

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

Zuo Ruijia¹, Othman Talib², Nur Aimi Nasuha binti Burhanuddin³, Li Wenling⁴

^{1,2,3,4} Department of foundation of education, faculty of educational studies, Universiti Putra Malaysia, sardang 43400, Malaysia

ABSTRACT: This study is based on cognitive behavior theory and accomplishment motivation theory and aims to investigate the influencing elements of college students' hidden truancy, the relationship between college students' boredom propensity and mobile phone dependence, and the mechanism of time efficacy in it. Using the Propensity Questionnaire, the College Students' Mobile Phone Addiction Propensity Scale, and the Time Efficacy Scale, a survey of 272 college students from a university in Sichuan Province, China, was undertaken. The survey data was analyzed using SPSS26.0, and the findings revealed a positive correlation between boredom and hidden truancy. The association between boredom and covert class skipping is mediated by reliance on mobile devices and time efficiency. According to the study's findings, college students' propensity for boredom has a sizable positive predictive impact on their dependence on mobile devices. College students' implicit truancy behavior is directly impacted by boredom, but it is also indirectly increased by dependence on mobile devices. Time efficacy acts as a moderator in the interaction between college students' propensity for boredom and dependence on their phones. It is suggested that in the future, in addition to improving the direct factors affecting college students' implicit truancy, enhancing the enjoyment of teaching, lowering students' feelings of boredom, but also strengthening the scientific management of mobile phone use, will help prevent and intervene with the phenomenon of implicit truancy among college students. In accordance with the demands of the classroom, we may not only advocate for mobile phone-free classrooms but also fully utilize the interactive features of mobile phones to increase the interactivity of instruction. College students can lessen their disguised class truancy practices and lower their mobile phone dependence by increasing their feeling of time efficacy.

KEY WORDS: Hidden truancy, mobile phone dependence, boredom tendency, time efficacy

1. INTRODUCTION

1.1 Problem Statement

College students hidden truancy is a topic that has always been a major concern in the higher education world (Gao et al., 2018). Explicit and recessive truancy behaviors were used by certain researchers to categorize truancy behavior. When students fail to show up for class at the scheduled time and location without requesting a leave of absence from the teacher, this is known as explicit truancy (Qiao, Li, and Tian 2006). The comprehensive ability and quality of college students are negatively impacted by this behavior, which also interferes with the regular teaching activities carried out by colleges and universities. Many universities implement supervision mechanisms like credit deduction and penalty to deal with explicit truancy behavior and stop it from happening in the future. In contrast to apparent truancy, however, implicit truancy in college instruction is also a fairly widespread occurrence. Students who skip class and skip out on activities that have nothing to do with learning are said to be engaging in "recessive truancy." (Duan and Wang 2021). Numerous research on the problem of concealed truancy have demonstrated that it is more difficult to control than explicit truancy and that its causes are more numerous. (Yu 2021; You, Zhu, and Li 2020; Chen and Fan 2021). Zhang (2008) separates hidden truancy behaviors into three categories, including studying (such as learning other subjects in class), entertaining (such as chatting), and boredom (such as using mobile phones, being in a daze, or thinking about things). The phenomenon of skipping classes seriously affects the effectiveness of college teaching work and teachers' enthusiasm for class. Studies have also found that the hidden behavior of skipping classes can also make individuals experience more negative emotions such as anxiety and depression (Zeng et al. 2011). According to other studies, playing with mobile phones was the most common covert truancy activity among students, ranging up to 40.97%–49.40%. The others were napping, reading books, and seemed to be in a daze (Liu et al. 2012). Research on hidden truancy only examines the behavior of hidden truancy and only reaches the level of phenomena description and countermeasures; psychological mechanisms are not explored. Exploring the causes and mechanisms of the concealed truancy phenomena among college students is therefore more practical for enhancing the caliber of higher education instruction.

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

2. LITERATURE REVIEW

Existing studies have shown that the phenomenon of hidden skipping classes are caused by both internal factors such as self-factors, and external factors (e.g., guidance management, curriculum setting and teacher factors)(Yu 2021; You, Zhu, and Li 2020; Yang 2016; Chen and Fan 2021). Ma (2018) stated that 21.5% of university students lack the motivation and interest in learning. Especially after entering the university, more time is available for students to spend freely, and the use of smartphones and laptops by university students has reached full coverage. The scenes of college students "not leaving their hands" and playing games in the dormitory without class are also increasing. This kind of scenes are continued in the classroom, showing that many students face the new environment passively by playing on their mobile phones; some students do not like their major because they follow the trend and fill in the volunteers, so they choose to skip class to escape the reality (YU 2021; Liu et al. 2012; You, Zhu, and Li 2020).

Yang (2016) said that teachers play an important role in teaching tasks. The quality of teachers is the most common reason that emerged from the analysis of the causes of hidden skipping of college students. Therefore, the quality of teachers should be an important reason for college students to skip classes. Some teachers lack teaching ability. These internal factors and external factors increase the probability of hidden skipping of college students. However, the deep-seated reasons for the hidden behavior of skipping classes of college students need to be explored in depth. Studies have shown that the boringness and boredom of the classroom itself is one of the main reasons for students' truancy psychology and truancy behavior (Wegner & Flisher, 2009). The tendency of boredom to be related to youth truancy, dropout, maladjustment, and Internet Bad behaviors (e.g., addiction) are significantly positively correlated (Wang, Huang, and Wu 2014). In summary, it can be speculated that boredom is an important reason for hidden skipping classes.

Boredom is a common and common emotional experience of human beings. Studies have shown that 18% to 50% of people everywhere experience boredom, and 51% of young people aged 12 to 19 report that they are "easy to be bored" (Eastwood et al., 2007). In recent years, words such as "boring" and "depressed" have almost become the mantras of contemporary college students. In the face of a seemingly fulfilling university life, college students often seem to be doing nothing, indulging in skipping classes, surfing the Internet, falling in love, and sleeping. If people are bored for a long time, their mental health will be negatively affected (Binnema, 2004), will cause poor academic performance effect. In addition, boredom is also related to the dropout rate, criminal behavior, alcohol or drug addiction and other social maladaptive behaviors significant correlation (Duan and Wang 2021). At present, the breeding and spread of boredom among college students has become an increasingly common and serious mental health problem, which has attracted the attention of more and more researchers.

Mobile phone dependence, also known as mobile phone addiction, refers to an obsessive state in which individuals lose control of their mobile phone behaviors, leading to significant impairment of their physical, psychological, and social functions (Gao et al., 2018). The symptoms of mobile phone dependence are mainly manifested in three aspects: first, frequent use when it should not be used, second, excessive use has adverse effects on study, work, and life, and third, psychological and psychological problems that occur when the mobile phone is not carried with physical discomfort (Samaha & Hawi, 2016). Mobile phone dependence will be one of the most important types of non-drug dependence in the 21st century. College students are a high-incidence group of mobile phone dependence, and the incidence is between 15-40% (Liu and Wang 2012; Wang, Huang, and Wu 2014; Huang, Zhou, and Yu 2013). Mobile phone dependence can cause varying degrees of damage to the physical health, mental function and social adaptation of college students, such as causing dysfunction and sleep disorders in shoulders, neck, waist, hands, eyes and other parts; triggering cognitive failure and memory Decline and lower learning performance; lead to lower self-esteem and higher susceptibility to stress (Samaha & Hawi, 2016); experience more negative emotions such as feelings of loneliness, alienation, helplessness, and meaninglessness (Bianchi & Phillips, 2005); resulting in less social support, higher social anxiety, and lower subjective well-being (Liu, Jiang, and Bai 2014).

Time efficacy refers to a person's anticipation and belief in their own use and management of time, showing their level of self-assurance and perception of their capacity for time management behavior. It is a key factor limiting time monitoring (Wang, Huang, and Wu 2014). Time efficacy is a major negative predictive variable for addictive behaviors among college students, including Internet addiction and excessive usage of mobile phone. Time efficacy is a major negative predictive variable for addictive behaviors among college students, including Internet addiction and excessive usage of mobile phone networks (Peng and Jiang 2011). The degree of internet addiction among college students increases with decreasing sense of time efficiency. Addiction to mobile devices and the internet differs from substance addiction, such as alcoholism and drug addiction. One of the frequent behavioral traits is the tendency for individuals to use their phones or the Internet for longer than they intended to and to have poor time management skills. This suggests that time management is a significant near-term influencing element of mobile phone reliance. Individuals spend an excessive amount of time on their mobile phones because they lack the skills and confidence to manage their time correctly.

"Hidden Truancy" is a kind of negative and spontaneous behavior among college students. This not only affects the normal teaching order of university classrooms but also is not conducive to the cultivation of good learning and living habits of students, and some even waste their studies due to truancy, which eventually leads to suspension or even withdrawal from school. For this reason, major universities in China have come up with "new methods" to solve the problem of truancy, such as "photo punching,"

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

"pre-class attendance," and "real-name seat cards." Although these methods have deterred college students to a certain extent, they have not solved the problem at its root. Only by deeply understanding and digging into the action logic behind college students' truancy behavior can we really play a role in stifling truancy behavior.

Chinese scholars have always maintained a strong research interest and enthusiasm for college students' truancy behavior. Focusing on the causes and driving factors of college students' truancy behavior, some commentators are rooted in the perspectives of cybernetics and cultural conflict theory under the paradigm of deviant sociological analysis and label college students' truancy behavior as deviant behavior. This kind of interpretation of the actions of the anomie from the standpoint of "offensive" is not sufficient to fully understand the behavioral orientation of the actors and the complex determinants behind them. Some commentators attribute college students' truancy behaviors to an individual perspective. Most of these studies are explanatory. Due to the lack of empirical data support, it isn't easy to meet the need for inferences about the causality of the determinants of college students' truancy behavior. Other research empirically explores the influencing factors of college students' truancy behavior. These studies usually follow the logic of theoretical hypothesis and data derivation, testing the explanatory power of various potential antecedent variables on college students' truancy tendencies. This research is different from the existing empirical research methods and is completely rooted in the "thematic" position of college students. Through questionnaire survey data, it collects the types and motivations that affect college students' truancy behavior and conducts exploratory factor analysis and confirmatory factor analysis to construct college students. An analytical model of truancy behavior as used in this paper can avoid the deviation of the researchers from the subject of action but also ensure that the collected college students' truant factors are more comprehensive in the content domain.

3. THEORETICAL BASIS AND RESEARCH HYPOTHESIS

This study hypothesizes that boredom and mobile phone dependence are important factors affecting hidden skipping classes and constructs a mediating effect model based on cognitive behavior theory and achievement motivation theory.

3.1 Theoretical basis

3.1.1 Cognitive behavior theory

Emotion is the inner experience, and that cognition determines the generation of behavior. This theory is also very important in the field of psychological intervention and treatment. It emphasizes the time-limited, education-oriented treatment process and emphasizes the service object Proactiveness inside and outside the treatment emphasizes changing the individual's emotions and behaviors by changing cognition. Some studies have pointed out that when tracking the reasons for hidden skipping classes, whether it is the internal factors or external factors that affect hidden skipping classes, they have brought boring emotional experiences to students, and this emotional experience will further lead to mobile phone dependence, and then cause hidden sexual truancy.

3.1.2 Achievement motivation theory

Atkinson expanded McClelland's theory of achievement motivation. He believed that people have two psychological tendencies when competing, namely, the motivation to pursue success and the motivation to avoid failure (Duan and Wang 2021). On the one hand, mobile phones have developed more and more functions, and most of these functions are easier to complete. This naturally attracts many students, because it can not only compensate students for their unmet need for achievement in real life (the pursuit of success), but also can reduce the sense of boredom in the classroom (avoid failure); on the other hand, people often consciously avoid some unpleasant emotions. Therefore, in the face of uninterested majors and boring classroom teaching, more and more students evade the classroom by playing mobile phones. In addition, in the field of research on the psychological mechanism of mobile phone dependence, the role of boredom has also begun to receive attention (Bianchi & Phillips, 2005).

3.2 Hypotheses

Based on cognitive behavior theory and achievement motivation theory, this study was conducted research hypothesizes:

H1: There is a positive relationship between boredom and hidden class skipping.

H2: Time efficacy and mobile phone dependence play an intermediary role between boredom tendency and hidden skipping classes, and build an intermediary model framework (as shown in Figure 1).

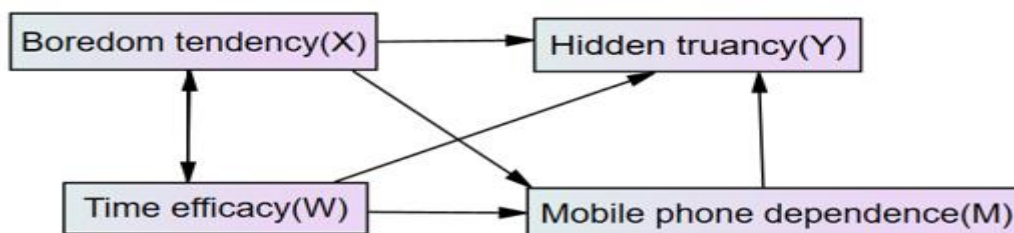


Figure 1. Model diagram of the intermediary effect

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

4. METHODOLOGY

In this study, a questionnaire survey method was used to survey 272 college students through the college students' boredom tendency questionnaire and the college students' hidden class skipping scale, and SPSS26.0 was used to statistically analyze the survey results.

4.1 Participant in Research

This study adopts a random sampling method, selects 272 college students from a university in Sichuan Province as the research objective, and obtains 272 valid questionnaires. The response rate of the questionnaire is 100%. The age range of the research object is 17–22 years old, and the gender of the research object, grade, and whether the mobile phone is handed in in the classroom (at the time of data collection, the main academic task of senior students is to carry out teaching and internship outside the school, so the senior data is not collected) (individual teachers require students to put their mobile phones away for classrooms without mobile phones; other teachers did not require mobile phones to be handed in in class) are shown in Table 1.

Table 1. The demographics of the study population (N = 272)

Variable name	Research object characteristics		
	Description	Frequency	Frequency percentage (%)
Gender	Male	177	65.07
	Female	95	34.93
Grade	Freshman	82	30.15
	Sophomore	114	40.91
	Junior	76	27.94
Whether to hand in mobile phone in class	Yes	131	48.16
	No	141	51.84

4.2 Research Instruments

4.2.1 Questionnaire on hidden truancy of college students

The research uses the Hidden Skipping Scale for College Students, which has 30 items, including two subscales, namely the Hidden Skipping Behavior of College Students and the Reasons for Hidden Skipping Behavior of College Students. Among them, there are 12 items in the Hidden Skipping Behavior Scale for College Students, which are classified as learning-type skipping (3 items), entertainment type skipping class (4 items), boring type skipping class (5 items) three dimensions; college students' hidden reason for skipping class scale has 22 items, which are guided and managed by the school (4 items), students' own factors (10 items), curriculum setting factors (4 items), and teacher quality factors (4 items) are composed of four dimensions. Both subscales use a 5-level scoring method. The KMO index of the Hidden Skipping Behavior Scale for College Students is 0.844, and the KMO Index of the Hidden Skipping Reasons Scale for College Students is 0.933, $\text{sig} < 0.005$, and the structure validity of the total scale is good. ($\chi^2/\text{df}=4.476$, $\text{RMSEA}=0.89$, $\text{CFI}=0.897$, $\text{TLI}=0.924$), the Cronbach alpha coefficient of the total scale is 0.938, the Cronbach alpha coefficient of the hidden truancy behavior subscale is 0.823, and the hidden truancy behavior subscale is 0.823. The Cronbach alpha coefficient of the cause subscale is 0.947.

4.2.2 Questionnaire for college students' boredom tendency

The study used the boredom tendency scale for college students revised by (Huang et al. 2010). The scale consists of 30 items including monotonicity, loneliness, restraint, tension, self-control, and creativity. Likert 7 is used. Grade scores, 1-7 respectively represent "completely inconsistent" to "completely consistent", the higher the score, the higher the tendency to be bored. The internal consistency coefficient of the total scale is 0.87. In this study, the structural validity of the scale was good ($\chi^2/\text{df}=3.9$, $\text{RMSEA}=0.084$, $\text{CFI}=0.93$, $\text{TLI}=0.963$), and the Cronbach alpha coefficient of the scale was 0.933.

4.2.3 Mobile Phone Addiction Propensity Scale for College Students

The mobile phone addiction tendency scale for college students compiled by (Xiong et al. 2012) with reference to the Internet Addiction Tendency Scale is divided into four dimensions: withdrawal symptoms, prominent behaviors, social comfort and mood changes, and a total of 16 questions. Likert 5-level scores, 1-5 respectively represent "completely inconsistent" to "completely consistent", the higher the score indicates the higher the individual's mobile phone dependence level. The internal consistency α coefficient of the scale is 0.83, the test-retest reliability is 0.91, and the fitting index of the confirmatory factor analysis is good: $\chi^2/\text{df}=2.87$, $\text{RMSEA}=0.63$, $\text{CFI}=0.92$, $\text{NFI}=0.89$, $\text{IFI}=0.94$, $\text{RFI}=0.88$. In this study, the internal consistency α coefficient of the scale was 0.89.

4.2.4 Time Efficacy Scale

The Time Efficacy Subscale of the Adolescent Time Management Propensity Scale compiled by (Huang and Zhang 2001) was used. The scale includes two dimensions of time management effectiveness and time management behavioral effectiveness. The Likert

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

5-level score is used, with 1-5 representing "completely inconsistent" to "completely conforming" respectively. The higher the score, the higher the individual's sense of time efficacy. The test-retest reliability of the two dimensions of the scale is 0.75 and 0.78, respectively, and the correlation coefficients between the total score of the scale and the sense of time value and time monitoring are 0.48 and 0.68, respectively, indicating that the reliability and validity of the scale are good. In this study, the internal consistency α coefficient of the scale was 0.79.

4.3 Data processing

The study uses SPSS26.0 for data entry, confirmatory factor analysis, and single-factor latent variable structure validity test. Descriptive statistics and Pearson product difference correlation analysis, reliability (Cronbach alpha coefficient) analysis, Harman single factor test, regression analysis, and mediating effect analysis were performed on the data using SPSS26.0.

5. RESEARCH RESULTS

5.1 Common method deviation test

The study using two questionnaires to collect data may lead to common method deviations. Common method deviations are due to the same data source or score, the same measurement environment, project early warning, and the project itself, caused by the artificial difference between the predictive variables and the benchmark variables. This type of artificial covariation is a systematic error that will cause significant confusion in the research results and may lead to incorrect conclusions (Zhou and Long 2004). First, the Harman single factor test method is used to test the common method deviation, and a total of 16 common factors with characteristic roots greater than 1 are extracted, and the variance contribution rate of the first factor is only 27.422%, which is less than the critical value of 40%. It shows that the common method of deviation is not obvious.

5.2 Descriptive statistics and correlation analysis of each variable

To examine the influence of variables such as gender, grade and whether mobile phones are handed in in class, a partial correlation statistical method is used, that is, to control variables such as gender, grade and whether mobile phones are handed in in class, to examine the correlation between the main variables. The results showed that boredom was significantly positively correlated with mobile phone dependence ($r=0.384, p<0.001$) and hidden truancy ($r=0.429, p<0.001$); mobile phone dependence and hidden truancy ($r=0.343, p<0.001$) was significantly positively correlated, and time efficacy ($r=-0.2, p<0.001$) was significantly negatively correlated with mobile phone dependence. The specific results are shown in Table 2.

Table 2. Descriptive statistics and correlation analysis between boredom, mobile phone dependence and hidden truancy classes (N=272)

	M±SD	Tendency to boredom	Mobile phone dependence	Hidden skipping class	Time efficacy
Boredom	3.07±0.63	1			
Mobile phone dependence	2.96±0.96	0.348***	1		
Hidden truancy	2.93±0.37	0.429***	0.343***	1	
Time Efficacy	3.46±0.63	-0.17***	-0.2**	0.26***	1

Note: * means $p<0.05$, ** means $p<0.01$, *** means $p<0.001$.

5.3 The relationship between boredom tendency and mobile phone dependence: a mediating moderating effect test

According to the test steps of the intermediary adjustment model proposed by (Wen et al 2018), all variables except gender are processed in a centralized manner, and demographic variables such as gender, grade, source of origin, and whether student cadres of college students are carried out. Control, using hierarchical regression to analyze the relationship between the variables.

This study estimates the following three regression equations:

(1) The regression of hidden truancy classes on boredom tendency, time efficacy, and "boring tendency \times time efficacy", to test whether the coefficient of "boring tendency \times time efficacy" is significant; (2) Regression of mobile phone dependence on boredom tendency, time efficacy, and "boring tendency \times time efficacy", to test whether the coefficient of "boring tendency \times time efficacy" is significant; (3) The regressions of hidden truancy on boredom tendency, time efficacy, "boredom tendency \times time efficacy", and mobile phone dependence were examined to see if the coefficient of mobile phone dependence was significant. Hidden truancy classes on boredom tendency and time efficacy Sense of Sense, "Boring Tendency \times Time Efficacy", regression of mobile phone dependence, to test whether the coefficient of mobile phone dependence is significant.

The results show (Table 3) that after controlling for the demographic variables, boredom tendency has a significant positive predictive effect on hidden truancy classes, and the interaction term between boredom tendency and time efficacy has also reached a significant level, which shows that time efficacy has a significant effect on time efficacy. The relationship between boredom

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

tendency and hidden truancy classes has a significant moderating effect. The moderating effect $\Delta R^2=0.170$ ($p<0.001$), which explains an additional 17% of the variation. That is, with the improvement of college students' sense of time efficiency, the susceptibility of the boredom tendency to the prediction of hidden skipping classes has increased.

Table 3. Hierarchical regression test of mediating mediation

	Step1 Predicted variable: mobile phone dependence		Step2 Predicted variable: time efficacy		Step3 Predicted variable: mobile phone dependence	
	B	ΔR^2	B	ΔR^2	B	ΔR^2
Gender	0.10*	0.014	0.09	0.017*	0.10*	0.016
Grade	0.07		0.04		0.09	
Birthplace	0.10*		-0.03		0.10*	
Is it a student leader	0.01		-0.11*		0	
Boredom tendency	0.24*	0.094***	-0.62**	0.036**	0.17*	0.094***
Time efficacy	-0.64**	0.149***	0.79***	0.066***	-0.46**	0.150***
Tendency to boredom \times time efficacy	0.46*	0.170***	-0.75**	0.093***	0.38**	0.157***
Mobile phone dependence					-0.10*	0.163***

Note: * means $p<0.05$, ** means $p<0.01$, *** means $p<0.001$.

The second step is to replace the predictive variable with mobile phone dependence. The results show that after controlling for the demographic variables, the boredom tendency, time efficacy, and the interaction terms of the two also have a significant predictive effect on mobile phone dependence, indicating that time efficacy has a significant effect on mobile phone dependence. The relationship between boredom tendency and mobile phone dependence also has a significant moderating effect. That is, with the improvement of college students' sense of time efficiency, the predictive sensitivity of the boredom tendency to mobile phone dependence has increased.

In the third step, time efficacy is used as the predicted variable, and mobile phone dependence is added as the predictor variable. The results show that mobile phone dependence has a significant predictive effect on hidden truancy, and the predictive power of boredom tendency on hidden skipping classes is reduced, but its predictive effect is still significant. It can be seen that mobile phone dependence plays a part as the intermediary in the relationship between boredom tendency and the hidden truancy effect. In addition, the interaction term of boredom tendency and time efficacy reduces the predictive power of hidden truancy, but its predictive effect is still significant, which shows that the moderating effect of time efficacy on the relationship between boredom tendency and hidden truancy is partly through mobile phone. ss Rely on this intermediary variable to have an effect. In other words, time efficacy can play a role by directly adjusting the relationship between boredom tendency and hidden truancy, and it can also affect the hidden skipping class by adjusting the relationship between boredom tendency and mobile phone dependence.

6. RESEARCH CONCLUSIONS AND ENLIGHTENMENT

6.1 Research conclusion

6.1.1 The relationship between boredom and hidden truancy

According to this study, college students' boredom levels can significantly predict their level of hidden truancy. The higher the boredom tendency of college students, the higher their level of hidden truancy. This research result is consistent with the conclusions drawn by (Huang, Zhou, and Yu 2013), and it also lays a foundation for revealing the regulation and intermediary mechanism of the relationship between boredom tendency and hidden truancy. There is a significant positive correlation between boredom and hidden truancy (see Table 2), and the increase in boredom can significantly predict hidden truancy behavior, which shows that the boringness or boredom of the classroom itself is the main reason for students' hidden truancy behavior. College students with a high tendency to be bored will feel that environmental stimulation is poor, monotonous, repetitive, and restrictive, and individuals need to have a certain level of arousal and sense of self-control. Mobile phones have high accessibility, portability, and entertainment, as well as information richness, virtual controllability, etc., which to a certain extent can meet the needs for higher arousal levels and

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

self-control of college students with high boredom tendencies, so they will have more hidden behaviors of skipping classes. This conclusion is also in line with the viewpoint of cognitive behavior theory, which believes that emotion is an inner experience and cognition determine the generation of behavior. Specifically, a boring emotional experience determines the generation of hidden skipping behavior. In addition, some studies have found that when tracking the reasons for hidden skipping, whether it is internal or external factors that affect hidden skipping, it brings students a boring emotional experience, and this boring emotional experience will in turn produce invisibility skipping behavior.

6.1.2 There is a mediating effect

First of all, this study found that the relationship between college students' boredom tendency and hidden skipping classes is regulated by the sense of time efficacy. This research result is consistent with the research hypothesis. A simple effect analysis found that with the improvement of time efficacy, college students' boredom tendencies are more sensitive to the prediction of hidden skipping classes. They also have higher requirements for the consistency of their psychological behaviors. However, the perceived boredom tendency and the components of the original self-cognition that maintain a high sense of autonomy and self-control may be contradictory and conflicting. Getting rid of this contradictory state as soon as possible and achieving self-consistent needs leads to the emergence of more hidden truant behaviors. For college students with a high level of time efficacy, their boring tendency is a significant predictor of hidden skipping classes, partly using mobile phones to rely on this intermediary variable. For students with low time efficacy, the level of boredom tendency and hidden skipping classes are higher than those of high time efficacy students, and the predictive power of their boredom tendency for hidden skipping classes is lower than the latter.

Secondly, after confirming that boredom can significantly predict the hidden truancy behavior of college students, this study further explored the mediating effect of mobile phone dependence between boredom and hidden truancy. Research has found that boredom affects hidden truancy indirectly through mobile phone dependence (see Table 2, Table 3). In other words, if students experience boredom in the classroom, they will use mobile phone dependence to reduce the sense of boredom, and the higher the degree of mobile phone dependence, the more likely it is that hidden class skipping behavior will occur. This coincides with the views of previous studies (Wegner and Flisher 2009; Huang, Zhou, and Yu 2013). This is also in line with Atkinson's theory of achievement motivation. That is, people have two psychological tendencies when competing, namely, the motivation to pursue success and the motivation to avoid failure.

Intervention in the phenomenon of college students' mobile phone dependence is also a direct and effective way. If college students can effectively manage their time with mobile phone use, they can set correct goals in their studies and reduce hiddenness. This study also found that boredom can influence college students' hidden truancy in class through the mediating effect of mobile phone dependence. From the perspective of the practical significance of the mediation effect, focusing on the mediation variables near the dependent variable has a better effect on changing the dependent variable. Therefore, when intervening in the hidden behavior of skipping classes, the intervention of mobile phone dependence can even change the hidden behavior of skipping classes. Therefore, when paying attention to the phenomenon of hidden skipping of college students in real life, although it is necessary to pay attention to the situation of boredom and mobile phone dependence at the same time, it is necessary to focus on improving the influence of the intermediary variable of mobile phone dependence.

7. RESEARCH INSPIRATION

Through the previous analysis, it was found that there are many reasons for the hidden skipping of college students. There are variously internal and external factors, but they are more affected by boredom and mobile phone dependence. For this reason, the following suggestions are proposed:

7.1 Enhance the fun of teaching and reduce students' sense of boredom

It has been found that "boring feelings" are the direct cause of hidden skipping in colleges and universities, and colleges and universities can take targeted measures to eliminate or reduce college students' sense of boredom in class. For example, colleges and universities can change their negative perception that classroom learning is "boring" through lectures or discussions, thereby reducing the occurrence of hidden skipping behavior; or by enhancing the interest in classroom teaching, assigning appropriate learning tasks to attract students to participate in classroom teaching activities to reduce students' sense of boredom.

7.2 Promoting a mobile phone-free classroom to eliminate the effects of hidden truancy

The results of this study show that whether students' hands on their mobile phones in class will affect the path of boredom to mobile phone dependence prediction. Mobile phone dependence plays an intermediary role between boredom and hidden skipping classes. Whether handing in mobile phones in class can also indirectly affect mobile phone dependence through boredom, which in turn affects the phenomenon of hidden truancy. Colleges and universities can formulate "no mobile phone classroom" regulations by prohibiting mobile phones from being brought into the classroom, shielding signals, or setting up mobile phone storage bags to exclude mobile phones from the classroom, thereby reducing hidden truancy behavior. Therefore, this research suggests that in the

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

management of colleges and universities, if the use of mobile phones as a teaching tool is not necessary for course teaching, try to promote classrooms without mobile phones as much as possible.

7.3 Give full play to the interactive function of mobile phones to enhance the interactivity of teaching

Smartphones are now fully popular. It is unrealistic to completely prohibit college students from using mobile phones in the classroom, and it does not meet the requirements of the development of the "Internet +" era. In addition, this research found that most students blame the hidden skipping of classes because of the boredom caused by the boring, boring content of the classroom, in the classroom management of colleges and universities, the positive impact of the popularization of smartphones on college students should be considered, to improve the interpersonal communication mode of college students in the classroom, such as the use of software platforms. Attendance management, questioning, and communication, especially based on the students' boredom and interest in courses discovered in this study, will affect their mobile phone use in the classroom, and then cause hidden truancy behavior. Therefore, we can learn from the data-supported classroom management model and establish data-supported classroom teaching management in college classrooms to form the teaching management goals of student behavior improvement, habit formation, ability improvement, and continuous growth (Zhan and Yang 2020). In addition, during the new crown pneumonia epidemic, online courses were popularized. With the help of smartphones and other tools, students realized the sharing of "textbooks, courseware, and other resources, including a new platform for teacher-student classroom interaction, as well as real-time feedback on teaching effects on Google meetings and Zoom. And evaluation" and other functions. Some researchers integrate student smartphones into classroom teaching systems, build smart electronic classrooms, realize real-time monitoring and effective application of mobile phones, and conduct practical demonstrations, proposing to integrate mobile phones into classroom teaching as a new teaching medium, which can not only be realized the goal of transforming mobile phones from a "toy" that affects classroom teaching to a "tool" that serves classroom teaching. More importantly, in classroom management, the behavior of students using mobile phones is no longer strictly guarded, which is more conducive to student acceptance and change (Xue 2018). Therefore, colleges and universities can use smart devices to change the traditional classroom management model and use mobile phones as an auxiliary tool for classroom teaching to change the negative effects of mobile phone dependence in traditional teaching, thereby reducing and eliminating hidden truant behaviors.

REFERENCES

1. Bianchi, A., & Phillips, J. G. (2005). Psychological Predictors of Problem Mobile Phone Use. *CyberPsychology & Behavior*, 8(1), 39–51. <https://doi.org/10.1089/cpb.2005.8.39>
2. Binnema, D. (2004). INTERRELATIONS OF PSYCHIATRIC PATIENT EXPERIENCES OF BOREDOM AND MENTAL HEALTH. *Issues in Mental Health Nursing*, 25(8), 833–842. <https://doi.org/10.1080/01612840490506400>
3. Chen, Peng, & Fan, Shi-Ling. (2021). The straying in virtual space: A qualitative study of online truancy among college students. *Research in Higher Education*, 42(2), 73-81.
4. Duan, Haidan, & Wang, Ying. (2021). Boredom and implicit truancy among college students: The mediating role of cell phone dependence. *Research in Electro-Chemical Education*, 42(10), 108-113. <https://doi.org/10.13811/j.cnki.eer.2021.10.015>
5. Eastwood, J. D., Cavaliere, C., Fahlman, S. A., & Eastwood, A. E. (2007). A desire for desires: Boredom and its relation to alexithymia. *Personality and Individual Differences*, 42(6), 1035–1045. <https://doi.org/10.1016/j.paid.2006.08.027>
6. Gao, T., Li, J., Zhang, H., Gao, J., Kong, Y., Hu, Y., & Mei, S. (2018). The influence of alexithymia on mobile phone addiction: The role of depression, anxiety and stress. *Journal of Affective Disorders*, 225, 761–766. <https://doi.org/10.1016/j.jad.2017.08.020>
7. Huang, H., Zhou, C. Y., & Yu, L.. (2013). The relationship between cell phone dependence and mental health among college students. *China School Health*, 34(9), 1074-1076. <https://doi.org/10.16835/j.cnki.1000-9817.2013.09.019>
8. Huang, S. H., Li, D. L., Zhang, W., Li, D. P., Zhong, H. R., & Huang, C. P.. (2010). Preliminary development of the Boredom Tendency Questionnaire for college students. *Psychological Development and Education*, 26(3), 308-314. <https://doi.org/10.16187/j.cnki.issn1001-4918.2010.03.004>
9. Huang, X. T., & Zhang, C. J.. (2001). Development of a time management tendency scale for adolescents. *Journal of Psychology*, 4, 338-343.
10. Liu, Hong, & Wang, Hongli. (2012). Cell phone dependence and loneliness among college students. *Chinese Journal of Mental Health*, 26(1), 66-69.
11. Liu, Pei-Ru, Jiang, Y. C., & Bai, X. L.. (2014). The relationship between cell phone Internet dependence and psychological harmony: the role of online social support. *Chinese Journal of Clinical Psychology*, 22(2), 277-280+276. <https://doi.org/10.16128/j.cnki.1005-3611.2014.02.026>

The Influence of Boredom Tendency and Mobile Phone Dependence on Hidden Truancy of College Students: An Intermediary Moderation Model

12. Liu, Qiu-Yun, Wang, Hui-Xin, Liu, Jian-Tao, & Song, Qi. (2012). A survey on the current situation of hidden truancy among college students in a local college. *Journal of Henan University of Science and Technology*, 2, 54-56.
13. Ma Yaju. (2018). An analysis of the hidden truancy phenomenon of college students based on students' perspective. *China Adult Education*, 15, 61-64.
14. Peng Honglei, & Jiang Xuying. (2011). The relationship between Internet addiction and time management tendencies among college students. *Chinese Public Health*, 27(6), 764-765.
15. Qiao, Y., Li, T., & Tian, Y. (2006). (2006). An analysis of the causes and countermeasures of truancy among college students. *China Higher Education Research*, 3, 78-80. <https://doi.org/10.16298/j.cnki.1004-3667.2006.03.032>
16. Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior*, 57, 321–325. <https://doi.org/10.1016/j.chb.2015.12.045>
17. Wang H, Huang H, & Wu H-M. (2014). The relationship between personality traits and cell phone dependence among college students: the mediating role of social anxiety. *Chinese Journal of Clinical Psychology*, 22(3), 447-450. <https://doi.org/10.16128/j.cnki.1005-3611.2014.03.061>
18. Wegner, L., & Flisher, A. J. (2009). Leisure boredom and adolescent risk behaviour: A systematic literature review. *Journal of Child & Adolescent Mental Health*, 21(1), 1–28. <https://doi.org/10.2989/JCAMH.2009.21.1.4.806>
19. Wen Zhonglin, Huang Binbin, & Tang Dandan. (2018). A prequel to questionnaire data modeling. *Psychological Science*, 41(1), 204-210. <https://doi.org/10.16719/j.cnki.1671-6981.20180130>
20. Xiong J, Zhou Zongkui, Chen Wu, You Zhiqi, & Zhai Ziyang. (2012). Development of a cell phone addiction scale for college students. *Chinese Journal of Mental Health*, 26(3), 222-225.
21. Xue, Shenglan. (2018). A study on the application of smartphone integration into classroom teaching. *Electrochemical Education Research*, 39(1), 86-91. <https://doi.org/10.13811/j.cnki.eer.2018.01.012>
22. Yang Yuxia. (2016). Research on the development and application of implicit truancy questionnaire for college students [Master, Shanxi Normal University]. <https://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CMFD&dbname=CMFD201701&filename=1016100523.nh&v=>
23. You Miao, Zhu Congxuan, & Li Zengke. (2020). Exploring the current situation of "hidden truancy" among college students and countermeasures for its management. *Journal of Guangxi Youth Cadre College*, 30(1), 10-14.
24. Yu, Xiaolin. (2021). Psychological factors influencing implicit truancy among college students: An empirical study based on strengths analysis. *Chinese Journal of Health Psychology*, 29(9), 1386-1391. <https://doi.org/10.13342/j.cnki.cjhp.2021.09.023>
25. Zeng H, Lai G, Wen HY, & Huang WG. (2011). The relationship between implicit truancy and personality traits and core self-evaluation among college students. *Chinese School Health*, 32(7), 793-794+799. <https://doi.org/10.16835/j.cnki.1000-9817.2011.07.011>
26. Zhan, Q. L., & Yang, J. J.. (2020). Research on leapfrogging classroom teaching management supported by data intelligence. *Research in Electro-Chemical Education*, 41(7), 100-107. <https://doi.org/10.13811/j.cnki.eer.2020.07.014>
27. Zhang Erqing. (2008). Analysis of the causes and countermeasures of truancy among college students. *Journal of Hebei Normal University (Education Science Edition)*, 9, 94-97. <https://doi.org/10.13763/j.cnki.jhebnu.es.2008.09.028>
28. Zhou H, & Long LR. (2004). A statistical test and control method for common method bias. *Advances in Psychological Science*, 6, 942-950.