JoME

Journal of Media Education

MISSION STATEMENT

The Journal of Media Education is an editor-reviewed pedagogical journal published electronically four times each year by the Broadcast Education Association. Its mission is to provide resources associated with the education and employment of students in various media fields and to promote communication among educators and media professionals.

JoME is BEA's principal forum for articles on pedagogy pertinent to the various media, industry analysis, responsive essays, reviews of books and other instructional materials, and reports on research and other work that may not fit the editorial objectives of traditional scholarly publications.

HISTORY

The Journal of Media Education was originally published by the Broadcast Education Association as Feedback (Volumes 1-50; 1959-2009). For fifty years, Feedback provided media professors and practitioners with information and articles enhancing the mutual appreciation of goals and demands associated with the education and employment of students in media fields. JoME, which launched in 2010, represents the on-going commitment to those goals while embracing the technological evolution of electronic publication.

GUIDELINES

The Journal of Media Education is an interactive publication designed to provide readers with a broad array of resources, including audio, video, slideshows, multi-media and Internet links related to the articles published. JoME is an editor-reviewed journal published electronically four times a year by the Broadcast Education Association. JoME publishes: (1) articles or essays dealing with pedagogical issues in any aspect of media education including, but not limited to, class syllabi, tutorials, and case studies; (2) responsive essays-especially industry analysis-reacting to issues and concerns raised by previous JoME articles and essays; (3) scholarly papers including those presented at conferences but not published in other publications; and (4) reviews of books and other instructional materials.

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As we enter a new year, many of us are trying to come to grips with the ways in which technology is changing our approach to teaching. Not only that, we are discovering that technology use by our students demands a whole new way of thinking about classroom management. In a follow-up to a previous study, Barney McCoy examines the growing use of digital devices by students in the classroom. This study makes it clear that we will continue to encounter new challenges in the classroom as digital devices become more deeply integrated into daily life

On the other hand, it is that very integration that is allowing us to find more creative ways of delivering instruction to a broader and more diverse learning community. John Hebbeler examines the viability of teaching media production online and discovers that while there are challenges, it can be done…and done successfully.

Of course, the media have discovered the importance of creating a broad and recognizable digital footprint to take advantage of the growing dependence on non-traditional avenues of message delivery. Anthony Adornato looks at ways we can help prepare our students to enter that changing workplace with the skill sets necessary to clearly communicate news and information and consistently communicate brand identity. Not only is it imperative to the media industry to get out the message, it's also vital the consumer be aware of where that message came from in order to grow the brand and remain competitive.
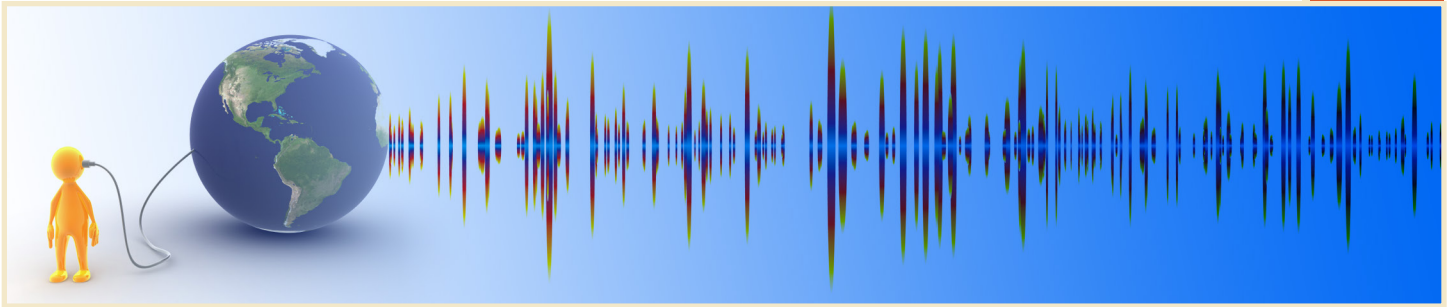
But as Terry Likes explains, there are problems facing the media industry today as consumer trust continues to decline. While there are a variety of factors involved in perceptions of trustworthiness of the media, the fact remains that trust is one commodity that is essential to attracting and retaining an audience. How we address those issues in our classrooms now, can help to shape the future of journalism.

Lee and Hong address a different kind of classroom experience in their look at an immersive educational project to create an interactive media experience for the Deaf and Hard of Hearing community. Learning a new way of communicating and creating barrier-free content proved to be both challenging and rewarding for the students and instructors.

We also have two book reviews and the annual list of the recipients of the BEA Scholarship recipients. I am always excited to see that list because in it is represented the best and brightest of our BEA member institutions. These young people will impact the industry, the academy…the world in which they find themselves when they graduate. And they'll do it because of the dedication of folks like you, committed to investing your life in them and ensuring they get the broadest and deepest education possible. Thank you!

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DIGITAL DISTRACTIONS IN THE CLASSROOM PHASE II: STUDENT CLASSROOM USE OF DIGITAL DEVICES FOR NON-CLASS RELATED PURPOSES

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ABSTRACT

A 2015 survey of American college students examined classroom learning distractions caused by the use of digital devices for non-class purposes. The purpose of the study was to learn more about Millennial Generation students' behaviors and perceptions regarding their classroom uses of digital devices for non-class purposes. The survey included 675 respondents in 26 states. Respondents spent an average of 20.9% of class time using a digital device for non-class purposes. The average respondent used a digital device 11.43 times for non-class purposes during a typical school day in 2015 compared to 10.93 times in 2013. A significant feature of the study was its measurement of frequency and duration of students' classroom digital distractions as well as respondents' motivations for engaging in the distracting behavior.

INTRODUCTION

In my first digital distractions study, I noted college students used digital devices such as smart phones, laptops, tablets, and other information and communication technologies ("ICTs") an average of 10.93 times in a typical school day for non-class purposes (McCoy 2013). In this study I found that student usage had risen to an average of 11.43 times in a typical school day and resulted in 20.9% of students' class time being distracted by a digital device. In my previous study, I found respondents admitted such behavior caused a distraction that could hurt their class performance.

Such findings come as members of the Millennial Generation continue their rapid adoption of mobile devices, particularly smart phones. They,

and mobile users of all ages, have benefitted from expanding wireless networks that offer high-speed Internet connections as well as a growing array of mobile and social media applications to use in their personal lives. Millennials in particular are spending more time using mobile digital devices because they are satisfied and comfortable with the experience.

Research over the past decade offers compelling evidence of these emerging trends. In the Pew Foundation's "Millennials in Adulthood" report (2014), these so-called "digital natives," were described as "the only generation for which these new technologies are not something they've had to adapt to. Not surprisingly, they are the most avid users." Experian Marketing Services "Millennials Come of Age," (2014) report found that having grown up in the age of the internet and mobile phones, Millennials "account for 41% of the total time Americans spend using smart phones, despite making up just 29% of the population."

The 2015 Digital Marketer noted that "70% of Millennials said they used their mobile devices from the moment they wake up to when they go to bed." Smith, Rainie & Zickuhr (2011) found nearly 100% of college graduate and undergraduate students had Internet access. Increasingly, that Internet access involves a mobile wireless connection via smart phone, laptop or tablet. The 2015 Digital Marketer (2015) found 43% of Millennials said a mobile device is their preferred method for using the Internet. That is more than twice the rate as people age 35 and older.

A Pew Research Center study "Broadband and smart phone adoption demographics" (2013), found 80% of young adults ages 18-29 owned a smart phone and 95% had a smart phone and home broadband Internet access. Newswire (2014) cited a Nielsen study that found in the second-quarter of 2014, 85% of Millennials aged 18-24 used a smart phone and 86% aged 25-34 own them, an increase from 77% and 80%, respectively, from the second-quarter of 2013.

Millennials are making a faster transition to mobile digital devices, and are using them more frequently too. In a Gallup survey, Newport (2015) found the "ubiquitous presence" of smart phones in Americans' lives was especially evident among younger Americans. The Gallup survey found more than seven in 10 smart phone owners, ages 18-29, check their device a few times an hour or more often, including 22% who admit to checking it every few minutes. In noting this behavior, Richter (2015) said; "Interestingly, most smartphone users don't seem to consider their device usage excessive. 61 percent of the respondents claim to use their own device less frequently than the people around them - a misperception that is not entirely unlike addict behavior."

Khalaf (2014) used the term "mobile addict" and said this segment is growing the fastest and consists primarily of consumers ages 13-24. Khalaf also noted that mobile addicts launched smart phone or tablet apps more than 60 times per day, a growth rate of 123% between 2013 and 2014. Duggan (2015) found the 18-29 age group also had the highest daily percentage participation rates on social media platforms Facebook, Twitter, Pinterest, and Instagram.

"The 2015 U.S. Mobile App Report," (2015) noted mobile apps drove a majority of the digital media time (54%) users spent on mobile devices. The report noted that mobile apps grew 90% over a two year period and "contributed to 77% of the total increase in time users spent on their mobile device."

Smith (2015) analyzed smart phone users and found young smart phone owners were particularly avid users of social media applications. Fully 91% of smartphone owners ages 18-29 used social networking apps on their phone at least once during the analysis study period, compared with 55% of those 50 and older (a 36-point difference). The same may be said of the Millennial Generations' use of digital devices in college classrooms.

Several studies have found a link between the Millennial Generations' growing use of digital tools and the distractions they may cause in educational settings. Kuznekoff, Munz & Titsworth (2015) examined student mobile phone use in the classroom and found sending/receiving text messages unrelated to class content negatively impacted learning and note-taking. Beland & Murphy (2015) studied 91 schools in England where more than 90% of teen students own mobile phones. The study found test scores were 6.41% higher in schools where cellphone use was banned. Researchers concluded that mobile phones "can have a negative impact on productivity through distraction."

Dahlstrom & Bichsel (2014) found that many college students use mobile devices for academic purposes but were concerned about their potential for distraction. A phenomenological study by Flanigan & Babchuk (2015) suggested the temptation and use of social media had become a prominent aspect of university students' academic experiences, "both within and outside of the classroom setting."

Studies have also revealed concerns by teachers over distractions caused by their students' growing use of digital devices. Richtel (2012) reported a belief among teachers that constant use of digital technology hampered their students' attention spans and ability to persevere in the face of challenging tasks. A "Children, Teens, and Entertainment Media: The View from the Classroom" (2012) study found 71% of teachers thought entertainment media (TV shows, music, video games, texting, iPods, cell phone games, social networking sites, apps, computer programs, online videos, and websites students use for fun) hurt student attention span "somewhat" or "a lot." About 60% of surveyed teachers said it hindered students' ability to write and communicate face to face.

Purcell, et al. (2012) found sharply diverging teacher views in a survey they conducted. Seventy-seven percent of teachers they surveyed thought theInternet and search engines had a "mostly positive" impact on student research skills. However, 87% of the respondents believed digital technologies were creating "an easily distracted generation with short attention spans," and 64% said digital technologies did "more to distract students than to help them academically."

Findings such as these have also involved research involving human behavior and the use of digital technology.

David et al. (2014), conducted a U.S. study based on self-reports from 992 college undergraduates regarding their major communication and media activities during a typical day. The respondents estimated they spent 39 hours a day on communication and media reached activity, an overestimation partially attributed to the respondents' multitasking. In the U.S., Rideout, Foehr, & Roberts (2010), found a majority of teenagers multitask "most" or "some" of the time when listening to music (73% of respondents), watching TV (68%), using a computer (66%), and reading (53%). In the UK, Ofcom & GfK (2010), note on average, 16- to 24-year-olds use media 9.5 hours a day, of which 52% involved media multitasking.

Wang et al. (2015), conceptualized media multitasking based on 11 different multidimensional behaviors. Wang noted: "In some sense, media multitasking exemplifies multiple challenges facing contemporary society. It is the product of too many goals and not enough time, too many options and not enough discretion, and a building pressure to be increasingly productive." Shan, Zheng & Prabu (2016) conducted a study examining the impacts of media multitasking on student respondents' social and psychological well being based on motivations (social, cognitive, entertainment) tied to these behaviors. The study found student multitasking involved different, and potentially competing, types of behaviors that had differing effects (positive, negative, and null) on respondents' perceived social and psychological well being.

Research has also found that just because a student is multitasking with a digital device in class doesn't always mean he or she is being distracted from the teaching and learning taking place.   Sullivan, Johnson, Owens & Conway (2014) identified digital device uses for non-class purposes as a "low level disruptive behavior" and argue that teachers could benefit from understanding how the classroom ecology influences student engagement, rather than focusing on 'fixing' unproductive behavior. O'bannon & Thomas (2014) found older teachers were less likely to own smart phones, and were less supportive and less enthusiastic about the use of mobile phones in the classroom and the benefits of specific mobile features for school-related work.

Gebre, Saroyan & Bracewell (2014) found students' cognitive and social engagement in technology-rich classrooms is significantly related to their professors' views of effective teaching. They conclude that technology implementation in university teaching needs to incorporate faculty development programs related to changing professors' conceptions of effective teaching. Findings from a number of studies (Hegedus & Roschelle 2013; Rutten, van Joolingen & van der Veen 2012), have shown the strategic use of technology tools in mathematics and science education, in particular, can support the learning of mathematical and scientific procedures and skills as well as the development of advanced proficiencies such as

Building on prior research, the purpose of this study examines college students' evolving uses of digital devices in the classroom for non-classroom related purposes. What impact does such behavior have on student learning? What are the perceived advantages and disadvantages of this behavior, and what policies might effectively limit classroom distractions caused by digital devices?

METHODS

In the spring of 2015, 675 students at American colleges and universities in 26 states an-

swered 17 survey questions about their classroom use of digital devices for non-class purposes. Respondents included freshmen, sophomores, juniors, seniors, and graduate students from Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Iowa, Illinois, Kansas, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New York, New Jersey, North Carolina, Ohio, Pennsylvania, South Dakota, Tennessee, Texas, Virginia and Wisconsin. Most respondents majored in mass communications, but also included students majoring in marketing, business, law, education, and agriculture.

Instructor observations of college students in classroom settings, a baseline survey of students, conversations with instructors at U.S. colleges, past research, and literature reviews suggest student classroom uses of digital devices for non-class purposes causes learning distractions. This resulted in a research agenda focused on the study of student classroom uses of digital devices for non-class purposes, and the effects such behavior may have on classroom learning.

The survey addressed the frequency, duration and intensity of non-class related digital distractions in the classroom, perceived advantages and disadvantages of using digital devices for non-class purposes, responses to classroom digital distractions, and policies needed to address such distractions in the classroom. Ten of the survey's 17 questions presented respondents with a list of answers to choose from in addition to an "other" open-answer response. Some questions were developed from a 2012 pilot survey of undergraduate mass communications majors (N=95) at a Midwestern university that identified frequent types of non-class related digital device behavior and use in classrooms. Other questions were formed after examining 777 responses in a 2013 survey of students at six U.S. universities on the digital distractions in the classroom topic.

Institutional Review Board approval was obtained before the survey's administration. It

included a cover page statement informing students that the survey's completion and submission constituted their consent to participate in the study.

In the spring of 2015, classroom instructors recruited respondents using email and personal contacts. All respondents were given the option to complete the survey. The survey did not ask respondents to state their name or institution, but respondent surveys were geo tagged (state and/or educational institution) by using Internet Protocol (IP) routing addresses associated with survey responses. Using SurveyMonkey.com as a data collection tool, survey results were statistically reported and compared with demographic data for gender, age, and year in school. The analysis also looked at the frequency and duration of responses.

RESULTS

The survey's quantitative frequencies results are presented first, followed by a comparison analysis.

QUANTITATIVE RESULTS

Table 1 shows results for the 17 question survey. The last three survey questions were demographic in nature. Females accounted for 65.4%, and males, 34.6% of survey respondents. Among the respondents, 11.6% said they were 18-years-old, 23.9% said they were 19-years-old, 23.3% were 20-year-olds, 23.6% were 21-year-olds, and 17.6% of the respondents were 22-year-olds. College freshmen accounted for 22.6% of the students, followed by sophomores at 21.4%, juniors at 24.8%, seniors at 28.2%, and graduate students at 3%.

Q15. Your sex?

Answered: 673   Skipped: 2

Female   65.38%
Male   34.62%
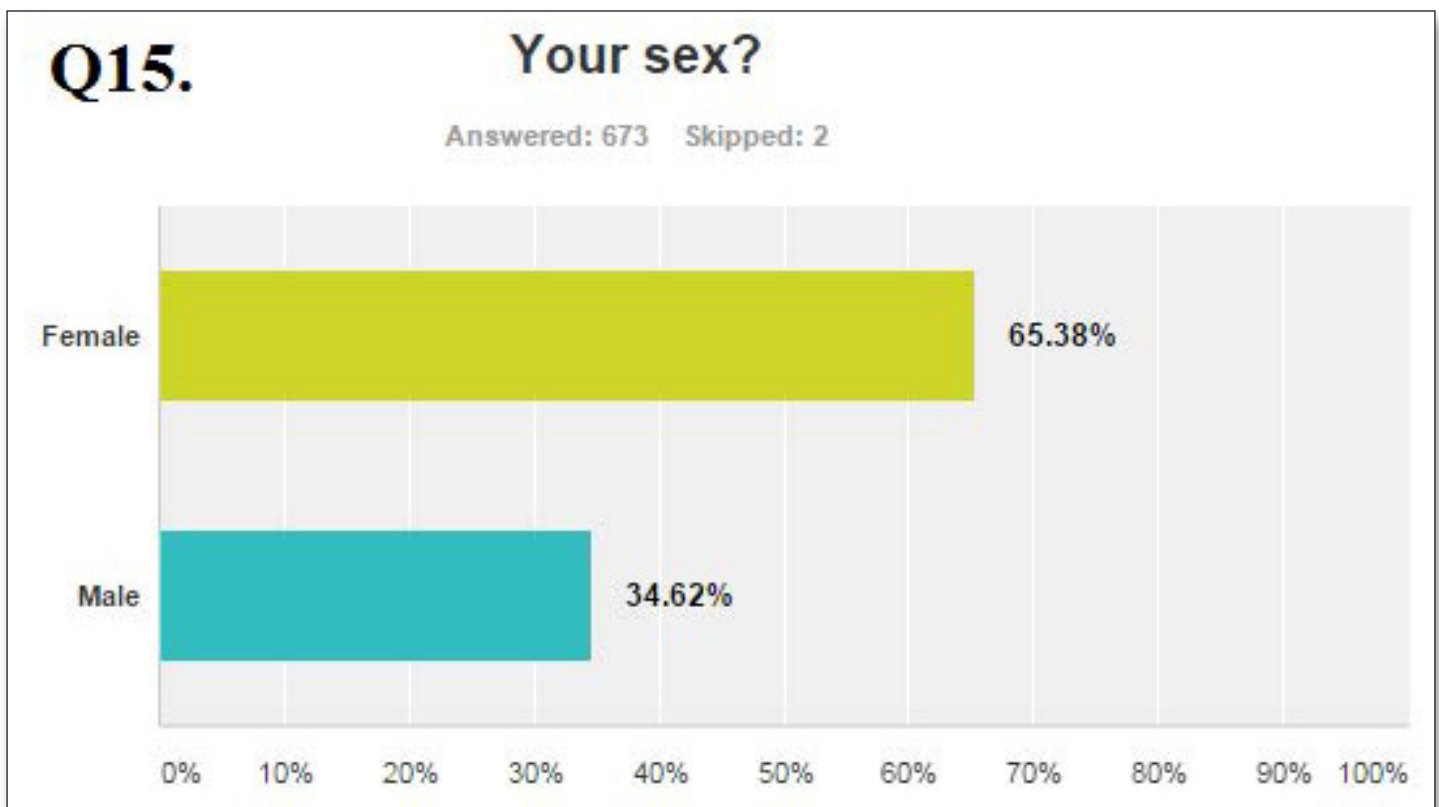
Q16. **Your age?**

Answered: 602   Skipped: 73

- 18 — 11.63%
- 19 — 23.92%
- 20 — 23.26%
- 21 — 23.59%
- 22 — 17.61%
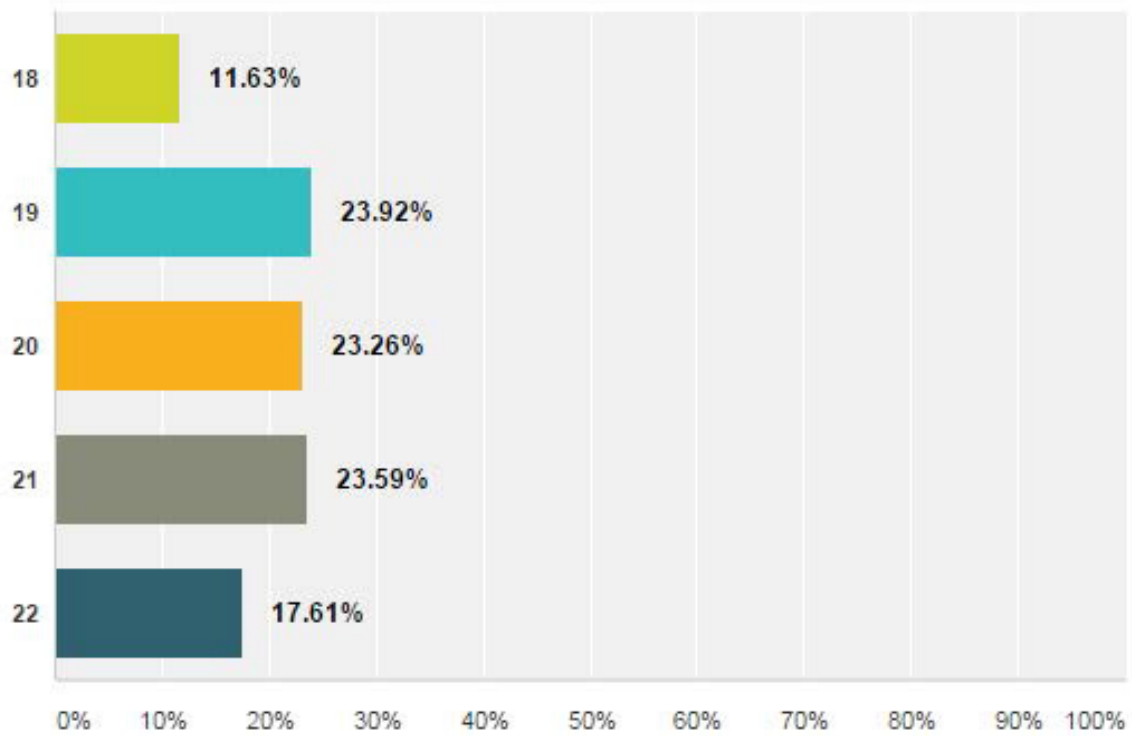
Q17. **Year in school?**

Answered: 673   Skipped: 2

- Freshman — 22.59%
- Sophomore — 21.40%
- Junior — 24.81%
- Senior — 28.23%
- Graduate Student — 2.97%
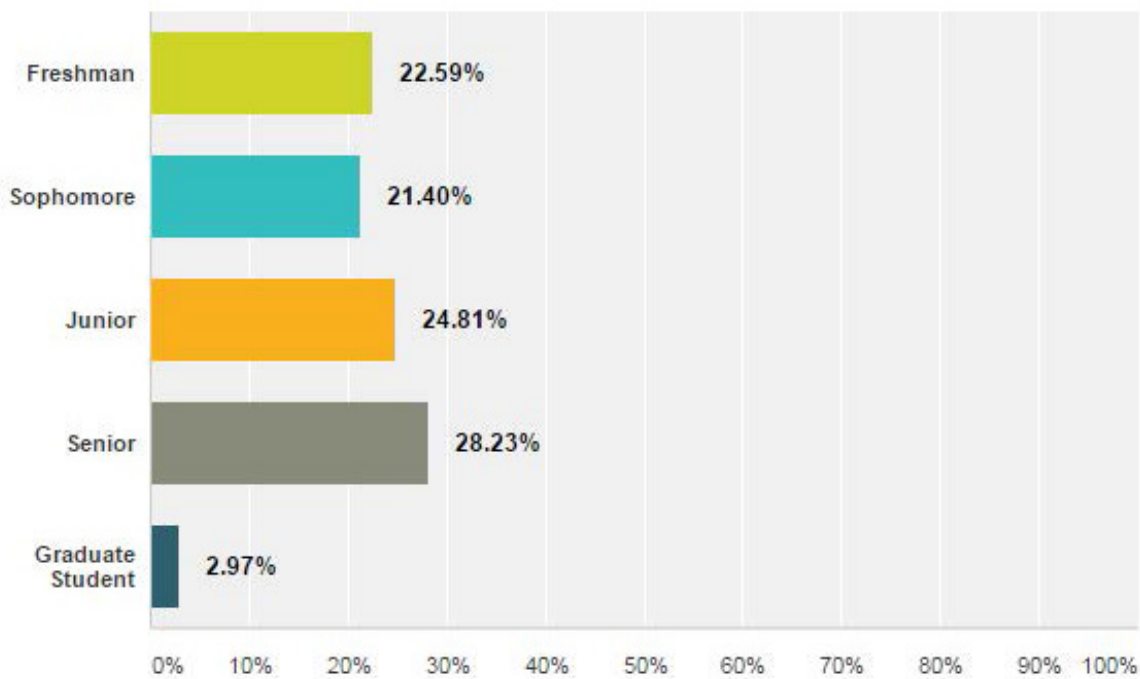
Students were asked how often they used a digital device during classes for non-classroom related activities on a typical school day. Of the responses, 34.4% chose "1 to 3 times" as a response, followed by 28.5% who chose "4 to 10 times." The remaining student responses included 21.5% who chose "11 to 30 times," 12.3% who chose "More than 30 times," and 3.3% who chose "Never."

Q1. On a typical school day, how often do you use a digital device during classes for non-classroom related activities such as texting, talking on a smart phone, emailing, surfing the Web, tweeting or other social networking?

Answered: 674   Skipped: 1

Response	Percentage
Never	3.26%
1 to 3 times	34.42%
4 to 10 times	28.49%
11 to 30 times	21.51%
More than 30 times	12.31%
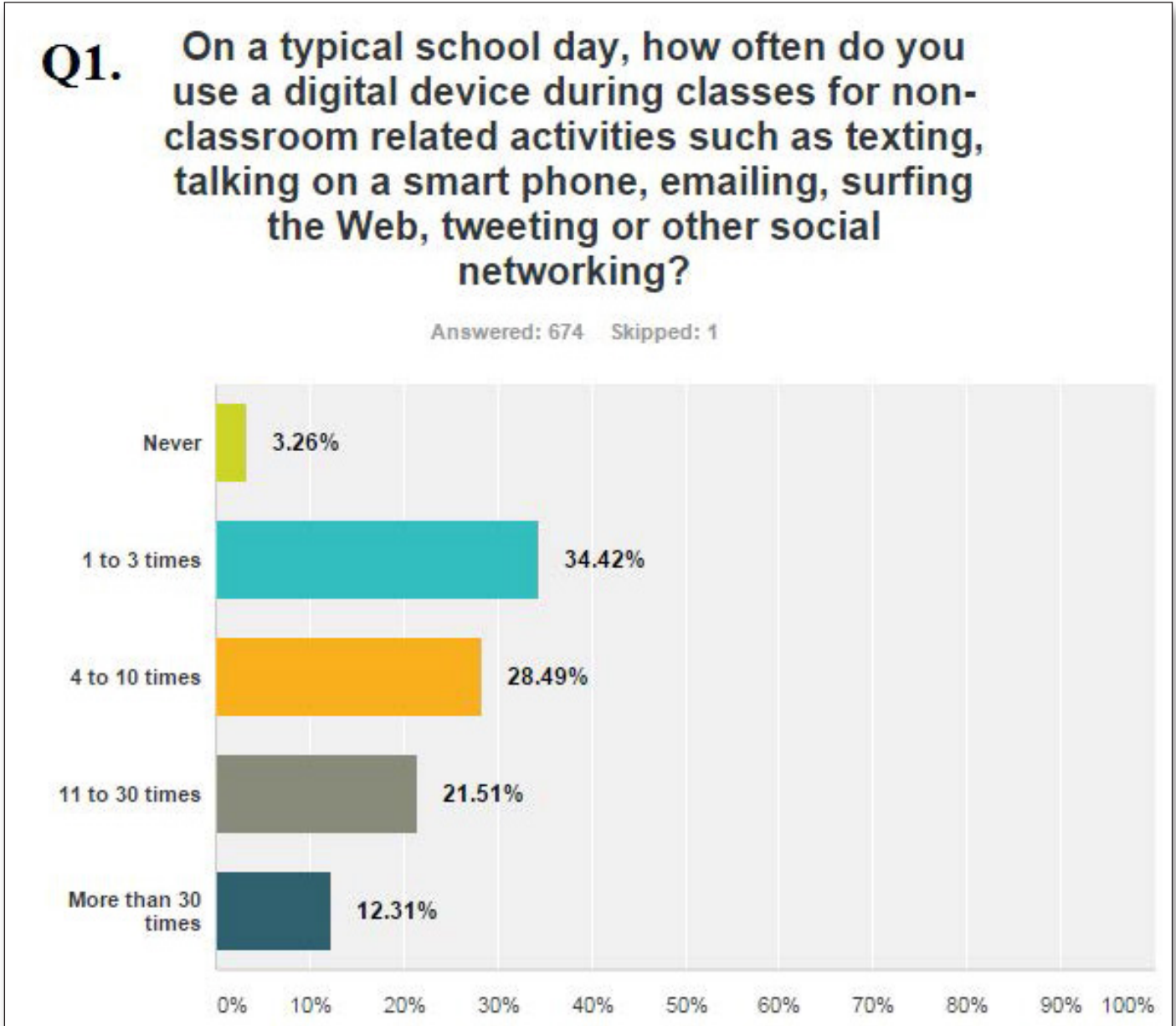
When we asked students to describe their various uses of digital devices during class for non-class purposes, "Texting" was the top response at 86.6%. It was followed by "E-mail" at 76.2%, "Checking the time," at 75%, "Social Networking" at 70.3%, "Web surfing" at 42.5%, and "Games" at 10%.

Q2. If you use a digital device during class for non-class purposes, please describe all those purposes.

Answered: 659   Skipped: 16

Category	Percentage
Texting	86.65%
Social Networking	70.26%
Email	76.18%
Web surfing	42.49%
Check the time	74.96%
Games	10.02%
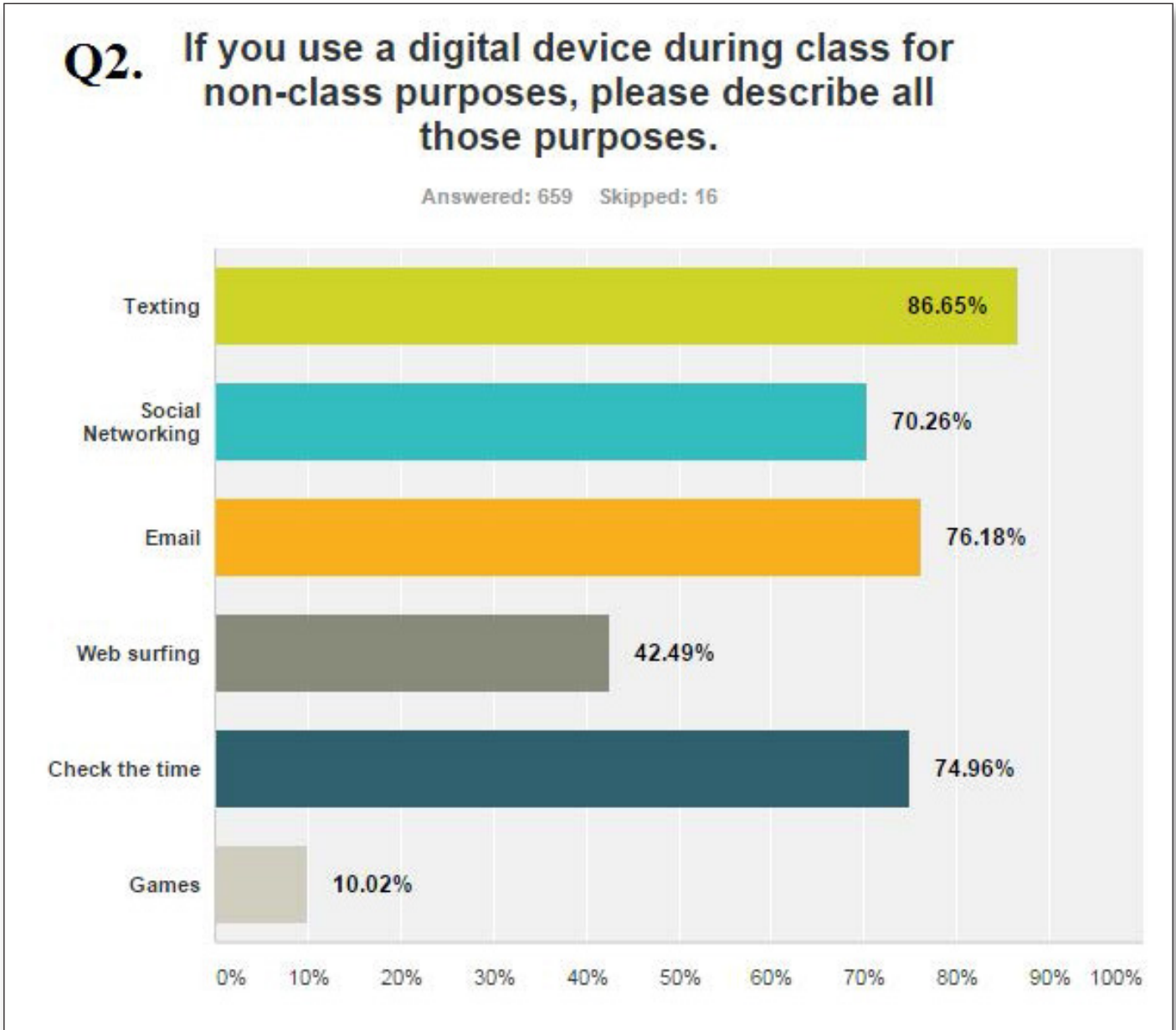
Question 3 asked students what percentage of the class was spent using a digital device for non-class purposes. The top response was "1-10%" at 41.2%. It was followed by "11-20%" at 19.9%, "21-30%" at 14.4%, "31-40%" at 6.9%, "41-50%" at 4.8% and "51-60%" at 3.4%.

Q3. If you use a digital device during class for non-class purposes, what percentage of the class is spent engaging in that activity?

Answered: 668   Skipped: 7

Answer Choices	Responses	
0%	2.10%	14
1-10%	41.17%	275
11-20%	19.91%	133
21-30%	14.37%	96
31-40%	6.89%	46
41-50%	4.79%	32
51-60%	3.44%	23
61-70%	1.95%	13
71-80%	1.80%	12
81-90%	2.54%	17
91-100%	1.05%	7
Total		668

Students were asked to choose the three biggest advantages and three biggest disadvantages to using digital devices in class for non-classroom purposes. The top response for biggest advantage was "To stay connected" at 63%. It was followed by "Fight Boredom" at 62.9%, "Entertainment" at 46.8%, "Related classwork" at 46.4%, and "In case of emergency" at 37.1%. The biggest disadvantage to using a digital device in class for non-classroom purposes was "Don't pay attention" at 89.1%. It was followed by "Miss instruction" at 80.5%, "Distract others" at 38.5%, "Get called out by instructor" at 30% and "Lose grade points" at 26.7%.

Q4. What are the three biggest advantages to using a digital device in class for non-classroom purposes?

Answered: 663   Skipped: 12

Category	Percentage
To stay connected	63.05%
Entertainment	46.76%
Fight Boredom	62.90%
Related classwork	46.46%
In case of emergency	37.10%
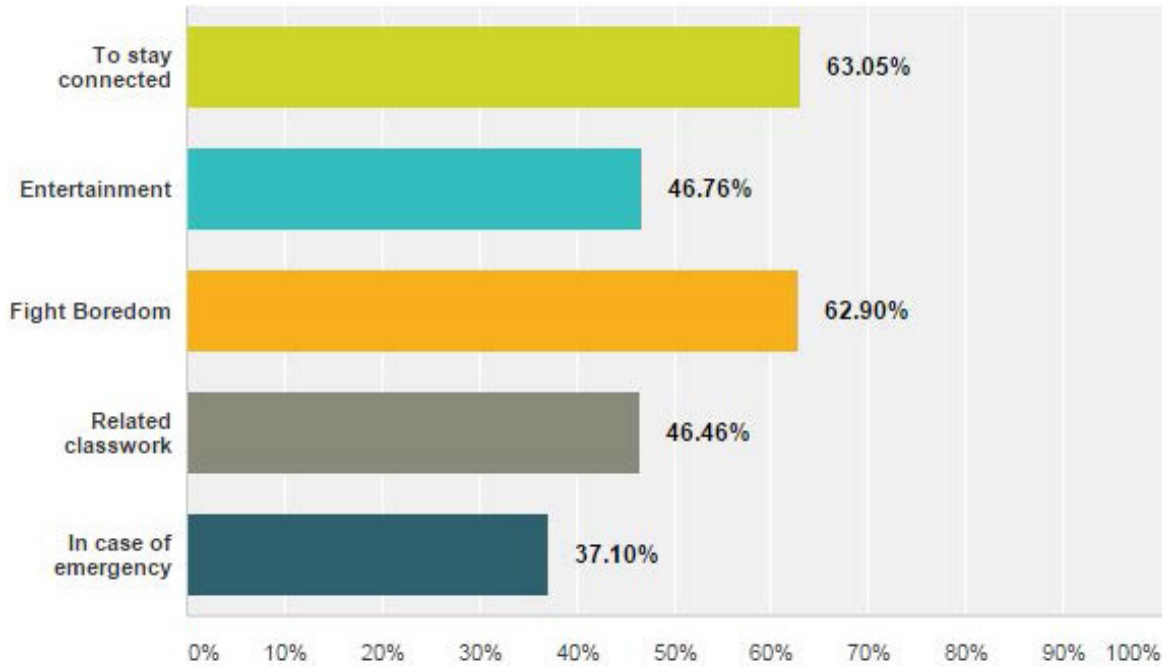
Q5. What are the three biggest disadvantages to using a digital device in the classroom for non-class purposes?

Answered: 667   Skipped: 8

Category	Percentage
Don't pay attention	89.06%
Distract others	38.53%
Miss instruction	80.51%
Lose grade points	26.69%
Get called out by instructor	29.99%
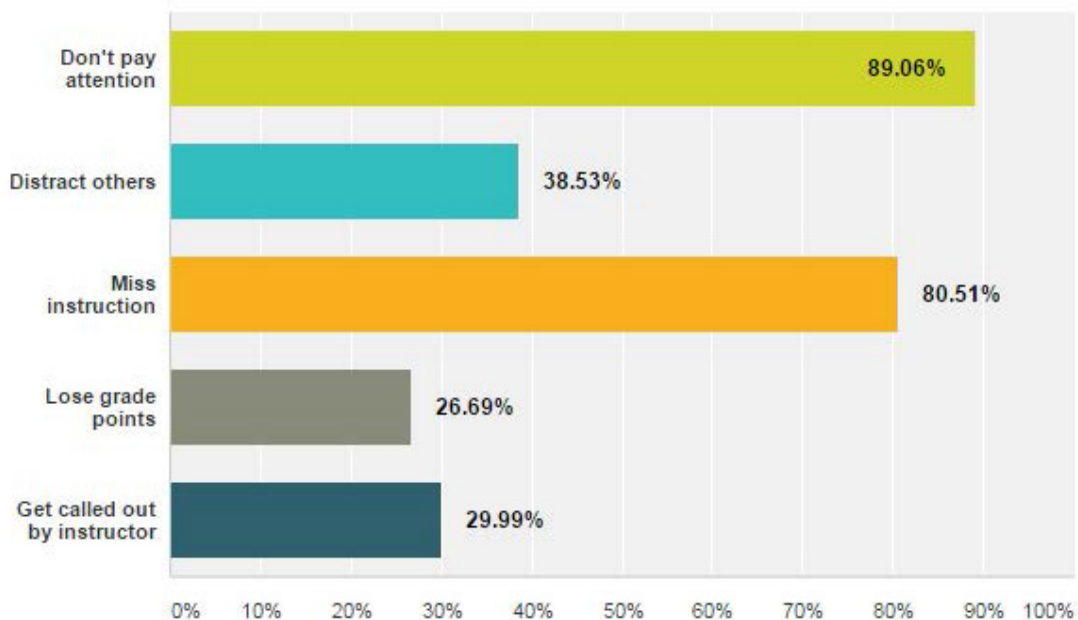
We asked students to identify how much of a distraction was caused by their own use of digital devices during class for non-classroom activities. "A little distraction" was the leading choice at 57.6%. It was followed by "More than a little distraction" at 21.4%, "Big distraction" at 9.4%, "No distraction" at 8.4%, and "Very Big distraction" at 3.1%.

Q6. How much of a learning distraction do you cause yourself if you use digital devices during class for non-class activities?

Answered: 667   Skipped: 8

Category	Percentage
No Distraction	8.40%
A little distraction	57.57%
More than a little...	21.44%
Big distraction	9.45%
Very big distraction	3.15%
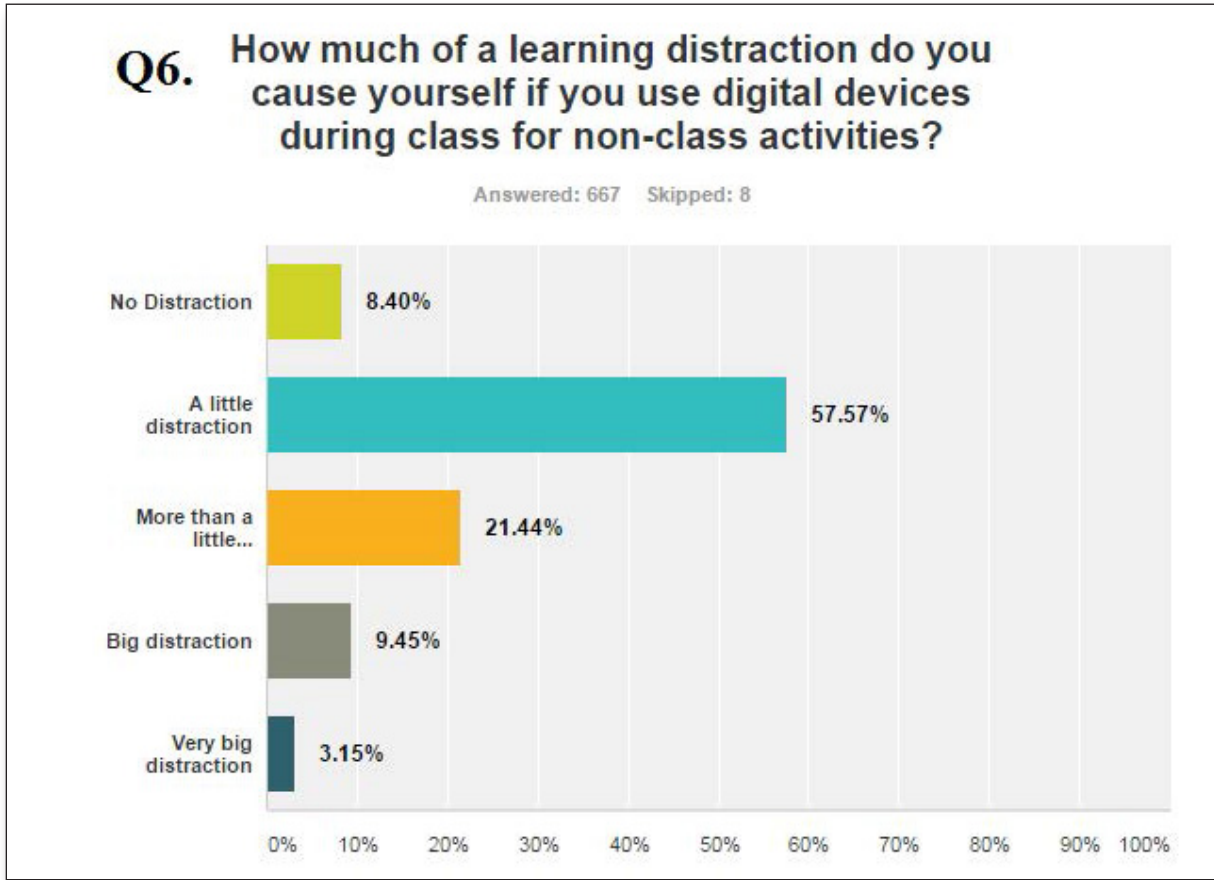
When asked to choose how much of a distraction was caused by other student's use of digital devices during class for non-classroom activities, the top response was "A little distraction" at 42%. It was followed by "No distraction" at 39%, "More than a little distraction" at 13.1%, "Big distraction" at 3.6%, and "Very big distraction" at 1.9%.

Q7. How much of a learning distraction is it to you when other students use digital devices during class for non-class activities?

Answered: 671   Skipped: 4

Response	Percentage
No Distraction	39.34%
A little distraction	42.03%
More than a little...	13.11%
Big distraction	3.58%
Very big distraction	1.94%
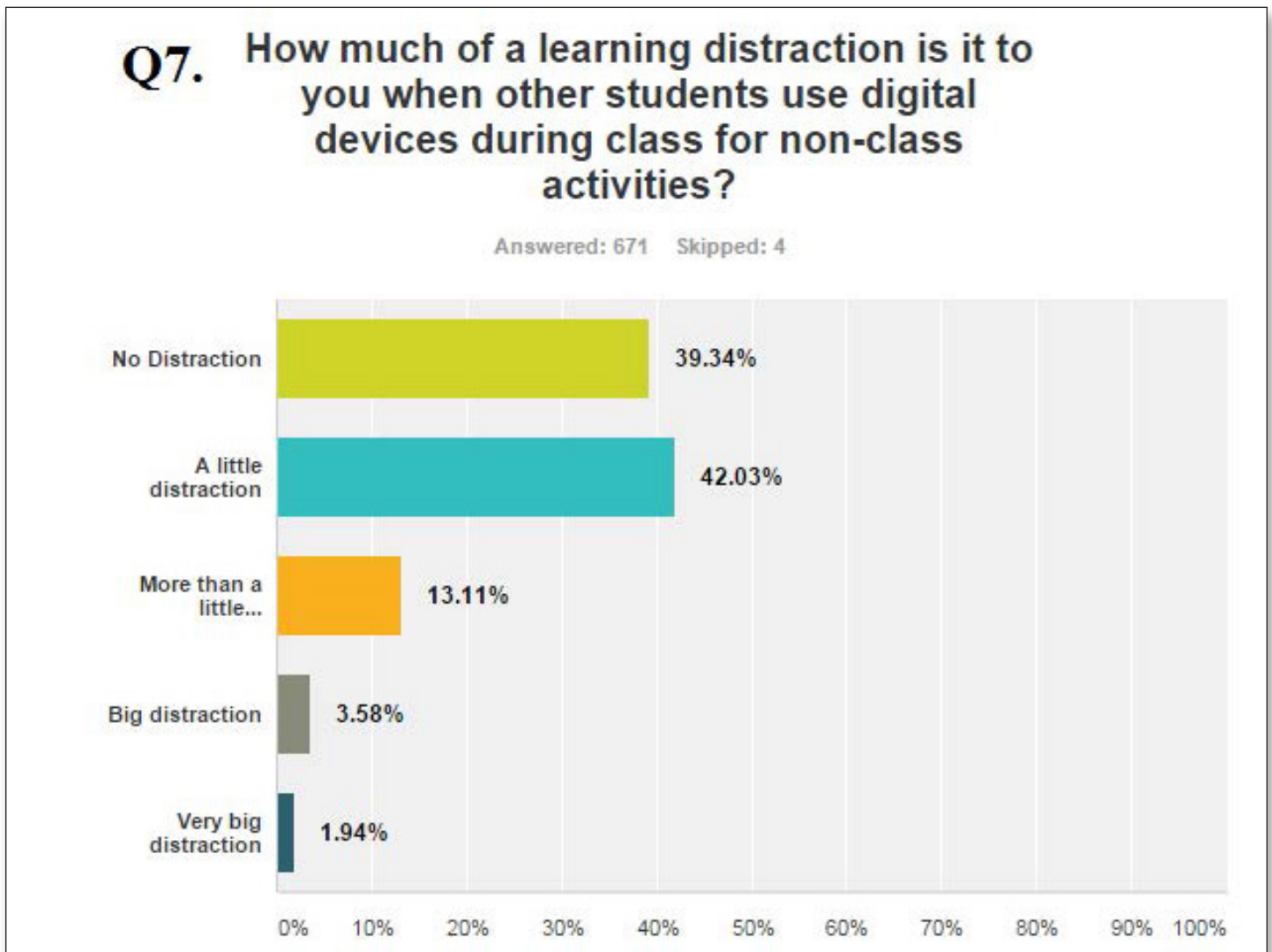
Question 8 asked respondents to choose the types of distractions caused by the use of digital devices during class for non-class activities.

"Visual activity" was chosen by 75% of the respondents, followed by "Audio activity" at 36.91%, and "It's not a distraction" at 12.1%.

Q8. What types of distractions are caused by the use of digital devices during class for non-class activities?

Answered: 669 Skipped: 6

- Visual activity (We... — 75.04%
- Audio activity (ringers,... — 36.92%
- It's not a distraction — 12.11%
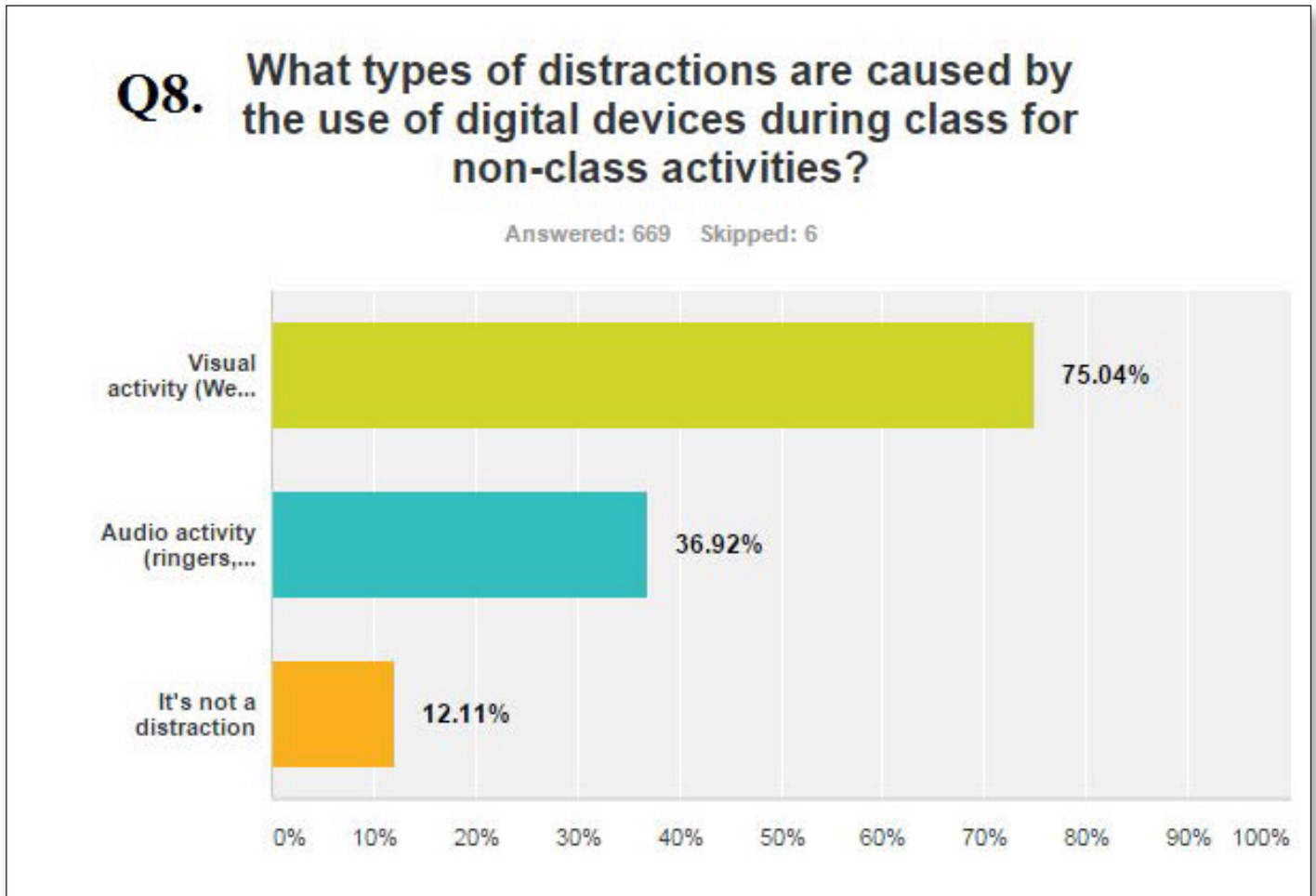
Question 9 asked students if their instructors have a policy regarding the use of digital devices in their classrooms. "Yes" was chosen by 71.8% of the respondents, followed by "No" at 28.2%.

When asked which statement they agree with "MOST" regarding classroom uses of digital devices for non-classroom purposes, 29.6% of the student respondents chose "I can freely use a digital device without it causing learning distractions," followed by 26.6% who chose "It's my choice to use a digital device whenever I feel like using one, " 19.4% chose " I don't use digital devices because of the classroom learning distrac-tions they may cause," 12.8% believe "my use of digital devices outweigh classroom learning distractions they may cause," and 11.5% chose "I can't stop myself from using digital devices even if they may cause learning distractions."

Question 11 asked if it would be helpful to have policies limiting non-classroom uses of digital devices. "Yes" was chosen by 52.8% of the respondents, followed by "No" at 32% and "Don't know" at 15.2%.

When asked if digital devices should be banned from classrooms, 89.9% of the respondents said "No," and 10.18% said "Yes."

Q9. Do most of your instructors have a policy regarding the use of digital devices in their classrooms?

Answered: 673   Skipped: 2

Yes — 71.77%

No — 28.23%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
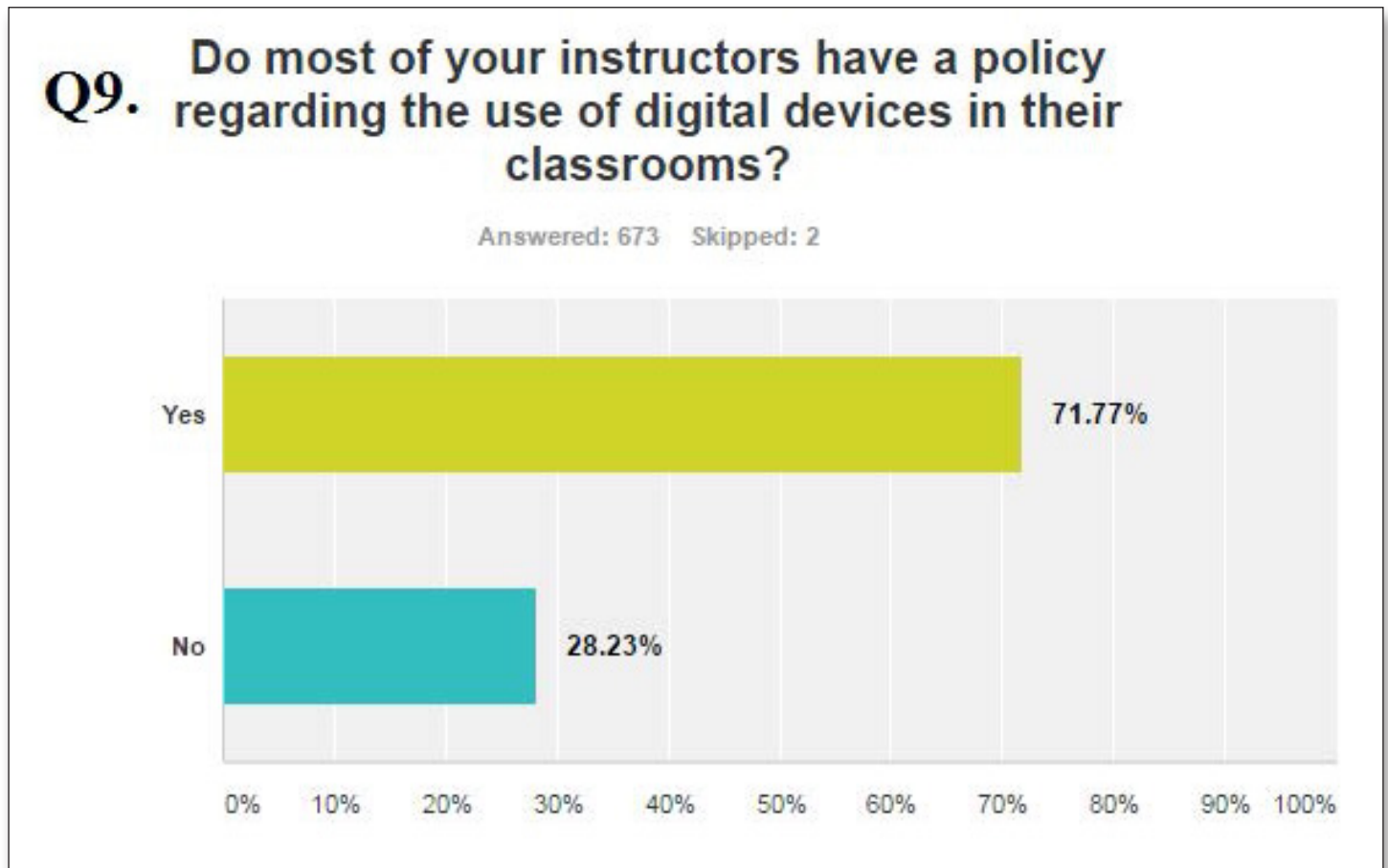
Q10. Which of the following statements do you agree with MOST regarding classroom uses of digital devices for non-classroom purposes?

Answered: 654   Skipped: 21

Statement	Percentage
I believe my use of digit...	12.84%
I don't use digital devi...	19.42%
I can freely use a digita...	29.66%
I can't stop myself from...	11.47%
It's my choice to use a...	26.61%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
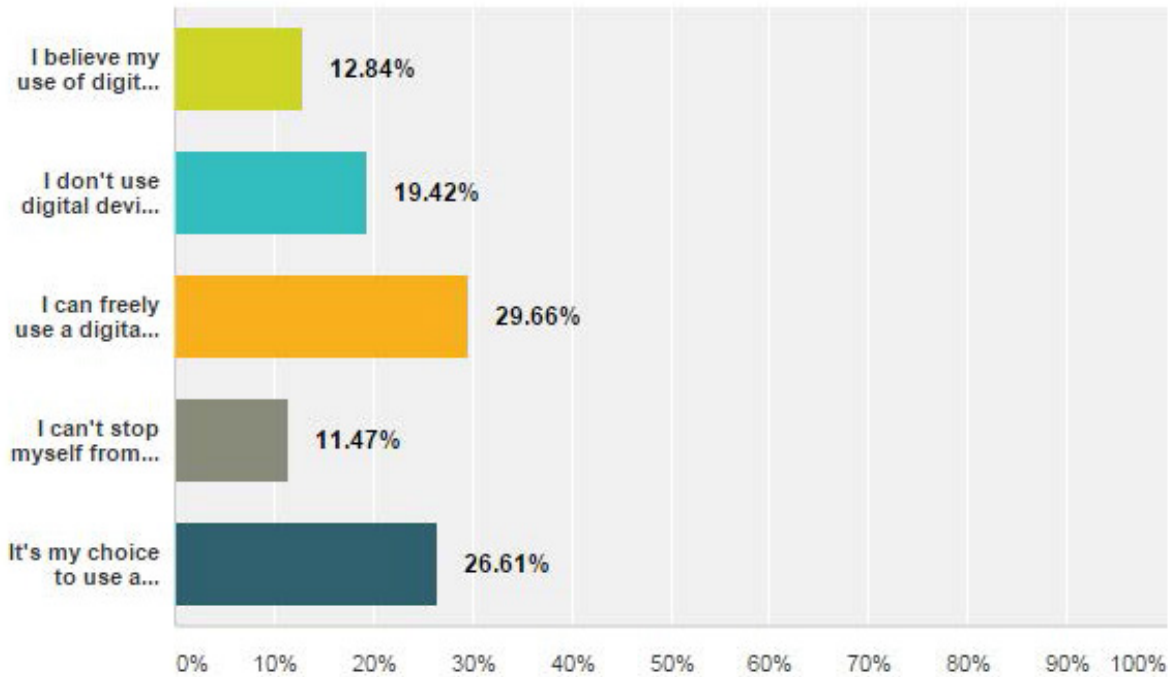
Q11. Do you believe it is helpful to have policies limiting non-classroom uses of digital devices?

Answered: 672   Skipped: 3

Response	Percentage
Yes	52.83%
No	31.99%
Don't know	15.18%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
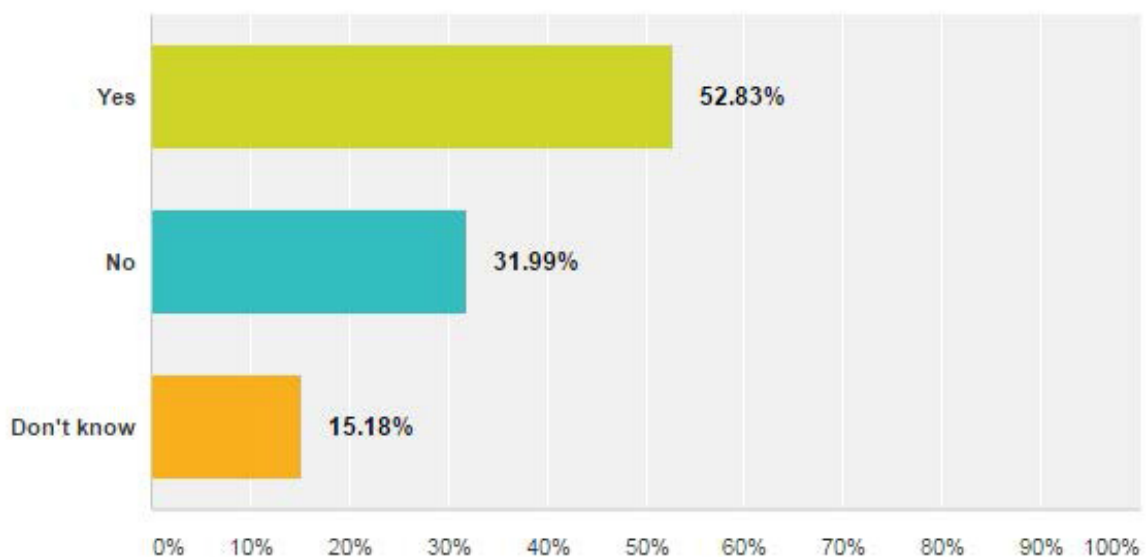
Q12. Should digital devices be banned from classrooms?

Answered: 671   Skipped: 4
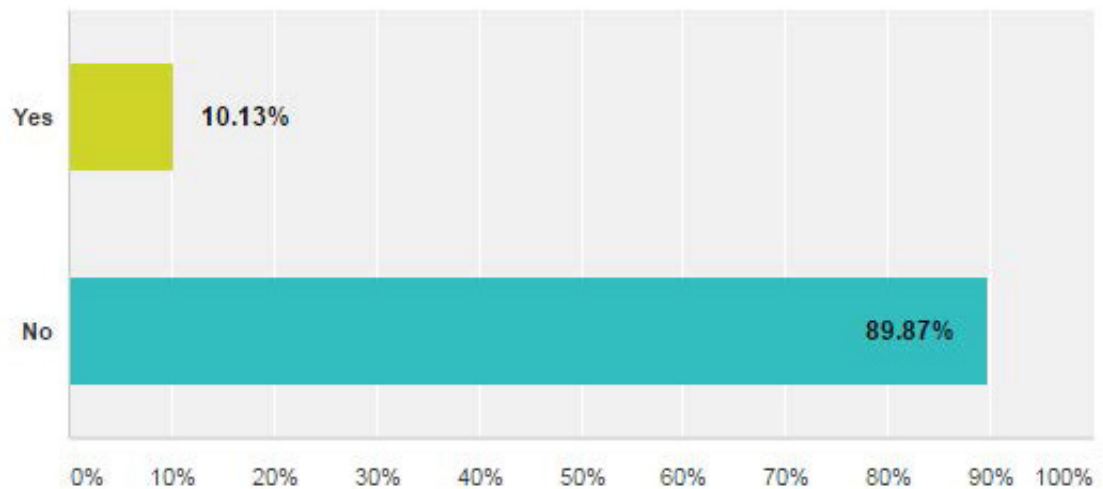
When asked what an instructor should do if a student causes a disruption by using a digital device for non-class purposes, 77.2% chose "Speak to student." Other responses were "Ask student to leave class" at 13.2%, and "Confiscate or turn-off device" at 9.6%.

Q13. What should the instructor do if a student causes a disruption by using a digital device for non-class purposes?

Answered: 627   Skipped: 48
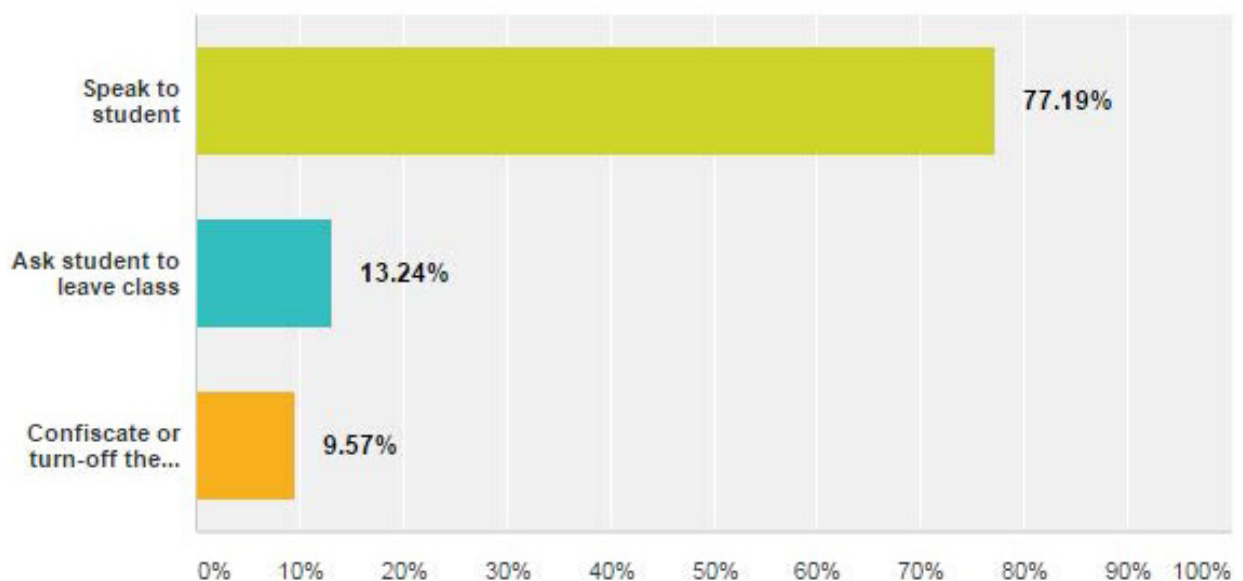
We asked students which policy they would favor most for students caught using digital devices in the classroom for non-class purposes. "Warning on first offense followed by penalties" was the leading response at 65.6%. It was followed by "No warnings or penalty" at 30.5% and "Penalty each time it happens" at 3.8%.

Q14. Which policy would you most favor for students caught using digital devices in the classroom for non-class purposes?

Answered: 658   Skipped: 17

Policy	Percentage
No warnings or penalty	30.55%
Warning on first offens...	65.65%
Penalty each time it happens	3.80%
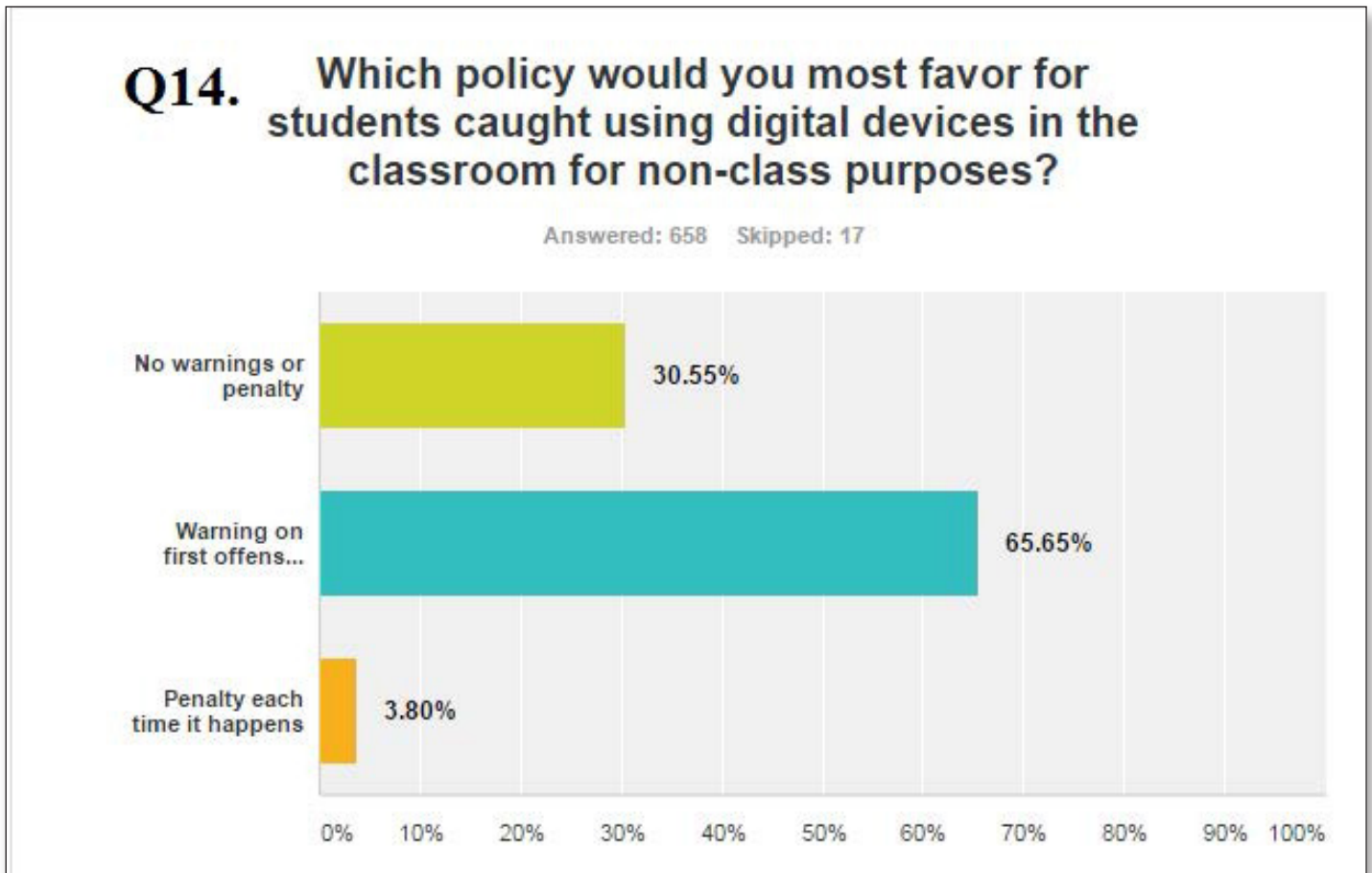
COMPARISON ANALYSIS RESULTS

Table 2 shows a comparison analysis of selected questions. Question 1 comparison analysis indicates undergraduates (N=652) were more likely to use digital devices than graduates (N=20) during daily classes for non-class activities.

Q1. Comparisons: Class

On a typical school day, how often do you use a digital device during classes for non-classroom related activities such as texting, talking on a smart phone, emailing, surfing the Web, tweeting or other social networking?

Answered: 672   Skipped: 1

	Never	1 to 3 times	4 to 10 times	11 to 30 times	More than 30 times
Q17: Freshman	1.97%	34.87%	28.29%	17.76%	17.11%
Q17: Sophomore	2.10%	30.07%	28.67%	23.78%	15.38%
Q17: Junior	2.40%	35.93%	25.15%	25.15%	11.38%
Q17: Senior	4.74%	34.74%	32.11%	20.53%	7.89%
Q17: Graduate Student	10.00%	50.00%	20.00%	15.00%	5.00%
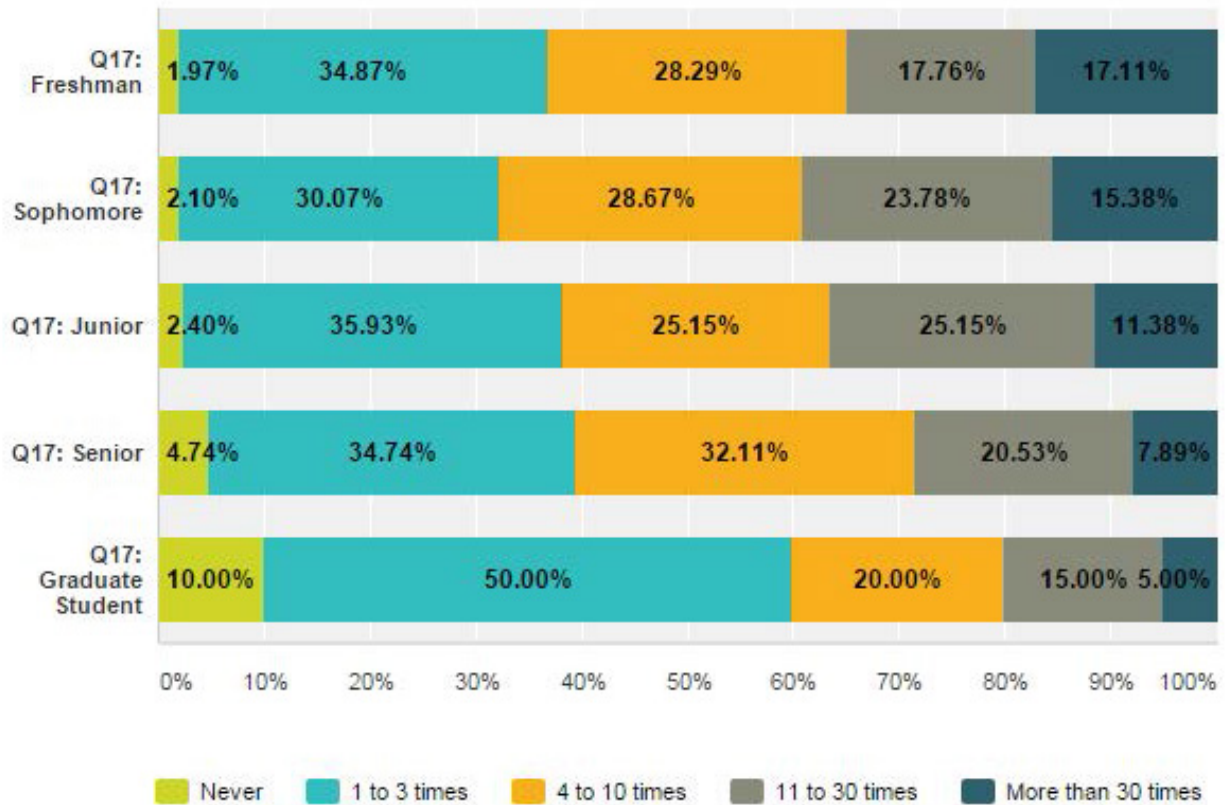
When overall frequency response rates were averaged ((1+3)/2=2, (4+10)/2=7, (11-30)/2=20.5, 35) and added for each school year, undergraduates used a digital device an average of 11.67 times during a typical school day for non-class related activities compared to an average of 7.23 times each class day for graduate students. Combined, undergraduate and graduate students used a digital device an average of 11.43 times each class day for non-class activities. A comparison of results between the 2013 and 2015 surveys show students are using digital devices more frequently (10.93 times each class day in 2013 versus 11.43 times each class day in 2015) in the classroom for non-class related activities.

Q1. Comparisons between 2013 Digital Distractions I survey and 2015 Digital Distractions II survey

Digital Distractions 1: On a typical school day, how often do you use a digital device during classes for non-classroom related activities such as texting, talking on a smart phone, emailing, surfing the Web, tweeting or other social networking?

	Never	1-3	4-10	11-30	>30	Total		(1+3)/2=2	(4+10)/2=7	(11-30)/2=20.5	35	Total	Average
Freshman	17	102	83	42	55	299	0	204	581	861	1925	3571	11.94
Fr /Fr Tot as %	5.7%	34.1%	27.8%	14.0%	18.4%								
Sophomore	10	66	52	31	30	189	0	132	364	635.5	1050	2181.5	11.54
So /So Tot as %	5.3%	34.9%	27.5%	16.4%	15.9%								
Junior	16	35	35	17	16	119	0	70	245	348.5	560	1223.5	10.28
Jr /Jr Tot as %	13.4%	29.4%	29.4%	14.3%	13.4%								
Senior	11	50	34	28	11	134	0	100	238	574	385	1297	9.68
Sr /Sr Tot as %	8.2%	37.3%	25.4%	20.9%	8.2%								
Graduate Student	7	14	2	1	1	25	0	28	14	20.5	35	97.5	3.90
GS /GS Tot as %	28.0%	56.0%	8.0%	4.0%	4.0%								
Total Responses	61	267	206	119	113	766	0	534	1442	2439.5	3955	8370.5	10.93

Digital Distractions 2: On a typical school day, how often do you use a digital device during classes for non-classroom related activities such as texting, talking on a smart phone, emailing, surfing the Web, tweeting or other social networking?
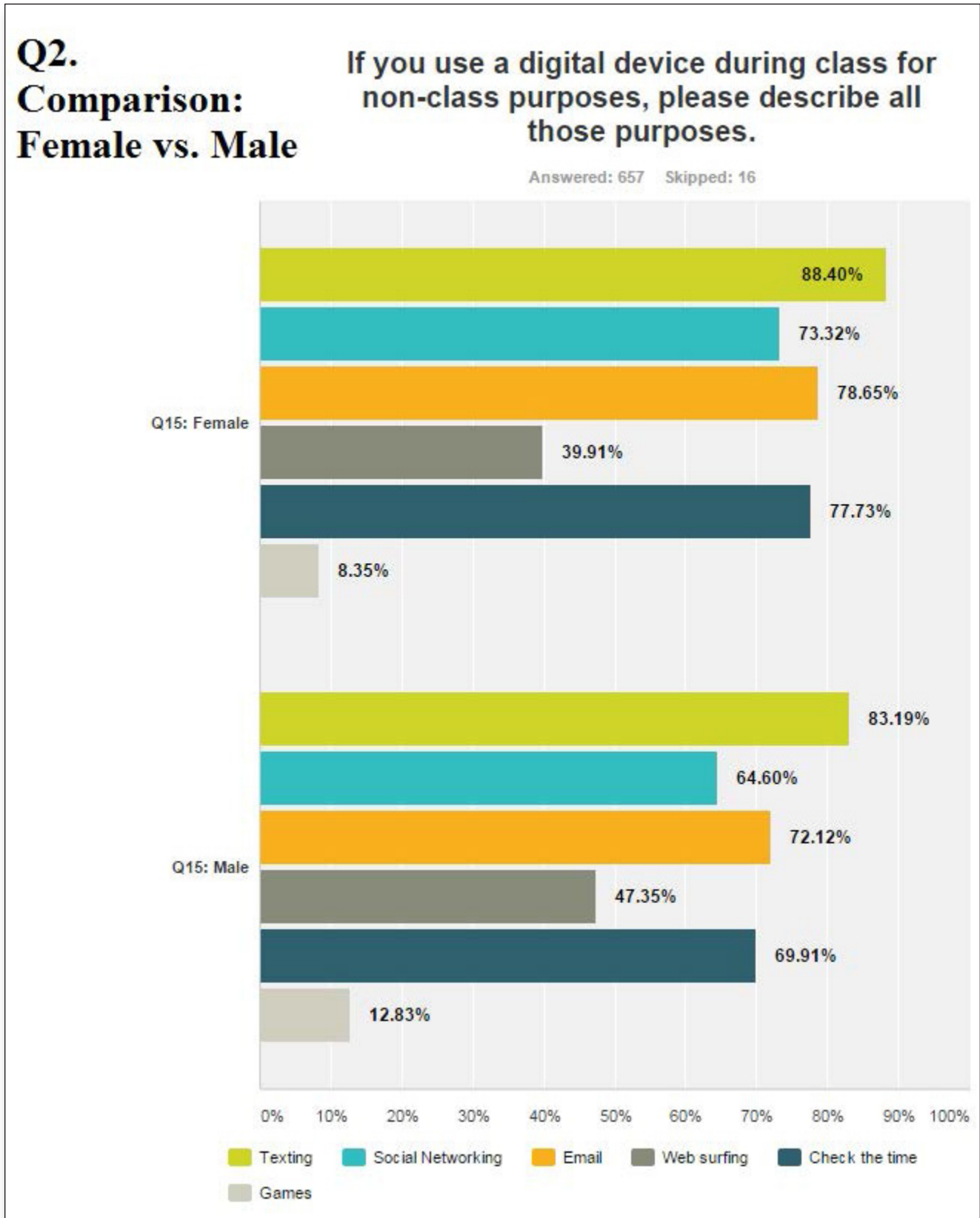
	Never	1-3	4-10	11-30	>30	Total	0	(1+3)/2=2	(4+10)/2=7	(11-30)/2=20.5	35	Total	Average
Freshman	3	53	43	27	26	152	0	106	301	553.5	910	1870.5	12.31
	2.0%	34.9%	28.3%	17.8%	17.1%								
Sophomore	3	43	41	34	22	143	0	86	287	697	770	1840	12.87
	2.1%	30.1%	28.7%	23.8%	15.4%								
Junior	4	60	42	42	19	167	0	120	294	861	665	1940	11.62
	2.4%	35.9%	25.1%	25.1%	11.4%								
Senior	9	66	61	39	15	190	0	132	427	799.5	525	1883.5	9.91
	4.7%	34.7%	32.1%	20.5%	7.9%								
Graduate Student	2	10	4	3	1	20	0	20	28	61.5	35	144.5	7.23
	10.0%	50.0%	20.0%	15.0%	5.0%								
Total Responses	21	232	191	145	83	672	0	464	1337	2972.5	2905	7678.5	11.43

Question 2 comparison analysis indicates females (N=440) were more likely than males (N=233) (73.3% vs. 64.6%) to use digital devices for non-class related social networking. Males were more likely than females (47.3% vs. 39.9%) to use digital devices for non-class related web surfing and (12.8% vs. 8.3%) playing games.

Q2. Comparison: Female vs. Male

If you use a digital device during class for non-class purposes, please describe all those purposes.

Answered: 657   Skipped: 16

Q15: Female
- 88.40%
- 73.32%
- 78.65%
- 39.91%
- 77.73%
- 8.35%

Q15: Male
- 83.19%
- 64.60%
- 72.12%
- 47.35%
- 69.91%
- 12.83%

Legend: Texting Social Networking Email Web surfing Check the time Games

Question 3 comparison analysis indicates undergraduates (N=653) were more likely to use digital devices than graduates (N=20) during daily classes for non-class activities. When overall frequency response rates were averaged and added for each school year, undergraduates used a digital device an average of 21.15% of the time in classes for non-class related activities compared to an average of 15% of the time for graduate students. Combined, undergraduate and graduate students (a small sample, N=20) used a digital device an average of 21% of the time for non-class activities while in the classroom.

Q3. Class by class averages comparisons Phase II

Q3. If you use a digital device during class for non-class purposes, what percentage of the class is spent engaging in that activity?
Class by class time averages
Answered: 668   Skipped: 7

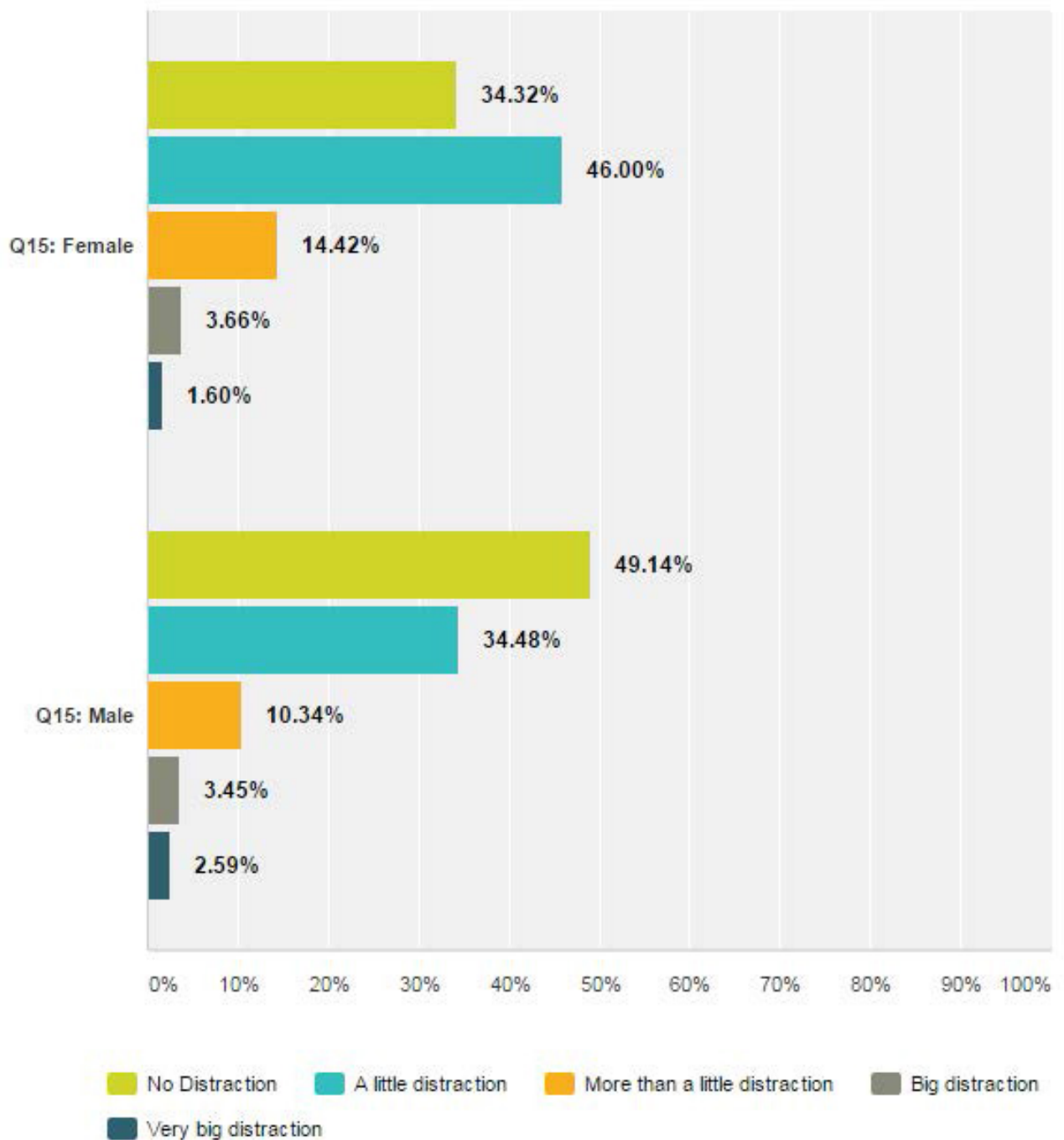|	0%	1-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-79%	71-80%	81-90%	91-100%	Total Class Respondents	Total # of minutes	Average % of time per class
Freshman	2	63	31	21	12	6	3	4	5	3	2	152		
#*ave time in the interval	0	315	465	525	420	270	165	260	375	255	190		3240	**21.3**
Sophomore	2	50	25	27	16	8	7	1	1	4	1	142		
#*ave time in the interval	0	250	375	675	560	360	385	65	75	340	95		3180	**22.4**
Junior	3	71	34	24	7	5	9	5	4	3	1	166		
#*ave time in the interval	0	355	510	600	245	225	495	325	300	255	95		3405	**20.5**
Senior	7	77	39	24	11	13	4	2	2	6	3	188		
#*ave time in the interval	0	385	585	600	385	585	220	130	150	510	285		3835	**20.4**
Graduate Student	0	12	4	0	0	0	0	1	0	1	0	18		
#*ave time in the interval	0	60	60	0	0	0	0	65	0	85	0		270	**15.0**
Total Respondents	14	273	133	96	46	32	23	13	12	17	7	666		
#*ave time in the interval	0	1365	1995	2400	1610	1440	1265	845	900	1445	665		13930	**20.9**

Comparison analysis on Question 7 indicate females were more likely than males (65.7% vs. 50.9%) to list some level of distraction caused by another student's use of digital devices during class for non-class activities.
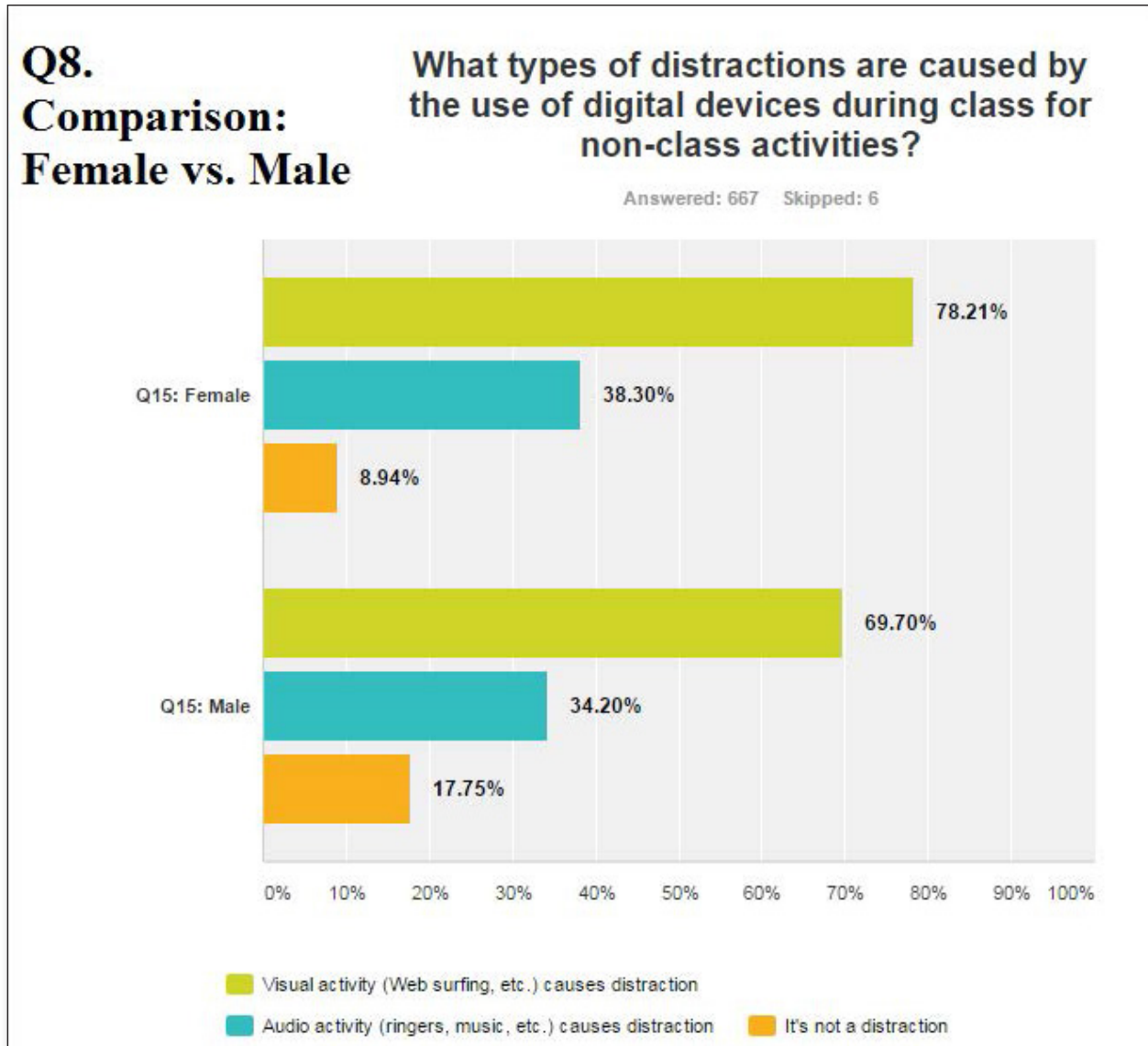

Q7. Comparison: Female vs. Male

How much of a learning distraction is it to you when other students use digital devices during class for non-class activities?

Answered: 669   Skipped: 4

Q15: Female
- 34.32%
- 46.00%
- 14.42%
- 3.66%
- 1.60%

Q15: Male
- 49.14%
- 34.48%
- 10.34%
- 3.45%
- 2.59%

Legend:
- No Distraction
- A little distraction
- More than a little distraction
- Big distraction
- Very big distraction

Comparison analysis on Question 8 indicates females were more likely than males to notice visual (78.2% vs. 69.7%) and audio (38.3% vs. 34.2%) distractions caused by the use of digital devices during class for non-class activities.

Q8. Comparison: Female vs. Male

What types of distractions are caused by the use of digital devices during class for non-class activities?

Answered: 667   Skipped: 6

Q15: Female
- 78.21%
- 38.30%
- 8.94%

Q15: Male
- 69.70%
- 34.20%
- 17.75%

Legend:
- Visual activity (Web surfing, etc.) causes distraction
- Audio activity (ringers, music, etc.) causes distraction
- It's not a distraction

DISCUSSION

Research indicates the frequency of classroom distractions that college students experience due to the use of digital devices is increasing. This survey indicates such digital distractions are often habitual and frequently happen despite an admission by a large majority (89%) of respondents that this behavior hampers their ability to pay attention in the classroom.

This study expanded on my previous findings with an aim to further quantify the frequency and duration with which students' digital device uses cause classroom distractions.

The 2015 survey found the average respondent used a digital device for non-class purposes 11.43 times during school days compared to 10.93 times during school days in the 2013 survey.

2015 survey respondents identified non-class related activities that included texting (86.6%), emailing (76.2%), and social networking (70.3%). The 2015 study found the duration of such digital distractions consumed an average of 20.9% of respondents' time in the classroom.

Respondents said three leading advantages

for using digital devices for non-class related behavior was to stay connected (63%), fight boredom (63%), and for entertainment (47%). Respondents also admitted such behavior, by themselves and/or students around them, caused them to not pay attention (89%) and miss instruction (81%) during class.

A large majority (80.5%) of respondents agreed with one of the following statements regarding their classroom uses of digital devices for non-classroom purposes:

- "I can freely use a digital device without it causing learning distractions." (29.6%)
- "It's my choice to use a digital device whenever I feel like using one." (26.6%)
- "My use of digital devices outweigh classroom learning distractions they may cause." (12.8%)
- "I can't stop myself from using digital devices even if they may cause learning distractions." (11.5%)

Such responses may explain why a large majority (90%) of respondents oppose classroom bans on digital devices while also recognizing the detrimental learning distractions they may cause. A smaller majority (53%) of respondents favor policies limiting classroom distractions caused by digital devices. A third of the respondents (32%) oppose such policies and 15% "didn't know" how they felt about such policies. This suggests students may be receptive to better clarity and conversations about appropriate and inappropriate classroom uses of digital devices.

Respondents said fighting boredom (63%) in the classroom was a leading reason they used digital devices for non-class activities. This suggests a need for students to learn more effective self-control techniques to keep them focused on the learning at hand in classroom settings. It also suggests instructors might benefit from learning and experimenting with new ways to engage college students in classroom activities that

might reduce boredom and minimize disruptions caused by non-class uses of digital devices. If one were to follow findings by Wang et al. (2015), digital device distractions may also be minimized by imposing other multitasking behaviors in classrooms that can more strategically allocate students' cognitive resources.

A comparison analysis indicated graduate students (7.2 times a day and 15% of class time) were less likely to use digital devices for non-class purposes than undergraduates (11.7 times a day and 20.9% of class time). This suggests that classroom digital distractions may lessen with age because older students are better self-regulated learners who are able to block out distractions in a classroom environment (Pintrich & de Groot, 1990) while they actively engage in cognitive processing of learning materials.

One limitation of this result was the small sample (N=20) of graduate student respondents. Another limitation of this study was the disproportionately larger sample of female respondents compared to male respondents (65.4% vs. 34.6%). Future research might use larger samples of graduate students and a more proportionally representative U.S. Census demographic sample of female and male (50.3% vs 50.7%) respondents to see if they result in different responses.

Other research might measure the before and after impact of apps (Pocket Points, SelfControl, Freedom, Anti-Social, Stay Focused, FocusWriter, etc.), pedagogies, technologies, and policies designed to limit classroom digital device distractions.

Research indicates the rapid adoption and use of digital devices and applications by Millennials is going to keep growing. It should continue to qualify for future research into the motives and perceptions that drive respondent behavior. Forecasts by Worldwide Wearables (2015), and Meeker (2013), indicate this may especially be the case with near-future growth of more personal technology devices such as wearables, drivables, flyables, and scannables.

Finally, the results of this and related research by Davis III, Deil-Amen, Rios-Aguilar, & González Canché (2015), Oh & Reeves (2014), & Van Dusen (2014) raise questions regarding the on-going need for colleges and universities to provide updated technology, technology support, and training time for instructors. This may allow faculty and other instructional staff to more efficiently use technology tools for better student engagement, to lessen digital distractions, and to improve the overall quality of classroom instruction.

The unique contribution of this study was its measurement of the frequency and duration of digital distractions in classrooms, as well as the competing justifications respondents identified for engaging in distracting behavior with digital devices they admit may have negative learning consequences. 📶

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