

# Exploring How Graduate Students Use Smartphones for Academic Purposes Outside of the Classroom

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## Abstract

This exploratory research study looks at how graduate students use their smartphones outside of the classroom for work related to their classes and research. The participants interviewed were two American and two South Korean graduate students. In particular, the locations of use, the perceived impact of smartphone use on academic success, and national differences were compared. The results from this preliminary study suggest that graduate students engage in smartphone use for multiple reasons, and that those reasons are contextual and situationally specific. The goal of this research study is to critically analyze and compare the behaviors of domestic and international graduate students in the United States to understand how they utilize their smartphones for academic purposes.

**Keywords:** Smartphone use; student information behavior; technology; academic success

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## 1 Introduction

Students use their smartphones for many reasons, and many students feel that their smartphones are an integral part of their lives (Gikas and Grant, 2013, p. 24; Marchant and O'Donohoe, 2014). Therefore, students could potentially be more effective and efficient in their everyday lives by completing their assignments and research directly on their smartphones. Rather than needing to carry textbooks or even laptops, smartphones provide new technological opportunity for students to better manage their academic lives. However, are students utilizing smartphones in a way that benefits them the most, or are students even aware of how they could use their smartphones for schoolwork? Furthermore, are students distracted by the other uses of their smartphone and thus not taking advantage of working academically on their smartphone? While research has been conducted to find out more about students' experiences with using social media for academic purposes (Arteaga Sánchez et al., 2014) and for using smartphones within a classroom setting (Yu & Conway, 2012), the context of students utilizing smartphones for academic reasons outside of classroom has not been a focus. Therefore, this research study intends to uncover the information behaviors of graduate students in this context so that students, educators, and system designers can better harness the capabilities of smartphones for school-related use.

## 2 Literature Review

### 2.1 Cellphone Use

High amounts of cellphone use has been connected to an increased chance of becoming addicted to cellphones (van Deursen et al., 2015). In their study, van Deursen et al. (2015) looked at how age, gender, process use, social use, emotional intelligence, social stress, and self-regulation affected habitual and addictive smartphone behavior. They found that process use, social use, and low self-regulation are determinants for habitual and addictive smartphone behavior. Furthermore, they found that older individuals were less likely to develop habitual and addictive smartphone behavior. Additionally, men were less likely to become addicted to smartphones because they "experience less social stress than women, and use their smartphones less for social purposes" (van Deuren et al., 2015, p. 417).

### 2.2 American vs. Korean Student Information Seeking

Jeong (2004) conducted in-depth interviews using grounded theory of eight Korean doctoral students, finding that "life for Korean graduate students is marginal, stressful, and iterative" (p. 389). Korean graduate students experienced information seeking barriers due to their perceived inability to communicate in English as well as due to their strong connections to their Korean church, which prevented them from connecting with people outside of their ethnic community.

### 2.3 Theoretical Framework

Activity Theory was used as the theoretical framework for this research study. Both Kuutti (1996) and Miettinen et al. (2012) examine activity theory and how it relates to human-computer interaction, and therefore the activity theory perspective is helpful in understanding the activities of the graduate students on their smartphones.

## 3 Research Questions

**RQ1.** What are the ways, if any, in which graduate students utilize smartphones for academic purposes outside of the classroom? How does this differ between domestic and international graduate students?

**RQ2.** Where do graduate students use smartphones the most in this context, if at all? How does this differ between domestic and international graduate students?

**RQ3.** How do graduate students perceive the use of smartphones in this context impact their success in their coursework, if at all? How does this differ between domestic and international graduate students?

## 4 Methods

Semi-structured interviews were conducted with two American and two South Korean graduate students, with one female and one male participant from each nationality for a total of four participants. Transcripts from the interviews were coded to categorize how the students use their smartphones outside of the classroom for school-related work, and the categories were compared between the American and South Korean students (RQ1). Additionally, the transcripts were coded for the types of locations in which students use their smartphones, and these were compared between students (RQ2). In the next section, the preliminary findings will be discussed, comparing how the graduate students see their smartphones impacting their academic success and the different ways and places in which they use their smartphones (RQ3).

## 5 Preliminary Results

Cheung & Hew, 2009	Research Study Examples
Multimedia Access	Watching TED Talks
Communication Tool	Emails; Texting other students; Skype
Capture Tool	Taking photos of written notes
Representational Tool	Dropbox
Analytical Tool	Google Sheets
Assessment Tool	N/A
Task Managing Tool	Calendar; Checklists; Project Management

Table 1. Comparison of Categories of Academic Smartphone Use

All except for one of the categories from Cheung and Hew (2009) were found in the interviews. None of the pilot study's participants discussed their smartphones as an assessment tool, which "refers to the employment of handhelds for students to answer examination questions, tests, or quizzes" (Cheung & Hew, 2009, p. 157). One potential reason could be since they were all at the doctoral level, they might not take tests or quizzes in the same way that K-12 students do. The category mentioned the most in the interviews was using a smartphone as a communication tool, in particular to check and answer emails. The two women discussed the social aspect of their smartphones with more of a focus than the two men, for example saying, "I see the phone as a social device not really as a working device, but I mean it can help at times when you're in a pinch." One of the men mentioned, on the other hand, how he uses it more for productive reasons, saying "my recreational time how now sort of become just productive."

### 5.1 Locations of Academic Smartphone Use

All four interviewees checked their smartphones in the morning while in bed, and mentioned that this was probably the most consistent place that they used their smartphones for academic-related purposes: "The place where I would say I use my smartphone everyday for sure is in my bed, because I wake up and I don't want to get out of bed."

They mostly used their smartphones while at home, mentioning the following places within their houses: bed, kitchen counter, kitchen table, living room, and home office. Additional locations included: in

their parked car, on public transit (trains or buses), in class, and in waiting rooms. The locations in which they used their smartphones for academic purposes were limited, and they all mentioned that they used their phones more for supplemental purposes rather than for “heavy work.”

## 5.2 Impact of Smartphone Use on Academic Success

None of the participants thought that their smartphones greatly impacted their academic success. Nevertheless, they all believed that it had some kind of impact. For example, one participant conveyed their thoughts by explaining, “I cannot say big impact, but maybe between small and big because of the convenience of checking emails and information.”

Convenience, ease-of-use, and speed were all reasons given for the positive impact of smartphones for academic use. One example is that “answering emails very quickly is appreciated by students and it results in them evaluating you positively.” This was also seen as potentially negative for one participant though, who said that “sometimes the design advantage of almost all time connection is annoying, sometimes very stressful, very urgent.”

Their smartphones were also a source of distraction, with almost all of the participants mentioning their strategies for avoiding being distracted by their smartphones. Relatedly, one participant said, “I became addicted really quickly because you can do so many things on this.” This participant’s observation supports the literature on smartphone addiction and thus could be a focus of future research.

## 5.3 National Differences

The only difference found between the American and South Korean graduate students were that the South Korean students used South Korean-English dictionaries on their smartphones. In fact, one participant said, “In my personal opinion I think it’s very different by individual instead of by country.” As such, it is not suggested that future research continue to look just at national differences. There could be other factors at play that create similarities and differences in smartphone use, so new paths should be pursued to uncover variations of smartphone use.

## 6 Conclusion

For academic purposes, the four interviewed graduate students mostly used their smartphones to check emails and communicate with other students and professors. They also checked their schedules and events, and used their smartphones to check news and social media. Since their smartphones were used more for surveillance purposes, in other words to stay updated on their personal and professional lives, it would be salient to continue research on how they manage their information for both professional and non-professional contexts. In addition, the graduate students used their smartphones mostly at home, suggesting that their phones were more for convenience rather than for labor-intensive work. Although this is not a new concept, it is important to not make assumptions on how and where people use their technological devices, especially because technology use can be determined by many factors other than simply task or goal. As can be seen from this exploratory study’s results, both American and South Korean graduate students navigate their lives by utilizing the available tools and skills at hand, thus bringing different affordance to light depending on the context and personal goals or habits of each individual.

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