



Electronic Devices & Student's GPAs

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Hypothesis

Some professors believe that students get distracted when using electronic devices to take notes and lead to lower grades received on tests and assignments.
H1: Students that use electronic devices more frequently to take notes have lower GPAs and lower grades on assignments.
 We tested whether using electronic devices in class to take notes will lead to students having a lower GPA and receive lower grades on their assignments. We used two variables to determine student's "grades" in their courses; GPA and relevant information learned compared to their peers. There is a significant correlation between the minutes distracted using an electronic device in class and the amount of relevant information learned compared to their peers.

Methods

Data was collected from college student users (N=142) of online student Facebook groups. Students were asked to report their year in school and how they take notes in class; with pen and paper or on an electronic device. Students were also asked to record their GPA. They were asked to report the relevant information learned compared to other students in their same major. The variable was used to determine "GPA" without looking at the actual grade point average.

Survey Question Samples

How often do you use an electronic device to take notes in class?
 Never
 Occasionally
 Fairly Many Times
 Very Often
 Always

In a typical 2 hour class, on average, how many minutes do you spend on the web pages not related to the course while on your electronic device?
 Self-reported the average number of minutes (0 to 120 minutes)

Relative to your peers, how much relevant information do you learn from your classes at the end of the semester/quarter?
 Extremely less than your peers
 Less than your peers
 About the same as your peers
 More than your peers
 Extremely more than your peers

Compared to other students in your major, where do you think your GPA stands?
 One of the Worst
 Below Average
 Average
 Above Average
 One of the Best

What is your GPA (4.0 scale)?
 Self-reported their GPA

Results

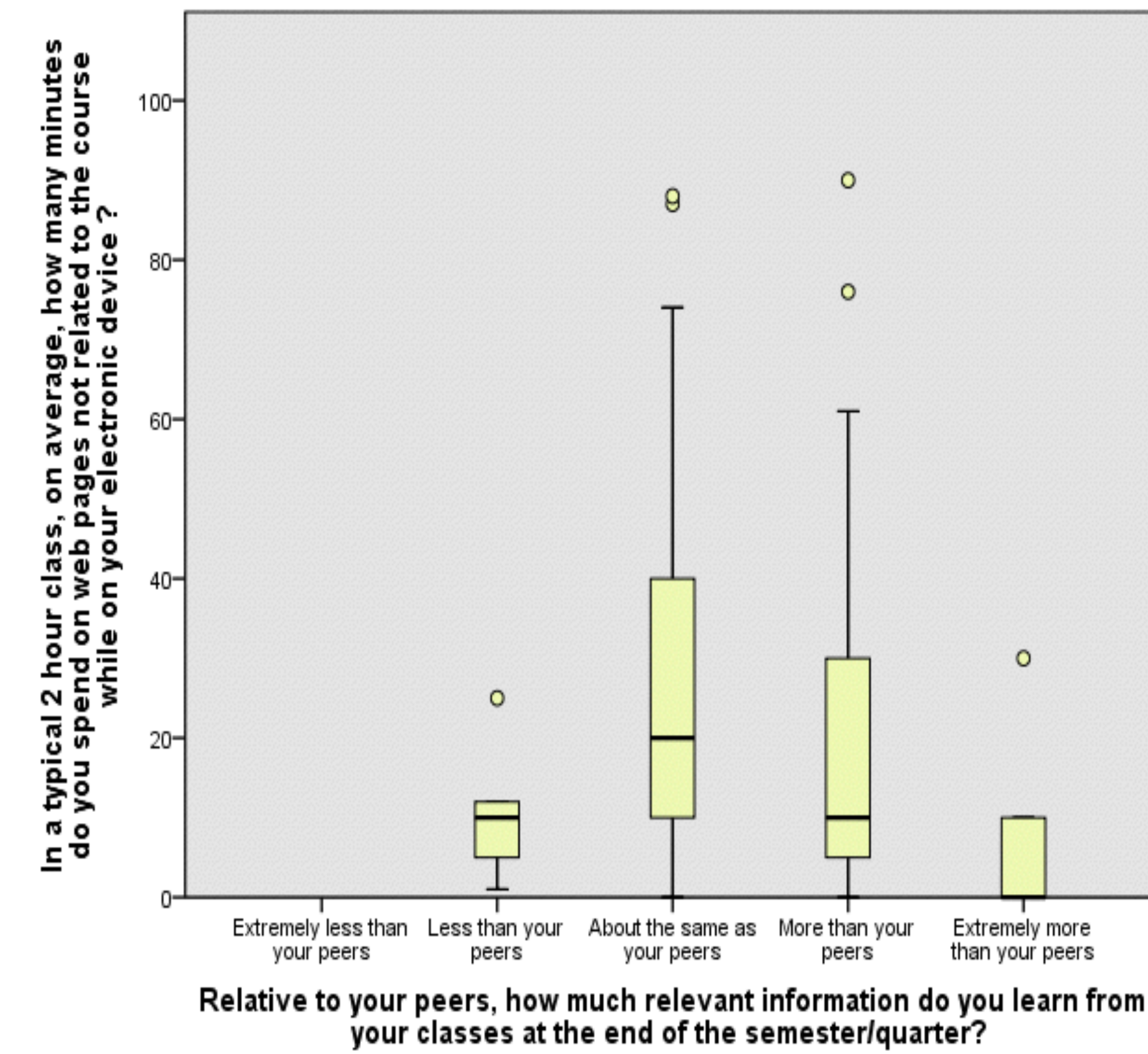


Fig. 1: Spearman Correlation; N=142, R²=.049, p= .008
 There is no correlation between relevant information learned at the end of a class and the amount of minutes students reported distracted on their electronic devices.

Spearman's rho	Relative to your peers, how much relevant information do you learn from your classes at the end of the semester/quarter?	Correlation Coefficient	In a typical 2 hour class, on average, how many minutes do you spend on web pages not related to the course while on your electronic device?
			-.221
		Sig. (2-tailed)	.008
		N	142

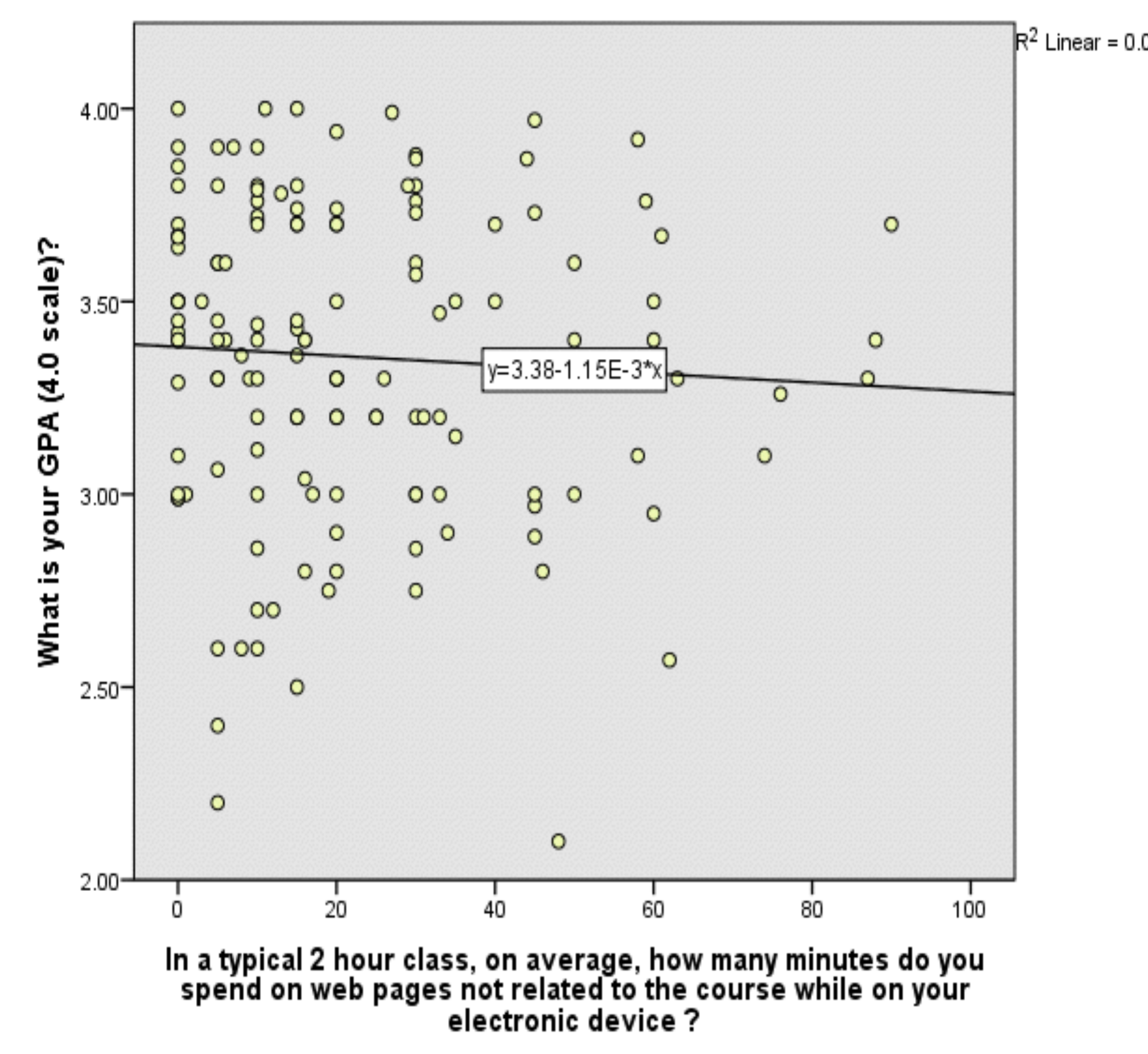


Fig. 2: Spearman Correlation; N=142, R²=.010, p= .234
 Students who spend fewer minutes distracted on their electronic device tend to report having higher GPA's

Spearman's rho	In a typical 2 hour class, on average, how many minutes do you spend on web pages not related to the course while on your electronic device ?	Correlation Coefficient	What is your GPA (4.0 scale)?
			-.101
		Sig. (2-tailed)	.234
		N	142

Results

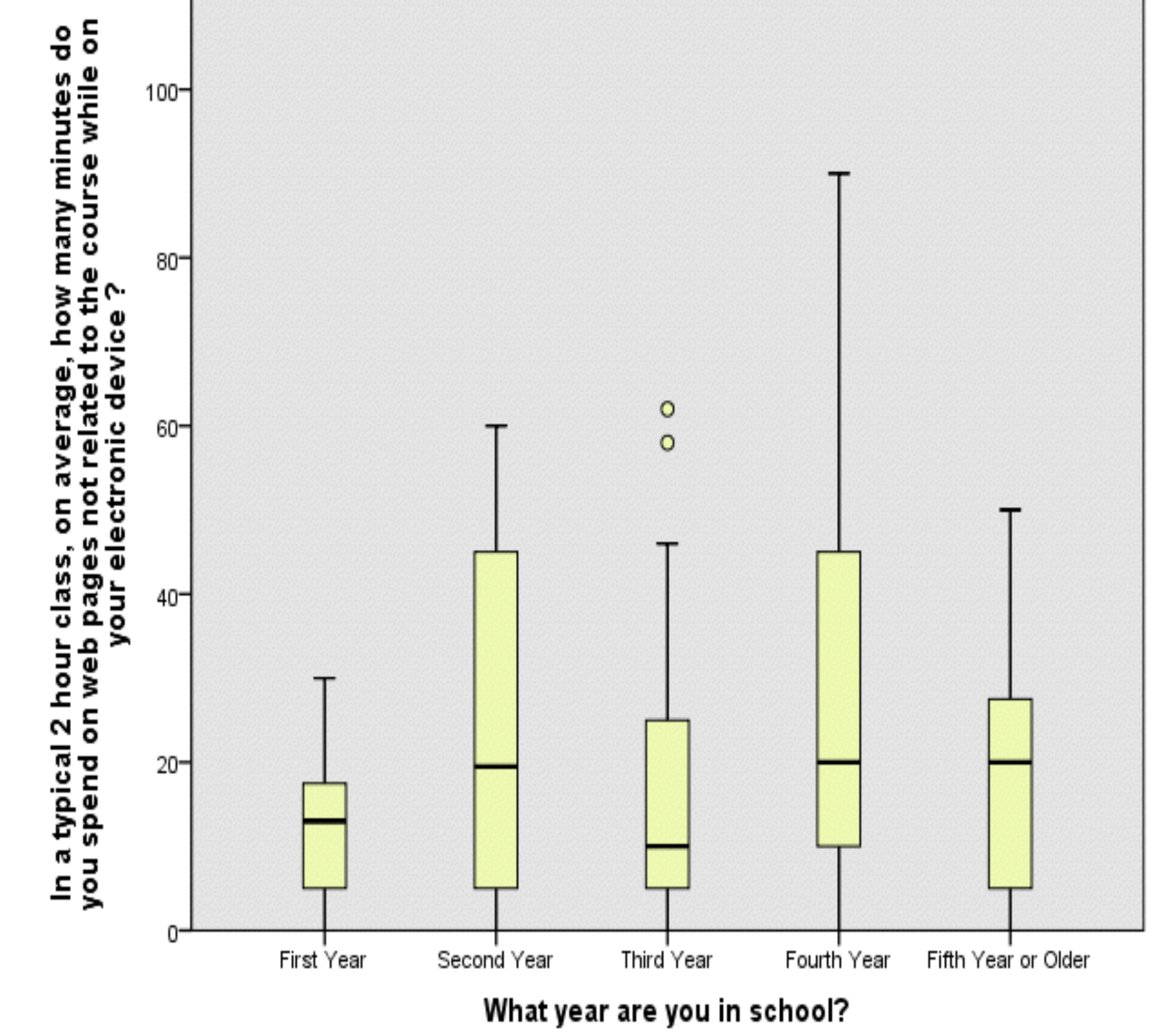
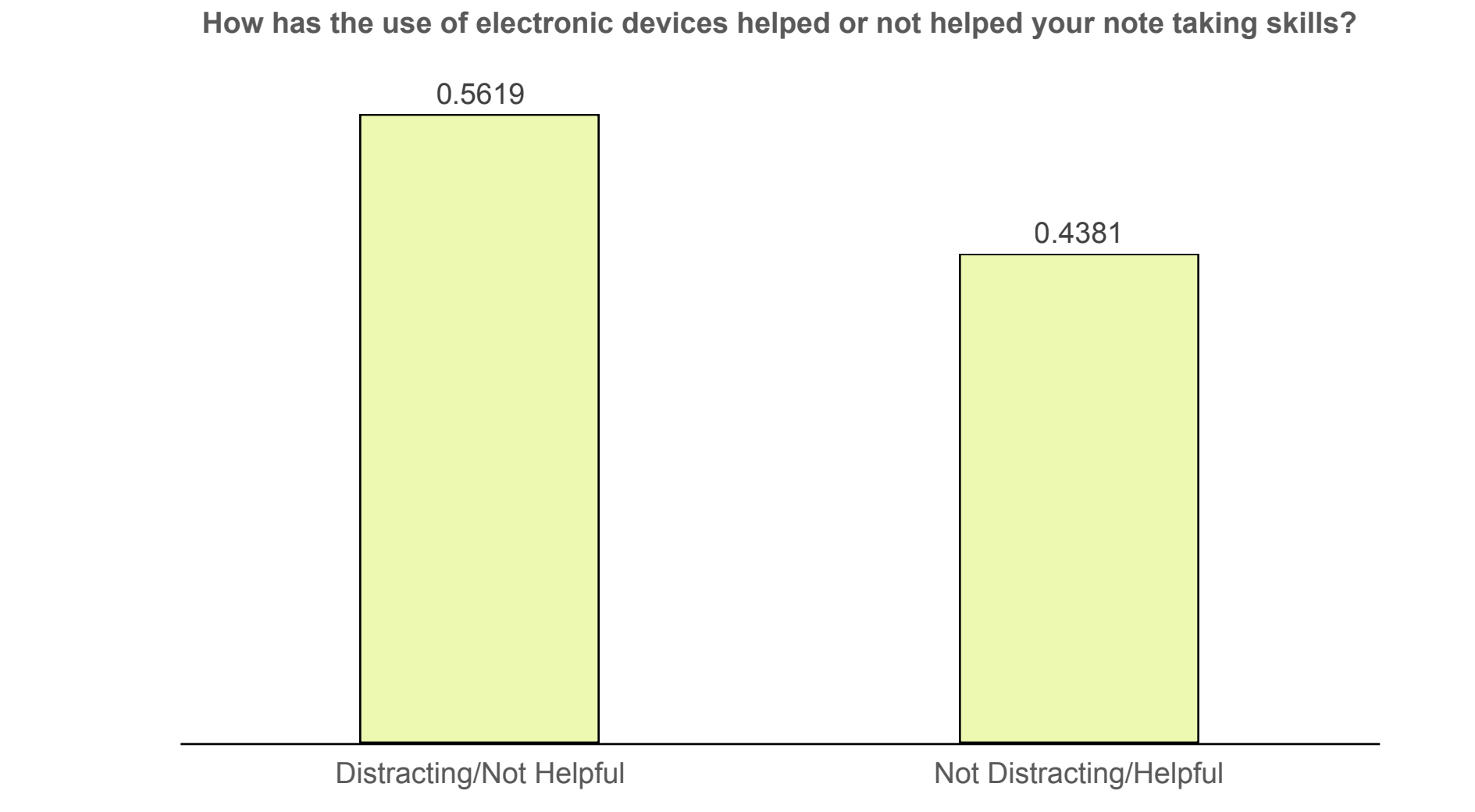


Fig. 3: Kruskal Wallis; N=142, (H(4)= 10.484, p= .003)
 The relationship between our variables was statistically insignificant. The year you are in school is responsible for % of how many minutes you are distracted on your electronic device

In a typical 2 hour class, on average, how many minutes do you spend on web pages not related to the course while on your electronic device ?	Ranks		N	Mean Rank
	What year are you in school?			
	First Year	11	53.09	
	Second Year	10	73.40	
	Third Year	39	59.32	
	Fourth Year	70	81.94	
	Fifth Year or Older	12	65.46	
	Total	142		

Test Statistics		In a typical 2 hour class, on average, how many minutes do you spend on web pages not related to the course while on your electronic device ?
Chi-Square		10.484
df		4
Asymp. Sig.		.033
a. Kruskal Wallis Test		
b. Grouping Variable: What year are you in school?		



Distracting/Not Helpful
 "It's helped me so much in taking notes, because I can write down what my professor is saying quickly and not have to worry about forgetting important information they've mentioned. I can also organize my notes much easier and it's less stressful for me because I know I can just fix it easily."

Not Distracting/Helpful
 "I take far better notes on a laptop as I am able to jot down more information at a faster pace. I am able to keep them organized into folders for each class and it helps me be able to find a certain piece of information more efficiently."

Conclusion

Some professors believe that students get distracted when using electronic devices to take notes and lead to lower grades received on tests and assignments.
H1: Students that use electronic devices more frequently to take notes have lower GPAs and lower grades on assignments.
 We tested whether using electronic devices to take notes in class predicts lower student GPAs. Spearman correlation indicated as the number of minutes distracted increased the amount of relevant information learned decreased (Fig. 1). Spearman correlation also indicated as the number of minutes distracted increased student GPA decreased (Fig. 2).

Distracting Percent

Internet
 "Using a laptop or other electronic device is a distraction for me and does lead me to browse non school related material and then miss information."

Paper & Pen
 "I think they're a distraction and I learn better while taking physical notes."

Social Media
 "I find it distracting to have such easy access to social media and other non-related material, so I choose not to use electronic devices to take notes. I also find it easier to make tables, drawings and diagrams if I am handwriting notes."

Texts
 "I like to see the power points on my laptop during class, but it does distract me because I get text messages on my laptop and sometimes I use it to look up other things instead of paying attention."

Easier
 "It's easier to take notes on a laptop because you can get the information down quicker which allows you to pay attention to the teacher's actual lecture instead of worrying about writing everything down as quick as possible. However, it can be easier to get distracted."

Helpful
 "I think electronic devices help me when writing down all the information. I can write more stuff down in less amount of time, and add in comments before the professor goes to the next topic."

Organized
 "I have sloppy handwriting and typing helps me create readable notes and organize them neatly. It also allows me to search through previous notes and create study guides. In real life (outside of academics) you have to learn to organize thoughts on a digital platform-- so using electronics in class helps teach real-world necessary skills."

Not Distracting Percent