

The Impact of Internet Addiction on Academic Performance and Social Skills of Chinese Middle High School Students

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Abstract: The rapid development of the Internet and its integration into education has markedly enhanced how students acquire knowledge. However, studies indicate that it has also had a profound negative impact on students. The middle school stage is pivotal in students' development, and at this juncture, internet addiction among students is on the rise. This study employs descriptive correlational quantitative methods to elucidate the impact of internet addiction on the academic performance and social skills of Chinese middle high school students. The results showed that Internet addiction was significantly related to social skills, but not to academic achievement or demographics.

Keywords: Internet Addiction, Middle School Students, Academic Performance, Social Skills.

1. Introduction

The concept of Internet addiction was first proposed by the American psychiatrist Ivan K. Goldberg in 1995. Goldberg posited that individuals reduce or abandon important social and professional activities due to excessive Internet use, leading to the potential emergence of psychological or behavioral disorders (Goldberg, 1996). Subsequently, the American psychologist Young suggested the possibility of Internet addiction as a new clinical disorder in 1996. Some online users become addicted to the Internet in much the same way that others become addicted to drugs or alcohol, leading to academic, social and career impairments. By using pathological gambling as a model, addiction arising from Internet use can be defined as a stimulus control disorder that does not involve narcotics (Young, 1996).

The World Health Organization (WHO) defines Internet addiction in 2018 as the long-term or periodic dependence of an individual resulting from excessive and obsessive use of the Internet, accompanied by an uncontrollable desire to use it again. Chinese scholar Tao and colleagues (2008) approached the definition from a medical perspective, stating that individuals use the Internet excessively and repeatedly, leading to behavioral disorders. Withdrawal reactions may occur when individuals reduce their Internet usage, and in severe cases, physical and mental abnormalities may manifest.

In 2018, the National Health Commission of China (NHC) delineated Internet addiction as the uncontrolled, impulsive use of the Internet without the involvement of addictive substances, resulting in evident academic, occupational, and social impairments. Given the multifaceted nature of Internet addiction, scholars from various research fields approach it from different perspectives, contributing to the absence of a standardized definition (Byun et al., 2009; Chou et al., 2005).

The causes of Internet addiction are complex and diverse, encompassing various aspects. Generally speaking, they can be delineated into three dimensions: personal factors, inherent characteristics of the Internet, and social factors (Wang, 2023). Personal factors constitute a significant aspect of Internet addiction. They encompass students' psychology and mental

health, individual personality traits, compromised behavioral self-control, individual needs, and the body's secretion of excitatory substances to stimulate the brain to pursue this feeling. The Internet is a special medium. A lot of mixed information makes it difficult for young netizens to distinguish. Teenagers with weak discrimination ability can easily get lost in the online world. The development of the game and entertainment industry has created an online virtual environment to provide students with a space to release pressure.

Furthermore, social factors also include family factors and social and cultural exchanges, which encompass family support and communication, as well as Internet use by family members. The rise of social software provides a communication platform for students with social difficulties, while the vast appeal of virtual social networking attracts many users. Developers in the game industry build cultural initiatives that attract young people. However, the government's laws regarding the Internet are not sound.

Internet addiction significantly affects college students, leading to various detrimental effects on their physical health (Xia, 2023). It causes irreversible physical damage, such as decreased vision, biological clock disorder, and reduced immune function. Psychologically, it causes anxiety and depression, decreased academic motivation, declining grades, and academic neglect, which leads to repeating a grade and dropping out of school. In terms of social interaction, people become self-centered, reduce social activities in real society, and establish a self-centered virtual social environment.

Internet addiction among middle high school students is realized through mobile phone terminals. Nearly half of Chinese middle high school students own their smartphones, and the primary purpose of using mobile phones is online learning and entertainment. Online entertainment activities, represented by playing games and watching short videos, have become an important way for minors to relax. According to the China Internet Network Information Center (CNNIC) data report in 2021, teachers and parents believe that Internet addiction caused by playing games and watching short videos is the problem that needs to be addressed most.

The fifth national internet usage situation of minors released by CNNIC shows the average daily online time of 193 million netizens. Still, 10% of underage Internet users may have excessive Internet use. Data show that in 2022, 11.1% of minor netizens spent more than 2 hours online on average on weekdays, and 13.1% spent more than 5 hours online on average during holidays. This group may have problems with excessive Internet use (CNNIC, 2023b).

Although only 10% of minors have excessive use problems, the data source does not exclude students from filling out the questionnaire truthfully. After the pandemic, students will spend more time using the Internet to complete their studies due to online courses. This situation increases students' risk of Internet addiction.

Existing research primarily targets a broad audience, particularly adult learners, while paying little attention to underage learners. According to current research, studies on internet addiction among middle school students predominantly focus on students who are already addicted to the internet. However, there is a gap in understanding why students develop internet addiction, the relationship between internet addiction and students' academic performance, the correlation between internet addiction and students' social skills, and the predisposing factors for internet addiction among students. Furthermore, there is limited exploration of the family and socioeconomic backgrounds of students with internet addiction.

This study employs a correlational-descriptive quantitative research design to investigate these issues comprehensively, aiming to deepen our understanding of students affected by

internet addiction.

2. STUDY OBJECTIVES

2.1. General Objective

To determine the impact of Internet addiction on the academic performance and social skills of Chinese middle school students.

2.2. Specific Objectives

A. To determine the demographic profile of students in terms of age, gender, and socioeconomic status.

B. To determine internet addiction, academic performance, and social skills

C. To correlate demographic profile and Internet addiction; Internet addiction and academic performance; Internet addiction and social skills.

D. To propose an intervention program to curb internet addiction among students.

Based on the objectives, the following hypotheses were formulated:

Ho1. There is no significant relationship between internet addiction across the demographic profiles

Ho2. There is a significant relationship between Internet Addiction and Academic Performance.

Ho3. There is a significant relationship between Internet Addiction and Social skills.

2.3. Conceptual Framework

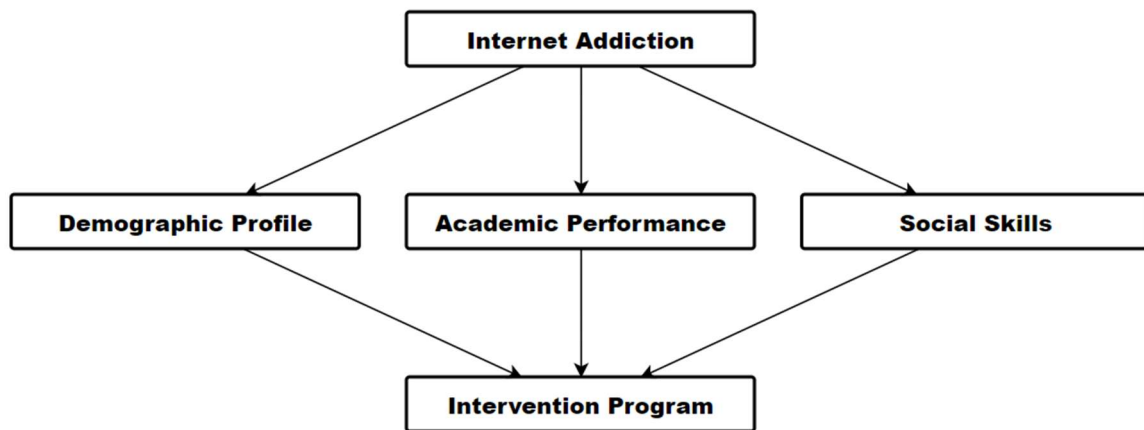


Figure 1. Conceptual framework

This figure illustrates the multifaceted impact of internet addiction on various aspects of students' lives, including their demographic profiles, academic performance, and social skills. By analyzing these interconnected factors, the results of this study will offer valuable insights into the development of effective intervention programs. Understanding how internet addiction affects different demographic groups, influences academic achievements, and shapes social interactions is crucial for designing targeted interventions that address the specific needs of students affected by this issue. By shedding light on these relationships, the study aims to

inform the creation of interventions that can effectively mitigate the negative effects of internet addiction and promote healthier behaviors among students.

3. Review of Related Literature

3.1. Internet Addiction among Middle School Learners

3.1.1. Underlying Factors of Internet Addiction

Family factors represent the most common aspect of analyzing Internet addiction among middle school students.

Family education stands as the foundational education in the child's life. The exploration of family factors proves to be a meaningful way to analyze Internet addiction among middle school students. These family factors include various dimensions, including the parent-child relationship, family intimacy, and parenting style (Jin, 2022; Yang 2023). The impact of different parenting behaviors on Internet addiction is divided into positive parenting and negative parenting. Positive parenting style helps children develop perseverance and reduce dependence on mobile phones. Negative parenting styles enhance children's avoidance of emotions at home and increase their dependence on mobile phones (Liu et al., 2023).

Relative to parenting styles, Diana Baumrind, a developmental and clinical psychologist, proposed three styles (authoritative, authoritarian and permissive) in 1967 and later added negligence in 1971 (Muraco et al., 2020). Authoritative parents set high standards and high responses to children. Students will become increasingly stressed and addicted to the satisfaction and relaxation obtained from the Internet. Authoritarian parents have the absolute say in everything in the family and do not allow any rebuttal or violation. It causes children to be timid, have low self-esteem, and be withdrawn. Talk and seek comfort in a virtual network. Permissive parents are busy with their careers or have only one child, and they respond to any request of the child. Neglectful parents could be more responsive and demanding towards their children. There needs to be more guidance and attention to the children. Rarely participates in children's activities. Children will have solid emotional needs and seek a sense of online belonging.

School is the place where students spend the longest time outside their families (Liu, 2023), and it is also the main reason for the outbreak of Internet addiction. Promoting quality education is a long-term and difficult process, and examination-oriented education cannot be abolished in a short time. Heavy school work brings greater pressure to middle school students. The entertainment of the Internet effectively caters to the physical and mental characteristics of middle school students. More and more students use the Internet to relieve stress.

In addition, modern society regards core literacy as an important indicator for evaluating students, but school education is relatively one-sided. In terms of information technology teaching, it is limited to technical training and ignores network security education and the cultivation of network ethics.

Improper handling of interpersonal relationships between students and teachers and between students, poor academic performance, bad campus environment and teachers' attitude towards students' online gaming behavior, etc., can easily lead to students' avoidance and psychological problems of being tired of studying, and then They prefer to indulge in the Internet to escape reality.

Internet addiction is not easy to quit. From the position of an educator, we must clearly understand the roles and functions of schools, teachers, and students. Prevention is the best treatment. Let students have a clear understanding of the Internet.

3.1.2. Internet Addiction Symptoms in Students

When American psychiatrist Ivan K. Goldberg first proposed Internet addiction in 1995, he outlined several defining characteristics associated with individuals affected by this condition. These symptoms include increased tolerance, withdrawal reaction, rising frequency of Internet

usage and extended online activities, an uncontrollable desire to surf the web, extensive time allocation to online networking activities, diminished engagement in social and professional spheres, as well as the manifestation of psychological distress and physical diseases.

American psychologist Young pointed out in a 1996 study that Internet addiction has become a possibility in clinical disorder research but did not indicate that Internet addiction is a disease. Some new standards were made in subsequent research, believing that Internet addiction is different from drug addiction. It refers to the sudden loss of control of people's online behavior under the influence of non-addictive substances, resulting in the impairment of social and psychological adaptive behaviors.

Clinical diagnostic criteria for Internet addiction were suggested through research on Chinese students (Tao et al., 2008). These criteria include (1) a persistent desire to use the Internet, (2) experiencing withdrawal reactions upon reducing or ceasing Internet usage, (3) developing tolerance to Internet activities, (4) an inability to control impulses to surf the Internet, (5) disregarding potential dangers or consequences of excessive Internet use, (6) engaging in online activities at the expense of other obligations, and (7) actively avoiding or reducing negative emotions through Internet usage. The first two items, combined with any other item, are considered Internet addiction.

3.2. Impact of Internet Addiction on Academic Performance

In the 1970s, Mischel conducted children's "Delayed Gratification Experiments" and first proposed the concept of delay of gratification. That is, the individual is willing to restrain the desire for immediate gratification for the sake of more valuable long-term results, and the ability to transcend the current difficult situation and strive to obtain long-term benefits is the core component of self-control ability (Rahayu et al., 2023). The ability to delay gratification reflects an individual's ability to control his immediate impulses and focus on more valuable long-term goals when faced with various temptations. Based on the work of Mischel and other researchers, Bembenuddy studied delayed gratification in school situations. Proposed the concept of Academic Delay of Gratification-the impulsive tendency of students to postpone immediate gratification in order to pursue more valuable long-term learning goals (Bembenuddy, 1999). That is, students' ability to resist their immediate impulses and focus on more valuable long-term learning goals when faced with various temptations in school situations.

3.2.1. The Negative Impact of Internet Addiction on Delayed Gratification in Academic Studies

For middle school students, if they want to achieve academic success, they must resist the temptations encountered in learning. Academic Delay of Gratification has a positive predictive effect on middle school students' metacognitive strategies. Middle school students with a strong academic delay of gratification are more likely to put in more effort in learning. In addition, the study found that after excluding additional factors such as intelligence level, learning methods and learning motivation, academic delay of gratification has a significant impact on the academic performance of middle high school students. Middle high school students with high academic delay of gratification are more likely to attach greater value to future learning goals, are more able to resist temptations encountered in learning, and

spend more energy on learning. All in all, the ability to delay gratification in studies is an indispensable ability for middle school students to become successful.

However, what is worrying is that middle school students with Internet addiction have a lower ability to delay gratification than middle school students who use the Internet normally. The study found that the degree of Internet addiction negatively predicts the academic delay of gratification ability of middle school students, that is, the higher the degree of Internet addiction of middle school students, the lower their academic delay of gratification ability.

In other words, Internet addicted middle school students have deficiencies in formulating and executing learning goals, eliminating interference from activities unrelated to learning, and resisting temptation. These shortcomings make Internet addicted middle school students more susceptible to interference from activities unrelated to learning, and tend to choose non-academic instant gratification and sensory happiness (Liu,2022).

3.3. Impact of Internet Addiction on Social Skills

Humans are social animals and humans create many ways to convey information, think, and participate in social activities. Social skills are the skills of communication and cooperation between people, including both verbal and non-verbal ways. Social skills are important skills for each individual to integrate into society and have a significant impact on the individual's social development.

Social skills are affected by our language and the way we use language-the way we speak, the tone of voice and the words we choose, as well as non-verbal language such as body language, signals and other means of communication.

Reddy (2019) pointed out that social skills are divided into verbal communication skills and non-verbal communication skills. Verbal communication skills or social intelligence are further divided into Social Expression (SE), which is the ability to speak and interact with others in social situations, and Social Sensitivity (SS), which is the ability to listen and understand social situations. Social control (SC) is the ability to monitor and act according to social situations.

Maslow's hierarchy of needs theory shows that an individual is a unified, organized individual and that most of an individual's desires and impulses are interrelated (Gambrel, 2003). Therefore, when a person's needs are not satisfied in one aspect, the individual will shift the needs to seek satisfaction in other aspects. When individuals cannot get what they want in the real world, they will turn to the Internet to escape or seek satisfaction. Internet addiction is a common phenomenon in contemporary society and will continue to grow in future generations. People with extraversion and conscientiousness traits are less at risk for addiction. Since most extroverts interact easily with others. Introverts have difficulty adapting to this situation. In order to avoid attending large gatherings and interacting with others, they usually immerse themselves in their own world, such as playing online games or watching movies or surfing (Reddy, 2019).

3.4. Strategies for Addressing Internet Addiction Among Middle School Students

In recent years, the pervasiveness of Internet addiction among middle school students has emerged as a pressing concern in educational settings. Addressing this issue requires

a multifaceted approach integrating psychological and educational literature insights. This review synthesizes key strategies proposed by Liu (2023) to mitigate Internet addiction and enhance self-control abilities among middle school students.

Liu (2023) proposed several intervention strategies tailored to the specific needs of middle school students struggling with Internet addiction. First, help middle school students with Internet addiction to plan learning tasks. Reward students appropriately according to the process of completing learning tasks. Rewards will be given after completing the prescribed learning tasks, and punishment will be given if the students fail to complete the learning tasks. In this way, reasonable behaviors are strengthened and students' self-control abilities are improved. Secondly, help middle school students with Internet addiction clarify their learning goals, create a good learning environment for students, and avoid interference from activities unrelated to learning. Finally, inhibit the impulsive behavior of Internet-addicted middle school students by emphasizing the cost of impulsive behavior in situations familiar to them, such as the impact on academic performance due to neglecting study time, which can lead to greater cumulative academic pressure.

In school education and teaching, teachers should pay attention to the cultivation of the ability to delay gratification in students with Internet addiction. Teachers should deeply understand the psychological characteristics of middle school students. Design teaching based on their characteristics to shift their attention to learning activities and reduce their attention to activities unrelated to learning. Enable the students to consciously resist the temptation of activities unrelated to learning and persist in completing learning tasks.

3.5. Future Research Perspectives

Internet addiction is an important negative impact brought about by the application of Internet technology in the field of education. It seriously affects the role of education in students. However, the causes of Internet addiction are complex and diverse and require the cooperation of many parties. The strong popularization of digital technology will lead to the adoption of virtual technology (VR) and augmented reality (AR) (CNNIC, 2023a) in the education field in the future. This immersive technology further increases the risk of students becoming addicted to the internet. Therefore, it is necessary to have a clear understanding and digital literacy of digital education. In addition, the government should improve relevant laws and regulations to prohibit digital companies from torturing young people for profit. Due to the complex case of the research at hand, the study can be conducted using qualitative data.

4. METHODS

4.1. Study Design and Locale

This study will utilize a correlational-descriptive quantitative research design. Descriptive research designs are employed to address the question "What is X?" Correlational research designs, on the other hand, are utilized to address the question "How are things related?" (Peter Miksza et al., 2023).

The purpose of this study is to gain an in-depth understanding of the interactive factors between internet addiction and students' academic performance, as well as the impact of internet addiction on the development of students' social skills. Additionally, the study aims to examine the

influence of age, socioeconomic status, gender ratio, and other factors on students who are addicted to the internet.

The locale of this study is Shangshui County No. 1 Middle High School, located in Henan Province, China. The participants are Chinese middle high school students. This school is a key high school, and 600 students will be randomly selected from the school to participate in the research study. It has experienced a rapid increase in internet addiction among students, leading to a significant decline in academic performance. This issue requires urgent attention and resolution.

4.2. Study Participants

4.2.1. Sample Size and Sampling

This study will utilize convenience sampling as the sampling technique. Convenience sampling involves selecting a sample from a population that is readily available or convenient to access. It is a non-probability sampling method commonly employed by researchers to gather data from a pool of easily accessible respondents (Obilor, E. I., 2023). The chosen middle school for this study comprises approximately 600 students. Due to the researcher's inability to control access to the complete list of students, random sampling cannot be employed. To determine the sample size, Raosoft will be utilized with a margin of error set at 5% and a confidence level of 95%. Consequently, the calculated sample size is 235 students.

4.2.2. Inclusion and Exclusion Criteria

For the inclusion criteria, a student's level of internet addiction will be determined using the Revised Chen Internet Addiction Scale (CIAS-R) self-assessment form.

In selecting the preliminary participants, specific criteria should be considered. First, they should be Chinese students aged 12-18 years old currently enrolled in middle school. The age range of 12-18 in China is chosen for the study because during this phase, Chinese middle school students are required to leave their families to study in middle school and live at school. Moreover, this period is the sensitive period of teenagers. Their physical and mental development, cognitive ability, and social adaptation are all at an important stage of transformation. They have different needs and motivations for using the internet. Since students leave their families, their parents' attention and influence on them decrease. Without parental supervision, many students spend their study time on the internet during this period.

Second, students who achieve a minimum score of 64 or higher on the Internet addiction self-assessment diagnosis tool will be selected as interview subjects. This criterion serves as a quantitative measure to identify individuals who exhibit symptoms and behaviors associated with internet addiction, ensuring that participants selected for the study represent those experiencing significant levels of internet-related challenges. By setting this threshold, the study aims to focus on students with a more severe degree of internet addiction, facilitating a deeper understanding of the phenomenon.

For the exclusion criteria, students with mental disabilities, those taking relevant medications, or undergoing psychological counseling will be excluded from the study. Participants with backgrounds not aligned with the study's aims and scope will also be excluded. For instance, if the study focuses on typical internet users, individuals with psychiatric or learning disabilities such as ADHD or anxiety disorders may be excluded. Such circumstances may

introduce extraneous variables into the study, potentially impacting the accuracy of the findings.

4.3. Research Instruments

This study will utilize three (3) questionnaires: Firstly, a survey questionnaire will be employed to evaluate the level of internet addiction among students. Secondly, a survey will be conducted to gather demographic information and assess the academic performance of the students. Finally, a social skills scale questionnaire will be administered to measure students' social skills.

4.3.1. Revised Chinese Internet Addiction Scale (CIAS-R)

This study will adopt the Revised Chinese Internet Addiction Scale (CIAS-R), originally developed by Taiwan-based scholar Chen (2003) and revised by Chinese scholars Bai and Fan (2005), to be more suitable for Chinese students, with a Cronbach's alpha of 0.90.

The questionnaire comprises a total of 26 questions and follows a 4-point Likert scale, with 1 representing the lowest and 4 the highest match of the respondent's experience. The total score of the scale is the sum of all four factors. The higher the total score of each factor and the total score of the scale, the greater the likelihood and tendency of Internet addiction.

Internet addiction can be categorized into three levels: a score of less than 46 indicates the normal group; a score greater than or equal to 46 and less than 64 indicates the Internet dependent group; a score greater than or equal to 64 indicates the Internet addiction group. Some scholars also directly classify scores of 46 and above as Internet addiction, essentially creating a dichotomy between normal groups and Internet addiction groups. In other words, the Internet addiction group can be considered as the sum of the dependent group and the addicted group. This method is commonly used in many domestic studies.

The CIAS-R comprises five dimensions: obsessive-compulsive symptoms, withdrawal symptoms, tolerance symptoms, interpersonal health problems, and time management; it consists of two components: core symptoms of Internet addiction and problems associated with Internet addiction (Mak et al., 2014). The core symptoms are categorized into three factors: compulsive Internet use, withdrawal reaction, and tolerance. Problems related to Internet addiction are classified into two factors: interpersonal relationships and time management. A higher score indicates a more severe level of Internet addiction. A trial report on the CIAS in mainland China suggested that the revised version has high reliability and validity (Su et al., 2005). Therefore, this study utilizes the revised version of the Chinese Internet Addiction Scale as a research tool to conduct self-assessment of Internet addiction among students.

4.3.2. Demographic Profile and Academic Performance

In this section, the researcher will gather pertinent information regarding the demographic profile and academic performance of the students. The demographic profile section will encompass details such as age, gender, and socioeconomic background. Understanding the demographics of the student population is crucial for ensuring inclusivity, identifying disparities, and tailoring educational interventions to meet diverse needs. Simultaneously, the academic performance section will focus on collecting data related to students' educational achievements. This includes the general weight average (GWA) of the students during their previous

academic year.

4.3.3. Social Skills

Alberta (2011) pointed out that the advantage of (Social Skills Rating System) SSRS is that it adopts a comprehensive format for teachers, parents and teenagers. The social skills section of the manual is comprehensive, but the academic abilities and problem behavior sections are brief. The psychometric properties of self-report forms are not as strong as those of parent and teacher forms. The SSRS has long been considered the most psychometrically reliable tool for assessing social skills.

SSRS regulates 4,000 children. Internal consistency reliability was found to range from 0.75 to 0.93. Test-retest reliability at 4 weeks was in the range of 0.80. Criterion-related validity and construct validity were established by finding significant correlations between the SSRS and other rating scales. Community University Partnership (CUP) tested the reliability and validity of the Social Skills Rating System (SSRS) in the Early Childhood Measurement and Evaluation Tool Review and the results are as follows:

Reliability: The SSRS has demonstrated good internal consistency reliability for its various scales, with Cronbach's alpha coefficients typically ranging from .80 to .90. Test-retest reliability coefficients have also been found to be satisfactory.

Validity: The SSRS has been found to have good convergent and discriminant validity, with significant correlations observed between SSRS scores and other measures of social functioning, as well as distinctions between social skills and problem behavior domains. The reliability and validity of the two are highly similar, so this reliability and validity were chosen as explanations.

4.4. Procedure

4.4.1. Selecting Participants Phase

The Revised Chinese Internet Addiction Scale (CIAS-R) will be distributed to middle high school students in Henan Province, China.

4.4.2. Internet Addiction Self-Assessment Phase

The minimum and maximum scores of the CIAS-R are 26 and 104, respectively. Higher scores indicate a more severe level of Internet addiction. Respondents scoring 64 and above will be classified as Internet addicted.

4.4.3. Survey Phase

The qualified participants will be surveyed online, with their consent, and their responses will be recorded. Each questionnaire will primarily focus on determining their demographic profile, GWA and social skills. Participants and the researcher will use Chinese language to ensure better understanding and facilitate comfortable conversation. Meanwhile, to ensure the credibility and validity of the questionnaire, the second question will be displayed only after the first question is answered, thereby enhancing the research's credibility.

4.5. Ethical Considerations

This study was approved after review by the AUF Ethics Committee.

4.5.1. Informed Consent Process, Duration of Participation, and Withdrawal Criteria

This study adopts the form of questionnaire. Each questionnaire will take participants 10-15 minutes.

Participants who scored 64 or above on the Internet Addiction Scale were asked to fill out a second questionnaire on demographic profile and social skills (SSRS). The chosen middle school for this study comprises approximately 600 students. Due to the researcher's inability to control access to the complete list of students, random sampling cannot be employed. To determine the sample size, Raosoft will be utilized with a margin of error set at 5% and a confidence level of 95%. Consequently, the calculated sample size is 235 students.

Your participation in this research study is completely voluntary. You have an option to refuse to participate and have an option to withdraw from the study anytime without any obligations. But you need to ensure that the questionnaire you fill out is true and valid. Completion of the questionnaire marked the participant's end of the study. Taking into account the fact that most of the participants were minor and the confidentiality of the data. Participants will not have access to study results.

4.5.2. Risks and Inconveniences

Students participating in the study may be exposed to certain risks because of the presence of minors, such as privacy protection risks, ethical issues, data security, legal compliance, and psychological impact on students. This research will exercise caution when processing minors' data, follow ethical principles, and take appropriate measures to protect the rights and privacy of minors. Consent will be sought from the participant's parent or guardian depending on the survey.

4.5.3. Benefits of the Study

It will give you a deeper understanding of the use of the internet involved in participating in the study. However relevant societal benefits can be generated from the outcomes of the study. In participating with this survey, your honest and sincere response can help draft programs that understand the impact of Internet addiction on students' academic performance and social skills. In order to put forward constructive suggestions to reduce middle school students' Internet addiction behavior.

4.5.4. Privacy, Confidentiality, and Data Management

The researcher will make sure that your identity will remain confidential. The researcher will ensure that your identity is kept confidential. The participant information provided, such as address, contact number and/or email address will also be kept strictly confidential. All information involved in the research survey will only be used for academic research. The questionnaire and the collected participant information will be deleted after the study is completed.

4.5.5. Conflict of Interest

This research is conducted without any conflict of interest and solely for academic inquiry and understanding.

5. Statistical Treatment

The data for this study were collected through the Questionnaire Star questionnaire. According to the sample size, 235 valid questionnaires were received through the setting. The following data roughly analyzes each questionnaire data, and analyzes the correlation between Internet addiction and demographics. Internet addiction Correlation with academic performance, Internet addiction and social skills.

Table 1. Summary of Demographic Profile of Students

Demographic Profile	Categories	Frequency	Percentage
Sex	Female	118	50.21 %
	Male	117	49.79 %
Age	16-18	116	49.36 %
	12-13	66	28.09 %
	14-15	53	22.55 %
Type of Area	Urban	98	41.70 %
	Rural	76	32.34 %
	Rural & Urban	61	25.96 %
Living Status	Live with parents	100	42.55 %
	Live with Grandpa and Grandma	97	41.28 %
	Live with mother	21	8.94 %
	Live with father	16	6.81 %
	Alone	1	0.43 %
Father's education	Senior middle school	74	31.49 %
	Junior middle school	50	21.28 %
	Primary school	49	20.85 %
	University	42	17.87 %
	PhD	13	5.53 %
	Master's	7	2.98 %
Mother's education	Senior middle school	69	29.36 %
	Primary school	55	23.40 %
	Junior middle school	43	18.30 %
	University	34	14.47 %
	Master's	16	6.81 %
	PhD	16	6.81 %
	Uneducated	2	0.85 %
Grandparents' education	Junior middle school	75	31.91 %
	Uneducated	68	28.94 %
	Primary school	54	22.98 %
	Senior middle school	32	13.62 %
	University	6	2.55 %
Father's occupation	Peasantry	58	24.68 %
	Self-employed	54	22.98 %
	Government departments and public institutions	44	18.72 %

	Worker	40	17.02 %
	Enterprise employee	39	16.60 %
Father's monthly income	> 4001 CNY	112	47.66 %
	2001-4000 CNY	92	39.15 %
	< 2000 CNY	31	13.19 %
Mother's occupation	Worker	53	22.55 %
	Self-employed	49	20.85 %
	Peasantry	47	20.00 %
	Government department and public institutions	44	18.72 %
	Enterprise employee	42	17.87 %
Mother's monthly income	> 4001 CNY	123	52.34 %
	2001-4000 CNY	86	36.60 %
	< 2000 CNY	26	11.06 %
Grandparent's occupation	Peasantry	93	39.57 %
	Worker	88	37.45 %
	Self-employed	26	11.06 %
	Enterprise employee	16	6.81 %
	Government departments and public institutions	12	5.11 %
Grandparent's monthly income	2001-4000 CNY	130	55.32 %
	< 2000 CNY	92	39.15 %
	> 4001 CNY	13	5.53 %

The demographic profile of the participants reveals several notable insights. The sample is almost evenly split between females (50.21%) and males (49.79%). A significant proportion of participants are aged 16-18 (49.36%). In terms of their living environment, a substantial portion reside in urban areas (41.70%), followed by rural areas (32.34%). Most

participants live with their parents (42.55%) or grandparents (41.28%). Regarding parental education, the largest group of fathers have completed senior middle school (31.49%), while more than half of the mothers earn over 4001 CNY per month (52.34%). These demographics highlight key characteristics of the participant population in terms of gender, age, living environment, living status, and parental education and income.

Table 2. Summary of Academic Performance of Students based on their Grades

	Mean	Standard deviation	Minimum	Maximum
Grades	69.3492	12.2435	46.8	90.4

The academic performance of the participants using their grades last semester shows an average grade of 69.35%. This suggests that, on average, students are achieving mid-level performance. The standard deviation of 12.24% indicates variability in the grades, meaning that the grades are spread out within 12.24% above or below the mean. The grades

range from a minimum of 46.8% to a maximum of 90.4%, showing a wide range of performance levels. Some participants are scoring below average, while others are performing very well. Overall, the data highlights a diverse range of academic performance among the participants.

Table 3. Summary of Internet Addiction Scale

Items	Mean	Standard deviation
1. I was told more than once that I spend too much time online.	2.86	0.86
2. I feel uneasy once I stop going online for a certain period of time.	2.85	0.92
3. I find that I have been spending longer and longer periods of time online.	2.84	0.92
4. I feel restless and irritable when the Internet is disconnected or unavailable.	2.90	0.93
5. I feel energized online.	2.94	0.91
6. I stay online for longer periods of time than intended.	2.88	0.94
7. Although using the Internet has negatively affected my relationships, the amount of time I spend online has not decreased.	2.89	0.92
8. More than once, I have slept less than four hours due to being online.	2.86	0.86
9. I have increased substantially the amount of time I spend online.	2.87	0.92
10. I feel distressed or down when I stop using the Internet for a certain period of time.	2.86	0.91
11. I fail to control the impulse to log in.	2.84	0.90
12. I find myself going online instead of spending time with friends.	2.88	0.92
13. I get backaches or other physical discomfort from spending time surfing the net.	2.89	0.97
14. Going online is the first thought I have when I wake up each morning.	2.94	0.91
15. Going online has negatively affected my schoolwork or job performance.	2.87	0.90
16. I feel like I am missing something if I don't go online for a certain period of time.	2.83	0.92
17. My interactions with family members have decreased as a result of Internet use.	2.87	0.95
18. My recreational activities have decreased as a result of Internet use.	2.87	0.87
19. I fail to control the impulse to go back online after logging off for other work.	2.83	0.87
20. My life would be joyless without the Internet.	2.83	0.94
21. Surfing the Internet has negatively affected my physical health.	2.86	0.93
22. I have tried to spend less time online but have been unsuccessful.	2.88	0.86
23. I make it a habit to sleep less so that more time can be spent online.	2.91	0.93
24. I need to spend an increasing amount of time online to achieve the same satisfaction as before.	2.88	0.93
25. I fail to have meals on time because of using the Internet.	2.85	0.93
26. I feel tired during the day because of using the Internet late at night.	2.81	0.91
Overall	2.87	0.79

The internet addiction scale has mean scores which range from 2.81 to 2.94, indicating a moderate level of agreement. The overall mean score is 2.87 with a standard deviation of 0.79, suggesting some but small variability in responses. This

is supported by the scores for each item that do not vary significantly, highlighting a consistent pattern of moderate internet addiction across all statements.

Table 4. Summary of Social Skills Scale

Items	Mean	Standard deviation
Self-control		
1. I do nice things for my parents like helping with household chores without being asked.	2.91	0.91
2. I make friends easily.	2.83	0.92
3. I follow the teacher's directions.	2.86	0.94
4. I end fights with my parents calmly.	2.86	0.89
5. I compromise with parents or teachers when we have a disagreement.	2.88	0.97
6. I disagree with adults without fighting or arguing.	2.85	0.94
7. I control my temper when people are angry with me.	2.80	0.91
8. I take criticism from my parents without getting angry.	2.83	0.91
Overall	2.85	0.81
Empathy		
9. I stand up for my friends when they have been unfairly criticized.	2.89	0.90
10. I feel sorry for others when bad things happen to them.	2.87	0.93
11. I listen to my friends when they talk about problems they are having.	2.87	0.96
12. I try to understand how my friends feel when they are angry, upset, or sad.	2.83	0.92
13. I let friends know I like them by telling or showing them.	2.82	0.96
14. I say nice things to others when they have done something well.	2.81	0.90
Overall	2.85	0.82
Assertion		
15. I start talks with classroom members.	2.85	0.93
16. I start conversations with opposite-sex friends without feeling uneasy or nervous.	2.86	0.90
17. I ask friends for help with my problems.	2.87	0.83
18. I ask someone I like for a date.	2.83	0.87
19. I give compliments to members of the opposite sex.	2.86	0.97
20. I talk things over with classmates when there is a problem or an argument.	2.83	0.92
Overall	2.85	0.79
Cooperation		
21. I ask friends to do favors for me.	2.86	0.92
22. I ask before using other people's things.	2.86	1.00
23. I keep my desk clean and neat.	2.86	0.91
24. I finish classroom work on time.	2.85	0.90
25. I listen to adults when they are talking with me.	2.82	0.89
26. I avoid doing things with others that may get me in trouble with adults.	2.87	0.96
Overall	2.85	0.82

The social skills scale indicates that students generally demonstrate moderate levels of social-emotional

competencies across self-control, empathy, assertion, and cooperation, with a consistent mean score of approximately

2.85 for each dimension, suggesting similarity in their social skills.

Table 5. Comparison Analysis of Demographic Profile and Internet Addiction

Variable	Statistical Test	Test Statistic	p-value	Significant?
Sex	Mann-Whitney U	6101.5	0.123	No
Age group	Kruskal-Wallis	0.6545	0.721	No
Type of area	Kruskal-Wallis	0.1494	0.928	No
Living status	Kruskal-Wallis	1.8982	0.754	No
Father's education	Kruskal-Wallis	0.8194	0.976	No
Mother's education	Kruskal-Wallis	4.0627	0.668	No
Grandparent's education	Kruskal-Wallis	3.6691	0.453	No
Father's occupation	Kruskal-Wallis	1.5407	0.819	No
Father's monthly income	Kruskal-Wallis	0.3155	0.854	No
Mother's occupation	Kruskal-Wallis	0.8382	0.933	No
Mother's monthly income	Kruskal-Wallis	4.4838	0.106	No
Grandparent's occupation	Kruskal-Wallis	4.5907	0.332	No
Grandparents monthly income	Kruskal-Wallis	6.4598	0.04	No

Table 5 shows that the comparison analysis indicates that there are no significant differences in internet addiction scores based on the demographic profile of the students, with all p-

values exceeding the conventional threshold for statistical significance ($p < 0.05$).

Table 6. Correlation analysis between Academic Performance and Internet Addiction, and Social Skills

Variables	Spearman's rho	p-value	Significant?
Grades	0.0313	0.633	No
Empathy	0.649	< .001	Yes
Assertion	0.6224	< .001	Yes
Cooperation	0.6384	< .001	Yes
Self-control	0.6671	< .001	Yes

The correlation analysis between academic performance, internet addiction, and social skills revealed significant relationships between internet addiction and various social skills. Specifically, empathy ($\rho = 0.649$, $p < .001$), assertion ($\rho = 0.6224$, $p < .001$), cooperation ($\rho = 0.6384$, $p < .001$), and self-control ($\rho = 0.6671$, $p < .001$) all showed strong positive correlations with internet addiction scores. However, academic performance (grades) did not show a significant correlation with internet addiction ($\rho = 0.0313$, $p = 0.633$). These results suggest that higher internet addiction scores are associated with higher levels of empathy, assertion, cooperation, and self-control, while academic performance does not appear to be significantly impacted by internet addiction in this study.

6. Conclusion

There is no significant correlation between Internet addiction and demographics, so demographics have no significant influence on students' Internet addiction. This fits the expected assumption. Internet addiction significantly affects students' social skills, which is consistent with the expected hypothesis. However, Internet addiction doesn't affect students' academic performance, which is inconsistent with the expected assumption. The researchers believe that this is because the selected participants are key high schools, students' academic performance is generally better, and the purpose of learning to surf the Internet is mostly to acquire knowledge. The survey data showed that these students had moderate symptoms of Internet addiction. At this time, the

influence of Internet addiction on students is small and controllable. It provides reference for middle school students to shift from moderate to severe Internet addiction.

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