

A Research on the Effect of Smart Mobile Phone and Wireless Internet on the Distraction of Chinese College Students During Class

Tuo Tong

China University of Geoscience, Beijing, China

Keywords: College student, internet, smart mobile phone, in-class concentration

Abstract: Since the development of modern technology, smart mobile phone and internet has changed people's life. We designed a questionnaire to find out how such technologies can affect the concentration during class among college students. 182 students from China University of Geoscience (Beijing) were enrolled in our study. Through the analysis of the data collected, it showed that male ones distracted more. According to their self-reported concentration level during class, students were divided into two groups with "good" or "bad" concentration level respectively. Students with bad concentration level distracted more during public fundamental courses and specialized courses. Compared with their counterparts with better concentration level they played mobile phone and dozed off more often during class. And these two activities were the main risk factors affecting the learning experiences during class. There were no significant differences of usages of wireless internet between the two groups of students with good or bad concentration.

1. Introduction

At present, in Chinese universities, the application of modern technologies has changed the ways of learning and teaching. In most of college class rooms, wireless internet connections were offered to college students free of charge. And smart mobile phones, which can be used to surf the internet and play electronic games, were relatively cheap and widely used among Chinese college students. In one hand, Chinese students enjoyed what the informational technologies brought to their life and their study and researching efficiencies has been widely improved by such convenience. In another hand, to some extent, informational technologies, especially the wireless internet connections and equipments, lead to a distraction from the teaching and courses. Psychologists and educators are aware of the potential negative impact from excessive internet use and related physical and psychological problems. [1–3] Users who spend a significant amount of time online often experience academic, relational, financial, and occupational difficulties, as well as physical impairments. [4,5] This study focused on the impacts of wireless internet and smart mobile phone usage during class on the learning outcomes and distraction of Chinese college students. We also tried to find out what kind of activities attracted them most and analyze the features of such distractions.

2. Method

We designed a questionnaire composing of 21 questions concerning in-class behavior, learning outcomes, usage of smart mobile phones and wireless internet of college students. Two hundred college students were enrolled, who were all from School of Humanities and Economic Management, China University of Geoscience (Beijing). Their ages ranged from 18 to 24 (median number is 20). 18 of their questionnaires were considered useless because of missed personal information or self-conflicting answers. And among 182 enrolled questionnaires 128 of the subjects were female and 54 were male. The data was analyzed with Chi-square test and Logistic regression (SPSS 19.0, Chicago, USA).

3. Results

According to their self-evaluation of in-class concentration and learning behaviors, the subjects were divided into two groups: Group A, subjects with lower concentration level, who reported a distraction of about 50% of the class hours during more than half of their classes; Group B, subjects with higher concentration level, the other group of students who reported a distraction of about 50% of the class hour during less than 50% of their classes.

It seemed that male ones were more likely distracted from classes ($p=0.057$, Table 1). And the more students distracted from class the less they learned. In Group A, there were significantly more students reported a worse learning experiences. ($p<0.001$, Table 2). Students in Group A and Group B had different concentration levels in distinct classes. There were significantly more people in Group B concentrated during specialized courses of their majors and public fundamental courses, such as English and mathematics. Politics and moral educational courses and optional courses attained much less attention, only a handful of students reported concentrated during such classes. (Table 3)

When students were distracted from the courses, students with different concentration levels choose distinct ways of amusement. The students who concentrated worse dozed off and play smart mobile phones more frequently when they distracted from the class while there were slightly more people got online in class than their counterparts with better concentration. (Table 4) However, in contrast to their differences, this survey showed students with different concentration levels used the internet to do almost the same activities. The ratios of students who wrote their Micro-blog (Chinese Twitter), updated their social media, discussed the latest hotspot in local BBS forum, chatting with instant on-line communication softwares and searching online for the knowledge useful for their homework, were constant between the two groups with different level of concentration. (Table 5)

There were several reasons behind their distractions during class. More than half of the students complained that the classes were too boring to concentrate. And about one third of them couldn't keep concentrating during unimportant courses, such as optional courses. "The courses were too simple to concentrate" was choose by other 10 percent students as one reason. There were significantly more students being sleepy and dozing off during class in the lower concentration group. And slightly more students preferred getting online to listen to their lecturers in group A. Compared to students in group B, more of them reported a dislike of the lectures while the numbers were not big enough to be statistically significant. (Table 6)

Logistic regression was done to analysis the possible factors affecting the in-class learning experiences. It showed that the more students dozing off and playing mobile phones the worse their in-class concentrations were. And in this analysis, gender, chatting and WIFI were not the reasons leading to bad attention (Table 7).

Table 1: Grouping of the subjects according to the extent of their distraction during class

	Male	Female	Total
Group A	36	64	100
Group B	18	64	82
Total	54	128	

Chi-square test: $p=0.057$. Male ones were more likely distracted during class.

Definition: Group A, lower concentration level, a group of students who reported a distraction of about 50% of the class hours during more than half of their classes; Group B, higher concentration level, the other group of students who reported a distraction of about 50% of the class hour during less than 50% of their classes.

Table 2: The more students distracted the less the knowledge they obtained

	Good	Bad	Total
Group A	26	74	100
Group B	58	24	82
Total	84	98	

Chi-square test: $p<0.001$.

Definition: Good, students learned $>50\%$ of the knowledge the lecturers taught during class-hours; Bad, students learned $\leq 50\%$ of the knowledge the lecturers taught during class-hours.

Table 3: Students with different concentration levels concentrated distinctively in different classes

	Politics and moral educational courses	Specialized courses	Public fundamental courses	Optional courses	Total
Group A	6	70	34	10	100
Group B	6	80	52	12	82
<i>p</i> value	>0.5	<0.0001	0.0001	>0.5	

Table 4: When students were distracted from the lecture, students with different levels of concentration chose different ways of amusement.

	Chatting	Dozing off	Playing mobile phone	Being online	Doing homework or study	Total
Group A	22	52	86	58	30	100
Group B	20	26	40	38	40	82
<i>p</i> value	>0.5	0.0093	<0.0001	>0.5	$p>0.05$	

Table 5: Students with different concentration levels used the internet with almost a same pattern.

	Micro-blog	Social Media	View webpages	BBS forum	Instant on-line communication	Doing homework or study on-line	Total
Group A	42	48	64	8	34	4	96
Group B	28	32	54	8	22	4	78
<i>p</i> value	0.37	0.3	>0.5	>0.5	0.39	>0.5	

Table 6: The reasons behind the distraction during class of students with different concentration levels had different distributions.

	Class was too boring	Class was not important	Class was too simple	Dozing off	Being online	Dislike the lecturers	Total
Group A	58	30	12	34	18	12	100
Group B	58	26	10	10	8	6	82
<i>p</i> value	>0.5	>0.5	>0.5	0.0012	0.1712	0.34	

Table 7: The Logistic regression of the factors influencing the in-class distraction of college students

	B	Standard Error	<i>P</i>	Exp (B)	95% C.I.of Exp(B)	
					Lower limit	Upper limit
Gender	-0.577	0.538	0.283	0.561	0.196	10.611
Chatting	0.571	0.565	0.312	10.770	0.585	50.352
Dozing off*	-10.053	0.516	0.041	0.349	0.127	0.959
Playing mobile phone*	-10.566	0.570	0.006	0.209	0.068	0.638
Being Online	-0.254	0.498	0.610	0.776	0.293	20.057
Doing Homework	0.958	0.494	0.052	20.607	0.990	60.866

The items with * meant they were significantly affected the in-class attention.

4. Discussion

In this research, we designed a questionnaire to investigate to what extent the usage of smart mobile phone and wireless internet connection can affect the concentration of college students during class. We found out that male students were more easily distracted during class. And a handful of studies support this observation, male students were more likely addicted to internet activities [6, 7]. However, in logistic regression analysis, the male gender was not a risk factor for bad attention. It might be because of the smaller number of male students, which led to contradicting statistic results, since there were much more female students in School of Humanity and Economic Management. As the data showed, the distraction harmed the in-class learning experiences and may hamper their academic performance. This casual relationship needs a further study. Similar results had been reported by different research groups [5, 6, 8]. As we expected, concentration of college students was course-specific. Students with better in-class attention like to listen what the lecturers taught them during their public fundamental courses and specialized courses. And in the courses during which their performance was not critical, the attention paid by them was almost the same compared with the group with worse concentration level. This result hinted that they cared more about their scores and the knowledge which may be helpful after they leave school or become graduate students. We had good reasons to speculate that students in this group may be good at self-control. At the same time, they had better scores and a better chance to get into a graduation school.

Students intended to do something more interesting during some tedious classes, and playing mobile phone was a convenient and safe choice, which was usually soundless and cannot disturb other students around or easily piss the lecturers off. Nowadays, smart phones become more and more powerful and so cheap that even a student whose family economic status was not so ideal can afford one with which he or she can take photos, play games and get online. And it seemed that mobile phones were more attractive to students with bad concentration level. To our surprise, the frequencies of getting online between these two groups were the same. When they didn't listen to

the lecturers' students with good or bad concentration levels used their smart mobile phones or laptops connecting to the free WIFI offered by their college by the same probabilities. One of the reasons behind the data was that surfing the internet was such a common entertainment that young adults, whatever their attitudes toward study were, resorted to it when they felt boring. One other reason possibly was that the ready WIFI offered by the college made the internet connection so easy that any one at any time can get online. In this case, internet has become part of the college life of Chinese students and influenced the way by which young people observe and experience the society.

Another unexpected result was the distinctive numbers of people dozing off during class between the two groups. This factor was even more significant than gender. The shorter people's sleep was the more they dozed off in day time. So, there must be some activities occupying their sleep hours. It may be playing online games, watching online film in dormitory or dating with one's friends. Some researchers reported that such causes can affect the absenteeism of college students [9,10]. If a student had some behavior problems to disturb their time schedule, they may need some help to correct them. However, the exact reasons behind this phenomenon need more effort to be uncovered.

5. Conclusions

We found out that smart mobile phone and dozing off during class were the two most outstanding factors affecting the in-class concentration of Chinese college students. However, since it is almost impossible to reverse the universalness of smart mobile phone and internet it depends on the concerted endeavor of lecturers and school managers to improve the in-class concentration of college students.

References

- [1] Griffiths MD. Does Internet and computer addiction exist? Some case study evidence. *Cyber Psychology & Behavior* 2000; 3, 211–18.
- [2] Young KS. Internet addiction: the emergence of a new clinical disorder. *Cyberpsychology & Behaviour* 1996; 1, 237–44.
- [3] Greenfield DN. Psychological characteristics of compulsive Internet use: a preliminary analysis. *Cyberpsychology & Behavior* 2000; 5:403–12.
- [4] Chou C. Internet heavy use and addiction among Taiwanese college students: an online interview. *Cyber Psychology & Behavior* 2001; 4:573–85.
- [5] Ni X-L, Yan H, Chen S-L, et al. Factors Influencing Internet Addiction in a Sample of Freshmen University Students in China. *CyberPsychology & Behavior* 2009; 12: 327-330.
- [6] Caplan S.E. Relations among Loneliness, Social Anxiety, and Problematic Internet Use. *Cyberpsychology & behavior* 2007; 10:234-242.
- [7] Odaci H, Kalkan M. Problematic Internet use, loneliness and dating anxiety among young adult university students. *Computers & Education* 2010; 55:1091–1097.
- [8] Li D, Li X, Wang Y, Zhao L, Bao Z, Wen F. School Connectedness and Problematic Internet Use in Adolescents: A Moderated Mediation Model of Deviant Peer Affiliation and Self-Control. *J Abnorm Child Psychol* 2013; 10. 1007/s10802-013-9761-9.
- [9] Clores M.A. A qualitative research study on school absenteeism among college students. *Asia-Pacific Edu Res.*2009; 18:151-165.
- [10] Wadesango N and Machingambi S. Causes and structural effects of student absenteeism: a case study of three south african universities. *J Soc Sci.* 2011; 26: 89-97.