MOBILE PHONES AS DISTRACTING TOOLS IN THE CLASSROOM: COLLEGE STUDENTS PERSPECTIVE

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Abstract

There are more than six billion users of cell phones worldwide. The need for people to connect with others frequently is apparent in our society. People use mobile phones everywhere and every time, to call and text friends, surf the web, visit social sites and attach themselves to their communication devices at all times. As the use of mobile phones has proliferated in academic settings in recent years, new challenges are faced by institutions of higher education and their faculties. Research indicates that increasing use of mobile phones by the students in the classroom causes a big distraction, although all of the college students have their own mobile phones and all of them regularly bring their devices to courses. The prevalence and inconvenient usage of mobile phones in colleges has prompted college administrators to create policies to manage mobile phone use during the school day. Also there is a lot of support for mobile phones to be banned from colleges, but such rules are not accepted or enforced in universities. Actually, college students must have the ability to consider the advantages and disadvantages of their behaviors. This study enlightens the situation about use and abuse of cell phones during courses. This paper presents the result of a study conducted on 300 college students from faculty of business administration at Sakarya University to gain a better understanding of the frequency and manner of cell phone use in college classrooms. Focusing on the use of text messaging during courses, students reported on their own and others' use of cell phones. The current research reveals that minority of the students use their smartphones during class time to enhance learning, such as using their smartphones as computers to look up relevant information pertaining to the lesson, as cameras to take pictures of information on the blackboard or screen, as calculators, and so forth. However, majority of the students use their smartphones during class time for personal use not related to learning. One of the most striking result of this study shows that majority of the students distract their classmates and they will continue to behave this way, unless the administrators take precautions.

Keywords: Misuse of mobile phones, abuse of mobile phones, phubbing, mobile phone use in class

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SINIF İÇERİSİNDE DİKKAT DAĞITMA ARACI OLARAK CEP TELEFONLARI: ÜNİVERSİTE ÖĞRENCİLERİNİN BAKIŞ AÇISI

Özet

Dünya çapında 6 milyonu aşkın cep telefonu kullanıcısı bulunmaktadır. İnsanların sıkça birbirleriyle iletişim kurma ihtiyacı duyduğu gözlenmektedir. İnsanlar her zaman ve her yerde, arama yapmak, mesajlaşmak, internette dolaşmak, sosyal paylaşım sitelerini takip etmek amacıyla cep telefonu kullanmakta ve iletişim cihazları ile bütünleşik halde yaşamaktadır. Son yıllarda cep telefonlarının eğitim ortamlarında hızla çoğalmasıyla beraber yükseköğrenim kurumlarını ve fakülteleri zorlu bir durumla karşı karşıya bırakmıştır. Bu araştırmada, üniversite öğrencilerin sınıflarda cep telefonu kullanmasının dikkati büyük oranda dağıttığını, buna rağmen öğrencilerin tamamının cep telefonuna sahip olduğunun ve hepsinin cihazlarını ders esnasında da yanlarında taşıdığının altı çizilmektedir. Cep telefonlarının yaygın ve uygunsuz kullanımı, yöneticileri bu konuda bir takım kurallar koymaya mecbur bırakmakta, ancak uygulanan kurallar üniversite yönetimi tarafından kabul edilmemekte veya mecbur tutulmamaktadır. Her ne kadar öğrencilerin ders esnasında telefon kullanmanın avantajlarını ve dezavantajlarını bilmeleri gerekiyor olsa da, bu çalışmanın asıl amacı öğrencilerin bu konudaki düşüncelerini açığa çıkartmaktır. Bu makalede, üniversite dersliklerine cep telefonu kullanım sıklığı ve alışkanlığının değerlendirilmesi amacıyla, Sakarya

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Üniversitesi İşletme Fakültesinde öğrenim görmekte olan 300 üniversite öğrencisi ile yapılan araştırmanın sonuçlarına yer verilmiştir. Ağırlıklı olarak ders esnasında mesajlaşmanın konu edinildiği çalışmada öğrenciler kendilerinin ve sınıf arkadaşlarının kullanımına ilişkin bilgi vermişlerdir. Çalışmanın sonuçlarına göre akıllı telefonların ders esnasında en fazla kullanılma sebebi dersle ilgisi olmayan kişisel sebepler olarak ön plana çıkarken; azınlık bir öğrenci topluluğu dersle ilgili bilgilere erişmek veya tahtadaki ders notlarının resmini çekmek ya da hesap makinesi kullanarak dersteki öğrenme verimini arttırmak amacıyla da telefonlarından yararlandıklarını belirtmişlerdir. Çalışmanın en çarpıcı sonuçlarından birisine göre; öğrencilerin büyük bir çoğunluğu ders esnasında arkadaşlarını telefon kullanarak rahatsız ettiklerini kabul etmiş ve gerekli tedbirler alınmadığı takdirde bu şekilde davranma niyetini açıkça ortaya koymuştur.

Anahtar Kelimeler : Cep telefonlarının kötüye kullanımı, cep telefonlarının suistimali, sınıfta cep telefonu kullanımı
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1. INTRODUCTION

In recent years, the mobile phone alternately referred to as cell phone has become one of the fastest-growing communication technologies ever, with subscriptions reaching went from almost none to a half billion through the 1990s (ITU, 2002), over two billion in 2005 (Wireless Intelligence, 2005) and now nearly 7,5 billion (GSMA Intelligence, 2014) worldwide. Mobile phones proliferate in our society, influencing the way people communicate on a daily basis. Studies have examined mobile phones can be used in any settings, including restaurants, grocery stores, buses, trains, and movie theaters for e-mail, text, find information, take picture, communicate, use map etc. (see, for example, (Ling, 1997, 2002; Murtagh, 2002; Campbell & Russo, 2003; Rice & Katz, 2003; Campbell, 2004) whenever you want and wherever you need. Considering the practically and popularity of this communication tool, it is surprising that appropriate and polite use of mobile phone is still unclear as there is no definitive set of rules for its usage (Elgan, 2010; Rosenfeld & O'Connor-Petruso, 2010).

In this context, although the urbane use of mobile phones is not identified, the impolite behaviors are well known. Phubbing is a brand new expression and stands for "phone snubbing", describes the act of snubbing someone in a social setting by looking at your phone instead of paying attention. This word is born as part of a campaign by Macquarie Dictionary. In May 2012, the advertising agency behind the campaign - McCann Melbourne - invited a number of lexicographers, authors, and poets to produce a new word to describe the behavior. The term has appeared in media around the world, and was popularized by the Stop Phubbing campaign created by McCann.

By means of this very meaningful word, the disrespect of the students, don't paying attention to the teacher during courses, found a name. Nowadays, this rudeness is rifle throughout the world in all walks of life. The abuse of smart phones has placed people at the risk of impaired social interactions. When it comes to smartphones, tablets and other mobile delights, many of the adults have the unfortunate tendency to behave like children: prodding and poking their shiny toy to the exclusion of anyone and anything else. People would rather communicate via text instead of talking face-to-face. As an increasingly pressing issue, phubbing has raised global attention and stirred widespread discussion. Almost in all kinds of social settings one can find phubbers.

Nevertheless the problem of phubbing becomes much trickier when it comes to the field of education. Traditionally expected, while the learning environment should be quite and pleasant, portable device use has become increasingly common in the classroom with 62% of students reporting the use of electronic media for non-academic purposes while in class, studying, or doing homework (Jacobsen & Forste, 2011) and estimated 95% of college students bring their mobile phones to class every day. For example, one study found that a third of college students in the U.S. play video games on their mobile phones during class (Gilroy, 2004). End, Worthman, Mathews, and Wetterau (2010) claimed that ringing mobile phone impairs student performance during the lesson. However, mobile phone ringing is distracting, students typically do not converse with the caller during lectures (Barks, Searight, & Ratwik, 2011). Although, silent cellular phone text messaging permits extensive conversational exchanges during classes that may not be as obviously disruptive (Young, 2006), a significant proportion of surveyed believe that texting creates a distraction to those sitting nearby (Tindell & Bohlender, 2010). Considering that the classroom discipline is one of the most important aspects in teaching and learning, it become not easy for teachers to struggle with mobile phones' negative impacts on students while keeping them focused on learning. In addition to all this negativity, some students have found ways to use mobile phone by accessing information online during an exam, taking and disturbing photos of exam, and text-messaging answers to exam questions (Katz, 2005).

As seen from another frame, it is important to recognize that not all mobile phone use in educational contexts is objectionable. For example, Katz (2005) reported on uses of the technology for tutoring, accessing Internet resources, and connecting students, instructors, and parents in efforts to coordinate school-related activities. Others have noted the potential of the technology to support anytime, anywhere learning (Mifsud, 2003), new forms of collaboration in distance education (Milrad, 2003), distributed intelligence (Fischer

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& Konomi, 2005), and knowledge communities through ''m-learning,'' the mobile evolution of Internet-based e-learning (Nyiri, 2002).

Gilroy (2004) argued that the opinions of faculty regarding the use of cell phones in the classroom are quite diverse, with some faculty members wishing to ban them and others feeling that even guidelines on cell phone use are overly restrictive and unnecessary. Some institutes have certain guidelines for restricting the students for carrying and using mobile phones in the class rooms, whereas some institutes are not much restrictive (Shrivastava & Shrivastava, 2014). A study, conducted by National Education Association (NEA), shows that 85% of a sample of higher education instructors in the U.S. agreed that professors include policies regarding the in-class use of mobile phones on their syllabi.

The world is changing and people do not feel safe themselves without their communication devices. Indeed they are not so unfair… A development psychologist Andrew Trotter has said: "By using technology, children are feeling more of a sense of mastery and are feeling good about themselves." Just think about it. In 1999 schools shouting in Colorado, in 2012 another terrorist attack occurred and 6 teachers were kidnapped in Turkey, and the most known and terrifying one is called "Beslan school hostage crisis" lasted three days and involved the capture of over 1,100 people as hostages, ending with the death of 385 people. Accordingly, the purpose of this study is to explore students' intention about phubbing during courses and find out if they bring their mobile phones because they want to feel safe or just because of phubbing or cheating..

2. LITERATURE REVIEW

The modern era of the college classroom began with two instructional items: the chalkboard and the overhead projector. Since those early days, classrooms are equipped with new technology products. Today's college classroom may contain computer projection, large screens and/or whiteboards, and all of the devices necessary to enhance education. All of the technology in the classroom had one thing in common: it was controlled or utilized by the instructor.

Perhaps the most interesting, challenging, and controversial technology to be introduced does not come from the instructor, but rather the student that being the electronic devices students are bringing into the classroom (Bayless, Clipson & Wison, 2013).

When cell phones first began to appear in the classroom, an annoying ringing phone would announce its presence and students would look around wondering who it belonged to. This distractor made it difficult for the instructor to keep the attention of the class. Later the rings changed to notes of a song, then to vibrations, which could bounce a phone across a metal desk, and finally to text messages. Every call or message is a distraction to someone. Now smartphones have access to the internet allowing students to browse on Facebook or any other website, as well as check email and send text messages.

Many recent studies have been conducted to clarify the usage of mobile phones in class, but the literature is insufficient about the new expression, phubbing. No study to date has surveyed students' mobile phone using habits under the frame of phubbing. As phubbing means snubbing someone by looking at your phone instead of paying attention, we consider that, being busy with mobile phones during courses is an act of phubbing.

Tindell and Bohlander (2012) surveyed 269 college students and argued that the use of the cell phone is a distraction and that "if students are spending time texting, they are not paying attention in class". Campbell (2006) conducted a study to explore some of the challenges associated with mobile phones in college classrooms. Participants including students and teachers reported that ringing is a serious source of irritation and distraction for both students and faculty members and supported for formal policies restricting the technology during class time. Froese et al. (2012) found students expect texting during classes. Clayson and Haley (2012) found students received and sent texts during class time. Students believed they could listen to lectures and text at the same time. This was not so and they earned lower grades.

Synnott (2013) surveyed 129 students at a midsized public university in New England. The study's focus was on students' use of smartphones during class time and their perceptions with regard to their classmates' use of smartphones concerning: texting, surfing the Web, visiting social sites, and leaving the classroom to take calls. He found all students do engage in these activities during class time to some degree. He also found that students misperceive that their peers use their phones more than they do themselves. These misperceptions may result in students increasing their use of smartphones during class time to be like their peers.

A pilot study conducted by Burns and Lohenry (2010) surveyed faculty and students in the health sciences to determine the perception of cell phone use during class. About 40% of the students indicated that they used their phones during class, and this activity caused a distraction for about 85% of the students. It seems clear that students are using their phones during class, and that this behavior is potentially disruptive. They also found the majority of students and faculty believed that cell phones were distracting during class. These personal behaviors in the context of teaching and learning often annoy professors (Jenkins, 2011). This is not the case for all professors of course.

Massimini and Peterson (2009) found students' use of smartphones resulted in tardiness. Tardiness results in negative consequences on the learning experience for the late students and the students interrupted by this behavior.

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Dzubak (2012) found interruptions during the learning process inhibit knowledge acquisition. Another study found students who experienced a ringing smartphone during a video presentation performed poorly compared to students in a control group who did not experience ringing phones (End, Worthman, Mathews, & Wetterau, 2010).

Braguglia (2008) examined the use of cell phones in a college setting. Over half of the students in the survey reported that they "interact with their cell phone during class time in every class they attend" (Braguglia 2008, 59), but the vast majority did not feel that the use of their phone interfered with learning. This study was limited to business majors, however, and did not focus on classroom management issues, but rather dealt with the overall use of phones by students.

Findings such as these may not be surprising given other research involving human behavior and the use of digital technology. Ophir, Nass, Wagner, Anthony & Posner (2009) noted society's increasingly saturated media environment means more people are consuming more than one content stream at the same time. Ophir told Thomas (2009) the human mind is not really built for processing multiple streams of information. Foerde and Poldrack (2006) found people had a harder time learning new things when their brains were distracted by another activity. In classroom settings, Wei, Wang and Klausner (2012) found texting during class partially affected a students' ability to self-regulate their attention to classroom learning. In an earlier study, Wei and Wang (2010) noted college students' ability to text and perform other tasks simultaneously during class might become a habit over time. Such habits may be defined as automatic behaviors triggered by minimum consciousness.

McCoy (2013) asked 777 college students from six U.S. universities to describe their behavior and perceptions regarding classroom use of digital devices for non-class purposes. He stated that the average respondent used a digital device for non-class purposes 10.93 times during a typical school day for activities including texting, social networking, and emailing. Most respondents did so to fight boredom, entertain themselves, and stay connected to the outside world. More than 80% of the respondents indicated such behavior caused them to pay less attention in the classroom and miss instruction.

In their paper Belwal and Belwal (2009) conducted a study on identifying mobile phone usage behavior of college students in Oman. They conducted a survey of 200 students in Muscat and Sohar cities of Oman. Their research revealed that a majority of students make less than 10 calls but more than 10 SMS per day, they feel uncomfortable without mobile phones, they keep their mobile phone switched on 24 hours, and they are equipped with almost every feature in their mobile. That means, students are keeping their mobile phones during their class times also.

Students are busy in receiving and sending text messages while attending a class lecture. Gilroy (2004) found that a third of college students in the US play video games on their mobile phones and laptops during class. Other studies from Korea, Norway, and the US indicate that various forms of mobile phone use take place in classrooms all over the world (Katz, 2005).

These studies show that students' smartphone use during class time is common, disrupts the learning process and distracts classmates. Research on this evolving topic, namely phubbing is limited; also research in this area needs frequent updating because the proliferation of new technology is growing at an exponential rate.

3. METHODOLOGY

Students from a state university in Turkey, Sakarya participated in this study. Students were invited to participate in the survey by one of their instructors, when they were waiting for the course to begin. The selection process produced a stratified sample with respect to academic major, with 6 different majors, representing the business school at the university.

We prefer to choose stratified random sampling over other types of sampling, because we want to examine if the trends vary between subgroups within the population. Stratified sampling is appropriate for this because it ensures the presence of key subgroups within the sample. Also stratified random sampling allows us to observe relationships between subgroups. With this type of sampling, we are guaranteed subjects from each subgroup are included in the final sample, whereas simple random sampling does not ensure that subgroups are represented equally or proportionately within the sample.

Another fact for using stratified sampling is our interest in rare extremes of the business school population, such as department of management information systems or international trade which have less population; by that way we can representatively sample even the smallest and most inaccessible subgroups of the college population. Simple random sampling does not allow this.

Stratified random samples generally require smaller sample sizes, which in turn can save a lot of time and effort for us. This is because this type of sampling technique has a high statistical precision compared to simple random sampling due to the fact that the variability within the subgroups is lower compare to the variations of dealing with an entire population (Babbie, 2001).

We use proportionate stratified random sample in this research to represent the business school truly. In proportional stratified random sampling, the size of each strata is proportionate to the population size of the strata when looked at across the entire population. This means that each stratum has the same sampling fraction. We have six strata with population sizes of 760, 1530, 70, 90, 900

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and 140. We chose a sampling fraction of 1/10, this means we randomly sample 76, 153, 7, 9, 90 and 14 students from each stratum respectively. The same sampling fraction is used for each stratum regardless of the differences in population size of the strata. In order to conduct this quantitative analysis, totally 349 students from six departments participated the survey.

Table 1: Descriptive Statistics

	Frequency	Percent	Cumulative Percent
Strata 1	76	21,8	21,8
Strata 2	153	43,8	65,6
Strata 3	14	4,0	69,6
Strata 4	90	25,8	95,4
Strata 5	7	2,0	97,4
Strata 6	9	2,6	100,0
Total	349	100,0	

4. RESULTS AND DISCUSSION

Because the participants could choose to omit questions if they desired, the sample could vary by question, but all of them are answered. The sample size didn't differ from the total of 349.

All participants (100%) said they had a mobile phone that could be used for text messaging and almost all of them (99%) indicated they had sent standard text messages. The vast majority (99,1%) said they always bring their phone to class. It is clear that college students are using their cell phones in the classroom. Almost all (98%) admitted to sending or receiving text messages while waiting for class to begin. About 95% admitted that they phub in class at least once or twice, and 32% do this every day. The participants also notice the phubbing done by others in the classroom, with 98% of students indicating they have noticed this at least once or twice.

If we consider being busy with the mobile phones during courses as phubbing, this means at least 95% of the students take a part in this rude behavior.

The students indicated that while in class their phones were either set to vibrate (51,6%) or silent mode (44,4%). Only 2,3% of the respondents stated they turn off their mobile phones and 1,7% of them said their phones stay at loud mode.

Generally, women and men make different decisions and they have different manners. The female student profile at Sakarya University seems more sensitive and timid than male students. Accordingly, we decided to make cross tabulation for sound profile and gender to analyze the relation. Table 2 shows the results. The exciting part is that the percentages differ in silent and loud modes. 54% of female students prefer to use their phones In silent mode where this percentage is just 26,5

for male. Majority of female students (54%) set their phones to silent mode. Most of the male students (48,9%) set their phones to vibration mode. Because the sample size is not so big, it's hard to comment on some results. Only 6 students indicated they set their mobile phones to loud mode during courses. Whereas one of them is female, 5 respondents is male. The pattern of percentages within genders reveal the intention of students. Male students seem calmer, whereas female participants appear more sensitive about disturbing their classmates.

Table 2: Sound Profile * Gender Relation

			Gender		Total
			Female	Male	
Sound Profile	Turned off	Count	4	4	8
		% within Sound Profile	50,0%	50,0%	100,0%
		% within Gender	1,9%	2,9%	2,3%
		% of Total	1,1%	1,1%	2,3%
	Silent	Count	114	41	155
		% within Sound Profile	73,5%	26,5%	100,0%
		% within Gender	54,0%	29,7%	44,4%
		% of Total	32,7%	11,7%	44,4%
	Vibration	Count	92	88	180
		% within Sound Profile	51,1%	48,9%	100,0%
		% within Gender	43,6%	63,8%	51,6%
		% of Total	26,4%	25,2%	51,6%
	Loud	Count	1	5	6
		% within Sound Profile	16,7%	83,3%	100,0%
		% within Gender	0,5%	3,6%	1,7%
		% of Total	0,3%	1,4%	1,7%
Total		Count	211	138	349
		% within Sound Profile	60,5%	39,5%	100,0%
		% within Gender	100,0%	100,0%	100,0%
		% of Total	60,5%	39,5%	100,0%

Phubbing can occur by texting, surfing the web, checking time, answering a call etc. The multiple choice question about the usage purpose of mobile phones during class revealed that majority of the students (77,8%) use their phones to check time or date and 54,5% use as a calculator. Although these purposes show students so innocent, 56,9% of them indicated they check whatsapp, 41% send messages, 32,9% surf the web, 22% use facebook during courses. This results show that checking time or date forms the greatest portion of phubbing.

However, students do not feel that instructors are aware of their phubbing habits. Almost half of the respondents

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indicated that it is easy to text in class without the instructor being aware. Another third of the respondents said that the difficulty depends on the class, with it being easy in some and more difficult in others. When asked to complete the following statement, "If college instructors only knew about text messaging in the classroom, they would be shocked," students most commonly responded (84%) that instructors would be shocked if they knew how much texting goes on. So, students are consistent in their views that instructors are unaware of the extent to which texting occurs. Students apparently do not want to risk a confrontation with the professor, and so are less likely to text in class if the instructor has a set policy and seems to care whether the students are texting. The participants also claim that %92 of the instructors, who care about phubbing and have a set of rules during courses, is male.

The size of the classroom also has a big impact on how easy it is to phub without being noticed. The vast majority (92%) of participants believed they could text without the instructor being aware in a classroom that had more than 50 students, and about half felt they could go undetected in a class with fewer than 25 students. This percentage decreased to only 16% if the class had less than 10 students. Consistent with this finding, when asked to specify what classroom characteristics make it easier to text, participants most frequently referred to the size of the classroom, indicating that it is easier in large classrooms, with more students. This seems to be particularly true when the room is crowded and there is an obstructed view from the instructor to the phubbing student.

With the apparent widespread use of cell phones in class, we questioned the reasons which make the students to phub during courses. About 13% of the students surveyed indicated that they prefer to phub because they wanted to be online. Another 13% claimed that they do it just for fun. The greatest portion with 60% said they start phubbing because they get bored during courses, only 14% indicated they get busy with their mobile phones in an emergency.

Although the students continue phubbing, they are aware of its disadvantages. Nearly 80% of the participants indicated that they become distracted and miss the course because of phubbing. Also 21% of them confess that phubbing during courses effect their academic performance negatively.

Based on student responses to the present research, it appears that students are not willing to simply give up their mobile phones in class and would continue to try to phub even if classroom policies banned their possession or use. When students understand the need to have a mobile phone policy and can help to set that policy for a class, they may be more likely to comply. It appears that many of the offending students may not be aware that their behavior is causing a distraction for their classmates, or that phubbing could be a problem for the instructor. Given the additional information, the students may be more likely to comply with an existing policy or help negotiate an alternative policy they would be willing to follow.

Having a cell phone policy in place is not enough, however. Faculty must enforce the policy for it to be effective. Individual instructors must monitor the use of cell phones, making it clear that phubbing will not be tolerated. Clearly the use of mobile phones in the college classroom is an issue that academic institutions cannot ignore, and it demands action by faculty to ensure an effective learning environment for all students..

References

Babbie, E. (2001). The Practice of Social Research: 9th Edition. Belmont, CA: Wadsworth Thomson

Barks, A., Searight, H., & Ratwik, S. (2011). Effects of Text Messaging on Academic Performance. Journal of Pedagogy and Psychology "Signum Temporis", 4(1), 4-9.

Bayless, M. L., Clipson, T., & Wilson, A. (2013). Faculty Perceptions and Policies of Students' Use of Personal Technology in the Classroom. Journal of Research in Business Information Systems, 119.

Belwal, R., Belwal, S., (2009). Mobile Phone Usage Behavior of University Students in Oman. NISS '09 Proceedings of the 2009 International Conference on New Trends in Information and Service Science. IEEE Computer Society, pp. 954-962.

Braguglia, K. H. 2008. Cellular telephone use: A survey of college business students. Journal of College Teaching & Learning 5: 55–61.

Burns, S. M., & Lohenry, K. (2010). Cellular phone use in class: Implications for teaching and learning: A pilot study. College Student Journal, 44(3), 805-810.

Campbell, S. (2004, November). Normative mobile phone use in public settings. Annual Meeting of the National Communication Association. Chicago, IL.

Campbell, S. (2006). Perceptions of Mobile Phones in College Classrooms: Ringing, Cheating, and Classroom Policies. Communication Education, 55(3), 280-294.

Campbell, S., & Russo, T. (2003). The social construction of mobile telephony: An application of the social influence model to perceptions and uses of mobile phones within personal communication networks. Communication Monographs(70), 317-334.

Clayson, D.E., & Haley, D.A. (2012). An introduction to multitasking and texting: Prevalence and impact on grades and GPA in marketing classes. Journal of Marketing Education, 35(1), 26–40.

Dzubak, C. M. (2012). Does multitasking interfere with learning?. The Journal of the Association for the Tutoring Profession. Retrieved Jan 3, 2015, from http://www.myatp.org/wp-content/uploads/2012/06/Synergy-Vol-5- Dzubak.pdf

Elgan, M. (2010). Here Comes the New Cell Phone Etiquette. www.computerworld.com: http://www.computerworld.com/article/2522809/mobile-wireless/here-comes-the-new-cell-phone-etiquette.html adresinden alındı

End, C. M., Worthman, S., Mathews, M. B., & Wetterau, K. (2010). Costly cell phones: The impact of cell phone rings on academic performance. Teaching of Psychology, 37, 55–57.

Fischer, G., & Konomi, S. (2005). Innovative Media in Support of Distributed Intelligence and Lifelong Learning. Third IEEE

Alphanumeric Journal
The Journal of Operations Research, Statistics, Econometrics and Management Information Systems
ISSN 2148-2225
htttp://www.alphanumericjournal.com/

International Workshop on Wireless and Mobile Technologies in Education (WMTE, 2005). Japan.

Foerde K., & Knowlton B.J., & Poldrack R.A. (2006). Modulation of competing memory systems by distraction. Proceedings of the National Academy of Sciences, 103: 11778–11783.

Froese, A. D., Carpenter, C. N., Inman, D. A., Schooley, J. R., Barnes, R. B., Brecht, P. W., & Chacon, J. D. (2012). Effects of Classroom Cell Phone Use on Expected and Actual Learning. College Student Journal, 46(2), 323-332.

Gilroy, M. (2004). Invasion of the classroom cell phones. Education Digest, 69(6), 56-60.

GSMA Intelligence. Definitİve data and analysis for the mobile industry. Retrieved Dec 10, 2014, from https://gsmaintelligence.com/

ITU. (2002). World communication indicators database (6th ed.).

Jacobsen, W., & Forste, R. (2011). The wired generation: Academic and social outcomes ofelectronic media use among university student. Cyberpsychology, Behavior, & Social Networking, 14(5), 275-280.

Jenkins, R. (2011). The Rules About Classroom Rules. The Chronicle of Higher Education. Retrieved Feb 21, 2015, from http://chronicle.com/article/The-Rules-About-Classroom/130048/

Katz, J. (2005). Mobile phones in educational settings. K. Nyiri içinde, A sense of place: The gobal and the local in mobile communication (s. 305-317). Vienna: Passagen.

Ling, R. (1997). ''One can talk about common manners!'': The use of mobile telephones in inappropriate situations. Stockholm: Telia.

Ling, R. (2002). The social juxtaposition of mobile telephone conversations in public spaces. Conference on Social Consequences of Mobile Telephones. Chunchon.

Massimini, M., and Peterson, M. (2009). Information and communication technology: Affects on U.S. college students. Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 3(3), 1-15.

McCoy, B., "Digital Distractions in the Classroom: Student Classroom Use of Digital Devices for Non-Class Related Purposes" (2013). Faculty Publications, College of Journalism & Mass Communications. Paper 71.

Mifsud, L. (2003). Learning ''2go'': Pedagogical challenges to mobile learning technology in education. K. Nyiri içinde, Mobile learning: Essays on philosophy, psychology, and education (s. 165-173). Vienna: Passagen.

Milrad, M. (2003). Mobile learning: Challenges, perspectives, and reality. K. Nyiri içinde, Mobile learning: Essays on philosophy, psychology, and education (s. 151-164). Vienna: Passagen.

Murtagh, G. (2002). Wireless world: Social and interactional aspects of the mobile age . B. Brown, N. Green, & R. Harper içinde, Seeing the ''rules'': Preliminary observations of action, interaction and mobile phone use (s. 81-91). London: Springer.

Nyiri, K. (2002). Towards a philosophy of M-learning. Proceedings of the IEEE Computer Society: Wireless and Mobile Technologies in Education (WMTE, 2002), (s. 121-124). Sweden.

Ophir, E., & Nass, C., & Wagner, Anthony D., & Posner, Michael I. (2009). Cognitive Control in Media Multitaskers. Proceedings of the National Academy of Sciences of the United States of America, 106 (37) 15583-15587.

Rice, R., & Katz, J. (2003). Mobile discourtesy: National survey results on episodes of convergent public and private spheres. Mobile democracy: Essays on society, self and politics, Vienna: Passagen Verlag.

Rosenfeld, B., & O'Connor-Petruso, S. (2010). Rude- ness in the classroom: A survey of college students' perceptions of inappropriate use of technology. 33rd Proceedings of the Association for Educational Communications and Technology: On the Practice of Educational Communications and Technology, 2, s. 263-266. USA.

Shrivastava, A., & Shrivastava, M. (2014). Classroom Distraction Due to Mobile Phones Usage by Students: College Teachers' Perceptions.

International Journal of Computer and Information Technology, 3(3), 638-642.

Synnott, C.K. (2013). Smartphones in the Classroom: University Faculty Members' Experiences. Journal of Higher Education Management, 28(1), 119-130.

Thomas, J. (2009) Chronic Media Multi-tasking Makes it Harder to Focus. U.S. News and World Report. Retrieved Jan 3, 2015, from, http://health.usnews.com/health-news/family-health/brain-and-behavior/articles/2009/08/24/chronic-media-multi-tasking-makes-it-harder-to

Tindell, D., & Bohlender, R. (2010). The use and abuse of cell phones and text messaging in the classroom: A survey of college students. Wilkes University News Archives.

Tindell, D., & Bohlander, R. (2012). The use and abuse of cell phones and text messaging in the classroom: a survey of college students. College Teaching, 60(1), 1-9.

Wei, F. F., & Wang, Y. K., (2010). Students' Silent Messages: Can Teacher Verbal and Nonverbal Immediacy Moderate Student Use of Text Messaging in Class? Communication Education. Vol. 59 Issue 4, p475-496.

Wei, F. F., & Wang, Y. K., & Klausner, M. (2012). Rethinking College Students' Self- Regulation and Sustained Attention: Does Text Messaging During Class Influence Cognitive Learning? Communication Education. Vol. 61 Issue 3, p185-204.

Wireless Intelligence. Wireless Intelligence: Market data and analysis on the global wireless industry. Retrieved Oct 18, 2014, from https://www.wirelessintelligence.com/Index.aspx

Young, J. (2006). Students passing notes in class via text message. Retrieved Jan 3, 2015, from, http://www.chronicle.com.

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