

# INF397C: Understanding Research

Instructor: Dr. Jacek Gwizdka

Syllabus – Fall 2017

**Instructor:** Dr. Jacek Gwizdka

**Office:** [UTA 5.532](#)

**Office Hours:** By appointment

**Email:** [jacekg@ischool.utexas.edu](mailto:jacekg@ischool.utexas.edu) (please always include **INF397C** in the email's subject line)

**TA:** Ms. Kathryn Golden

**Email:** [kegolden@utexas.edu](mailto:kegolden@utexas.edu)

(all course-related email should be sent to the TA and cc-ed to the course instructor)

**Class meetings:** Thursdays, 12pm-2:50pm, [UTA 1.208](#)

**Canvas @ UT:** <https://utexas.instructure.com/>

**Course schedule:** in a separate document on Canvas (look under Canvas Syllabus)

**Course announcements and email list:** through Canvas - make sure to configure Canvas settings to receive notifications about announcement and messages in your email inbox.

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## **COURSE INTRODUCTION**

Every day you may hear, or read, many claims, such as:

*"This toothpaste will whiten your teeth faster."*

*"Our study has shown that people are not using libraries due to the availability of online information."*

*"Our results indicate that 37% of library users want access to free Wi-Fi."*

*"Austin traffic worsened by 33% in the last year"*

*"This web site is better than the other."*

*"Taking this course will help you be a better information scientist." ☺*

Unprepared information professionals – indeed, unprepared citizens! – are forced to consider the huge inflow of claims they hear every day, and either accept or reject them based on faith. Prepared professionals and citizens can, instead, consider the methods used and analyze the information on which the claims are made, and evaluate for themselves the likely goodness of the claims. This course aims to help you evaluate and understand such claims by helping you to understand quantitative and qualitative research methods, as well as a number of other approaches. Being able to critically examine research for quality and applicability and to discuss it intelligibly is an important competency of an information professional. Understanding the underpinnings of research is part of being a critical consumer of information. You may also find the need to conduct studies in your practice as a professional, whether you are an information architect, an archivist, a librarian, a UX specialist, or any other information professional. In this course, we will integrate the exploration of criteria-based research evaluation with hands-on experience.

The course is designed to help you develop skills and awareness for understanding research. The course will arm you with an appreciation for various ways to conduct research. Assignments will

provide you with a chance to demonstrate that you understand the basics of these various approaches to research. We will engage in some lecture, some discussion, and some hands-on in-class exercises. I expect you to come out from this course being able to evaluate whether a piece of research you read about was appropriately designed and well conducted. Note that the fundamental goal of this course is not to empower you to conduct your own research, but rather to well prepare you to be critical consumers of research in your academic and professional careers. But we will practice some research methods too.

### ***COURSE CATALOGUE DESCRIPTION***

INF 397C is intended to be a broad survey of the goals, methods, processes, and products of systematic inquiry. The course prepares students to critically evaluate information studies research. The course makes no claim to comprehensiveness but rather looks at important forms of research used widely in the field.

### ***LEARNING OUTCOMES***

This class is designed to arm you with a scientist's skepticism and a scientist's tools to understand and evaluate research. That is not to say however that readers should be cynical about researchers' motives or achievements, but rather they should subject researchers' claims to appropriate scrutiny. Hence, the student who successfully completes this course will, at a general level:

- Recognize authors' philosophical stances towards research;
- Understand research design, and know how to evaluate the appropriateness of designs;
- Understand the difference between, and the relative benefits of, quantitative and qualitative research;
- Be aware of the main research designs and methods;
- Be better able to discern the quality or soundness of research.

More specifically, at the completion of the course you should be able to:

- Recognize when hypotheses, propositions, or research questions are appropriate;
- Understand descriptive statistics, and know how to represent a collection of numbers;
- Understand inferential statistics and hypothesis testing;
- Appreciate the strengths, weaknesses, and validity concerns of a variety of research methods.

### ***COURSE PEDAGOGY and ORGANIZATION***

Class time will be split between (typically short) content-based lectures, reading discussions & debates, group activities, and project work. The part of class time used for lectures will be devoted to highlighting course materials. The goal is to create a learning environment in the classroom where questions and concepts are discussed and analyzed and skills are developed collaboratively. This format requires participation of all class members. Students are expected to:

- Participate actively in all activities;
- Attend all class sessions; if a student misses a class, it is his or her responsibility to arrange with another student to obtain all notes, handouts and assignment sheets;
- Read all material prior to class; students are expected to use the course readings to inform their classroom participation and enable them to perform the class activities and assignments.

- Hand in all deliverables fully and on time. Late submissions will not be accepted unless an emergency is involved. In the event of an emergency, the student must contact the instructor as soon as possible. (see also Grading and Policies)
- Educate themselves and their peers. The successful completion of this course and their participation in the information professions depend upon the students' willingness to demonstrate initiative and creativity. Your participation in the professional and personal growth of your colleagues is essential to your success as well as theirs. Such collegiality is at the heart of professional practice. The in-class group activities and discussion of the assignments is designed to encourage this kind of collaboration.
- If needed, ask for additional help from the instructor or the Teaching Assistant.

### **MY PERSONAL GOALS FOR YOU IN THE COURSE**

In addition to content-specific objectives reflected by the topics in the course calendar, I have these personal goals for each student:

- to get you to think deeply and carefully about the subject,
- to provide knowledge and skills useful to you in your career,
- to engender a deeper interest that can be pursued beyond this course,
- to make you proud of your achievements in this course, and,
- hopefully, to have a little fun in the process 😊 !

### **BOOKS AND READINGS**

Main textbook: **Gray13**: Gray, D. E. (2013). Doing Research in the Real World. SAGE.

Selected chapters from secondary book: **CP10**: Connaway, L. S., & Powell, R. R. (2010). Basic Research Methods for Librarians, Fifth Edition. ABC-CLIO.

**Note:** Additional readings will be assigned as needed. Some will be provided for specific assignments. For details, please visit Canvas.

### **CLASS LECTURE SLIDES**

The PDF versions of class lecture slides, if any, will be posted on Canvas. You have permission to print a copy for your personal use; please do not post or share them online. This policy applies to all other course handouts too.

**GRADING** is based on homework = assignments (*due dates on Canvas*):

A1. IRB – Human Subject Certification	5%
A2. Research paper and its parts	5%
A3. Questionnaire Design GROUP	20%
A4. Experiment Design GROUP	20%
A5. Critique: Research article and popular media reporting	15%
A6. Survey, Quantitative Data Analysis and Presentation - GROUP	35%
<b>Total</b>	<b>100%</b>

**Note:** A3 and A6 go together and are what you may call a mini-project.

## **GRADING SCALE**

- 96 or above (A: superior), 90-95 (A-: distinguished)
- 87-89 (B+: good), 84-86 (B: satisfactory), 80-83 (B-: barely satisfactory)
- unsatisfactory: 77-79 (C+), 74-76 (C), 70-73 (C-).

Note: Final grading does not happen just by calculations. I take into account many factors, and so your "Canvas points/%" are only a rough indication of the final grade. Ask when in doubt.

## **ASSIGNMENTS**

Assignments are listed in the Grading section. They are also on Canvas along with their due dates. Even if the instructor doesn't announce an assignment in class, it's your job to know when you should be working on one and when they are due. Please ask when in doubt.

### ***Submitting written homework and assignments***

You must prepare your assignments using a word processor and submit it by uploading to Canvas by the due date/time. Please always use appropriate three- or four-letter file extensions in submitted filename (e.g., .docx for Word files, .pdf for Adobe portable document format. Please avoid submitting zip files). Assignments usually may not be submitted via email to either the professor or a TA.

**Important:** All documents that you are submitting should include on the front page of your submission your name (spelled in the same way as in the course roster), course number/name, instructor's name, semester and the date of submission. For group work, if applicable, please also always include on the front page all group member names, your project group number, and your project short name (or title). **Warning:** If you do not follow these requirements, your submission may be returned without a grade and without a possibility to re-submit it.

## **CLASS PARTICIPATION AND ATTENDANCE**

Class participation includes active participation in lectures, presentations (Q&A) and in discussions. You are also expected to work diligently and cooperatively on in-class exercises.

You will not be graded directly on attendance. You are adults in a graduate-level course and are *expected* to attend every class. Beyond the occasional need to be absent from class for a good reason, please consider that much of the learning for the course occurs in class. You cannot participate in this learning if you are not present.

*Poor attendance and poor participation will lower your grade; good attendance and good participation may improve it.*

If you have to miss class for an extended period due to a protracted illness or similar reason, we will treat your needs as a special case and I will do everything I can to help you survive.

## **OTHER CLASS POLICIES**

### ***Due dates and times for handing in homework and assignments.***

Unless otherwise indicated, all homework and project assignments must be turned in at the beginning of class on the due date. You should think of all due dates for assignments, especially project assignments, as firm. The tight schedule of deliverables throughout the whole semester makes it nearly impossible to slip or extend due dates. Any assignment that you do not hand in on time may be penalized in grading. If you are not able to complete an assignment by the due date, it would be best for you to hand in as much of it as you have done. You must prepare your

assignments using a word processor and submit it by uploading to Canvas by the due date/time. Please do not submit links to Google Docs. Assignments usually may **not** be submitted via email to either the professor or a TA.

### **Computer use in the classroom**

You may use your laptops and other computing devices (e.g., tablets, smartphones) in the classroom. However, their use during class time is **restricted** to the class related activities. Students who use their devices for non-class related activities will be excused from the class and will have points deducted for their final grade.

### **Plagiarism**

Plagiarism, as defined in the 1995 Random House Compact Unabridged Dictionary, is the "use or close imitation of the language and thoughts of another author and the representation of them as one's own original work." (as cited in Plagiarism (2017). Wikipedia, <https://en.wikipedia.org/wiki/Plagiarism> accessed 2017.01.16.) If you use words or ideas that are not your own, you must cite your sources. Otherwise you will be guilty of plagiarism. Here's a resource designed to help you avoid plagiarism: [www.lib.utexas.edu/plagiarism](http://www.lib.utexas.edu/plagiarism)

### **Academic Honor Code**

You are encouraged to discuss assignments with classmates, but anything submitted must reflect your own, original work. If in doubt, ask the instructor. Plagiarism (as described above) and similar conduct represents a serious violation of UT's Honor Code and standards of conduct:

- [http://deanofstudents.utexas.edu/sjs/scholdis\\_plagiarism.php](http://deanofstudents.utexas.edu/sjs/scholdis_plagiarism.php)
- <http://deanofstudents.utexas.edu/sjs/conduct.php>

Students who violate University rules on academic dishonesty are subject to severe disciplinary penalties, such as automatically failing the course and potentially being dismissed from the University. **\*\*PLEASE\*\* do not take the risk.** We are REQUIRED to automatically report any suspected case to central administration for investigation and disciplinary hearings. Honor code violations ultimately harm yourself as well as other students, and the integrity of the University, academic honesty is strictly enforced. For more information, see the Student Judicial Services site: <http://deanofstudents.utexas.edu/sjs>.

### **Notice about students with disabilities**

The University of Texas at Austin provides appropriate accommodations for qualified students with disabilities. To determine if you qualify, please contact the Dean of Students at 512-471-6529 or UT Services for Students with Disabilities. If they certify your needs, we will work with you to make appropriate arrangements. UT SSD Website: <http://www.utexas.edu/diversity/ddce/ssd>

### **Coping with stress and personal hardships**

The [Counseling and Mental Health Center](#) offers a variety of services for students, including both individual counselling and [groups and classes](#), to provide support and assistance for anyone coping with difficult issues in their personal lives. As mentioned above, life brings unexpected surprises to all of us. If you are facing any personal difficulties in coping with challenges facing you, definitely consider the various services offered and do not be shy to take advantage of them if they might help. These services exist to be used.

### **Notice about missed work due to religious holy days**

A student who misses an examination, work assignment, or other project due to the observance of a religious holy day will be given an opportunity to complete the work missed within a reasonable time after the absence, provided that he or she has properly notified the instructor. It is the policy of the University of Texas at Austin that the student must notify the instructor at least fourteen days prior to the classes scheduled on dates he or she will be absent to observe a religious holy day. For religious holy days that fall within the first two weeks of the semester, the notice should be given on the first day of the semester. The student will not be penalized for these excused absences, but the instructor may appropriately respond if the student fails to complete satisfactorily the missed assignment or examination within a reasonable time after the excused absence.

### **Weather contingencies**

If the university is closed (for any reason) on an assignment due date, the assignment will be due at the beginning of the next class.

### **Electronic mail Notification Policy**

In this course e-mail will be used as a means of communication with students. You will be responsible for **checking your e-mail regularly** for class work and announcements. If you are an employee of the University, your e-mail address in Canvas is your employee address.

All email concerning the class should be addressed to the TA with a copy to the instructor. We will sort out which of us should act on the message and will make every effort to answer your email in a timely fashion. However, you should not necessarily always expect to get an immediate reply. In particular, don't expect to get answers to questions about a homework or assignment within the last few hours before that assignment is due.

Please put **INF397C** as part of the subject line of your email; that will help us identify your emails more quickly.

The University has an official e-mail student notification policy. It is the student's responsibility to keep the University informed as to changes in his or her e-mail address. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. Read the policy: <http://www.utexas.edu/its/policies/emailnotify.html>. You can find and change your official email address of record at [https://utdirect.utexas.edu/apps/utd/all\\_my\\_addresses](https://utdirect.utexas.edu/apps/utd/all_my_addresses)

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Course Schedule (subject to change) – Fall 2017

#	Date	Topic	Readings (to do <i>before</i> class, except as indicated)	In class activity	Due – Assignments (due at the beginning of class, except as indicated)
1	Aug 31	Introductions, Ethics in Research (IRB)	Syllabus; Gray13: Ch4; CP10: Ch1	introductions	
2	Sept 7	Epistemological and theoretical perspectives. What is a research problem?	Gray13: Ch1-2, Ch5 (pp.112-124) CP10: Ch2 Blaise + Hernon	Discuss epistemological positions and theoretical perspectives. How to read a research paper?	1. IRB training certificate
3	Sept 14	Research methodologies and design: <b>Quantitative (QN)</b> and <b>Qualitative (QL)</b>	<b>QN:</b> Gray13: Ch6; CP10: Ch6. <b>QL:</b> Gray13: Ch7; CP10: Ch7 (pp. -213)	Discuss methodologies, Discuss papers (quantitative & qualitative)	2. Parts of paper
4	Sept 21	Research methodologies and design: Mixed Methods	Gray13: Ch8	Discuss methodologies Assignment Discussion	
5	Sept 28	Data collection methods: questionnaires, interviews, focus groups	Gray13: Ch14-15, 18 CP10: Ch5	Questionnaire design	
6	Oct 5	Data collection methods: ethnography, observation, unobtrusive	Gray13: Ch16-17, 19	Experiment design	3. Questionnaire GRP
7	Oct 12	<b>Quantitative</b> data analysis: descriptive statistics	Gray13: Ch22 (pp. -569) CP10: Ch9 (pp.261-274)	Data analysis	
8	Oct 19	<b>Quantitative</b> data analysis: inferential statistics	Gray13: Ch22 pp. 569-) CP10: Ch9 (pp.274-288)	Data analysis	4. Experiment design GRP
9	Oct 26	<b>Quantitative</b> data analysis cont.		Data analysis	
10	Nov 2	<b>Qualitative</b> data analysis: grounded theory, coding.	Gray13: Ch23 CP10: Ch7 (pp. 213-)	Coding	Progress check (GRP): Survey data analysis
11	Nov 9	<b>Qualitative</b> data analysis: cont.		MAXQDA	
12	Nov 16	<b>Quantitative</b> and <b>Qualitative</b> data analysis - as needed		StatPlus, MAXQDA – as needed	5. Critique research in news
13	Nov 23	<b>Week of Thanksgiving – no class</b>			
14	Nov 30	Presenting research results	Gray13: Ch24, 25		
15	Dec 7	Wrap up. Getting involved in research		Present survey results	6. Survey, data analysis & presentation GRP

Most readings are from textbook: **Gray13:** Gray, D. E. (2013). *Doing Research in the Real World*. SAGE.

Selected from: **CP10:** Connaway, L. S. & Powell, R. R. (2010). *Basic Research Methods for Librarians*, 5th Ed. ABC-CLIO.

**Note:** Additional readings will be assigned as needed. Some assignments come with extra readings.

# INF397C: Understanding Research

## Assignment 1

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### **IRB – Human Subject Certification**

Social science research almost always involves working with human beings. Institutions design research compliance mechanisms, sometimes called "Institutional Review Boards" (IRBs) in order to ensure that researchers treat human subjects ethically and fairly. UT Austin requires that all individuals who conduct research involving human beings (and other animals) be trained and certified to conduct such research. Your first task is to complete the IRB training (if you have not done so already), following the instructions below:

UT Austin's IRB page is located here: <http://www.utexas.edu/irb>

Complete the IRB training for research involving human subjects. For the purposes of this course, you *ONLY* need to complete the human subjects training. The Financial Conflict of Interest (FCOI) training is optional. It will help you with research projects to be certified but it is **NOT REQUIRED** for this course. The start page for the training is here: <https://research.utexas.edu/ors/humansubjects/training/>

*Deliverables:* Download your completion form report from the CITI web site and submit it via Canvas.

*Grading:* Your grade will be your score achieved on the IRB test.

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# INF397C: Understanding Research

## Assignment 2

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### Research paper and its parts

Carefully read the two assigned papers. As you read each paper, identify the items listed below.

1. The problem statement (PS) (paraphrase is in a sentence or two)
2. The literature on which the study draws (describe in a paragraph or so)
3. The research questions or hypotheses of the current study (RQs)
4. The type of investigation undertaken (e.g., experiment, case study, survey) (METHODOLOGY)
5. The sample (types and number of subjects/informants/data) (SAMPLE)
6. Data collection method(s) (DATA\_COLLECTION)
7. Data analysis methods(s) (ANALYSIS)
8. Main findings (Can you summarize them in a few sentences?)

*What to do:* read and mark up on each paper (annotate directly a printout or an electronic version) the above items (use the codes/short names). Write your summary notes on a separate page – single spaced.

### *Papers to read:*

1. qualitative: Barley, W. C., Leonardi, P. M., & Bailey, D. E. (2012). Engineering Objects for Collaboration: Strategies of Ambiguity and Clarity at Knowledge Boundaries. *Human Communication Research*, 38(3), 280–308. <https://doi.org/10.1111/j.1468-2958.2012.01430.x>
2. quantitative: Gwizdka, J. (2010). Distribution of cognitive load in Web search. *Journal of the American Society for Information Science and Technology*, 61(11), 2167–2187. <https://doi.org/10.1002/asi.21385>

*Deliverables:* Submit the annotated papers (if you annotated on paper, you will need to scan it) plus your summary notes on a separate page via Canvas.

*Grading:* markup 35%; summary notes (65%)

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# INF397C: Understanding Research

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## Assignment 3 – Questionnaire Design – GROUP Assignment

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This is the first of two parts of a group project. This first part involves coming up with a topic (and research questions) and creating a data collection instrument – a questionnaire. The second part (due at the end of the semester), will involve data collection using your questionnaire, analyzing the data, and presenting the results.

Pick a topic of interest to you. This will be something you want to learn about from a population you are able to reach (e.g., using email). Formulate research questions (RQs). The RQs should not be limited to one aspect (e.g., how many people use smartphones to access health information), but rather should include multiple aspects/constructs (e.g., learning about situations when people use smartphones to access health information to answer who/when/what/why/for whom). Your topic and RQs can be exploratory in nature and you are not expected to formulate hypotheses (i.e., create an analytical survey). However, it is expected that your questionnaire will ask for some population characteristic that will allow you to create respondent groups and (later) compare their responses. Examples of groups include: gender, age ranges, education levels, income level (respondent's or household's).

A few example topics: diversity of mobile device use; use of travel websites for finding, booking and purchasing hotels/flights/vacation packages; use of websites to find books to read (e.g., library vs. non-library websites, commercial (such as Amazon) vs. non-commercial (e.g., public libraries, Worldcat); use of internet in a household; process of finding online graduate schools to apply to. Please avoid sensitive topics (e.g., related to politics or religion). You should not use the same topic as the one used in the in-class exercise.

Your submission should include:

1. Topic
2. Research question(s) – i.e., what do you want to learn about the topic. Please be specific.
3. How would sample your population? Describe an ideal, even though you may not be able to apply it in this course.
4. Questionnaire. In creating your questions, you should consider validity and reliability. To ensure reliability you can create several questions to learn about each construct. Expected 24+ questions.

The main objective of this assignment is to have you practice creating questions to collect data for predefined research questions.

*Deliverables:* Submit document via Canvas.

*Grading:* 20% (of the course grade). You will be graded on quality of questions and their appropriateness for your RQs.

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## Assignment 4 – Experimental Design – GROUP Assignment

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Your task is to design an experiment. Think of this as your first (?) experimental design. You get to have fun imagining the research, without actually carrying out the work. Design a study from which you'd like to know the results.

Start by specifying your research question(s). Pick something that interests you. (If you wish, you can send me your research question(s) beforehand, and I'll tell you if I think it (they) sounds good.) Specify what your independent and dependent variables are, and how they are operationalized. Specify your hypotheses. Specify what controls and counterbalancing you'd employ to avoid confounds. Who will be your experiment participants? How will you sample them? Take short notes that describe your rationale behind experiment design decision (in particular, your variables, their operational definitions, controls/avoiding confounds, participant selection). Now, spend some time being reflective. Write a paragraph on which parts of this were hard for you and which parts were easy. Why do you think so?

Overall, I would like to see your thinking process and not just the final outcome.

The goals of this assignment are: i) to give you an opportunity to think about, and process deeply, the components of a good experiment, and thus to give you some empathy for how hard it is to design a good experiment, ii) to better equip you to be able to evaluate others' experimental designs and thus be a better, critical consumer of experimental research.

Here is a template for your answers. Your entries need not be in complete sentences – just make sure you communicate well what you would intend to do. Remember to add the rationale to your most important experimental design decisions (a sentence or two per point is sufficient) and the "reflexive paragraph".

1. Title of experimental project
2. The research question(s) you want to answer
3. Independent variable (one or more) and its operational definition
4. Dependent variable (one or more) and its operational definition
5. Hypothesis (or hypotheses)
6. Test participants. How would you find and recruit your test participants?
7. Counterbalancing and other controls
8. Any important procedural notes

*Deliverables:* Submit via Canvas

*Grading:* 20% of the grade.

This assignment points: 60% for experimental design; 25% for rationale; 15% for reflections.

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## Assignment 5:

### Critique of a research article and popular media reporting – Individual Assignment

Find a news article that reports on an academic research study. The overall goal is to synthesize and present a brief, meaningful overview of the work presented in the original research paper and compare it to the news coverage of this paper. Your critique should include the following elements:

Facts about the paper (30%)

1. The problem statement in a sentence or two
2. A bullet list of areas covered by the background literature cited in the study
3. General and specific research questions or hypotheses of the current study
4. The types of research methods for this investigation (e.g., experiment, case study, survey)
5. The sample (types and number of subjects/informants/data)
6. Data collection method(s)
7. Data analysis method(s)
8. Main findings (describe in a few sentences)

Your analysis of the paper: (40%)

- Which of the items above does the paper present well?
- Which aspects of the items above could the paper improve? Which additional data, methods, or analyses might improve the paper by effectively communicating necessary information?
- Do the various methods used complement each other and present a cohesive view of the approach? Describe in a sentence or two: i) significance of the problem, ii) significance of the results, iii) limitations of the approach and the results
- Does the paper clearly convey these aspects of the work?

Facts about and analysis of the news article (40%):

- News source
- Time between research paper and news article
- How accurately does the article present the research findings?
- To what extent does the article take liberties with the research?
- Does the article headline sensationalize the research? If so, how?

*Deliverables:* Submit via Canvas

*Grading:* 15% of the course grade.

*Example research topics reported in news:* reading on digital devices, "mind reading", etc.

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## Assignment 6 – Survey Data Collection, Quantitative Data Analysis and Presentation

### – GROUP Assignment

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This is second of the two parts of the group project. The first part (Assignment 3) involved coming up with a topic, research questions, and creating questionnaire. This second part, involves analyzing the data you collected using your questionnaires and presenting the results (in a written report and in oral presentation). Your submission should include:

I. The written report (single spaced). The report parts will be familiar to you from reading sample research articles earlier this semester. (25%)

1. Topic of your research (revised, if applicable)
2. Research question(s) – i.e., what you aimed to learn about the topic. (revised, if applicable). If you formulated hypotheses, please include them.
3. Population, sampling, recruitment, and response.
  - 3.1 What was your target population. How did you sample your population?
  - 3.2. How did you recruit your respondents? How many responses have you received?

#### 4. Data Analysis

##### 4.1 Descriptive statistics

##### 4.2 Inferential statistics or associations between variables (as applicable)

For example: parametric or non-parametric (e.g., t-test, analysis of variance, Mann-Whitney U, etc.), or associations between variables (e.g., correlation).

The use of specific statistical procedures will depend on your research questions, the number of responses, the types of variables you have, distributions of the collected data, etc. Selection of appropriate procedure(s) is part of your task, and you should explicitly describe why you selected the specific statistical procedures. Statistical procedure that you will need are available in Excel, StatPlus and/or online at: <http://www.socscistatistics.com/tests/>

Results presentation may include a combination of data tables and charts, as applicable, along with some descriptive text. The description should highlight statistically significant results, if applicable.

5. Discussion of what you have learned from the results of your data analysis vis-à-vis your research questions (and/or hypotheses).
  6. Lessons learned – and short section in which you reflect on the process of coming up with research questions, data collection, selecting statistical procedures for data analysis,
- Appendix. Final Questionnaire.

II. Presentation slides (separate file). (10%, slides and their presentation in the class).

Each group will be presenting their work during the last class meeting (approx. 8 mins. presentation + 2 mins. Q&A). The slides should reflect the structure and the main elements from your report, but should not contain too many details (you should have 8-10 slides). All presentations will be run from one computer.

*Deliverables:* Submit documents via Canvas. Each document needs to contain the standard elements: your names, group number, course and instructor info (as described in the syllabus).

*Grading:* All elements are worth 35% (of the course grade). You will be graded on: appropriateness of the selected statistical tests, how you conducted data analysis and presented its results, drawing conclusions from data analysis results in relation to your research questions, your reflections on the process, and the overall quality of your report (including language) and presentation.