Innovative Idea

Seeing Beyond the Source: Critical Media Evaluation in ANR Education

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Introduction & Need

Data literacy skills are crucial for transforming information into actionable practices by effectively collecting, analyzing, and interpreting diverse data sources (Gummer & Mandinach, 2015). However, Van Audenhove et al. (2020) argue that existing data literacy frameworks emphasize technical skills over the critical understanding necessary to navigate and make sense of complex systems. Integrating media literacy into data literacy can strengthen not only the ability to utilize data but also the capacity to critically assess how data shapes media, education, and decision-making. This integration requires individuals to analyze, evaluate, and create messages across multiple contexts (Livingstone, 2004). Knaus (2020) suggests that media literacy education can contribute to establishing critical attitudes towards data and equipping learners with the ability to critique and reflect on media and the digital technologies and data driving them. Engaging learners in critical thinking is a deliberate approach that fosters deeper understanding, strengthens problem-solving skills (Facione, 1990; Vaghela & Parsana, 2024), and requires long-term strategies and reflective thinking (Turner et al., 2016).

This study centers on a learning experience in which students engage with real-world ANR issues to improve their problem-solving skills and develop creative solutions through critical analysis. Students participate in discussions, analyze information from diverse media sources, evaluate evidence, reason through strategies, and draw well-supported conclusions. As part of the course, students critique how their ANR issue is portrayed in the media to build critical thinking skills and understand how media coverage influences policy and public perceptions. This assignment enhances students' literacy skills through the critical evaluation of accuracy and information sources. It encourages reflection on how the articles' portrayal might influence public perception and policy decision-making.

Methodology

Researchers collected data from students' media critique responses (n = 64) and instructors' evaluation comments *(*n = 4). Researchers cleaned and prepared the data before importing it into Microsoft Copilot. Participants were anonymized using pseudonyms to protect students' and instructors' identities. Copilot was used as a tool and did not replace researchers' roles as analysts. Microsoft Copilot was used to code and generate emerging themes from instructors' comments and students' analyses of accuracy and informational sources. Outputs from the thematic analysis were treated as provisional and were not accepted until independent checks and intercoder agreement were obtained. The research team made the final thematic interpretations.

Results to Date

Thematic analysis of students' media critiques provided insights into their information sources and how they assess accuracy, informing instructors' future literacy teaching. Findings revealed that students primarily used peer-reviewed journals, news media, university and NGO/nonprofit organizations' websites, government sites, and general web articles. Students analyzed media accuracy based on authority and institutional reputation, citations, statistics, cross-verification, method, recency, bias/framing awareness, peer review, publication type/audience, and language precision.

While students could identify surface features of media texts, they struggled to evaluate evidence, balance, framing, and ethical dimensions. Common gaps included equating accuracy with institutional reputation, confusing statistics with credibility, vague analysis, limited scrutiny

of methods, and overlooking how framing shapes public perception and policy or conflates bias with ethics. These findings inform future course design, including structured templates to provide more precise criteria, so students learn not just what to critique in media, but how to do so more specifically.

Advice to Others

When teaching literacy, instructors should focus on experiences that foster active engagement and skill demonstration. This process also allows instructors to focus on experiences that encourage self-regulation and self-directed learning, helping students adjust their thinking as they continue working on their ANR issues. Students are exposed to media every day through both traditional and digital channels, about various informational topics (Austin & Domgaard, 2024). Researchers recommend continuing to educate students on how to analyze reports, identify whether a source is credible, understand biases, think critically, apply problem-solving techniques, and, overall, develop accurate perceptions of the media available to them. The Message Interpretation Process (MIP) Model (Martens, 2010) proposes that students apply their own logic when analyzing media sources and compare what the media offers them with their perceptions. By comparing, students can develop a better understanding of media or data, change or validate their attitudes or behaviors, use problem-solving and decision-making skills to interpret bias and one-sided arguments, and analyze the credibility of media and data (Austin & Domgaard, 2024; Martens, 2010).

The National Association of Media Literacy Education (NAMLE, 2026) identifies media literacy as a vital component to preparing students for future careers. Incorporating more media literacy into the classroom will benefit future generations by preparing them to identify misinformation and bias with awareness (NAMLE, 2026). The News Literacy Project (2026) also offers many ways to incorporate media literacy into the classroom through its nationwide initiative. NLP has developed lesson plans for middle and secondary schools to incorporate into various classroom pathways, including STEM education and ANR, to educate future generations about misinformation and other literacy gaps. Although their efforts have focused on secondary education, Martens (2010) discussed the importance of integrating media literacy into higher education. Exposure to media and data literacy in post-secondary education increases awareness of media's impacts and content (Martens, 2010).

Overall, the research team recommends that all ages continue to be exposed to media and data literacy and learn to process the information readily available to them. Individuals should continue to develop skills to enhance their media literacy and avoid emotional bias, using reflective thinking, especially when interacting with social media algorithms (Austins & Domgaard, 2024). Applying the MIP model to develop a media literacy assignment for college courses will advance students' literacy, critical thinking, and problem-solving skills. Applying media and data literacy to ANR fields can help students better understand pertinent policies and public perceptions.

Costs/Resources Needed

To replicate this assignment, instructors need access to credible ANR-related media sources, a structured critique template, instructional materials that introduce media literacy, data literacy, and critical thinking concepts, and clear rubrics. Students require guidance on selecting real-world ANR issues and on accessing news articles, research databases, and government websites. Overall, the assignment can be implemented with curated media resources, clear instructions, and basic instructional and analytical tools.

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