modified it and compiled it into the scale of this study. The question was modified and compiled into the scale of this study. This study also directly adopted the online learning effectiveness scale for college students developed by Liu (2022) in his study of online learning effectiveness enhancement strategies for college students based on the community of inquiry theory. Shen and Wu (2020) analyzed the reliability of the scale in the knowledge construction section, and the Cronbach's  $\alpha$  coefficient of the independent learning dimension of the scale was 0.86, which was higher than 0.7, with a cumulative variance contribution of 77.2%, and its factors conformed to the range of 0.62 to 0.89, which showed that the reliability of the scale was good. Liu (2022) analyzed the reliability of the scale within the study by the Cronbach's  $\alpha$  coefficient of the scale was 0.988, which was higher than 0.7, indicating that the scale reliability of the study was good, the KMO value of online learning effectiveness was 0.904 higher than 0.6, and the question-item probability of significance Sig. = 0.000 was less than 0.01 significant level, which fulfilled the conditions of factor analysis which indicates that the validity of the scale is good, summarizing that the scale has good reliability and validity.

### 3.4.4 Self-Esteem

#### A.Operational Definition

Through the definition of self-esteem earlier in this study and other scholars' research on self-esteem, this researcher has extracted several core key points from the definition of self-esteem, which are the three points of self-worth, self-efficacy and competence and self-perception. The questionnaire survey of this study on self-esteem

with college students will be conducted in three dimensions of self-worth, self-efficacy and competence, and self-perception, in terms of operation, this researcher is to use the arithmetic mean of self-esteem to represent the overall self-esteem scores of the current interviewees, and the results show that the higher the scores, the higher the level of self-esteem is represented. As shown in Table 3.4.

Table 3.5  
Self-Esteem Scale for College Students

Dimension	Item
Self-worth	1. i feel like a person who is as valuable as anyone else 2. I think I have many reasons to be proud of myself 3. I have a positive attitude about myself
Self-efficacy and competence	4. in general, I think I am good at a few things 5. I have the ability to do things as well as anyone else 6. I do feel useful in a variety of situations
Self-perception	7. I think I have positive qualities 8. in general, I feel good about myself 9. I have a good opinion of myself

Source: Rosenberg, M. (1965). *Society and the Adolescent Self-Image*. Princeton: Princeton University Press. <https://doi.org/10.1515/9781400876136> . The relationship between self-esteem and college students' risky decision-making: the moderating role of uncertainty [Master's thesis, Tianjin Normal University], China Knowledge <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFDTEMP&filename=1023648802.nh>

## B. Research Instrument

For the measurement of self-esteem in this study, the self-esteem scale developed by Ronsenberg (1965) was used directly, and the scale was divided into three dimensions, self-worth, self-efficacy and competence, and self-perception, with the question, "I think I am capable of doing a lot of things" deleted. The question "I think I am capable of doing a lot of things" was removed, and nine items were finally selected, three for each dimension. The scale is based on a four-point Likert scale, which is labeled as "very much does not meet", "does not meet", "meets", and "very much meets", and this researcher used a four-point Likert scale for the purposes of the study. The present researcher changed the scale to a five-point scale to conform to her own study, with "strongly disagree", "disagree", "generally", "agree" , "Agree" and "Strongly

Agree". The self-esteem scale developed by Ronsenberg was analyzed for reliability, and the analysis showed that the Cronbach's  $\alpha$  coefficient of the scale was 0.862 (Liu Minqian, 2023) which was greater than 0.7, and the reliability of the scale was analyzed to be 0.7. It indicates that the reliability of the scale is good.

### 3.5 Sampling Technique

This study was conducted in September 2023 by distributing questionnaires through the network, using convenience sampling method to conduct the questionnaire survey. First of all, a prediction questionnaire was issued to conduct the survey, Xu & Li (2013) two scholars proposed that the number of predicted subjects of the questionnaire should be selected to predict the questionnaire has the largest number of questions in the subscale, with the number of questions in the subscale of the number of 5-10 times to be issued. Based on the 5-10 times of the number of items proposed by the scholars, it can be seen that 125-250 respondents are needed to fill out the questionnaire. Considering the convenience of distributing and collecting the questionnaires as well as the existence of invalid questionnaires, the researcher estimated that 137 questionnaires would be collected for the prediction analysis, which ensured that the number of valid questionnaires was higher than 125 to achieve the prediction effect. Based on numerous scholars (Anderson et al. 2022; Bautista and Anderson, 2021; Jung, 2021; Kieser, 2020) in the field of statistics, one of the notable considerations in the research process is how the researcher determines the appropriateness of the sample size of the research questionnaire as this has a profound effect on the accuracy of the researcher's study and cost effectiveness has a profound impact. Typically, the optimal sample size is expressed as a percentage of the population, usually between 10% and 15% of the population, not exceeding the limit of 1,000.

To better illustrate this, suppose that in a group with a population of 5,000, 10% would correspond to 500 people, while in a population of 200,000, 20% would correspond to 20,000 participants. However, this exceeds the maximum number allowed. Therefore, in this case, it is recommended to use a sample of 1,000, as this is sufficient to obtain reliable research results. Additional sampling beyond this threshold would become impractical and redundant, as it would result in a high expenditure of

time and financial resources without a corresponding increase in accuracy. The university has a total of 5,469 students, and based on a 10% calculation, the valid sample size for the study should be 550 after removing invalid questionnaires.

### 3.6 Pilot Study

In September 2023, this study utilized an online survey via the Questionnaire Star platform, garnering 133 valid responses from an initial 137, yielding a 97.1% validity rate. Through item analysis, the reliability and validity of the pretest's subscales were evaluated, confirming their appropriateness for this study. The social media dependence subscale, comprising 8 items, demonstrated robust internal consistency with a Cronbach's alpha of 0.862, surpassing the 0.7 threshold indicative of adequacy (Keith S. Taber, 2018). Additionally, its KMO value stood at 0.841, with  $P < 0.001$ , signaling strong validity. Similarly, the online learning effectiveness subscale, with 25 items, and the self-esteem subscale, consisting of 9 items, showed excellent internal consistency, with Cronbach's alphas of 0.905 and 0.861 respectively, and KMO values of 0.854 and 0.889, both with  $P < 0.001$ . These results, detailed in Table 3.5, affirm the scales' reliability and validity.

Table 3.5  
Reliability and Validity Results

Scales	Cronbach's Alpha	KMO	Sig.	Item
SMD	0.862	0.841	0.000	8
OLE	0.905	0.854	0.000	25
SE	0.861	0.889	0.000	9

*Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023*

The CITC test through SPSS shows that for the eight items of the Social Media Dependence Scale, the CITC value is higher than 0.5, which indicates that there is a high correlation between each item of the scale and the reliability performance is good. The summarized results of the above data are shown in Table 3.6 in the following page.

Table 3.6  
Social Media Reliance Pretest CITC Form

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
A1	.690	.838	0.862
A2	.657	.841	0.862
A3	.571	.850	0.862
A4	.642	.842	0.862
A5	.637	.842	0.862
B1	.642	.842	0.862
B2	.622	.845	0.862
B3	.509	.862	0.862

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

The 25 question items of the Online Learning Effectiveness Scale have CITC values higher than 0.5, which indicates that the correlation between each question item of this scale is high and the reliability performance is good. The summarized results of the above data are shown in Table 3.7 below.

Table 3.7  
Online Learning Effectiveness Pretest CITC Form

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
C1	.607	.965	0.905
C2	.673	.964	0.905
C3	.630	.965	0.905
D1	.728	.964	0.905
D2	.777	.963	0.905
D3	.701	.964	0.905
D4	.728	.964	0.905
D5	.706	.964	0.905
E1	.691	.964	0.905
E2	.772	.964	0.905
E3	.773	.964	0.905
F1	.767	.964	0.905

Table 3.7

Online Learning Effectiveness Pretest CITC Form(Continuation table)

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
F2	.788	.963	0.905
F3	.774	.963	0.905
F4	.743	.964	0.905
G1	.711	.964	0.905
G2	.781	.963	0.905
G3	.751	.964	0.905
G4	.800	.963	0.905
H1	.675	.964	0.905
H2	.645	.965	0.905
H3	.729	.964	0.905
I1	.628	.965	0.905
I2	.662	.964	0.905
I3	.608	.965	0.905

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

The nine question items of the self-esteem scale have a CITC value higher than 0.5, which indicates that the correlation between each question item of the scale is high and the reliability performance is good. The summarized results of the above data are shown in Table 3.8 below.

Table 3.8

Self-Esteem Pretest CITC Form

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
J1	.724	.930	0.861
J2	.782	.927	0.861
J3	.788	.926	0.861
K1	.746	.929	0.861
K2	.784	.927	0.861
K3	.742	.929	0.861
L1	.776	.927	0.861
L2	.807	.925	0.861
L3	.678	.933	0.861

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

### 3.7 Data Analysis

The researcher used the software SPSS 25 for Windows as the statistical analysis tool for this study, and the analysis method has descriptive statistical analysis, exploratory factor analysis, confidence analysis, analysis of variance, correlation analysis.

### 3.7.1 Descriptive Analysis

Descriptive statistical analysis is a method of analysis used to understand and identify the basic characteristics and structure of data and is used to do the analysis for the structure of the sample data of this study (Zhang, 2018). This method is used in this study to illustrate the statistical data in terms of mean and standard deviation of each variable to give an overview of the respondents' data. This researcher used descriptive statistical analysis to test the analysis of hypothesis 1 proposed in this study.

### 3.7.2 Exploratory Factor Analysis (EFA)

Exploratory factor analysis is intended to explain the relationship between the variables and to discover the hidden common factors of these variables. According to Qiu (2006), KMO values need to be tested when conducting exploratory factor analysis, and if the KMO value is greater than 0.7 and the significance p is less than 0.00, it is suitable for exploratory factor analysis to analyze the construct validity of the scale. This researcher analyzed the validity test of the research data of this study through exploratory factor analysis.

### 3.7.3 Reliability Analysis

In the SPSS software analysis, the value of Cronbach's alpha coefficient was used to test the reliability of the scales of the variables in the study, when the Cronbach's alpha coefficient is greater than 0.7, it means that the scale has good reliability, and it is best when the value is greater than 0.8, and the closer it is to 1, it means that the higher the reliability is (Taber, 2018). This researcher examined the reliability performance of the research data of this study through reliability analysis.

### 3.7.4 Variance Analysis

Qiu's (2006) research methodology, independent samples t-test should be used for mean comparisons between two groups, while one-way analysis of variance data should be applied for mean comparisons in the case of more than two groups. This researcher used the independent samples t-test to detect college students of different genders. This researcher analyzed the hypothesis 2 proposed in this study by testing it through analysis of variance.

### 3.7.5 Pearson Correlation Analysis

Pearson correlation analysis is mainly used to study the analysis between variables to test the degree of correlation between them. The positive and negative values of its results reflect the positive or negative correlation between the variables (Qiu, 2006). This researcher has used Pearson correlation analysis to find out the significance of the correlation between the independent variable social media dependence and the dependent variables online learning effectiveness and self-esteem. This researcher analyzed the hypothesis 3 proposed in this study by testing it through correlation analysis.



## **CHAPTER 4**

### **RESULTS**

This chapter is a study to analyze the data information after collecting the questionnaire and draw the findings of the study. This chapter is explored in a total of six subsections; the first subsection is the descriptive statistical analysis of the respondents' data obtained from the questionnaire; the second subsection is the reliability analysis of the questionnaire data; the third subsection is the exploratory factor analysis of the questionnaire data; the fourth subsection is the analysis of the contextual variables (gender, grade level, and length of time spent on social media use) on the relationship between social media dependence, online learning effectiveness, and self-esteem; the fifth subsection is the analysis of the correlation between social media dependence and online learning effectiveness, and self-esteem; the sixth subsection is the analysis of variance; the fifth subsection is the correlation analysis between social media dependence and online learning effectiveness and self-esteem among college students; the sixth subsection is the results of testing the research hypotheses.

#### **4.1 Descriptive Analysis**

In this study, the research subjects were selected as freshmen, sophomores, juniors and seniors of a university in Jiangxi Province, and a total of 560 online questionnaires were distributed and recovered, and after screening and deleting 5 invalid questionnaires, there were 555 valid questionnaires. The data of the questionnaires collected in this study showed that the number of male respondents was 210, accounting for 37.84% of the total respondents, and the number of female respondents was 345, accounting for 62.16% of the total respondents. The number of first-year respondents was 134 or 24.14% of the total number of respondents, the number of second-year respondents was 159 or 28.65% of the total number of respondents, the number of third-year respondents was 138 or 24.87% of the total number of respondents, and the number of fourth-year respondents was 124 or 22.34% of the total number of respondents. Among them, in the past week, the number of people who used social media for less

than 1 hour per day on average was 41, accounting for 7.39% of the total number of respondents, the number of people who used social media for 1 to 2 hours was 92, accounting for 16.58% of the total number of respondents, the number of people who used social media for 3 to 4 hours was 192, accounting for 34.59% of the total number of respondents, the number of people who used social media for 5 to 6 hours was 99, accounting for 17.84%, and the number of people with more than 6 hours is 131, accounting for 23.6% of the total number of respondents. The summary results of the above data are shown in Table 4.1 below.

Table 4.1  
Summary of Descriptive Analysis

Demo. Variable	Category	N	Percentage
Gender	Male	210	37.84%
	Female	345	62.16%
Academic Level	Freshman	134	24.14%
	Sophomore	159	28.65%
	Junior	138	24.87%
	Senior	124	22.34%
Average daily social media usage hours	Less than 1 hour	41	7.39%
	1~2 hours	92	16.58%
	3~4 hours	192	34.59%
	5~6 hours	99	17.84%
	More than 6 hours	131	23.6%

*Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023*

In the descriptive statistical analysis of the data studied in this research, the observed indicators for each variable were summed and averaged in order to observe the values of each variable. The study used a five-point Likert scale, where 1 means strongly disagree and 5 means strongly agree. The mean value of social media dependence is 3.76, which is between 3.50 and 4.49, which indicates that the phenomenon of social media dependence among the respondents surveyed in this study is in the middle of the status quo level; the mean value of online learning effectiveness is 3.10, which is between 2.50 and 3.49, which indicates that the respondents surveyed in this study are in the middle of the status quo level of online learning effectiveness; the mean value of self-esteem is 3.07, which is between 2.50 and 3.49; and the mean

value of self esteem is 3.07, which is between 2.50 and 3.49. mean value is 3.07, which is between 2.50-3.49, which indicates that the performance of the respondents surveyed in this study on the level of self-esteem is in the medium level. The summary results of the above data are shown in Table 4.2 below.

Table 4.2  
Mean Scores of All Variables

Variables	Min	Max	Mean
SMD	1	5	3.76
OLE	1	5	3.10
SE	1	5	3.07

Note 1: SMD: Social Media Dependency. OLE: Online Learning Effectiveness; SE: Self-Esteem

Note 2: The data herein is sourced from a compilation independently conducted by the researcher in 2023

#### 4.2 Reliability Analysis

The reliability analysis of this paper is based on Cronbach's alpha reliability value analysis. The analysis results show that the coefficient of Cronbach's  $\alpha$  is 0.918 for the Social Media Dependence Scale, the coefficient of Cronbach's  $\alpha$  is 0.978 for the Online Learning Effectiveness Scale, and the coefficient of Cronbach's  $\alpha$  is 0.954 for the Self-Esteem Scale. The reliabilities of the three scales are all greater than the standard 0.7, which indicates that the three scales have good internal consistency reliabilities, and the reliabilities show good performance, and this study has good reliabilities. The summarized results of the above data are shown in Table 4.3 below.

Table 4.3  
Reliability of All Variables

Variables	Item	Cronbach's $\alpha$
SMD	8	0.918
OLE	25	0.978
SE	9	0.954

Note 1: SMD: Social Media Dependency. OLE: Online Learning Effectiveness; SE: Self-Esteem

Note 2: The data herein is sourced from a compilation independently conducted by the researcher in 2023

CITC data analysis through SPSS was conducted to test the reliability of this

questionnaire in depth, and it can be seen that the CITC values of the eight measurement questions of the Social Media Dependence Scale are higher than 0.5, which indicates that the reliability of each question item of the Social Media Dependence Scale is good and the correlation between them is strong. The summarized results of the above data are shown in Table 4.4 below.

Table 4.4  
CITC of Social Media Dependency Scale

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
A1	.759	.904	0.918
A2	.766	.904	0.918
A3	.752	.905	0.918
A4	.751	.905	0.918
A5	.752	.905	0.918
B1	.795	.901	0.918
B2	.679	.911	0.918
B3	.573	.920	0.918

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

The CITC value of each item of the online learning effectiveness scale is higher than 0.5, which shows that the reliability of each measurement item of the online learning effectiveness scale is good and the correlation between them is strong. The summary results of the above data are shown in Table 4.5 below.

Table 4.5  
CITC of Online Learning Effectiveness Scale

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
C1	.620	.979	0.978
C2	.649	.978	0.978
C3	.695	.978	0.978
D1	.804	.977	0.978

Table 4.5

*CITC of Online Learning Effectiveness Scale(Continuation table)*

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
D2	.831	.977	0.978
D3	.818	.977	0.978
D4	.819	.977	0.978
D5	.814	.977	0.978
E1	.792	.977	0.978
E2	.842	.977	0.978
E3	.820	.977	0.978
F1	.870	.977	0.978
F2	.857	.977	0.978
F3	.857	.977	0.978
F4	.845	.977	0.978
G1	.807	.977	0.978
G2	.819	.977	0.978
G3	.845	.977	0.978
G4	.851	.977	0.978
H1	.806	.977	0.978
H2	.793	.977	0.978
H3	.785	.978	0.978
I1	.728	.978	0.978
I2	.762	.978	0.978
I3	.719	.978	0.978

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

The CITC value of each question item of the Self-Esteem Scale is higher than 0.5, which indicates that the reliability of each measurement item of the Self-Esteem Scale is good and the correlation between them is strong. The summarized results of the above data are shown in Table 4.6 below.

Table 4.6  
CITC of Self-Esteem Scale

	CITC	Cronbach Alpha (After Deletion)	Cronbach's $\alpha$
J1	.777	.950	0.954
J2	.833	.948	0.954
J3	.832	.948	0.954
K1	.841	.947	0.954
K2	.865	.946	0.954
K3	.801	.949	0.954
L1	.815	.948	0.954
L2	.820	.948	0.954
L3	.743	.952	0.954

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

### 4.3 Exploratory Factor Analysis (EFA)

When conducting exploratory factor analysis, a general KMO value greater than 0.9 indicates that the information is well suited for exploratory factor analysis; a KMO value between 0.9 and 0.8 indicates that it is well suited for analysis. The results of the analysis showed that the KMO value of the social media dependence scale was 0.926, which was greater than 0.7, with a significance of 0.000, reaching the significant level; the KMO value of the online learning effectiveness scale was 0.974, which was greater than 0.7, with a significance of 0.000, reaching the significant level; and the KMO value of the self-esteem scale was 0.939, which was greater than 0.7, with a significance of 0.000, reaching the significant level. The KMO values of the three scales are greater than 0.7 and the significance is less than 0.001, which indicates that the validity of the three scales performs well and this study has good validity. The summarized results of the above data are shown in Table 4.7 below.

Table 4.7

Validity Analysis of All Variables

Variables	KMO	Approx. CS.	DF	Bartlett's significance
SMD	0.926	2770.072	28	0.000
OLE	0.974	15691.973	300	0.000
SE	0.939	4660.515	36	0.000

Note 1: SMD: Social Media Dependency. OLE: Online Learning Effectiveness; SE: Self-Esteem

Note 2: The data herein is sourced from a compilation independently conducted by the researcher in 2023

#### 4.4 Analysis of Variance

The background variables were gender, grade level, and duration of social media use, which were analyzed using one-way independent samples ANOVA analysis for comparison. The SPSS data analysis showed that the F-value for gender was 1.444 with a p-value of 0.006, and the research data indicated that different genders had significant differences for social media dependence, online learning effectiveness, and self-esteem; the F-value for grade level was 0.999 with a p-value of 0.491, and the research data indicated that different grade levels did not have significant differences; the F-value for length of social media use is 1.367, with a P-value of 0.017, and the research data indicates that different lengths of social media use have significant differences for social media dependence, online learning effectiveness and self-esteem. The summarized results of the above data are shown in Table 4.8 below.

Table 4.8

Analysis of Variance

Variables	F-Value	Sig.
Gender	1.444	0.006
Academic Level	0.999	0.491
Average daily social media usage hours	1.367	0.017

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

#### 4.5 Pearson Correlation Analysis

Through SPSS data analysis, it can be seen that the correlation coefficient between

social media dependence and online learning effectiveness is -0.032, which indicates that the relationship between these two variables is a negative correlation, which means that respondents with a high score of social media dependence have lower scores in terms of online learning effectiveness, and the more they depend on social media, the worse the online learning effectiveness is, and the opposite is also true; between social media dependence and self-esteem The correlation coefficient between social media dependence and self-esteem is -0.066, which indicates that the two variables are negatively correlated, meaning that respondents with high social media dependence scores have low self-esteem scores, and the more they rely on social media, the worse their self-esteem performance is, and vice versa; the correlation coefficient between online learning effectiveness and self-esteem is 0.439\*\*, indicating that the two scales are positively correlated, meaning that respondents with high online learning effectiveness scores may have lower scores, and the more they rely on social media the worse their online learning effectiveness is, and vice versa. The correlation coefficient between online learning effectiveness and self-esteem is 0.439\*\*, indicating that the two scales are positively correlated, which means that respondents with high scores on online learning effectiveness are likely to perform well in terms of self-esteem; the better the effectiveness of online learning effectiveness is, the better the self-esteem will be, and vice versa. The results of the above data are summarized in Table 4.9 below.

Table 4.9

Summary of Pearson Correlation among All Variables

Variables	SMD	OLE	SE
SMD	1		
OLE	-0.032	1	
SE	-0.066	0.439**	1

Note 1: SMD: Social Media Dependency. OLE: Online Learning Effectiveness; SE: Self-Esteem

Note 2: The data herein is sourced from a compilation independently conducted by the researcher in 2023

#### 4.6 Validation of Research Hypothesis

The previous data analysis shows that descriptive statistics were used to validate the hypotheses of this study H1a: the average status of social media dependence of college students is at a moderate to high level, H1b: the average status of online learning



effectiveness of college students is at a moderate level and H1c: the average status of self-esteem of college students is at a moderate level. The one-way independent sample ANOVA analysis verified that H2a: the background variable gender does not have a significant difference on social media dependence, online learning effectiveness and self-esteem, H2b: the background variable grade level does not have a significant difference on social media dependence, online learning effectiveness and self-esteem, and H2c: the background variable length of social media use does have a significant difference on social media dependence, online learning effectiveness and self-esteem. SPSS correlation analysis was conducted to verify the hypotheses of this study H3a: there is a negative correlation between social media dependence and online learning effectiveness of college students, H3b: there is a negative correlation between social media dependence and self-esteem of college students and H3c: there is a positive correlation between online learning effectiveness and self-esteem of college students. After testing all the research hypotheses are valid. The above results are summarized in Table 4.1 below.

Table 4.10  
Results of Research Hypothesis Validation

Research Hypothesis	Results
RQ1: What is the current status of social media users among college students in China regarding social media dependence, online learning effectiveness and student self-esteem?	
H1a: The average status of college students' social media reliance is moderate to high.	Accept
H1b: The average status of college students' online learning effectiveness is moderate.	Accept
H1c: The average status of college students' self-esteem is moderate	Accept
RQ2: Is there a difference between background variables (gender, grade level, and length of social media use) and social media dependence, online learning effectiveness, and student self-esteem among domestic college students' social media users?	
H2a: There is no significant difference between the background variables gender on social media dependence, online learning effectiveness and self-esteem	Accept
H2b: There is no significant difference between the background variable grade level on social media dependence, online learning effectiveness and self-esteem	Accept
H2c: There is a significant difference between the background variables of social media usage hours on social media dependence, online learning effectiveness and self-esteem.	Accept
RQ3: What is the correlation between social media dependence, online learning effectiveness and students' self-esteem of social media users among college students in China?	
H3a: There is a negative correlation between college students' social media dependence and online learning effectiveness	Accept
H3b: There is a negative correlation between social media dependence and self-esteem of college students.	Accept
H3c: There is a positive correlation between online learning effectiveness and self-esteem among college students	Accept

Note: The data herein is sourced from a compilation independently conducted by the researcher in 2023

## **CHAPTER 5**

### **CONCLUSION AND DISCUSSION**

This section is to discuss the research of this study, which is divided into four subsections, the first subsection is the conclusion and discussion, in this subsection all the findings of this study will be stated and discussed; the second subsection is the research recommendations, in this subsection the corresponding recommendations on the findings of the study, which will provide references for the research scholars afterward; the third subsection is the limitations of the study, in this subsection, it points out the limitations that exist; the fourth subsection is the researcher's summary, in this subsection the summary of this study is conducted.

#### **5.1 Conclusion and Discussion**

Based on the results of the statistical analysis in Chapter 4, this subsection is divided into the following five parts for discussion; the current situation analysis of social media dependence, online learning effectiveness and self-esteem; the analysis of the differences in the background variables (gender, grade level and length of social media use) on the respondents' social media dependence, online learning effectiveness and self-esteem; the influential relationship between social media dependence and online learning effectiveness; the social media dependence and self-esteem Effective relationship between social media dependence and online learning effectiveness; Effective relationship between social media dependence and self-esteem; Effective relationship between self-esteem and online learning effectiveness.

##### **5.1.1 the Current State of Social Media Dependence, Online Learning Effectiveness, and Self-Esteem**

According to the results of the data analysis of college students' social media dependence in Chapter 4, it can be seen that the phenomenon of college students' dependence on social media use presents a medium to high status quo level, which indicates that at present, college students will rely more on social media platforms for social interaction and information acquisition in their daily lives, and that the college

student group's dependence on social media is more serious. This is similar to the results of Niu's (2021) study on college students' social media dependence, which shows that college students generally have different degrees of dependence on social media, and some of them are more significantly dependent on social media, and even experience mood swings, interpersonal conflicts and withdrawal difficulties, and these problems even adversely affect their studies or work. The results of the data analysis of the online learning effectiveness of college students show that the phenomenon of online learning effectiveness of college students presents a medium level of status quo, which indicates that the learning effectiveness of the college student group obtained through online platform learning is not ideal and belongs to a medium level. This is similar to the results of Sun's (2014) study in which this researcher concluded that the improvement in the aspect of students' online learning effectiveness mainly relies on the capability of the online learning platform. The results of analyzing the data on self-esteem can be understood that the phenomenon of self-esteem among college students shows a moderate level of status quo, which indicates that the group of college students performs better in terms of self-esteem.

#### 5.1.2 Differences in SMD, OLE and SE by Gender, Grade Level, and Length of Social Media Use

The findings of this study indicate that there is a significant difference between different genders and length of social media use with social media dependence, online learning effectiveness and self-esteem.

For the gender background variable, there is a significant difference between genders for social media dependence, which is consistent with Wu's (2014) finding that male college students are more dependent on social media than female college students, and the scholar believes that this may be due to the fact that male college students have a stronger need to socialize or obtain information through social media compared to female college students. There is a significant difference between genders in terms of online learning effectiveness, which is consistent with the findings of Shen et al. (2020), who concluded that female college students have higher online learning effectiveness and satisfaction than male college students. There is a significant difference in self-

esteem between genders, which is consistent with the findings of Tao et al. (2011), who found that male college students have higher self-esteem than female college students, and concluded that male self-esteem is higher than female self-esteem to a large extent due to the traditional Chinese cultural gender identity, and that males show more self-esteem and maturity.

For the social media use length background variable, different use lengths have significant differences for social media dependence, online learning effectiveness and self-esteem, but since all the current related studies are only done to analyze the difference between the variables and the demographic variables, there is no related study that analyzes the difference between the social media use lengths and each of the variables.

For the grade background variable, there is no significant difference between different grades for social media dependence, which is consistent with the findings of Niu (2021) and Zhang (2015), who argued that college students in different grades get the self-fulfillment they need on social media; and Zhang (2015), who argued that the overall level of social media dependence of college student groups in terms of the background variable grade does not differences exist. There is no significant difference between different grades for online learning effectiveness, which is consistent with the findings of Guo (2023), who argued that this group of college students has experienced a long period of online learning and has adapted to the mode of online learning, and the experience related to online learning is relatively rich. There is no significant difference between different grades for self-esteem, which is similar to the findings of Wang (2021), who argues that this is related to the development of education in China, and that the pressure of learning can cause college students to have some confusion and disapproval of their own abilities and values. However, this is inconsistent with the conclusions of other scholars, some scholars believe that there is a significant difference in self-esteem between different grades, and that the self-esteem of freshmen and seniors is lower than that of sophomores and juniors.

### 5.1.3 Influential Relationship between SMD and OLE

According to the content of Chapter 4, there is a negative correlation between

social media dependence and online learning effectiveness, which indicates that college students with severe social media dependence have worse learning effectiveness through online learning platforms than those with mild social media dependence, and on the contrary, college students with less severe social media dependence have better learning effectiveness than those with severe social media dependence through online learning platforms. dependence phenomenon. The study of Xie (2014) showed that college students' social media-dependent groups are more inclined to choose avoidance when facing realistic tasks, and they use social media to reduce academic pressure, relieve tension, anxiety and boredom. Although they realize that social media use may lead to academic procrastination, they still rely on social media as a mental comfort when they are tired of studying. Du (2016) illustrated through his study that mobile social media dependence can lead to distraction and occupation of study time among college students, resulting in a decrease in study effectiveness. Gao (2019) scholars' research shows that college students' dependence on cell phone social media can lead to college students' study procrastination phenomenon, which affects college students' study effectiveness, and the researcher found that the improvement of self-control will have a certain effect on college students' study procrastination phenomenon due to the dependence on cell phone social media. The results of this study and those of previous studies show that college students' dependence on social media can lead to distraction, which has a serious impact on their learning effectiveness.

#### 5.1.4 Influential Relationship between SMD and SE

According to the results of this study, the relationship between social media dependence and self-esteem is a negative correlation, which indicates that the performance of self-esteem of college students with severe social media dependence is worse than that of college students with mild social media dependence, and on the contrary, the performance of self-esteem of college students with less severe social media dependence is better. Zhang's (2018) study showed that the self-fulfillment obtained through social media can replace the need for respect and self-fulfillment that cannot be obtained by individuals in the real world, and therefore social media dependence occurs. The results of Huang's (2023) study showed that the higher the

social media dependence, the greater the likelihood of increased low self-esteem performance of the college student group, the scholar believes that low self-esteem performance of college students will lead to increased dependence on social media phenomenon, and low self-esteem performance of college students can be obtained through social media to obtain a short period of self-fulfillment. Combining the findings of this study with the relevant findings of previous scholars, there is a difference between the virtual fulfillment on social media and the self-satisfaction received in the real world, and for the college student groups who have gained more satisfying self-satisfaction and respect on social media than in the real world, it will have a negative impact on self-esteem when everything in the real life doesn't match with what is on social media. This, in turn, leads to an increase in the number of low self-esteem individuals in the college population and a decrease in real-life socialization skills to the point where the college population begins to have a lack of self-esteem in terms of self-efficacy and self-esteem is compromised.

#### 5.1.5 Influential Relationship between SE and OLE

This study found that self-esteem and online learning effectiveness showed a positive correlation, with college students with high levels of self-esteem having high online learning effectiveness, and vice versa, those with low levels of self-esteem having low online learning effectiveness. The findings of this study are consistent with the findings of existing related studies. Feng et al. (2011) showed that those students with high self-esteem usually have positive self-evaluations and emotional experiences about themselves. They excel in their studies as evidenced by a desire for knowledge, concern for test results, and a greater tendency to self-reflect on their experiences of success or failure. These characteristics contributed to their good academic performance, and the feelings and experiences of academic success further enhanced their level of self-esteem. Gala's (2015) study concluded that college students with low self-esteem tend to have difficulty in meeting their basic needs in their academic life, resulting in a lack of autonomy, a lack of willingness to take action, and a lack of a sense of meaning and competence in their tasks. Combining the results of this study with the findings of previous scholars, it is concluded that college students with high

levels of self-esteem have more positive motivation to learn, their pursuit of knowledge is stronger than that of college students with low levels of self-esteem, and they are full of confidence in accomplishing their learning tasks, and they have a good resistance to frustration in the face of difficulties and failures.

## 5.2 Recommendations

The findings of this study suggest that college students' social media dependence has a negative impact on their online learning effectiveness and self-esteem, so colleges and universities and college students should control their use of social media appropriately to reduce their dependence on social media. To address the relationship between social media dependence and online learning effectiveness and self-esteem in this study, the researcher proposes recommendations for both students and universities in this section, for the reference of related research in the field.

### 5.2.1 Undergraduate Perspective

Self-control, self-learning, and self-encouragement are key for college students to mitigate alleviate the negative effects of social media dependence on online learning effectiveness and self-esteem. This study proposes the following research recommendations to address these three key points.

1) Self-control: College students can clearly define the purpose and time limit of social media use, which can be for social needs, information acquisition or entertainment, etc. They can use social media within the defined time to make sure that the use of social media does not interfere with their studies or other important activities; college students can also formulate scientific and effective time management scheduling plans, which include time slots for studying, resting and using social media; they can also develop scientific and effective time management schedules for studying, resting and using social media; and they can make use of social media to reduce the negative impacts of online learning. College students can also make a scientific and effective time management plan, including time periods for studying, resting and using social media; for college students with serious social media dependence, they can also make use of the limiting function of cell phones and social media applications to set the



upper limit of social media use every day, and they will not be able to continue to use it on the same day when the social media use reaches the set limit, which helps them to quit social media dependence in phases and cultivate self-restraint, so as to reduce the over-use of social media.

2) Self-study: college students can limit the social media applications to focus mode when studying, which can reduce the temptation of social media for themselves and create an environment where they can focus on their studies; based on this, college students can also develop the habit of studying at a fixed point in time, which can effectively reduce the interference and distraction from social media; at the same time, college students should learn to participate in the physical social media. At the same time, college students should learn to participate in physical social activities, establish real face-to-face social relationships, learn to get rid of the dependence on social media through real social interaction, improve self-esteem and exercise social skills.

3) Self-encouragement: College students can set some small goals about learning effectiveness and social media usage limitations, and the goals don't have to be set too high in the beginning, and set the corresponding rewards for achieving the goals, which will help college students to improve their self-discipline, and form the habits of positive learning and healthy use of social media; and they should also self-affirm and self-encourage their own successes for their own efforts, so as to have motivation to work hard for development. Motivated to work hard.

### 5.2.2 University Perspective

This researcher puts forward the following suggestions for colleges and universities to improve the social media dependence phenomenon of college students.

1) Carry out mental health education: Colleges and universities can carry out mental health education classes to educate college students about their mental health, and provide psychological counseling for college students in need to improve their self-esteem; and encourage college students to learn self-discipline, improve self-control, and get rid of social media dependence.

2) Encourage face-to-face communication and cooperation: Colleges and universities can organize extracurricular activities to promote face-to-face communication among

college students, encourage college students to express their emotions, improve their narrative ability, establish real social relationships, meet normal social needs, and reduce their dependence on social media.

### 5.3 Limitations

Although this study has carefully examined the relationship between social media dependence and online learning effectiveness and self-esteem, there are still shortcomings in this study.

- 1) The research object of this study is limited to college students of a university in Jiangxi Province, and the limitation of the research object makes the research data of this study also have certain limitations, and to a certain extent, the findings and conclusions of this study are not representative, and their applicability is limited. Future research can expand the scope of the study, not only limited to college students in Jiangxi Province, can be more places as the object of study.
- 2) The research method used in this study is the questionnaire survey method, although the questionnaire survey method is a more commonly used and can quickly obtain the research data needed for the study, but there are still some limitations. Different respondents may have different understandings of the questions in the questionnaire, and differences in respondents' understandings may lead to data bias; at the same time, the questionnaire survey restricts the in-depth understanding of the respondents' views, so the researcher has a certain one-sidedness in the interpretation and verification of respondents' data, which will produce certain bias in the results of this study. Research methods such as face-to-face interviews may be more suitable for digging deeper into the real feelings and views of the respondents, and face-to-face interviews can be used in future research to ensure the accuracy of the research results.

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## Appendix

### Chinese Version Research Questionnaire

亲爱的同学，你好!非常感谢你抽出宝贵的时间参与我们的问卷调查，我们目前正在进行一项关于中国大学生社交媒体使用依赖与在线学习成效以及学生自信心的相关研究，希望能够获得你的支持。请放心，这份问卷只用于学术研究，你的个人信息将被严格保密。如果你对这份调查问卷有任何疑问，请随时联系 2608141732@qq.com。再次感谢你的参与。

注意:本问卷所说的“社交媒体”是指社交应用(不包括手机本身自带电话和短信功能)

#### 第一部分：个人信息

1.你的性别	男	女			
2.你的年级	大一	大二	大三	大四	
3.在过去的一周,你平均每天使用社交媒体的时间是多少	1小时以内	1~2小时	3~4小时	5~6小时	6小时以上

#### 第二部分：正式问题

	非常不同意	不同意	一般	同意	非常同意
4.A1 我总是想打开社交媒体，难以控制使用社交媒体的时间	1	2	3	4	5
5.A2 我使用社交媒体的时间比预期要长很多	1	2	3	4	5
6.A3 我尝试过减少社交媒体的使用，未取得明显成效	1	2	3	4	5
7.A4 我常常中断正在进行的学习或工作，开始使用社交媒体	1	2	3	4	5

8.A5 我经常由于使用社交媒体而拖延或打断原定的时间安排	1	2	3	4	5
9.B1 我察觉到使用社交媒体得不到趣味与满足，但是却难以停止使用	1	2	3	4	5
10.B2 我在无法使用社交媒体时，有不自在、焦躁、不安等情绪	1	2	3	4	5
11.B3 当生活中遇到一些麻烦时我会使用手机社交媒体来平复自己的情绪	1	2	3	4	5
12.C1 通过在线学习，我可以记住本章节所学的知识	1	2	3	4	5
13.C2 通过在线学习，我可以对某些知识点进行叙述、背诵	1	2	3	4	5
14.C3 通过在线学习，我可以反复回放，便于知识复习巩固	1	2	3	4	5
15.D1 通过在线学习，我可以用自己觉得有意义的话语来组织表达所传授的内容和知识	1	2	3	4	5
16.D2 通过在线学习，我可以对所交流的信息进行解释和说明	1	2	3	4	5
17.D3 通过在线学习，我可以详细地阐明所学知识的基础理论和基本原理	1	2	3	4	5
18.D4 通过在线学习，我可以将所学知识进行分解并找出它们之间的联系	1	2	3	4	5
19.D5 通过在线学习，我可以将所学的零碎知识整合为知识体系	1	2	3	4	5
20.E1 通过在线学习，我可以通过目前的知识去推测未来的状况	1	2	3	4	5
21.E2 通过在线学习，我可以将学习到的知识、规则、方法等应用到实践中	1	2	3	4	5
22.E3 通过在线学习，我可以通过查阅资料设计方案并应用方案来解决一个实际问题	1	2	3	4	5
23.F1 通过在线学习，我可以对学习到的知识进行价值评判，例如我可以对某个观点的陈述	1	2	3	4	5
24.F2 通过在线学习，可以提高我分析和解决问题的能力	1	2	3	4	5
25.F3 通过在线学习，可以提高我的批判性思维能力。(批判性思维是一种包含解释、分析、评估、推论、反思等环节的思维过程。可以分解为分析、评估、推论以及自我调节等子能力。)	1	2	3	4	5
26.F4 通过在线学习，可以提高我的数据分析能力	1	2	3	4	5

27.G1 通过在线学习，可以提高我使用信息工具的能力	1	2	3	4	5
28.G2 通过在线学习，可以提高我的自主学习能力	1	2	3	4	5
29.G3 通过在线学习，能够提高我理解、获取、利用信息及利用信息技术的能力	1	2	3	4	5
30.G4 通过在线学习，能够提高我发现信息、组织信息与保存信息的能力，辨别信息的真伪并判断其价值的的能力，利用媒介发展和完善自我的能力	1	2	3	4	5
31.H1 通过在线学习，可以提高我的合作探究能力	1	2	3	4	5
32.H2 通过在线学习，可以提高我的专业能力，例如多媒体课件设计与制作的能力、信息化教学设计能力等	1	2	3	4	5
33.H3 通过在线学习，能够提高我的信息意识，帮助我在学习与生活中解决自己所遇到的问题。(信息意识是指人们对信息敏锐的感受力、判断能力和洞察力。)	1	2	3	4	5
34.I1 在线学习过程中，我能够遵守法律、法规、信息资源提供的规定以及约定俗成的一些规则	1	2	3	4	5
35.I2 通过在线学习，能够拓宽我的视野，提高鉴赏能力，了解最新科技动态和文化动态，及时收集本专业新的知识，更新学习内容	1	2	3	4	5
36.I3 在线学习能够提高我的思想政治素养	1	2	3	4	5
37.J1 我觉得自己是一个和其他人一样有价值的人	1	2	3	4	5
38.J2 我想我有很多理由为自己感到骄傲	1	2	3	4	5
39.J3 我对自己持积极的态度	1	2	3	4	5
40.K1 总的来说，我认为我擅长几件事	1	2	3	4	5
41.K2 我有能力做事和别人一样好	1	2	3	4	5
42.K3 我确实在各种场合都觉得自己很有用	1	2	3	4	5
43.L1 我认为我有积极的品质	1	2	3	4	5
44.L2 总的来说，我自我感觉良好	1	2	3	4	5
45.L3 我对自己的评价很好	1	2	3	4	5

## Biographic Data of Author

### 作者简介

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