

2020

AP<sup>®</sup>

CollegeBoard

---

# AP<sup>®</sup> Research Academic Paper

## Sample Student Responses and Scoring Commentary

### **Inside:**

#### **Sample E**

- Scoring Guideline**
- Student Samples**
- Scoring Commentary**

© 2020 College Board. College Board, Advanced Placement, AP, AP Central, and the acorn logo are registered trademarks of College Board. AP Capstone is a trademark owned by the College Board. Visit College Board on the web: [collegeboard.org](https://collegeboard.org).

AP Central is the official online home for the AP Program: [apcentral.collegeboard.org](https://apcentral.collegeboard.org).

AP® Research Academic Paper 2020 Scoring Guidelines

The Response...				
<b>Score of 1</b> Report on Existing Knowledge	<b>Score of 2</b> Report on Existing Knowledge with Simplistic Use of a Research Method	<b>Score of 3</b> Ineffectual Argument for a New Understanding	<b>Score of 4</b> Well-Supported, Articulate Argument Conveying a New Understanding	<b>Score of 5</b> Rich Analysis of a New Understanding Addressing a Gap in the Research Base
Presents an overly broad topic of inquiry.	Presents a topic of inquiry with narrowing scope or focus, that is NOT carried through either in the method or in the overall line of reasoning.	Carries the focus or scope of a topic of inquiry through the method <b>AND</b> overall line of reasoning, even though the focus or scope might still be narrowing.	Focuses a topic of inquiry with clear and narrow parameters, which are addressed through the method and the conclusion.	Focuses a topic of inquiry with clear and narrow parameters, which are addressed through the method and the conclusion.
Situates a topic of inquiry within a single perspective derived from scholarly works <b>OR</b> through a variety of perspectives derived from mostly non-scholarly works.	Situates a topic of inquiry within a single perspective derived from scholarly works <b>OR</b> through a variety of perspectives derived from mostly non-scholarly works.	Situates a topic of inquiry within relevant scholarly works of varying perspectives, although connections to some works may be unclear.	Explicitly connects a topic of inquiry to relevant scholarly works of varying perspectives <b>AND</b> logically explains how the topic of inquiry addresses a gap.	Explicitly connects a topic of inquiry to relevant scholarly works of varying perspectives <b>AND</b> logically explains how the topic of inquiry addresses a gap.
Describes a search and report process.	Describes a nonreplicable research method <b>OR</b> provides an oversimplified description of a method, with questionable alignment to the purpose of the inquiry.	Describes a reasonably replicable research method, with questionable alignment to the purpose of the inquiry.	Logically defends the alignment of a detailed, replicable research method to the purpose of the inquiry.	Logically defends the alignment of a detailed, replicable research method to the purpose of the inquiry.
Summarizes or reports existing knowledge in the field of understanding pertaining to the topic of inquiry.	Summarizes or reports existing knowledge in the field of understanding pertaining to the topic of inquiry.	Conveys a new understanding or conclusion, with an underdeveloped line of reasoning <b>OR</b> insufficient evidence.	Supports a new understanding or conclusion through a logically organized line of reasoning <b>AND</b> sufficient evidence. The limitations and/or implications, if present, of the new understanding or conclusion are oversimplified.	Justifies a new understanding or conclusion through a logical progression of inquiry choices, sufficient evidence, explanation of the limitations of the conclusion, and an explanation of the implications to the community of practice.
Generally communicates the student's ideas, although errors in grammar, discipline-specific style, and organization distract or confuse the reader.	Generally communicates the student's ideas, although errors in grammar, discipline-specific style, and organization distract or confuse the reader.	Competently communicates the student's ideas, although there may be some errors in grammar, discipline-specific style, and organization.	Competently communicates the student's ideas, although there may be some errors in grammar, discipline-specific style, and organization.	Enhances the communication of the student's ideas through organization, use of design elements, conventions of grammar, style, mechanics, and word precision, with few to no errors.
Cites <b>AND/OR</b> attributes sources (in bibliography/ works cited and/or in-text), with multiple errors and/or an inconsistent use of a discipline-specific style.	Cites <b>AND/OR</b> attributes sources (in bibliography/ works cited and/or in-text), with multiple errors and/or an inconsistent use of a discipline-specific style.	Cites <b>AND</b> attributes sources, using a discipline-specific style (in both bibliography/works cited <b>AND</b> in-text), with few errors or inconsistencies.	Cites <b>AND</b> attributes sources, with a consistent use of an appropriate discipline-specific style (in both bibliography/works cited <b>AND</b> in-text), with few to no errors.	Cites <b>AND</b> attributes sources, with a consistent use of an appropriate discipline-specific style (in both bibliography/works cited <b>AND</b> in-text), with few to no errors.

## Academic Paper

### Overview

This performance task was intended to assess students' ability to conduct scholarly and responsible research and articulate an evidence-based argument that clearly communicates the conclusion, solution, or answer to their stated research question. More specifically, this performance task was intended to assess students' ability to:

- Generate a focused research question that is situated within or connected to a larger scholarly context or community;
- Explore relationships between and among multiple works representing multiple perspectives within the scholarly literature related to the topic of inquiry;
- Articulate what approach, method, or process they have chosen to use to address their research question, why they have chosen that approach to answering their question, and how they employed it;
- Develop and present their own argument, conclusion, or new understanding while acknowledging its limitations and discussing implications;
- Support their conclusion through the compilation, use, and synthesis of relevant and significant evidence generated by their research;
- Use organizational and design elements to effectively convey the paper's message;
- Consistently and accurately cite, attribute, and integrate the knowledge and work of others, while distinguishing between their voice and that of others; and
- Generate a paper in which word choice and syntax enhance communication by adhering to established conventions of grammar, usage, and mechanics.

How much Misinformation Spreads in an Echo Chamber of Madison High School

Students?

Word Count: 5008

## INTRODUCTION

The information available at the fingertips of people today far exceeds what has been available to those in the past. However, increasingly there has been concerns surrounding whether this accessibility is more of a hindrance or a help. Media misinformation has consumed the spread of information and has even become a world issue that is recognized by the World Economic Forum (Törnberg, 2018, 1). This is a major issue because having a misinformed people and future is detrimental to the development and growth of a nation.

An example of this issue is the 2016 election. Misinformation about candidates swarmed all news outlets, not just social media. People unknowingly based their decisions on lies and misconceptions. Although the youth could not have deterred the results then, in the future the youth will have a voice and an opinion. If the youth could look further than just taking the information at face value then information in future situations could be more accurate. People who receive their news from social media have a tendency to take it at face value meaning they do not investigate its credibility. Gathering information on a topic instead of just jumping to a conclusion on the first article one sees would prevent a multitude of problems, but especially issues surrounding disasters and ones easily influenced by opinions.

Preventing the spread of misinformation and bias should be a chief goal for anyone who wants to see the society progress. These issues limit people to letting false information and bias consume society. However, by doing research on teens and studying the verification of the information produced on media platforms, society can find ways to change for the future to make sure its citizens are well-informed on important matters.

Most research involving echo chambers revolves around adults, however that is not the focus of this study. There is a gap in this research surrounding how specifically high school aged teens respond to placement in an echo chamber and how they are fed information. This is problematic because teenagers are the next generation of voters and an analysis on how they take in information will matter since they will be making the decisions. Since the current teenage generation grew up surrounded in an age where information about any subject can be at reach in seconds, it makes one wonder if their responses differ from adults.

The young people today are surrounded by more information than any of their predecessors. But it is debatable if that information is useful if it contains misinformation. If young people fall into the trappings of the generations before them then it will bode terribly. However if they were afforded the chance to be more proactive in the making of their opinions the misinformation crisis may decrease. If it can be proven that teens fact check their information before making decisions and forming opinions, then society will take a step towards being better informed.

#### LITERATURE REVIEW

The research completed by Kyle Hunt, Puneet Agarwal and Jen Zhuang defines misinformation as “false or misleading,” by misleading they mean including an exaggeratory or faulty manner (2019, 29). Echo chambers of misinformation have been prevalent on social media due to many things, but primarily due to a search for homogeneous groups to socialize in, a distrust for regular news, and the ease of getting information from the internet and believing it to be true, which can result in negative things.

Social media by its very design, especially platforms like facebook or twitter, can be negatively influential towards people in that they can spread a lot of misinformation quickly. For example, the setup of these sites being that one spends their time scrolling quickly through articles and comments without being able to judge reliability since they are just snippets of an entire article or point can lead people astray(Allcott, Gentzkow, 2017, 221). Also that one can report their supposedly truthful findings on social media and then disappear, or have no fear of getting held accountable, because they have no apparent accountability to hold up. If a post or a statement of something goes viral it just does and people tend to believe it, although they should not.

Echo chambers are a space in which misinformation can flourish, because they are insulated from contradictory information. An echo chamber is a place where people gather together to get reaffirmation on ideas and opinions, and seek shelter from disagreement (Tornberg, 2018, 1). Since they allow easily for homogeneity without the chance of seeing differing perspectives, they allow misinformation to spread easily without people challenging it. In fact, it was found in 2015 that “social homogeneity”— an echo chamber— can lead to the “users aggregating in communities of interest which causes reinforcement and fosters confirmation bias, segregation and polarization”(Bessi, Caldarelli, Quattrociocchi,Petroni, Zollo, Stanley, Scala, 2015,5).

By their very design, people are known to seek out information that conforms to their opinions and validates them. In 2009, the American Psychological Association found that people are 67% more likely to consume information that supports their thoughts than to take in information that disprove them. Their research is very widely respected, being that they are a

non-profit and boarded by the best and brightest psychologists. In “Filter Bubbles, Echo Chambers, and Online News Consumption,” the authors come to the major conclusion that people read articles which mainly support their views. As the internet became more easily accessible throughout society many people thought and still believe that it is aiding the diversification of opinions, but this is not always the case (Flaxman, Goel, Rao,2016). A new online culture has been formed called “mass culture," a term coined by Daniela Koceva and Snezana Mirascieva, which is a homogenous culture that prevents other ideas from flourishing (2018, 69).

Another contributing factor is an increase in the number of people who have had to rely on social media as a news outlet due to growing distrust of regular news sites/channels. In fact, the attitudes that surround the news held by the public are at “historic lows” (Irving, Pingree, Scholl, Turcotte, York, 2015,520). The people who receive their news on social media sites, like Facebook and Twitter, surpass those that get their information from newspapers and television reporters (McDonald, 2019, 26). This point is highlighted in research by Deborah Eckberg, James Densley, and Katrinna Dexter, who also say that since there is no one to hold the people accountable they are allowed to speculate over things without drawing on the facts (2018). Their research is credible because it was posted in a peer reviewed journal, which means it was reviewed by experts in the field and checked for quality.

Social media also enables the formation of echo chambers by way of algorithms and positive feedback loops. Social media’s ability to connect to the minds of people across the world is a technological wonder, it utilizes customized algorithms to suit each user’s specific needs. These algorithms on social media sites, such as Twitter and Facebook, are a defining

quality, and it allows for sites to quickly filter what the user may or may not like. This state of the art filtering can lead to the problems which snowball into echo chambers. The first is the filter bubble, which is caused by expert filtering on a site. A filter bubble is when a site assumes and filters out content that might oppose an already formed opinion, (Pariser, 2011), which is problematic because of the fact that it can also leave the user with a bias and it can also leave them lacking knowledge on the other side of the topic. In addition, this filtering may lead to the user becoming trapped in a positive feedback loop which could possibly lead to an echo chamber. Positive feedback loops are established and kept when someone has an opinion, correct or incorrect, that gets constant reaffirmation and no criticism. This loop is more so troublesome by itself, but when a community of people get stuck reaffirming each other's opinions, with little to no outside interactions, an echo chamber can be formed.

The spread of misinformation has become more prevalent than it has previously because of the wide variety of ways people can get information these days. When people used to primarily get their information from official news sources there was a degree of accountability that the reporters and news channel had to hold themselves to, but with news found on social media that is not the case. Another idea that ties into this is people's ability to take the information they see at face value as well. In "The Fake News Crisis" by Katy Steinmetz a point is made at the end that "six out of ten links get retweeted without the user reading anything besides someone else's summation of it." (2018,31). These links are usually shared by close friends or family which does not help the cause. In fact in *The Week*, it is reported that Mark Zuckerberg has altered facebook to make it value the posts your family/friends have made first (2018, 34). Due to the fact that people's close friends and family are usually in the same social

group, which means they share in the same homophilous thoughts and ideas, it does not bode well on spreading reliable and diverse information.

The results when misinformation is spread around in an echo chamber and reverberates to mainstream media can be disastrous towards the information the general public knows about a subject. The Ebola outbreak had a fair amount of misinformation surrounding it due to its publication and circulation on Twitter. It was found that 58.9% of information contained medical misinformation about the diseases (Gabarron, Oyeyemi, Wynn, 2014,1). This type of research, especially one into a crisis like the Ebola pandemic, is highly susceptible to misinformation and bias. However both the author and the research in this article is credible: the authors are because they are all highly educated and trained people within their profession, while the research is credible because it was published in the BMJ which is a credible and peer-reviewed scientific journal. Another example of misinformation having adverse effects is reported in Time Magazine. Time's Daniel Benjamin found that Robert Bowers, the Pittsburgh shooter, and Cesar Sayoc Jr., who is suspected of the bombs being mailed to Trump critics, justified their own ideas in echo chambers found online, thus which allowed them to build on their own thoughts until they were ready to act on them (Benjamin, 2018, 26).

Most of the research surrounding this topic is heavily focused on adults, thus the gap that exists centers around how misinformation in echo chambers impacts teens and their consumption of information. How do teens filter the information they consume? Or do they at all? Do they even know that they need to fact check their findings, and that misinformation on social media is so prevalent? Do they use the resources they have grown up around or do they

fall into the trappings that adults do? These are all questions that need to be answered to evaluate the current state of the world's misinformation emergency.

## METHODS

Since I used minors in my experiment, making sure all the paperwork was filled out correctly is important, as well as getting my IRB's approval. These were both important to me, but first I needed to make sure all the proper paperwork was in order to make sure that everyone knew that there were no physical risks in participating in my experiment. I needed to make sure that those that wanted to participate would have the headspace to not be negatively impacted when finding out the information that they might feel highly divisive about is false. Also the IRB's approval was important because I needed to ensure what I was doing was not too intensive on one's mental health. If one was subject to be part of an experiment where the topic meant a great deal more to them than cats and dogs, I could not imagine how disastrous the impacts might be especially considering the fact that all my participants are minors.

To test whether or not high school students can filter misinformation they find in echo chambers, I decided to first look to articles that contained experiments that closely examined what it is I wanted to research. Soon I found out that most of the experiments would be unfeasible for me to achieve within the time constraints and also with my level of accessibility of online information of minors. Keeping that in mind, I downsized significantly, and even though my data will not be significantly viable it will still pick up on patterns of misinformation in echo chambers of teens. I also chose to make my research an experimental qualitative study.

A point of interest to me when building my experiment was what kind of subject I should base my information around to create an echo chamber. I found that divisive subjects were

looked upon to see how misinformation was believed and spread. For an echo chamber to even happen there must be an idea that people can form homogenous clusters around, and devote conditionless support. For example, Emily K. Vraga, Sojung Claire Kim, and John Cook used topics such as HPV Vaccinations, gun control, and climate change in their research, which are all divisive and polarizing in their own way (2019, 394). Since I wanted to stay away from politics I chose a subject that could get the same reaction: cats and dogs.

The next thing I wanted to take note of was how much data was being analyzed in others experiments. In two experiments done by MIT graduates, one by Nabeel Gillani, Ann Yuan, Martin Saveski, Soroush Vosoughi, Deb Roy, and the other done by Soroush Vosoughi, Deb Roy, and Sinan Aral, they both focus on mass amounts of data found primarily on twitter. The latter used approximately 126,000 tweets for their experiment (2019, 9). Knowing this would be unfeasible for me to accomplish, I decided to stretch my experiment out from its original four weeks to eight to try to maximize the amount of data I could get from my participants, so I could see the trends in the information they believed was correct.

The setup of my experiment started with making two separate websites that would contain information on cats and dogs respectively. Once I made the websites, I then looked to find participants who had a personal preference on either cats or dogs and separated them into groups. To see what my participants preferred I would just ask them about which one they like more, once I had my groups separated I then gave them the link of the website and told them to look at it daily and consume the information they find on it how they would regularly consume information. I had them look specifically at their preference, because I was trying to simulate their normal everyday experiences. Most people consume media that supports their thoughts

because that is what is enjoyable. The perfect scenario in my experiment would be that the high school students do not answer the questions asked with the misinformation found on the website. I am looking for them to fact check the information given and see if the information is actually factually before assuming it is correct.

Originally, before I decided I wanted to do a qualitative experimental study, I really wanted to do a big observational study, however with my lack of willing participants, I decided on surveys because they are something the experimenters used in tandem with their wide observations. The experimenters would comb through users' data and have them do a survey on whether or not theyFor example, a study completed by Nabeel Gillani, Ann Yuan. Martin Saveski, Soroush Vosoughi, Deb Roy, used a post-survey see about how their participants felt about the experiments. So I saw that surveys could be used to get a closer look at the human side of this phenomenon and not be so absent mindedly focused on the pure and raw data.

The information provided on the website would be mostly factual with one major lie or misconception sprinkled in for the week. For the lie/misconception, I would often take a superstition or warp an existing fact to see if I could get the participants to catch my bluff or believe it. Every week on Friday I would give a survey to see what they believed by asking them multiple choice style questions on what they read and saw for the week. An example of a type of question I would ask is, "Are all black cats of the same breed?". The answer to the question is no, and I hope they would come to that conclusion by comparing the information they were supplied with.

ANALYSIS

Based on Figure 2, the results of this experiment in the chart show that the participants fall for the misinformation provided to them on the website. On weeks four and seven the participants actually did pick the right answer more than they picked the wrong one, although the other six weeks they did not. On week two, the number of correct and wrong answers were equal. While on weeks one and three the results were the same, with six correct and nine wrong. After week four there is an overall downward trend on the number of correct questions answered, which could be due to a multitude of things. My main hypothesis on why that happened is that winter break was fast approaching. The experiment concluded with the disproving of my hypothesis; teens would not use the accessibility granted to them through the internet to check and see if the information was true or false. I decided to do a couple of post-experiment surveys.

In looking at the results of the post-experiment survey the participants took, it seems that the amount of fact checking varied from person to person, as well as grade to grade as seen in Figure 1. By far, the people that fact checked the most were the seniors, with five out of the six of them at least checking once a week. However, this is not a surprise being that the seniors are the oldest and thus are more likely to be the most mature in the handling of their information. This trend can be seen in the number of correct answers in total Figure 2. The number of incorrect answers outweighs the number of correct answers in most cases, except in week four and seven.

Along with fact checking, the seniors answered the most and the most consistently overall. In fact, in week eight, the only three people that responded were seniors, as pictured in Figure 3. A major point to be noted in this experiment is that there is never a week that has all participants answer the survey. It reaches its trough in week eight, but in weeks seven and four

there are seven people who do not answer. A common trend in this experiment overall is the amount of responses, and the number of correct answers, worsens as time goes on for all grades even in the senior participants. Week eight's lack of responses is understandable and something I should have expected since it was the first week of winter break. However the lack of responses in week four or seven are not as easily explained, maybe more work was assigned or personal issues arose for some of my participants.

Once I separate the participants into groups based on whether they went onto the cat or dog website, the number of questions correctly answers improves for the dog test group and worsens for the cat group, as seen in Figures 4 and 5. For the first four weeks of the dog group, as seen in Figure 4, they consistently got more questions correct than incorrect. After week four their results got worse, in that they got more of the questions wrong, except in week seven. Which is an overall trend seen in the cat groups as well. In week seven the misconception question was "How many dogs survived the Titanic?", the answer supplied to the participants on the website was four, but the correct answer was three. All seven people that participated in the survey answered the question correctly, so either they researched the topic when presented to them on the website, or copied and pasted the question into google to get the right answer. If the first time they saw it was in the question they could have easily just copied and pasted the information into Google instead of going to the blog and finding that information. Another example question, this one from the cat website is "How to reduce aggression in cats?" this one unlike the other is not a question one could just copy paste into google and get a clear cut answer. For this question reading an article would be necessary to find the best and overall

answer that experts have concluded. The results of this question shows that and half of the participants got the question right and half did not.

However, the cat group starts and finishes doing rather poorly. The cat group sees improvement in weeks four and five but all the other weeks only two people consistently get the answer correct. The questions in week four surrounded the mythos of black cats and where their bad luck came from, and the question was posed to the participants “Are all black cats from the same breed?” Maybe the mythos of the animals’ luck piqued their interest and prompted them to find their own information. However, when another stereotype comes up they take the information at face value. For example, a question was posed to the participants “What would be a good treat for your cat?” The answer that the website pushed people to was milk, but that is not the right answer because cats are lactose intolerant. However, the answer milk was chosen six out of the seven times the question was answered. Only one person answered correctly, which was none of the above.

In the beginning of the experiment, I told all participants to answer the survey based on correctness and consume the media on the website in a way in which they naturally would. In reviewing Figure 6, the responses show that the juniors and sophomores answered most based on comprehension, instead of outright correctness, like I had told them too. A reason for this could maybe be that they have been primed to read primarily for comprehension instead of correctness, a skill taught and used in school. Also another reason could be that their maturity towards dealing with the information they consume is not great enough for them to fact check all the information they come in contact with.

The seniors, however, in correct answers, fact checking, and comprehension versus correctness outscore all other groups, this can be seen in Figures 7, 1, and 6 respectively. The seniors were less likely in this experiment to fall for the misinformation found on the website. Also five out of the six respondents say they fact checked, which could be the reason they answered more correctly, I believe there is more credit should be given to the fact that they looked to correctness rather than comprehension like the underclassmen did.

Based on this study, the next study I would do on echo chambers would be solely on the ages of 17-18. I would focus only on that age group because they are the age range that did the best consistently responding to my survey, and also the skills learnt from my survey seem more prevalent to them. Someone between these age ranges would soon be journeying into the outside world and would need to be able to filter the information they consume in order to not fall for misinformation that could ruin their lives. One would need to be able fact check information they come across in day-to-day life to effectively make decisions in society.

## CONCLUSION

In studying the flow of information granted by the access of the internet, one must also acknowledge the misinformation that flows through it. One must acknowledge the damage that could and will be done if those who use it do not realize they can not take all the information they consume at face value. The participants in this experiment showed that overall when they consume information they fall for the misconceptions that lurk within. They have shown that echo chambers can flourish and spread misinformation, and that people do not fact check as much as they need to make sure they do not fall for fallacies that exist within them.

This becomes more and more prevalent because most of the seniors in the class of 2020 will be able to vote this year in the coming elections. Revisiting the 2016 election, misinformation swarmed social media sites, like Facebook, which added confusion to the whole debacle. With the statements Mark Zuckerberg made at Georgetown in October 2019, it seems that he does not believe that Facebook should have the ability to filter out things people (Bond, 2019). With this in mind, people should be more aware that fact-checking the information they consume is necessary, perhaps some of the confusion could be avoided in years to come. Preventing the spread of misinformation will be essential for society to continue and grow.

The thought in studying the youth, specifically high school sophomores, juniors, and seniors was to see if they use the tools and advanced accessibility allotted to them through the internet. Based on this experiment, the participants in the study did not use the tools available to them, because overall they got more of the questions incorrect than correct in the surveys presented to them. The participants in the experiment either read the website based on comprehension, which is something learned to do in school, especially in junior year with the SAT, or others fact-checked. However, they did not fact check enough, or only looked to confirm the information and not refute it. This is problematic because if people can not take advantage of the tools allotted to them and become knowledgeable about their online surroundings, and the situations in which they live in, how is society supposed to prosper?

The underclassmen in this study did worse than the seniors, the amount of maturity and responsibility that someone has when they grow older increases which means they could take their information filtration more seriously, so this is not that surprising. Naturally, one would expect this trend to continue when looking at the juniors and sophomores. However, that is not

the case. The younger group, the sophomores, did all around better than the juniors in fact checking and in answering questions correctly. While pondering this many things came to mind, for example perhaps the sophomores chosen were more mature about their consumption of misinformation. A more interesting theory, however, is that just taking information at its face value is taught in school as something necessary for students to do. Take for example the SAT, the information presented by the College Board is to be taken as is and analyzed for comprehension and not correctness. Reading for comprehension is still important for people to do however in this age of information correctness should always be at the front of one's mind. If one learns that correctness does not matter, and all the information available to them is correct they start to not question all information they consume.

People need to become more aware that the information they consume could leave them misinformed. Being misinformed in any situation can lead to someone making decisions irrationally and lead them to ruin. Thus the decision was made to keep the subject matter in this experiment light-hearted was intentional, because I did not want the participants to go out into the world with misinformation about a major and important topic. Although, the misinformation about cats and dogs could still be harmful to the lives of cats and dogs if I had not debriefed them. Most of the debriefing was just refuting the claims made on the website and making sure they did not put any of the "advice" or "suggestions" they found on the website to actual use.

More research should be done exclusively on teens to see whether or not it was just my study group that did not use all the resources available to them, or is it a trend that the youth take the information always accessible to them for granted. Most teens have a cellphone on their person wherever they go, and most of them also have access to the internet to answer all the

questions they would have, so why do not they use it to make sure they are knowledgeable in topics of interest to them? If I ever got the chance to research again, I would want to do deep dive into what most teens use their phones for and look at the data consumed by teens on a large scale. Are teens content being blatantly misinformed when it supports their opinions or do they suffer a naivety towards how much misinformation actually exists on the internet?

With continuing the research on teens, I would also choose a more serious topic to center the websites around. I would love to test the hypothesis that a topic, such as one on a major or controversial matter, would hopefully piqued their interest to care more about whether the information was faulty or not. If I found a topic that the participants would feel passionate about perhaps they would actually fact check it instead of assuming it was correct. Would changing the topic improve their knowledge and willingness to put their own research into a topic? I would expect that it would increase their desire to filter information, but research would need to be conducted before a serious answer could be given.

Index

Figure 1:

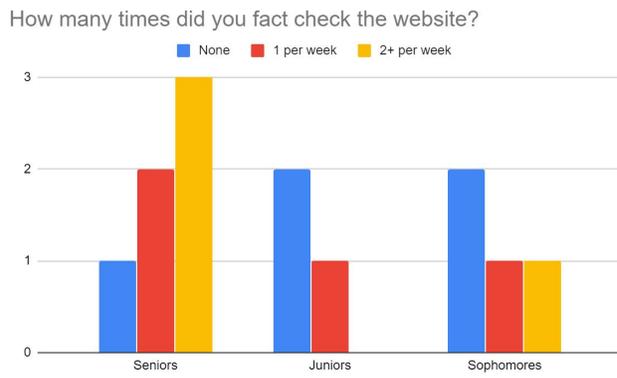


Figure 2:

# ECHO CHAMBERS AND MISINFORMATION

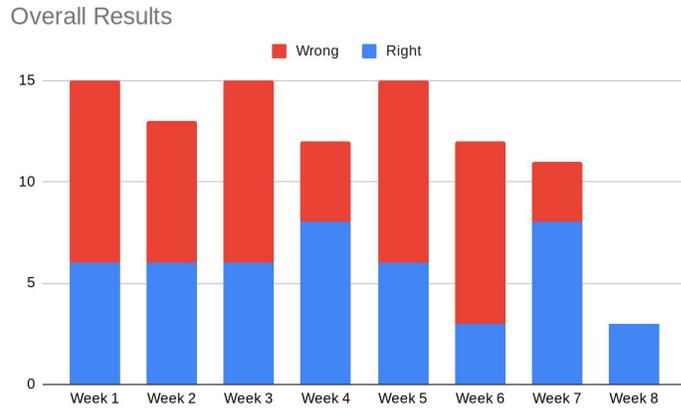


Figure 3:

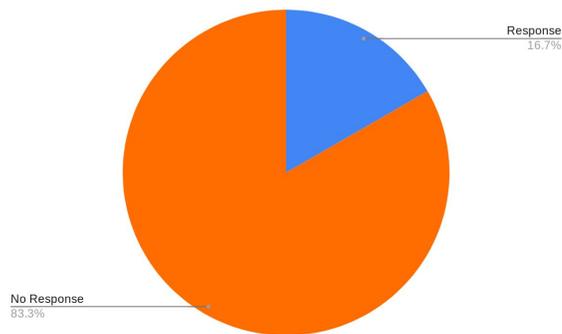


Figure 4:

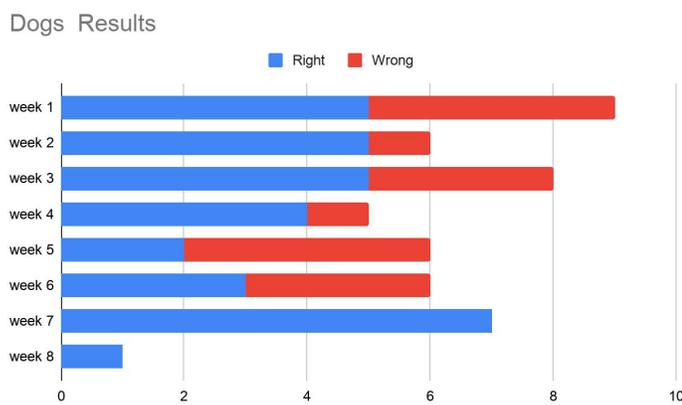


Figure 5:

# ECHO CHAMBERS AND MISINFORMATION

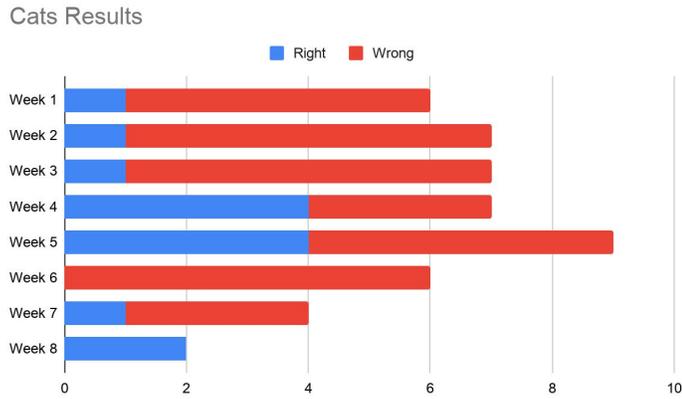


Figure 6:

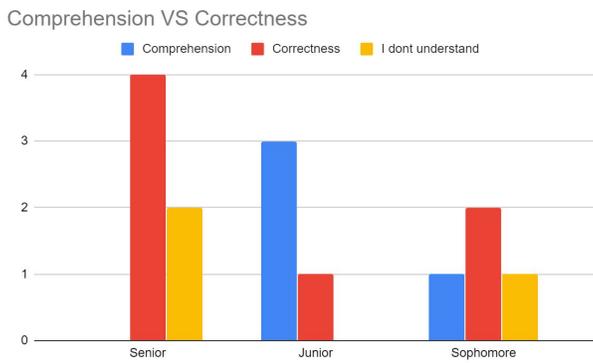
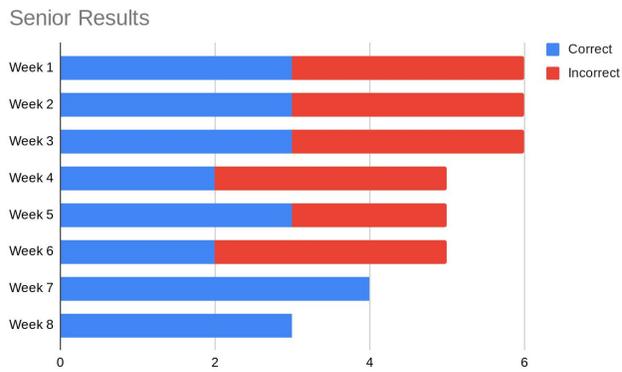


Figure 7:



### Bibliography

- Albarracín, Dolores., Eagly, Alice H., Hart, William., Inge, Brechan, Inge.,Lindberg, Matthew J., & Merrill ,Lisa.(2009). People seek the truth, but most prefer like minded-views. *American Psychological Association 135*(4), 555-558. Retrieved from:  
<https://www.apa.org/news/press/releases/2009/07/like-minded>
- Allcott, H., & Gentzkow, M. (2016). Social media and fake news in the 2016 election. *Journal of Economic Perspectives, 31*(2), 211-236. Retrieved from:  
<https://web.stanford.edu/~gentzkow/research/fakenews.pdf>

- Ara, Sinan., Roy, Deb., Vosoughi, Soroush.(2019) .The spread of true and false news online  
*Science* 359 (6380), 1146-1151.received from doi:10.1126/science.aap9559
- Benjamin, Daniel. (2018). The rise of right wing terrorism. *Time*, 192(20), 26.
- Bessi, Alessadro., Caldarelli, Guido.,Petroni, Fabio., Quattrociocchi, Walter.,Scala, Antonio.,  
Stanley, H. Eugene., Vicario, Michela Del., Zollo, Fabiana.(2015). The spread of  
misinformation online. *PNAS Early Edition* (1-10). Retrieved from:  
[10.1109/HICSS.2009.91](https://doi.org/10.1109/HICSS.2009.91)
- Densley, J., & Dexter, K., Eckberg, D. A.(2018). When Legend Becomes Fact, Tweet the  
Legend: Information and Misinformation in the Age of Social Media. *Journal of  
Behavioral & Social Sciences*, 5(3), 148–156. Retrieved from  
<http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=132625691&site=ehost-live>
- FLAXMAN, S., GOEL, S., & RAO, J. M. (2016). Filter Bubbles, Echo Chambers, and Online  
News Consumption. *Public Opinion Quarterly*, 80, 298–320.  
<https://doi.org/10.1093/poq/nfw006>
- Gabarron, Elia., Oyeyemi Oluwafemi, Sunday., Wynn, Rolf. (2014). Ebola, twitter, and  
misinformation: a dangerous combination?*BMJ*(1-2) Retrieved from: 10.1136/bmj.g6178
- Gillani, Nabeel., Roy, Deb., Saveski, Martin., Vosoughi, Soroush., Yuan, Ann. (2018). Me, my  
echo chamber, and i: introspection on social media polarization. *International World  
Wide Web Conference Committee* 4(9). Retrieved from: [https://doi.org/  
10.1145/3178876.3186130](https://doi.org/10.1145/3178876.3186130)
- Hunt, K., Argwal, P., & Zhaung, J. (2019). Tracking storms of misinformation spread amid

disaster: machine learning can be used to identify “fake news” shared via social media.

*ISE: Industrial & Systems Engineering at Work*, 51(9), 28-32. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=138118025&site=ehost-live>

Irving, Jacob., Pingree, Raymond J., Scholl, Rosanne M., Turcotte, Jason., York, Chance.(2015).

McDonald, N. H. (2019). Popping the filter bubble: how newspapers are navigating

through social media bots, trolls and misinformation to bring readers the truth. *Editor &*

*Publisher*, 152(2), 46–50. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=134271973&site=ehost-live>

KOCEVA, D., & MIRASCIEVA, S. (2018). From Mass Media and Culture to Mass Society.

*BalkanSocialScienceReview*,12(12),59–70.Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=134708891&site=ehost-live>

McDonald, N. H. (2019). Popping the filter bubble: how newspapers are navigating through

social media bots, trolls and misinformation to bring readers the truth. *Editor &*

*Publisher*, 152(2), 46–50. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=134271973&site=ehost-live>

Pariser, Eli. (May 2011). Beware of the online “filter bubbles”. [Video file]. Retrieved from:

[https://www.youtube.com/watch?](https://www.youtube.com/watch?v=B8ofWFx525s)

[v=B8ofWFx525s](https://www.youtube.com/watch?v=B8ofWFx525s)

Steinmetz, K. (2018). The Real Fake News Crisis. *TIME Magazine*, 192(7), 26–31. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=131153625&site=ehost-live>

Törnberg, P. (2018). Echo chambers and viral misinformation: Modeling fake news as complex contagion. *PLoS ONE*, 13(9), 1–21. <https://doi.org/10.1371/journal.pone.0203958>

Vraga, E. K., Kim, S. C., & Cook, J. (2019). Testing logic-based and humor-based corrections for science, health, and political misinformation on social media. *Journal of Broadcasting & Electronic Media*, 63(3), 393–414. <https://doi.org/10.1080/08838151.2019.1653102>

## Academic Paper

**Note:** Student samples are quoted verbatim and may contain spelling and grammatical errors.

**Sample: E**

**Score: 3**

### **How much Misinformation Spreads in an Echo Chamber of Madison High School Students?**

This paper earned a score of 3. It makes attempts to narrow its focus—to “pick up on patterns of misinformation in echo chambers of teens “ (page 8)—by examining students at a specific high school. It also points to a gap in the research: “Most of the research surrounding this topic is heavily focused on adults, thus the gap that exists centers around how misinformation in echo chambers impacts teens and their consumption of information.” However, the presence of several research questions identified on page 9 clearly indicate that the topic of focus is still narrowing. The paper asks, “How do teens filter the information they consume? Or do they at all? Do they even know that they need to fact check their findings, and that misinformation on social media is so prevalent?”

The paper didn’t earn a score of 2 because its methods, despite the study’s misalignment, are reasonably replicable. Its findings are student-generated. The paper discusses the IRB process on page 8, provides justification for choices made in the methods on page 9, and contextualizes and explains results on pages 11-12. It also offers suggestions for future research on page 14 and links its findings, albeit in a limited way, to real world implications on page 16.

The paper didn’t earn a score of 4 as there are clear alignment issues. The paper claims to examine confirmation bias in politics and the existence of echo chambers in a high school, but instead, the method examines whether or not students fact check information provided to them. Not only is alignment an issue, but decisions made in the methods are not entirely justified in the literature. On page 9, the researcher states, “Since I wanted to stay away from politics I chose a subject...cats & dogs.” While this decision may result in a less incendiary reaction to the information presented to the study’s participants, such a decision is, as mentioned, not justified in the literature of the field nor is it entirely logical given the scope of the study’s intent.