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INQUIRY-BASED EDUCATION IN ANALYZING SOCIAL MEDIA REFERENCE TOWARDS DEVELOPING CIVIC ONLINE REASONING AMONG SELECTED SENIOR HIGH SCHOOL STUDENTS

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INTRODUCTION

The rise of social media platforms such as Facebook and TikTok has transformed how information is consumed globally, including in the Philippines, where approximately 94 million individuals actively use social media as of 2023 (OOSGA, 2023). However, this accessibility has also led to increased exposure to misinformation, particularly among students who often lack the critical skills to assess digital content (Gagalang, 2022; Shu et al., 2020; Shabani & Keshavarz, 2022). Research highlights students' difficulty in distinguishing credible information from false content, often relying on superficial cues rather than verifying sources (Besmano et al., 2017; Johnston, 2020; Liwanag et al., 2019; Axelsson et al., 2021).

To address this, the concept of *civic online reasoning* has emerged, referring to the ability to evaluate digital information, verify source credibility, and engage in informed online discourse (Breakstone et al., 2019; McGrew & Breakstone, 2023). The COVID-19 pandemic further amplified the need for these skills as online learning became widespread, intensifying students' exposure to digital misinformation (Ku et al., 2023; Sylviany et al., 2021).

This study, conducted at Fernando Air Base Integrated National High School, investigates the effectiveness of inquiry-based education—specifically, problem-based learning (PBL) and case-based learning (CBL)—in enhancing students' civic online reasoning. Drawing from *media literacy theory*, which emphasizes understanding media messages through motivation, knowledge structures, and analytical skills (Cho et al., 2024; McGrew et al., 2018), the study applies these strategies to train students in corroboration, sourcing, and contextualization of online information.

The integration of PBL, CBL, and civic online reasoning foster critical thinking, self-directed learning, and analytical reasoning. PBL involves collaborative problem interpretation, information discovery, and reflective solution presentation (Chua et al., 2016), while CBL uses evolving case scenarios to deepen understanding and engagement (George et al., 2020). The study also incorporates techniques such as the SIFT method—Stop, Investigate the source, Find better coverage, and Trace claims—to aid digital content evaluation (libguides.rowan.edu, 2024; Huffman, 2023).

The research employed a pretest-posttest experimental design involving 80 Grade 11 students from the ABM strand. It aimed to answer whether PBL or CBL significantly enhances students' civic online reasoning skills across three dimensions: corroboration, sourcing, and contextualization. The study tested three null hypotheses asserting no significant difference in students' reasoning before and after the interventions, nor between the two groups.

The findings aim to benefit multiple stakeholders: teachers may be guided in integrating inquiry-based methods, students may gain essential digital literacy skills, and the broader social media community may benefit from more critical content consumers. The research also supports school administrators in promoting evidence-based instructional strategies and contributes to future academic inquiries on media literacy and digital citizenship.

LITERATURE REVIEW

Inquiry-based education is a pedagogical approach rooted in social constructivism that emphasizes student-centered learning through questioning, investigation, and exploration. It fosters critical thinking, problem-solving, and collaboration by engaging students in tasks that mirror real-world challenges (Letina, 2016; Khalaf, Zin, & Bt, 2018; Corpuz & Salandanan, 2015; Chu et al., 2021). Well-structured inquiry-based learning enhances motivation, academic achievement, and interdisciplinary connections, particularly when delivered through problem-based learning (PBL) and case-based learning (CBL) models (Bailey, 2018; Wilson, 2020; Baraquia, 2018).

PBL engages students in solving authentic problems, requiring them to analyze various perspectives and evaluate sources, thereby developing critical thinking, assessment literacy, and civic competence (Jonassen & Hung, 2015; Ramadhani, Syamsul, & Rofiqul, 2019; Koh et al., 2019; Saif et al., 2024). The integration of technology within PBL enhances digital collaboration and strengthens awareness of source credibility

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(Kirabo et al., 2024; Cook & Walsh, 2012). In the Philippine context, PBL has been shown to improve critical thinking and promote digital civic participation (Lapuz & Fulgencio, 2020).

CBL, on the other hand, employs real-life scenarios to link theoretical knowledge with practical decision-making. It is typically guided by instructors and emphasizes contextual analysis, collaboration, and critical evaluation of multiple viewpoints (Tawfik, Hung, & Giabbanelli, 2020; Jamari et al., 2018; Japar, 2018). While CBL enhances self-management and interpersonal skills, it also reveals challenges in evaluating source credibility, necessitating explicit instruction in critical digital literacy (Brante, 2019; Arsjad et al., 2023).

Civic Online Reasoning (COR) comprises essential digital literacy skills—sourcing, corroboration, and contextualization—that empower students to assess the reliability and intent of online content, particularly amid the widespread misinformation on social media platforms like Facebook (McGrew et al., 2017; Esparrago-Kalidas, 2021; Manfra & Holmes, 2020). Studies show that many students lack the ability to critically evaluate online information, highlighting the need for instructional interventions that build evaluative heuristics and ethical digital engagement (Fajardo, 2023; Toquero & Talidong, 2021; McGrew & Breakstone, 2023).

Sourcing involves analyzing the origins, authorship, and intent behind digital content, often through lateral reading and click restraint, to determine credibility (Wineburg & McGrew, 2019; Axelsson, Guath, & Nygren, 2021). Corroboration requires comparing multiple sources to validate claims, emphasizing evidence-based judgment and cross-checking (Breakstone et al., 2018; Guath & Nygren, 2022). Contextualization, the most complex of the three, entails situating information within broader historical, cultural, or socio-political frameworks, requiring both prior knowledge and intellectual humility (De La Paz et al., 2022; Lee, 2021).

Together, PBL and CBL provide robust frameworks for teaching COR, enabling students to navigate digital content critically and responsibly—an essential skill in contemporary democratic societies (Hodgin & Kahne, 2018; Tsang, 2019).

METHODOLOGY

The study adopted a pre-test and post-test experimental design to investigate the impact of inquiry-based education, specifically problem-based learning (PBL) and case-based learning (CBL), on enhancing civic online reasoning (COR) among senior high school students. Two groups of Grade 11 ABM strand students from Fernando Air Base Integrated National High School participated: ABM 11-01 was exposed to PBL, while ABM 11-02 received CBL instruction. Pre-tests and post-tests assessed three core COR skills—contextualization, sourcing, and corroboration—using real-world social media posts as stimuli. Students' responses were evaluated with an analytic rubric, and observational data were collected during the intervention to supplement findings.

The respondents, selected via purposive sampling, consisted of 80 Grade 11 students enrolled in the 2024–2025 academic year. Although this non-random sampling technique limited generalizability, it allowed for targeted exploration of the effectiveness of inquiry-based strategies within the selected school setting.

To measure COR, the research instrument featured identical pretest and posttest tasks tailored to each COR dimension. Each student completed three tasks, one for each skill, and their work was rated using proficiency-based criteria. The instrument underwent expert validation and pilot testing to ensure its reliability. Instructional implementation involved real-world, digitally relevant content, with PBL guiding students through investigation and problem-solving, and CBL employing structured case analysis and discussion.

The research procedure spanned eight days. It began with pretesting, followed by differentiated interventions: Group A engaged in identifying and analyzing misinformation through Problem-based Learning (PBL), while Group B conducted Socratic evaluations of social media content through Case-based Learning (CBL). As sessions progressed, students applied techniques such as the SIFT method and Venn diagram comparisons to assess source credibility and verify information. Final presentations and reflective discussions reinforced higher-order reasoning. Posttests on the final day measured learning gains in COR. Student responses were scored using an analytic rubric with four levels: novice, advanced beginner, competent, and proficient.

In terms of data analysis, descriptive statistics (mean and standard deviation) were used to summarize pretest and posttest scores for both groups. Inferential statistics, including paired t-tests and independent t-tests, assessed within-group changes and between-group differences, respectively. These analyses aimed to determine which instructional method more effectively developed students' civic online reasoning abilities.

RESULTS

1. Pretest and Posttest Scores of the Problem-based Group Regarding Civic Online Reasoning as to Corroboration, Sourcing, and Contextualization

Corroboration

Before the intervention, a significant majority (92.5%) of students were categorized as Novice, indicating limited ability to verify online content using external sources. Their responses revealed a tendency to rely on trending or emotionally persuasive posts without verification. Only a small fraction (7.5%) reached the Advanced Beginner level, demonstrating intent but not execution in verifying claims. Post-intervention results showed a substantial improvement: the number of Novice students dropped to 2.5%, while 55% reached the Competent level and 10% attained

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Proficient. These students demonstrated a capacity to locate corroborating sources, analyze the credibility of those sources, and recognize the need for further investigation when evidence was lacking.

Sourcing

In the domain of sourcing, pretest results indicated that 70% of students were Novice, showing a basic recognition of a source's creator but little effort to evaluate its credibility. The remaining 30% were Advanced Beginners, who attempted some level of verification but relied on superficial indicators such as popularity or familiarity. After the PBL intervention, no students remained in the Novice category. A majority (75%) progressed to the Competent level, with 7.5% reaching Proficient. These students demonstrated deeper source evaluation, including examining organizational credibility, historical reliability, and potential bias. Some responses reflected nuanced insights, such as recognizing that a large social media following does not equate to credibility.

Contextualization

In the skill of contextualization, 62.5% of students were initially Novice, with responses lacking critical awareness of broader contexts or the author's intent. Another 37.5% reached Advanced Beginner, showing minimal but insufficient attempts at evaluation. Following the intervention, the Novice category was eliminated, with 82.5% of students moving to the Competent level and 2.5% achieving Proficient. These students could identify persuasive language, evaluate motives, and assess the factual basis of claims. A standout Proficient response noted the need for caution when posts relied heavily on opinions or emotional appeals, and emphasized the necessity for verification from independent, reliable sources.

2. Pretest and Posttest Scores of the Case-based Group Regarding Civic Online Reasoning as to Corroboration, Sourcing, and Contextualization

Corroboration

Prior to the intervention, the majority of students (85%) were at the Novice level, indicating minimal effort to verify information or seek supporting evidence. Only a small fraction demonstrated competent or advanced skills. After the intervention, the Novice category was eliminated. Half of the students advanced to the Advanced Beginner level, showing emerging verification skills, while 40% achieved Competent status, engaging in systematic fact-checking. Notably, 10% reached the Proficient level, demonstrating sophisticated corroboration by synthesizing multiple credible sources, identifying conflicting information, and applying nuanced critical analysis to complex claims.

Sourcing

Initially, nearly half of the students were Novices, recognizing content creators without critically evaluating their credibility. The other half were Advanced Beginners, who made superficial assessments often based on platform reputation rather than evidence. No students showed Competent or Proficient skills pre-intervention. Post-intervention, the Novice group dropped to zero. Most students (60%) became Competent, demonstrating deeper evaluation of source motives, expertise, and reliability. Additionally, 12.5% reached Proficient levels, critically assessing factors such as the creator's prior content, verification status, and intentions, reflecting advanced civic online reasoning.

Contextualization

Before intervention, 57.5% of students were Novices, accepting content at face value without considering broader socio-political context or bias. The rest were Advanced Beginners with limited critical engagement. No students achieved Competent or Proficient ratings pretest. Posttest, the Novice category dropped significantly to 2.5%, with most students (67.5%) reaching Competent status by critically examining motivations, bias, and supporting evidence within broader public discourse. A smaller group (7.5%) attained Proficient level by demonstrating comprehensive contextual analysis, including critical reflection on source reliability, political implications, and verification through official data.

3. Significant Differences in Civic Online Reasoning Using Problem-Based Learning

The result demonstrated statistically significant improvements in all three domains after PBL implementation ($p < 0.001$). Corroboration scores increased from a mean of 1.12 (SD = 0.21) pretest to 2.73 (SD = 0.64) posttest, indicating enhanced ability to critically evaluate and cross-check online information ($t = 14.560$, $df = 39$). The integration of Venn Diagrams during the Discovery and Reporting stage facilitated students' ability to compare multiple sources visually, supporting their analytical reasoning. This aligns with Koh et al. (2019), who emphasize that PBL enhances evidence-based inquiry, and Saif et al. (2024), who highlight the role of PBL in fostering comprehensive cognitive processes for information evaluation.

Sourcing skills also significantly improved, with mean scores rising from 1.34 (SD = 0.38) to 2.86 (SD = 0.52) post-intervention ($t = 15.316$, $df = 39$). The use of the SIFT method—Stop, Investigate, Find, Trace—during the PBL cycle was instrumental in developing students' abilities to critically assess source credibility, as supported by Ramadhani, Syamsul, and Rofiqul (2019) and Kirabo et al. (2024).

Contextualization showed the highest gain, from 1.37 (SD = 0.39) to 2.86 (SD = 0.46), with a t-value of 19.278 ($df = 39$). The systematic application of WH-questions in the Problem Analysis phase helped students understand the broader context and authorial intent of digital information, consistent with prior research by Cook and Walsh (2012), Fita et al. (2021), and Susanti et al. (2023). Adler, Salanterä, and Zumstein-Shaha (2019) further corroborate that PBL enhances higher-order critical thinking and problem-solving in digital literacy contexts.

Overall, PBL effectively transitioned students from novice to competent and proficient levels in civic online reasoning,

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fostering robust digital media literacy essential for contemporary information environments.

4. Significant Differences in Civic Online Reasoning Using Problem-Based Learning

The result similarly revealed significant improvements in corroboration, sourcing, and contextualization after CBL ($p < 0.001$). Corroboration increased from 1.19 (SD = 0.40) to 2.60 (SD = 0.59) posttest ($t = 14.588$, $df = 39$). The use of Venn Diagrams to compare sources within authentic case scenarios supported critical fact-checking, reflecting findings by Hussain and Zaman (2022) and Soluade (2018).

Sourcing mean scores rose from 1.53 (SD = 0.36) to 2.89 (SD = 0.50), facilitated by the SIFT method's structured evaluation of source reliability ($t = 16.902$, $df = 39$). Talens (2015), Arsjad et al. (2023), and Brante (2019) similarly report that case-based approaches promote reflective evaluation of digital information sources.

Contextualization improved from 1.42 (SD = 0.38) to 2.84 (SD = 0.53), with students employing WH-questions during the analysis and discussion phases to deepen their critical understanding ($t = 15.274$, $df = 39$). These outcomes are consistent with Tawfik, Hung, and Giabbanelli (2020) and Koehler et al. (2020), who document enhanced cognitive and analytical thinking through CBL.

The findings confirm that CBL nurtures higher-order reasoning skills necessary for responsible digital citizenship by engaging students in authentic and collaborative inquiry.

5. Significant Difference of the Post-test Scores of the Problem-based Group and Case-based Group in their Civic Online Reasoning

The result shows no statistically significant difference between the posttest scores of the PBL and CBL groups across all three civic online reasoning domains: corroboration ($p = 0.335$), sourcing ($p = 0.777$), and contextualization ($p = 0.877$). This equivalence suggests that both PBL and CBL are equally effective pedagogical approaches for enhancing critical digital literacy and civic reasoning skills. The findings support Tawfik, Hung, and Giabbanelli's (2020) assertion that inquiry-based learning—whether problem- or case-based—equally fosters critical thinking, collaborative learning, and real-world problem-solving.

Teachers may therefore select either approach depending on instructional context and learner needs, confident that both methods develop essential competencies for navigating the complex digital information landscape and combating misinformation (Baraquia, 2018).

DISCUSSION

Summary of Findings

This study evaluated the effectiveness of inquiry-based education—specifically Problem-Based Learning (PBL) and Case-Based Learning (CBL)—in enhancing civic online reasoning skills (corroboration, sourcing, and contextualization) among senior high school students analyzing social media references.

- Problem-Based Learning Group: Pretest and posttest scores showed significant improvement in all aspects of civic online reasoning, demonstrating that PBL effectively cultivates students' critical evaluation of digital content.
- Case-Based Learning Group: Similarly, students exposed to CBL exhibited substantial gains in corroboration, sourcing, and contextualization, highlighting CBL's efficacy in fostering analytical skills through engagement with real-world cases.
- Statistical Significance: Both PBL and CBL groups displayed statistically significant improvement between pretest and posttest scores, affirming each method's role in developing students' ability to critically assess online information.
- Comparison of Approaches: No statistically significant difference was found between the posttest scores of the two groups, indicating that both PBL and CBL are equally effective in promoting civic online reasoning skills.

Conclusions

1. PBL significantly improves civic online reasoning skills among senior high school students.
2. CBL also significantly enhances these skills.
3. There is no significant difference in effectiveness between PBL and CBL for developing civic online reasoning.

Recommendations

1. Educators should integrate PBL and CBL approaches into media literacy and digital citizenship curricula to strengthen students' civic online reasoning.
2. Instructional materials and modules based on PBL and CBL frameworks should be developed for classroom use.
3. Schools should provide professional development focused on implementing inquiry-based strategies that support corroboration, sourcing, and contextualization skills.
4. Policymakers should incorporate inquiry-based learning into national media literacy programs to promote responsible online engagement.
5. Future research should explore the impact of PBL and CBL in diverse populations and educational contexts to assess broader applicability and scalability.

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REFERENCES

1. *Adler, K., Salanterä, S., and Zumstein-Shaha, M. (2019). Focus Group Interviews in Child, Youth, and Parent Research: An Integrative Literature Review. Int. J. Qual. Methods 18, 160940691988727. doi:10.1177/1609406919887274*
2. *Arsjad, R. H., Hulukati, W., Djafri, N., & Rahim, M. (2023). Management of Project-Based Learning and Case-Based Learning in Guidance and Counseling Lessons. International Journal of Professional Business Review, 8(7), e02851. https://doi.org/10.26668/businessreview/2023.v8i7.2851*
3. *Axelsson, C. A. W., Guath, M., & Nygren, T. (2021). Learning how to separate fake from real news: Scalable digital tutorials promoting students' civic online reasoning. Future Internet, 13(3), 60.*
4. *Bailey, L. A. (2018). The impact of inquiry-based learning on academic achievement in eighth-grade social studies (Doctoral dissertation, University of South Carolina). Retrieved Nov. 14, 2021 https://scholarcommons.sc.edu/cgi/viewcontent.cgi?article=5472&context=etd*
5. *Baraquia, L. G. (2018). Interdisciplinary contextualization and inquiry-based learning: How engaging can it be. International Journal of Science and Engineering Investigations, 7(81), 54-58. ISSN: 2251-8843*
6. *Besmano, J. V., Fernandez, J. M., Dimaranan, H. S., & Valguna, R. G. (2017). Identifying Political Fake News in the Philippines.*
7. *Brante, E. W. (2019). A multiple-case study on students' sourcing activities in a group task. Cogent Education, 6(1). https://doi.org/10.1080/2331186X.2019.1651441*
8. *Bråten, I., Brante, E. W., & Strømsø, H. I. (2019). Teaching sourcing in upper secondary school: A comprehensive sourcing intervention with follow-up data. Reading Research Quarterly, 54(4), 481–505. https:// doi.org/10.1002/rrq.253*
9. *Breakstone, J., Smith, M., Wineburg, S., Rapaport, A., Carle, J., Garland, M., & Saavedra, A. (2019). Students' civic online reasoning: A national portrait. Educational Researcher, 0013189X211017495. https://stacks.stanford.edu/file/druid:cz440cm8408/Students%27%20Civic%20Online%20Reasoning_2021.pdf*
10. *Ceron, W., de-Lima-Santos, M. F., & Quiles, M. G. (2021). Fake news agenda in the era of COVID-19: Identifying trends through fact-checking content. Online Social Networks and Media, 21, 100116.*
11. *Cho, H., Cannon, J., Lopez, R., & Li, W. (2024). Social media literacy: A conceptual framework. New media & society, 26(2), 941-960.*
12. *Chu, S. K. W., Reynolds, R. B., Tavares, N. J., Notari, M., & Lee, C. W. Y. (2021). 21st century skills development through inquiry-based learning from theory to practice. Springer International Publishing.*
13. *Chua, B. L., Tan, O. S., & Liu, W. C. (2016). Journey into the problem-solving process: cognitive functions in a PBL environment. Innovations in Education and Teaching International, 53(2), 191-202.*
14. *Cook, P., & Walsh, M. B. (2012). Collaboration and problem-based learning: Integrating information literacy into a political science course. Communications in Information literacy, 6(1), 6.*
15. *Corpuz, B. B., & Salandanan, G. G. (2015). Pedagogical foundations of inquiry-based learning. Philippine Journal of Teacher Education, 12(2), 55–70.*
16. *De La Paz, S., Wissinger, D. R., Gross, M., & Butler, C. (2022). Strategies that promote historical reasoning and contextualization: A pilot intervention with urban high school students. Reading and Writing, 35(2), 353-376.*
17. *Dou, Y., Shu, K., Xia, C., Yu, P. S., & Sun, L. (2021, July). User preference-aware fake news detection. In Proceedings of the 44th international ACM SIGIR conference on research and development in information retrieval (pp. 2051-2055).*
18. *Esparrago-Kalidas, A. J. (2021). The effectiveness of CRAAP test in evaluating credibility of sources. International Journal of TESOL & Education, 1(2), 1-14.*
19. *Fajardo, M. F. (2023). Filipino students' competency in evaluating digital media content credibility:'Beginning'to 'emerging'levels. Journal of Media Literacy Education, 15(2), 58-70.*
20. *Gagalang, J. L. (2022). Exploring social media use of Filipino learners: How it impacts reading attitudes and competence. Linguistics and Culture Review, 6(S2), 275-290. https://doi.org/10.21744/lingcure.v6nS2.2034*
21. *George, T., Carey, R. A., Abraham, O. C., Sebastian, T., & Faith, M. F. (2020). Trainee doctors in medicine prefer case-based learning compared to didactic teaching. Journal of family medicine and primary care, 9(2), 580-584.*
22. *Goulding, J. (2021). Historical thinking online: An analysis of expert and non-expert readings of historical websites. Journal of the Learning Sciences, 30(2), 204-239.*
23. *Guath, M., & Nygren, T. (2022, July). Civic online reasoning among adults: An empirical evaluation of a prescriptive theory and its correlates. In Frontiers in Education (Vol. 7, p. 721731). Frontiers Media SA.*
24. *History Skills. (2024). Corroboration. Retrieved June 28, 2024, from https://www.historyskills.com/source-criticism/analysis/corroboration/*
25. *Hodgin, E., & Kahne, J. (2018). Misinformation in the information age: What teachers can do to support students. Social Education, 82(4), 208-212.*
26. *Huffman, S. (2023). Goal 1: Contextualize the study's methods. Retrieved June 28, 2024, from https://iastate.pressbooks.pub/preparingtopublish/chapter/goal-1-contextualize-the-studys-methods/*
27. *Hussain, Q., & Zaman, S. (2022). Effects of Case Method on Civic Competence of Students from Different Socio-economic Backgrounds. Pakistan Languages and Humanities Review, 6(2), 1164-1179.*
28. *Jamari, D., Abdullah, Z., Mohamed, H., Zaid, N. M., & Aris, B. (2018). Implementation of case based learning and metacognitive scaffolding in social media to improve problem solving Skill – A theoretical framework. Advanced Science Letters, 24(6), 4196-4201.*
29. *Japar, M. (2018). The Improvement of Indonesia Students 'Engagement in Civic Education through Case-Based Learning'. Journal of Social Studies Education Research, 9(3), 27-44. Retrieved Nov. 14, 2021 https://dergipark.org.tr/en/download/article-file/661086*
30. *Johnston, N. (2020). Living in the world of fake news: High school students' evaluation of information from social media*

ISSN (Online): 2455-3662
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sites. Journal of the Australian Library and information Association, 69(4), 430-450.

31. *Jonassen, D. H., & Hung, W. (2015). All problems are not equal: Implications for problem-based learning. Essential readings in problem-based learning: Exploring and extending the legacy of Howard S. Barrows, 1741. Retrieved Nov. 12, 2021 https://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1080&context=ijpbl*
32. *Khalaf, B. K., Zin, M., & Bt, Z. (2018). Traditional and Inquiry-Based Learning Pedagogy: A Systematic Critical Review. International Journal of Instruction, 11(4), 545-564. Retrieved Nov. 13, 2021 https://files.eric.ed.gov/fulltext/EJ1191725.pdf*
33. *Kirabo, E., Batiibwe, M.S.K., Mbulankende, J.S. et al. (2024) Technology-supported problem-based learning in mathematics education for pre-service teachers: a systematic literature review. SN Soc Sci 4, 173 (2024). https://doi.org/10.1007/s43545-024-00973-y*
34. *Koehler, A. A., Fiock, H., Janakiraman, S., Cheng, Z., & Wang, H. (2020). Asynchronous online discussions during case-based learning: A problem-solving process. Online Learning, 24(4), 64-92.*
35. *Koh, K., Delanoy, N., Bene, R., Thomas, C., Danysk, G., Hone, G., Turner, J., & Chapman, O. (2019). The role of authentic assessment tasks in problem-based learning. Papers on Postsecondary Learning and Teaching: Proceedings of the University of Calgary Conference on Learning and Teaching, 3, 17-24 Retrieved from https://files.eric.ed.gov/fulltext/EJ1302881.pdf*
36. *Ku, K. Y., Fung, T. M., Au, A. C., Choy, A. Y., Kajimoto, M., & Song, Y. (2023). Helping young students cope with the threat of fake news: efficacy of news literacy training for junior-secondary school students in Hong Kong. Educational Studies, 1-19.*
37. *Lapuz, A. M., & Fulgencio, M. N. (2020). Improving the critical thinking skills of secondary school students using problem-based learning. Lapuz, AME, & Fulgencio, MN (2020). Improving the Critical Thinking Skills of Secondary School Students using Problem-Based Learning. International Journal of Academic Multidisciplinary Research,(4), 1, 1-7. Retrieved Nov. 12, 2021 https://files.eric.ed.gov/fulltext/ED603182.pdf*
38. *Lee, C. D., Nasir, N. I. S., Smirnov, N., & Carrington, A. (2021). Civic reasoning and discourse: Perspectives from learning and human development research. Educating for civic reasoning and discourse, 53-107.*
39. *Liwanag, A. V., Olympia, J. J. P., Nanoy, Y., Mijares, M. L. E., & Nicomedes, C. J. C. "ABANLKONNMNAKO!: A SOCIAL STUDY ON THE PROCESS OF DETECTING FAKE NEWS AMONG COLLEGE STUDENTS. https://www.researchgate.net/profile/Christian-Jasper-Nicomedes/publication/340049701_ABANLKONNMNAKO_A_SOCIAL_STUDY_ON_THE_PROCESS_OF_DETECTING_FAKE_NEWS_AMONG_COLLEGE_STUDENTS/links/5e7445b3458515c677c638e4/ABANLKONNMNAKO-A-SOCIAL-STUDY-ON-THE-PROCESS-OF-DETECTING-FAKE-NEWS-AMONG-COLLEGE-STUDENTS.pdf*
40. *Manfra, M., & Holmes, C. (2020). Integrating media literacy in social studies teacher education. Contemporary Issues in Technology and Teacher Education, 20(1), 121-141.*
41. *McGrew, S., & Breakstone, J. (2023). Civic Online Reasoning Across the Curriculum: Developing and Testing the Efficacy of Digital Literacy Lessons. AERA Open, 9, 23328584231176451.*
42. *McGrew, S., Breakstone, J., Ortega, T., Smith, M., & Wineburg, S. (2018). Can students evaluate online sources? Learning from assessments of civic online reasoning. Theory & Research in Social Education, 46(2), 165-193. https://stacks.stanford.edu/file/druid:gf151tb4868/Civic%20Online%20Reasoning%20National%20Portrait.pdf*
43. *Nygren, T. (2021). Learn how to debunk news stories in just 20 minutes. Retrieved Nov. 1, 2021 https://media-and-learning.eu/type/featured-articles/intellectual-and-technical-tools-against-disinformation/*
44. *Nygren, T., & Axelsson, C. A. W. (2021). The News Evaluator's Self-Assessment Tool: Training Adolescents in Civic Online Reasoning.*
45. *Nygren, T., & Guath, M. (2021). Students Evaluating and Corroborating Digital News. Scandinavian Journal of Educational Research, 1-17. https://www.tandfonline.com/doi/pdf/10.1080/00313831.2021.1897876*
46. *Nygren, T., & Guath, M. (2022). Students evaluating and corroborating digital news. Scandinavian Journal of Educational Research, 66(4), 549-565.*
47. *OOSGA (Open Online Social Global Analytics). (2023). Social media usage report: Philippines 2023. Retrieved https://oosga.com/social-media/phl/*
48. *Polizzi, G. (2020). Information literacy in the digital age: Why critical digital literacy matters for democracy. Informed Societies: Why information literacy matters for citizenship, participation and democracy, 1-23.*
49. *Ramadhani, R., Syamsul, H., & Rofiqul, U. (2019). Problem-Based Learning, Its Usability and Critical View as Educational Learning Tools. Journal of Gifted Education and Creativity, 6(3), 193-208. Retrieved Nov. 12, 2021 https://dergipark.org.tr/en/download/article-file/883852*
50. *Rowan University Libraries. (2024). APA citation style - 6th edition. Retrieved June 28, 2024, from https://libguides.rowan.edu/c.php?g=942045&p=6790840*
51. *Saif, A., Umar, I.N., Ghazal, S., Aldowah, H. (2024). The Problem-Based Learning Revolution: A Systematic Review Exploring Its Effect on Student Achievement and Self-regulated Learning. In: Saeed, F., Mohammed, F., Fazea, Y. (eds) Advances in Intelligent Computing Techniques and Applications. IRICT 2023. Lecture Notes on Data Engineering and Communications Technologies, vol 210. Springer, Cham. https://doi.org/10.1007/978-3-031-59711-4_18*
52. *Shabani, A., & Keshavarz, H. (2022). Media literacy and the credibility evaluation of social media information: Students' use of Instagram, WhatsApp and Telegram. Global Knowledge, Memory and Communication, 71(6/7), 413-431.*
53. *Shu, K., Mahudeswaran, D., Wang, S., Lee, D., & Liu, H. (2020). Fakenewsnet: A data repository with news content,*

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social context, and spatiotemporal information for studying fake news on social media. Big data, 8(3), 171-188.

54. *Sinatra, G. M., & Lombardi, D. (2020). Evaluating sources of scientific evidence and claims in the post-truth era may require reappraising plausibility judgments. Educational Psychologist, 55(3), 120-131.*
55. *Soluade, Z. O. (2018). Effects of case-based and scenario instructional strategies on learning outcomes of pre-service Social Studies teachers in Civic Education concepts. Olabisi Onabanjo University, Ago-iwoye.*
56. *Talens, Joy. (2015) "Students' Learning and Participation in a Case–Based Science Instruction." Retrieved Nov. 12, 2021 https://www.researchgate.net/profile/Joy_Talens/publication/308523788_Students'Learning_and_Participation_in_a_Case__Based_Science_Instruction/links/57e6444608aed7fe4666612d/StudentsLearning-and-Participation-in-a-Case-Based-Science-Instruction.pdf*
57. *Tawfik, A. A., Hung, W., & Giabbanelli, P. J. (2020). Comparing How Different Inquiry-Based Approaches Impact Learning Outcomes. Interdisciplinary Journal of Problem-Based Learning, 14(1), n1. Retrieved Nov. 14, 2021 https://files.eric.ed.gov/fulltext/EJ1257973.pdf*
58. *Toquero, C. M. D., & Talidong, K. J. B. (2021). Socio-educational implications of technology use during COVID-19: A case study in General Santos City, Philippines. Human Behavior and Emerging Technologies, 3(1), 194-198. Retrieved Nov. 14, 2021 https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/hbe2.214*
59. *Tsang, S. J. (2019). News Credibility and Media Literacy in the Digital Age. In Handbook of Research on Media Literacy Research and Applications Across Disciplines (pp. 135-155). IGI Global.*
60. *Wilson, C. E. (2020). The Effects of Inquiry-Based Learning and Student Achievement in the Science Classroom. Retrieved Nov, 14, 2021 https://scholar.umw.edu/cgi/viewcontent.cgi?article=1391&context=student_research*
61. *Wineburg, S., & McGrew, S. (2019). Lateral reading and the nature of expertise: Reading less and learning more when evaluating digital information. Teachers College Record, 121(11), 1-40. Retrieved Nov. 1, 2021 https://www.tcrecord.org/Content.asp?ContentId=22806*