

## The Effectiveness of CRAAP Test in Evaluating Credibility of Sources

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### Abstract

Judging credibility is an important skill that 21st-century learners and citizens should possess as the world continues to present a seemingly infinite number of information from a wide variety of sources- not all of them truthful. This research sought to determine whether students can judge the difference between credible and non-credible sources with and without the use of the CRAAP instrument and whether there is a significant difference between the results of the classes involved. The researcher used the descriptive research design with purposive sampling with ninety (90) Grade 10 students as the respondents. The researcher gave a post-test and a pre-test and also conducted a focus group discussion to verify the results. The researcher found that students find it difficult to evaluate credibility without an instrument as they don't have a guide in what to consider in doing so. It is also measured a significant difference ( $t=2.00^{**}$ ) between the pre-test and post-test results in all sections, which means that the CRAAP test leads students to the aspects that should be considered in judging or evaluating credibility serves as an effective practice material to develop said skill. Students in the different sections also had similar difficulties and marked improvements (pre-test = 1.27 ns, post-test = 1.35 ns), which the CRAAP test helped address. The CRAAP test helps all kinds of students improve, given that diverse students have diverse ways of learning for the CRAAP test targets a specific skill for the students to improve on.

**Keywords:** Credibility, CRAAP Test, Information Evaluation, Fake News, Satire

### Introduction

In today's world filled with fake news and questionable sources, judging credibility is a very important skill. Credibility, one of the critical thinking skills, is defined as "the quality of being trusted and believable." It is through the credibility that people sort out what and who to believe.

This is not a new concept, and its lack is not a new problem. This problem has been existent with the advent of internet technology. According to the Pew Research Center, internet users regard the Internet as a more trustworthy source than conventional media. Only a minority believed that you could believe a lot of what you discover on the Internet, while the majority agreed that we are more likely to obtain reliable information about what is going on from the Internet than from daily newspapers or network news (Smith, 2018). According to the Roper Research Center (2014) for the Freedom Forum, people ranked major conventional sources as fairer and more unbiased than Internet information. Three-quarters of those polled said they trust CNN, and six out of ten said they trust the New York Times, while slightly more than half said they trusted the Internet to provide accurate and balanced information. This has been the case for the past decade. As Johnson & Kaye (1998) mention, more people trust the Internet more than their local newspapers.

However, it is a growing concern that students in this time and age still have difficulties in evaluating credibility despite being 'tech-savvy,' as seen in a Stanford study done by Wineburg et al. (2016). It was found that students show a disappointing lack of ability to reason about information they see on the Internet. Students had a hard time distinguishing advertisements from news articles or identifying where the information came from. Wineburg et al. also state that although students are fluent and spend hours upon hours in social media, they are not equally discerning about what they find there.

A generation of tech-savvy yet credibility-negligent students would impact how decisions are made in the future. It is from this concern that this action research stems from. In this study, the researcher aims to find out whether the CRAAP credibility test would be an effective way to evaluate credibility.

## **Literature review**

Several studies reveal the state of students' proficiency in evaluating credibility. In a study done by Wineburg et al. (2016), several assessments were done to test students' knowledge on credibility-finding. Middle school students were asked to explain why they would not believe an essay on financial planning authored by a bank executive and sponsored by a bank in one of the assessments. According to the researchers, many students did not mention authorship or article sponsorship as major factors for not trusting the paper.

In continuation, Middle school pupils were asked to classify specific pieces of information as either news articles or ads in another test. A typical commercial — one with a discount code — was clearly distinguished from a news piece by the students. However, more than 80% of those polled thought an advertisement labeled "sponsored content" was a genuine news item.

In addition, students were asked to assess two Facebook posts announcing Donald Trump's presidential campaign. The first came from a verified news account, while the second came from a fake news account. Only a quarter of the students understood and described the meaning of the blue checkmark, which indicates that the account has been validated, while over a third

of the students claimed that the false account was more trustworthy due to several crucial graphic features. This study suggests that students are more concerned with the substance of social media posts than with their sources. Many students, despite their familiarity with social media, are unaware of fundamental norms for signaling genuine digital material.

At the collegiate level, the tests emphasized more complicated thinking. Students were given the job of evaluating information obtained from Google searches, arguing that open Internet searches provide conflicting results that frequently combine reality and fiction. It was shown that deciphering search results is significantly more difficult when dealing with politically sensitive issues. Therefore, it is a challenge for students to have the knowledge and skill to go through mixed results to find reliable and accurate information. Succeeding in such would make the student digitally literate (Wineburg et al., 2016).

Other studies yield similar results. The vast quantity and accessibility of information online are less clear because the origin, quality, and veracity of information are not a mere product of an effortful evaluative process (Metzger & Flangin, 2013). Most students also have difficulties in identifying their information needs, which in turn affected and convoluted their evaluation of Relevance and credibility.

People rely extensively on the Internet for information gathering, according to research. The Internet was found to be used "to obtain information" more frequently than books, magazines, television, newspapers, the telephone, electronic mail, or face-to-face communication. The trend is obviously toward more and more diversified information being accessible via the Internet and a growing dependence on that information (Metzger & Flangin, 2000).

However, the Internet varies from previous information retrieval systems in important ways that might influence its trustworthiness, credibility, and veracity as a source of information. Anyone may be an author, a creator, or a publisher on the Internet.

On the other hand, this information openness brings with it a greater risk of mistake or exploitation. While newspapers, books, magazines, and television all go through some degree of factual verification, content analysis, and editorial review, the vast majority of the material on the Internet does not. Sites that are similar to their print counterparts, such as major newspapers and magazines, go through the same editorial procedures as their print counterparts, although they only make up a small fraction of the content available on the Internet (Metzger & Flangin, 2000).

These studies were done in the United States, where students have more access to the Internet and information. It is a challenge, more so in a developing country such as the Philippines, whose digital natives also constantly struggle with fake news and misinformation.

According to Inquirer.net, a poll conducted by the Philippine Trust Index (PTI) revealed that Filipinos with Internet access trusted social media more than conventional media: social media is trusted by 9 out of 10 Filipinos (87.3%), whereas conventional media is trusted by 7 out of 10 (73.4%).

Surprisingly, conventional media is distrusted by more individuals than social media: Traditional media is distrusted by 5% of online Filipinos, compared to 0.5 percent who mistrust social media. (2017, PTI).

This means that people trust what they see on the Internet more than what they see on television or even what they hear on the radio. People view traditional and mainstream media content as "over-hyped or sensationalized," even calling them "biased."

This is further supported by Gonzalez's (2007) claim that mainstream media commercialization has caused a strong tendency to adhere to the taste of the public for controversy, scandal, entertainment, and sensational news.

In a Starweek interview with veteran BBC journalist Rico Hizon in September 2017, Hizon raises the fact that Filipinos are still unsure or even ignorant of the importance of the credibility of news sources. He states that Filipinos must refer to news organizations that tell the truth- and not fake news. Instead of sharing social media posts, like tweets and Facebook posts from news sources that are virtually unknown to many people, people just must go to the news source that will give fair, balanced, and accurate news. Hizon continues, mentioning that people just do not read anymore. They only read the headlines and then believe everything. We should not listen to just gossip and hearsay. Before sharing, we need to find out if it is the truth.

The problem is not isolated, and there have been programs prompted that cater to this concern. According to the Philippine Star, Clair Deevy, Facebook's head of community affairs in Asia-Pacific, held the inaugural digital discernment workshop in February 2018 in collaboration with the Department of Education and Globe Telecom.

The program, which will be held in various schools around the country, will cover subjects that will teach online users how to think critically and efficiently distinguish trustworthy from dubious material.

However, the greatest challenge is in the classroom. How will we help students become more sensitive and mindful of the information they pick up, especially for research?

As a result of the influx of sources and the widespread difficulty of verifying their credibility, The CRAAP (Currency, Relevance, Authority, Accuracy, and Purpose) test was created by Sarah Blakeslee and her team of librarians at California State University, Chico (CSU Chico) to assess the credibility of sources across academic fields. Because there are so many sources available online, it can be difficult to know which ones are reliable enough to utilize as research tools. As a result, the CRAAP exam assists instructors and students in determining whether or not their sources can be trusted (Blakeslee, 2004).

Without access or the knowledge of the right tools, how a student evaluates credibility can be affected by other factors. One such theory includes the Source Credibility Theory, an established theory that describes how communication's persuasiveness is impacted by the perceived credibility of the communication's source and clarifies the concept of credibility.

Aristotle separated persuasion into three categories: ethos (trustworthiness), pathos (passion), and logos (persuasion) (logic) (Umeogu, 2012).

This means that students are swayed to believe in things from believable sources that contain the information they need, and sometimes these sources present an emotional appeal to them even when the information itself is not reliable or truthful.

### *Research Questions*

This action research aims to determine whether students know how to evaluate credibility and whether the CRAAP test would aid the students in identifying credible from non-credible sources. Particularly, this research aims to answer the following questions:

1. How well are students able to judge the difference between credible and non-credible sources without using any instrument?
2. Is there a significant difference in the results of the pre-test and post-test?
3. Is there a significant difference in the pre-test and post-test results among the sections?
4. What is the result of the interview with the respondents in terms of their difficulties in identifying credibility before and after the CRAAP test?

## **Methods**

### *Pedagogical Setting & Participants*

The mission of the school is to work together for the total education and formation of the young, particularly in Northern Mindanao, and to develop conscientious servant leaders who are marked by excellence, enriched with Filipino culture and heritage, concerned with maintaining and preserving ecological balance and employing a pedagogy that integrates Ignatian Spirituality in all phases of life at school, in the community, and the workplace. Its goal is to develop Christ-centered, competent, compassionate, dedicated, and culturally integrated persons who aspire to attain MAGIS in all parts of their lives. (2016, XUJHS Student Handbook).

Xavier Institution Junior High School is a K-12 school that follows the university's mission of being a top ASEAN university by 2033, creating leaders of character.

Xavier University students are required to exhibit excellent communication abilities in Junior High School English, including macro skills such as listening, reading, writing, researching, seeing, and speaking.

The research participants are Grade 10 students of XUJHS. The Grade 10 students are chosen for this research as credibility is one of the aspects to consider in the writing of their research paper. Practicing credibility evaluation would allow them to select literature and related studies that are trustworthy and believable.

The sampling procedure that will be used in this study is probability purposive sampling.

According to Research Methodology (2017), "Purposive Sampling is a sampling technique which relies on the researchers' judgment when choosing members of a population to include in the study." Thus, in this study, 30 students from each of the Grade 10 sections, namely, Dagani, Fernando, and Pope Francis, were randomly chosen for the test. These were the sections selected as the researcher handled these. These sections are general sections comprising heterogeneous students.

### *Design of the Study*

This study employed descriptive research. Descriptive research tests hypotheses and answers questions. According to Raagas (2010), descriptive research describes and interprets what is. It is concerned with conditions of relationships that exist, opinions that are held, processes that are going on, evident effects, or trends that are developing. It is primarily concerned with the present, although it often considers past events and influences as they relate to current conditions.

### *Data collection & analysis*

The data was collected through a questionnaire and two different answer sheets for pre-test and post-test. The questionnaire contains several articles and images, which the students then evaluated to be credible or not. Experts have validated the questionnaire in the department, which includes the department head and the school's assistant principal. The researcher then conducted a pre-test. The pre-test did not include details of the CRAAP and simply contained boxes per item labeled 'very credible,' 'credible,' and 'not credible' and brief descriptions of 'credible,' 'credible,' and 'not credible' mean.

After the initial pre-test, the teacher discussed the concept of credibility and the CRAAP in the class. Afterward, the post-test was conducted. The post-test contained a checklist translated from the CRAAP guide. The post-test used is based on the CRAAP (Currency, Relevance, Authority, Accuracy, and Purpose) test that was created by Sarah Blakeslee and her team of librarians at California State University, Chico (CSU Chico) to assess the credibility of sources across academic fields (Blakeslee, 2004). Said post-test served as a tool for evaluating the articles and images and will be used further to evaluate other research materials in the future. The tool is adapted from the Library and Learning Services Study Guide made by the Eastern Institute of Technology, New Zealand. Experts have validated both the pre-test and the post-test in the department, which includes the department head and the school's assistant principal.

After answering the post-test, as the CRAAP test is part of the class discussion, the texts' credibility and the aspects considered in evaluating credibility were discussed.

FGDs (focus group discussions) were then conducted before and after the CRAAP test was given to find out the students' difficulty in identifying credible sources before using the CRAAP test and the students' difficulty in answering parts of the CRAAP test. This would indicate which aspect, whether, under the Currency, Relevance, Authority, Accuracy, or Purpose, they find difficult to understand or identify.

The researcher used the T-test to see if there is a significant difference in the pre-test and the post-test results. F-test was also utilized to compare the scores among the sections using the pre-test and post-test before and after the intervention was given.

To interpret the mean scores before and after the intervention, the following scoring guidelines were used:

Score range	Interpretation
10 – 9	Excellent
8 – 7	Very Good
6 – 5	Good
4 – 3	Fair
2 – 0	Poor

The scoring is based on the number of articles provided and has been agreed upon by the department.

### Results/Findings and discussion

This section is organized in terms of the specific problems presented in the previous section. The discussion will focus on the pre-test, and post-test results, a comparative analysis of the responses before and after the CRAAP test- intervention was given, a comparative analysis of the scores among the sections, and the results of the interview before and after the intervention was implemented.

Problem 1. How well are students able to judge the difference between credible and non-credible sources without the use of any instrument?

Table 1. Mean and Descriptor of Pre-test Scores

Section	Pretest Mean	Descriptor
Dagani	3.73	Fair
Fernando	3.43	Fair
Pope Francis	3.83	Fair

Overall, the data reveals that while the students find it difficult to evaluate credibility without an instrument, as shown by the descriptor 'Fair,' they are not yet as proficient in it as they don't have a guide in what to consider in evaluating credibility.

Problem 2: Is there a significant difference in the results of the pre-test and post-test?

Table 2. Test of Significant Difference Between Pretest and Posttest Scores

Section	Pre-test		Posttest		T-value
	Mean	Descriptor	Mean	Descriptor	
Dagani	3.73	Fair	4.87	Good	2.00 **
Fernando	3.43	Fair	4.4	Fair	2.00 **
Pope Francis	3.83	Fair	4.6	Good	2.00 **

Legend: ns: not significant ( $\alpha > 0.05$ )

\* significant ( $0.01 < \alpha \leq 0.05$ )

\*\* highly significant ( $\alpha \leq 0.01$ )

As seen from the data, there is a highly significant difference between the pre-test and post-test results for all the sections, with a p-value of 0.000471 for Dagani, a p-value of 0.000148025 for Fernando, and a p-value of 0.001729 for Pope Francis. This means that the CRAAP test is indeed effective in improving the students' evaluation of the credibility of sources.

Interestingly, although there is a highly significant increase in the pre-test and post-test scores, students' means have increased from 'Fair' to 'Good' only, with Fernando not moving up to 'Good' at all, with both post-test and pre-test under 'Fair.' There can be several reasons why this is so.

One is that there are ten articles to be evaluated, all of which require time to think about and research, and not all students have the available materials for research, such as gadgets or even a stable internet connection.

Two is that the CRAAP test itself is very long and tedious to take. It has many parts which require students to gather information. This possibly leads to test-taking fatigue. Cognitive test-taking fatigue is defined as a sense of being mentally worn out or exhausted during and after taking a test. Some people simply seem to feel it more than others in situations that demand prolonged concentration and mental effort (Ackerman & Kanfer, 2009).

Lastly, as the CRAAP test activity is recorded under 'effort mark' and not considered a scaffold or performance task, students tend not to take the activity as seriously as they would in summative assessments.

Problem 3: Is there a significant difference in the pre-test and post-test results among the sections?

Table 3. Test of Significant Difference Among the Sections' Pre-test and Post-test Scores

Pre-test (F-value)	Posttest (F-value)
1.27 ns	1.35 ns

Legend: ns: not significant ( $\alpha > 0.05$ )

\* significant ( $0.01 < \alpha \leq 0.05$ )

\*\* highly significant ( $\alpha \leq 0.01$ )

As seen from the data in the table above, there is no significant difference in the class averages about their pre-test scores with a p-value of 0.28735, and there is no significant difference in the class averages about their post-test scores with a p-value of 0.26335.

This means that the students in the different sections had similar difficulties and marked improvements, which the CRAAP test mostly helped address.

Some of these difficulties include believing satire or fake news sites because of presented facts, rejecting a credible source because it's outdated, believing the 'findings' of a social media influencer, and mistrusting reports made by mainstream media.

The first difficulty was that students believed satire or fake news sites because of presented facts. They have focused on the twisted facts in the article, which seemed realistic instead of the way the facts were presented, or even if the source itself was not credible. When students see that an article is presented as news containing details such as dates, names, places, and numbers, they immediately judge it as credible, without checking if these facts are correct or if the facts presented are biased. Students argued that a fake news account was more trustworthy because of some key graphic elements that it included, and students may focus more on the content of social media posts than on their sources. This is supported by Wineburg et al.'s (2016) study, which states that many students are unaware of basic conventions for indicating verified digital sources despite their fluency with social media.

Difficulty also arises when an article also has complete details, including the authors, date of publication, and publisher, but is outdated. The article in question is a journal article from *Helio: A Nursing Education Journal* published in 1999. Many things have changed in the disciplines, practice, and even in people since then, so it is not considered 'Very Credible' but can still be used as the basis for comparison for existing data. However, the students rated it as 'Not Credible' because the first part of the CRAAP test is 'Currency,' which is how recently the article came out. So, when students saw that the article was outdated, they no longer proceeded to examine the rest of its contents and authors.

Another difficulty is that some students have also made the classic fallacy 'Appeal to Authority'

when judging the credibility of an information source. In one instance, a scientific post from a 'social media influencer' became believable, or for the students, credible, because said person is popular on social media. Students think that his opinions on scientific issues can be trusted, even if he is not a scientist or science practitioner.

Lastly, the growing mistrust in reports made by mainstream media is also an apparent difficulty in judging credibility. Even when news comes from credible media outlets, such as CNN, students still tend to disregard this information as they see it as 'sensationalized' or 'biased.' This is supported by an earlier claim by the Philippine Trust Index (2017), which states that more people simply distrust traditional media than social media.

Problem 4: What are the students' difficulties in identifying credibility before and after the CRAAP test?

Problem 4 includes the students' responses to three questions: what their difficulties in evaluating credibility before the CRAAP test were, how they evaluated credibility now that they have learned and practiced CRAAP, and lastly, what part of the CRAAP test they found difficult.

For the first question, students were asked what their difficulties in evaluating credibility were after the pre-test and before the CRAAP (post) test. The students answered that their difficulties in evaluating credibility were that there are articles that are deceiving, and they really seem credible and that some articles also would give shocking news backed by details that would seem too real, so it is a mixture of the truth and untruth. One student stated that "If I don't research more about what is in the article, I wouldn't know that it's not true because it's written so well- like the real thing." Students also pointed out that some articles also twist facts, which make the article seem legitimate, and that people who might seem knowledgeable and credible at first glance might not be credible at all, or that it is hard to tell credibility because of the lack of information provided in the article. When asked about their difficulty, another student mentioned, "I get easily confused because one site is presenting itself like a medical website or like they offer legitimate medical services, but when Ma'am discussed it, we found out that it was selling herbal (holistic) products." Students also point out that some articles also use statistics, but these are not updated or that these statistics are not verifiable, and they also find it difficult to tell credibility if opinions are presented as facts. Students think that an article is credible if the graphic on the page, such as pictures, connects to the article. Lastly, students also find an article credible if other people, especially their peers, trust or use the website. As one student mentioned, "I see some of my friends sharing this quote from (this person), so I thought that he was credible."

Students were asked how they evaluate credibility for the second question now that they have learned and practiced CRAAP. Students said that they found that articles were credible if the information contained in the article has been reviewed and checked by experts in the field and if the statistics are updated and recent. Students are also looking at whether the article was released recently and if the authors are knowledgeable and widely published since not all

authors who write these articles are credible. When asked about what he has learned, a student said, “We are now more careful about the articles we share and read because not everything out there (on the internet) is true.” Now that they have practiced CRAAP, the students are also considering if the publishers who publish the articles are well known and if sites they came from are well known for information and data, and whether they are educational, such as sites ending in .edu or .org. Students now also look for evidence to back up claims and consider if the information given is complete. Students also check the language used in writing, whether there are grammar errors or misspellings that could give away a source that is not credible.

For the third and last question, students were asked to identify what part of the CRAAP test they found difficult. Several students answered that they had difficulties in finding the purpose because it was difficult to identify between fact, opinion, and propaganda and because it was difficult to find biases. As a student states, “There are a lot of articles that uses facts but is actually convincing us to believe or do something.” Students are also concerned about what the author might have intended to say, but the readers might have misunderstood, especially that they are written in a way that they do not seem biased at all. Under Relevance, students also say that it is difficult since they do not know if they can use the given information for their research, “Sometimes we don’t know if what we’re researching is really related to our topic or just adds to the pages”. Aside from questions belonging under Purpose and Relevance, students also found it difficult to find the right Authority since organizations pretend to be credible but are not and mimic legitimate companies, people, and groups. Another student mentioned. “I really thought that it was real because it contained the logo of (a news network).” The Accuracy part is also difficult because some of the information that the articles present seems very real, but they are just meant to deceive, and they also make claims which are believable but are not true. There is also a question of whether the information is supported by evidence. Some articles have evidence that the students cannot easily find or are not enough to support the claims.

## Conclusion

Based on the findings of the action research, the following conclusions and implications are made: Students find it difficult to evaluate credibility without an instrument, as shown by the pre-test's descriptor 'Fair.' They are not yet as proficient in evaluating credibility as they do not guide what to consider in evaluating credibility. This implies that guides or instruments not only lead students to the aspects which should be considered in judging or evaluating credibility, but these also serve as practice materials to develop a skill in doing so.

This idea is further emphasized in the second finding that the CRAAP test is indeed effective in improving the students' evaluation of the credibility of sources. The CRAAP Test is an effective practice material in evaluating credibility. Due to its length, however, it cannot be used every single time research would be done. Each of the aspects considered in assessing credibility, including Currency, Relevance, Authority, Accuracy, and Purpose, are all present in the test. The CRAAP test then serves as practice material to automatically pick up or know what to look for incredible materials.

Students in the different sections had similar difficulties as well as marked improvements, which the CRAAP test helped address. The CRAAP test helps all kinds of students improve, given that diverse students have diverse ways of learning as the CRAAP test targets a specific skill for students to improve on.

Students also had difficulties in evaluating credibility before the CRAAP instrument. Before the CRAAP test, students think that articles that would give shocking news backed by details that would seem too real, articles that twist facts, making the article seem legitimate, are credible. Other articles that seem credible for the students come from people who might seem knowledgeable and credible at first glance, which might not be credible at all or articles that lack information. Students also find it difficult when some articles use statistics that are not updated or verifiable. Some articles also present opinions like facts or when the graphics on the page connect to the article. Students also find an article credible if their peers trust or use the website.

When asked how students evaluate credibility now that they have learned and practiced CRAAP, they said that they found that articles were credible if the information contained in the article has been reviewed and checked by experts in the field and if the statistics are updated and recent, if the article was released recently, and if the authors are knowledgeable and widely published. Students also consider if the publishers are well known and if the article's sites are well known for information and data and whether they are educational. They are also looking for evidence to back up claims and take into consideration if the information given is complete and if the language and grammar used in writing are correct.

Lastly, students were asked to identify what part of the CRAAP test they found difficult. The students had difficulties finding the purpose because it is difficult to tell between fact, opinion, and propaganda. They are also concerned about what the author might have intended to say, but the readers might have misunderstood. Under Relevance, students also say that it is difficult since they do not know if they can use the given information for their research. Students also found it difficult to find the right Authority since organizations pretend to be credible but are not and mimic legitimate companies, people, and groups. The Accuracy part is also difficult because some of the information that the articles present seem very real, but they are not, and there is also a question of whether the information supported by evidence because some articles have pieces of evidence which the students cannot easily find or are not enough to support the claims.

In sum, the CRAAP Test is effective in helping students evaluate the credibility, and with revisions and improvements in its implementation, it might help students gain the skill to judge the credibility and further evaluate the truthfulness and believability of the information presented.

## References

- Ackerman, P., & Kanfer, R. (2009). Test length and cognitive fatigue: An empirical examination of effects on performance and test-taker reactions. *Journal Of Experimental Psychology: Applied*, 15(2), 163-181. doi: [10.1037/a0015719](https://doi.org/10.1037/a0015719)
- Blakeslee, S. (2004) The CRAAP Test. *LOEX Quarterly*: Vol. 31 : Iss. 3 , Article 4. Available at: <https://commons.emich.edu/loexquarterly/vol31/iss3/4>
- Gonzalez, D. (2009). *Elections, the media and pop culture*. Retrieved from the HotManila website: <http://hotmanila.ph/Focus/2007/elections&the%20media> 0407494.html.
- Inquirer. (2017). Online Filipinos trust social media more than traditional media — poll. Retrieved from <https://technology.inquirer.net/66402/filipinos-online-trust-social-media-traditional-media-poll>
- Johnson, T., & Kaye, B. (1998). Cruising is Believing?: Comparing Internet and Traditional Sources on Media Credibility Measures. *Journalism & Mass Communication Quarterly*, 75(2), 325-340. doi: <https://doi.org/10.1177/107769909807500208>
- Metzger, M., & Flanagin, A.. (2000). Perceptions of Internet Information Credibility. *Journalism & Mass Communication Quarterly*, 77(3), 515-540. doi: <https://doi.org/10.1177/107769900007700304>
- Metzger, M., & Flanagin, A. (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. *Journal Of Pragmatics*, 59, 210-220. doi: DOI:[10.1016/J.PRAGMA.2013.07.012](https://doi.org/10.1016/J.PRAGMA.2013.07.012)
- Philippine Star. (2018). Facebook launches digital literacy program for students. Retrieved from <https://www.philstar.com/headlines/2018/02/07/1785517/facebook-launches-digital-literacy-program-students#eSHiP3k7xES5DvXx.99>
- Raagas, E. (2010). *Understanding research concepts*. Cagayan de Oro: Datastat Analysis Center.
- Smith, A. (2018). Declining Majority of Online Americans Say the Internet Has Been Good for Society. Retrieved from <https://www.pewresearch.org/internet/2018/04/30/declining-majority-of-online-adults-say-the-internet-has-been-good-for-society/>
- Umeogu, B. (2012). Source Credibility: A Philosophical Analysis. *Open Journal Of Philosophy*, Vol.2(No. 2), 112-115. DOI: [10.4236/ojpp.2012.22017](https://doi.org/10.4236/ojpp.2012.22017)
- Wineburg, S., McGrew, S., Breakstone, J. & Ortega, T. (2016). *Evaluating Information: The Cornerstone of Civic Online Reasoning*. Stanford Digital Repository. Available at: <http://purl.stanford.edu/fv751yt5934>

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