Building Civic Competencies: Design and Outcomes in Media Literacy Instruction - the "Critical Thinking in the Age of Misinformation Module

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Abstract

This paper explores the collaborative development of an interdisciplinary module to create competencies in the connected areas of critical thinking and media literacy and presents a study analyzing student perceptions of the value, purpose, and effectiveness of the instruction. The emergence of misinformation and disinformation have led to a mistrust of information in general, from politics to science to pop culture. This mistrust undermines the notion of collective or public inquiry, not only within colleges and universities, but also within society. Furthermore, mistrust often gives way to apathy, creating a lack of desire to even distinguish between reliable and unreliable sources of information. A study of student surveys across multiple semesters and courses supports the notion that instruction in media literacy, with an emphasis on the application of critical thinking, produces positive outcomes among first- and second-year college students. The implications of this study are to the need for and value in increased efforts to tackle misinformation, voter apathy, and democratic backsliding through combined instruction in critical thinking and media literacy in institutions of higher education, particularly among first and second-year undergraduate students. Additionally, this study contributes to efforts to do so by providing a tested interdisciplinary model of instruction, built on consistent and coherent learning paths utilizing high impact practices, easily integrated into an existing course design.

Introduction

As recent political events across the globe shed light on the fragility of democratic values, the role of the University in creating a framework for civic education becomes more urgent. Cultivating an informed and engaged citizenry must be a goal of higher education. A major challenge that our students currently face is that they are living in an age dominated by information, but not all of it is good information. The emergence of misinformation and disinformation have led to a mistrust of information in general, from politics to science to pop culture. This mistrust undermines the notion of collective or public inquiry, not only within colleges and universities, but also within society. Furthermore, mistrust often gives way to apathy, creating a lack of desire to even distinguish between reliable and unreliable sources of information.

Focusing on critical thinking to address this pressing issue is not a new strategy. For many decades now, institutions have sought to equip students with these skills through various direct or indirect methods. Lacking, however, are consistent and systematic efforts to ensure direct and substantial instruction in media (or information) literacy in K-12 schools or in higher education in most states. While many states have encouraged the adoption of critical thinking standards within existing curriculum, since 2011 only 15 states encourage some form of media literacy education. In 2022, Illinois became the first state to mandate media literacy instruction, though the requirement is only for a unit on media literacy at the high school level (https://www.latimes.com/california/story/2022-10-26/media-literacy-combats-fake-news). In early 2023, New Jersey became the only state to develop and mandate an information literacy curriculum for K-12 (Sitrin, 2023). Therefore, only recently have a few states mandated direct and substantial instruction in media literacy in K-12 schools, but none have done so within their institutions of higher education. Multiple studies and reports in the last decade have shared disheartening findings as to where young people get their news and an inability among the general population to distinguish fact from fiction (Breakstone, et al.; Haidt, 2022; Liedke and Matsa, 2022; Mitchell, et al., 2018; Mitchell, et al. 2020). Second, misinformation is negatively influencing interpretations of information, conspiratorial thinking, polarization among the electorate, and trust in mainstream media and democratic institutions, such as elections. In sum, the "horse has left the barn" and the state are not even close to catching up, though recent progress is encouraging. Faculty in higher education, like ourselves, and organizations such as Media Literacy Now and News Literacy Project are working to fill the gap by providing information and resources for students, lawmakers, and the public.

To address this rising issue, our group of three faculty members, serving in a two-year access college within a large public, urban university used an internal team innovation grant to develop an interdisciplinary module to enhance student critical thinking and media literacy skills. While targeting those competencies, the module, titled "Critical Thinking in the Age of Misinformation", was designed to connect the lessons to informed citizenship. The inspiration and rationale behind the project included: (1) the civic responsibility that institutions of higher education have vis-à-vis their students; (2) the complex world of information that students must navigate as part of their education; (3) the roles that critical thinking and media literacy play in enabling them to do this; and (4) the recognition that a wide array of courses can serve as a basis for introducing students to these skills by supplementing, rather than sacrificing, course content; and (5) the role of misinformation and declining civic trust and competency in the erosion of democracy.

To date, this interdisciplinary module has been adopted by roughly 40 faculty teaching first- and second-year core courses across the liberal arts and sciences over multiple semesters. Most instructors using the module teach primarily students of the two-year access institution within the university. Analysis of the module's effectiveness in creating competencies and value in critical thinking and media literacy relied on student perception and self-reporting through a

survey included in the module to gather responses during the Fall semester of 2021 and all of 2022.

Nearly 600 student survey responses suggest student satisfaction in the module's design, achievement of learning outcomes, and objectivity. The findings indicate an increase in student value of the topic and instruction with a substantial reduction in indifference about the need for critical thinking and media literacy skills. Equally heartening are the findings regarding the effectiveness of the instruction, which suggest that the number of those who plan to evaluate sources and information using their new competencies on a regular basis has doubled. Additionally, we found a fourfold increase in those declaring they plan to always use media literacy in their personal and professional lives. Finally, the study also found positive shifts in student perceptions of their competency in evaluating information, particularly from news media and social media platforms. Now that the students feel more equipped to navigate their complicated media environment, they are of the mind that they can become frequent and consistent critical consumers of information.

Review of the Literature

A Pew Research study found that Americans regularly get news on social media, with a 31 percent turning to Facebook for news. Twitter is used by about three-in-ten U.S. adults (27 percent), about half of its users (53 percent) turn to the site to regularly get news there. Other sites such as LinkedIn have large many users but only 13 percent of its users regularly get news on the site. There are demographic differences in the populations who use social media for news with those under 30 more likely to seek news information from social media. For example, half or more of regular news consumers on Snapchat (67 percent), TikTok (52 percent) and Reddit (50 percent) are ages 18 to 29 (Liedke and Matsa, 2022).

Indeed, as consumers of information are required to make rapid decisions about the veracity of information, the source of their information gathering habits has been found to affect their ability to determine fact from fiction. A 2019 Pew Research Center study of 5035 adults found that when asked to identify five facts from opinion statements and 3of 5 Americans were able to do so - little better than random responses. Nearly a quarter got them all wrong. Those with high digital awareness, who were politically active or with high trust in the news media were more likely to get all five answers correct. Respondent's level of interest in news did not make a difference in the outcome. Attributing statements as to the source of the information only made a modest difference in the identification of fact statements and lack of attributing statements had no effect on the identification of opinion statements.   Fortunately, studies have determined that the inability to judge information online can be corrected. Stanford researchers concluded in a 2019 report that when students were taught the skills used by factcheckers, such as "lateral reading", their ability to critically evaluate digital information improved significantly (Breakstone, et al.).

While is enduring a tectonic shift due to the changing landscape of increasing use of social media for information gathering, opinions differ among citizens of advanced nations about the impact of this change on democracy. In a Pew Research study, Wike, et al. (2022) report that while people are increasing turning to social media for information, those surveyed believe this has positive and negative impacts on the health of democracies around the world. The study surveyed users in 19 advanced industrial nations and found 59 percent believe social media has a positive effect on democracy. However, the United States is an outlier with just 34 percent of adults responding that social media is good for democracy, and 64 percent believing that it is bad for democracy. Across all surveyed populations, there was a consensus that the spread of false information is the second most dangerous threat to the global community behind only climate change. In addition, 65 percent believe social media has made dialog more divisive and less civil. At the same time, despite slight demographic differences reported in party and ethnicity, overall public trust in government remains near historic lows.

Haidt (2022) argues that while the damage done by social media to democracy, institutional trust and teen mental health had its beginnings in the early 2010's, the matter is not settled by social science. The damage may have lasting effects and be hard to mitigate. Haidt recommends structural changes to repair damage to "key democratic and epistemic institutions" including:

> (1) harden democratic institutions so that they can withstand chronic anger and mistrust,
> (2) reform social media so that it becomes less socially corrosive, and
> (3) better prepare the next generation for democratic citizenship in this new age.

Haidt suggests that this work must be undertaken by citizens who understand the forces that brought us to this point and urges that teaching these skills to "students is crucial, because they are the generation who will have to reinvent deliberative democracy and Tocqueville's art of association for the digital age."

With the rise in information illiteracy and democratic erosion, the role of the University in creating a framework for civic education becomes more urgent. Informed, caring, and engaged citizenry must be a goal of higher education, specifically, as Richard Taylor (suggests, to strengthen public reason while protecting private reason. This re-energizing of universities as the bedrock of social enlightenment is mobilizing educators to design learning objectives, courses, and programs to better accomplish this essential task. In their work, *The Engaged University*, David Watson et al. (2011) compiled historical evidence of the growth in a movement of engaged universities around the globe to tackle community problems and re-engage with social purpose. Allison Anderson (2016) asserts, "to be relevant, education must provide young people with the necessary knowledge and skills to become responsible global citizens who can take joint actions." In *Democracy and Education*, John Dewey (1966) argues that the full development of an educated mind depends on societal experiences that help younger members to better understand the social norms and effectively participate in society.

Focusing on critical thinking to address this pressing issue is not a new strategy. For many decades now, institutions have sought to equip students with these skills through various direct or indirect methods. However, the integration of critical thinking into higher education has met with many challenges along the way. There have been debates over what constitutes critical thinking (e.g., formal vs. informal logic), but more significantly, there has been fears that teaching these skills might come at the expense of teaching academic content. Jonathan Haber debunks this myth. He argues, "Since background knowledge, including knowledge of content related to the academic disciplines, is a vital part of being a critical thinker, understanding content and thinking critically about it do not need to come into conflict." In other words, virtually all courses can provide an opportunity to build critical thinking skills as part of their content.

A recent study published by Connolly (2017) comparing the difference in critical thinking skills between incoming freshman and graduating seniors (using the CLA+, or Collegiate Learning Assessment Plus test) noted that, at the institution that saw the largest improvement, "critical thinking is baked into many different courses, rather than being the formal subject of any one course." Schmaltz and Lilienfeld (2014) argue that with access to information ever increasing, it is essential that students acquire the skills to distinguish fact from fiction. The authors advocate providing comparative examples of fantasy from hauntings to secret laws of attraction with science. This allows students to grapple with issues of falsifiability and connectivity. Students need to learn extraordinary claims require extraordinary evidence and should think critically like scientists to investigate the reliability of the source while investigating the claim. Georgiadou, et al. (2018), suggest the challenges posed by the proliferation of technologies, platforms, and media through which information in multiple formats is created, propagated, and shared, exacerbate an already difficult problem. It is thus imperative for everybody, but for educators especially, to support the development of critical thinking skills in their students.

It is implied throughout the literature that there is a connection between media literacy and critical thinking (Goodset and Schmillen, 2022). Feuerstein (2006) concludes: "As pupils increase their experience with a media literacy program, they will show greater gains proportionally in media analysis and critical thinking skills" (p. 50). In a 2018 report prepared for the European Commission, McDougal, et al. found the cross-disciplinary appeal of a media literacy program as media literacy education is advantageous and easily integrated into a variety of curriculum subjects. In the report, McDougal, et. al. shared evidence that "students who reported high levels of media literacy learning opportunities were more likely to identify misinformation," lending "credence to the impact of media literacy programs." These findings in primary and secondary school levels are especially significant as secondary students have more fully developed belief systems". After acknowledging the role of young individuals in media creation and alarming developments, such as the growth of disinformation and 'echo chambers,' McDougal, et. al. (2018) assert: "Education that focuses on raising awareness about the processes of disinformation, and which encourage critical self-reflection, can play a key role in reversing these trends" (p.43).

Instruction: The Design of the "Critical Thinking in the Age of Misinformation" Module

The module is designed to increase competency in the application of critical thinking skills when approaching the ever-expanding world of information so that students are better equipped to determine the value and credibility of information. This is achieved by differentiating between the varying quality of sources, identifying motivations for disinformation, becoming aware of common reasons for misinformation, and finally, how the trafficking of bad information is a danger to democracy. To meet our goals of effectiveness, efficiency, and versatility we developed the cross-disciplinary learning outcomes, current content and practice opportunities in a logical and straightforward format easily integrated into an existing course via one comprehensive, yet concise, learning module.

The curriculum includes six short lessons to guide students in overcoming common obstacles, such as evaluating the credibility of information and sources, understanding the makeup and evolution of the media environment; learning to apply reasoning; identifying and avoiding fallacies in written and oral discourse; and understanding the importance of informed citizenship.

Below are the lessons and their respective objectives or learning outcomes.

Lesson	Objective
Introduction to Critical Thinking and Media Literacy	Explain what critical thinking and medial literacy are, their usefulness in different settings, and their importance in terms of one's academic, personal, professional, and civic lives.
Junk Sources	Describe and differentiate between credible information or sources and junk sources that spread misinformation; and recall methods to identify junk sources and news.
Zombie Logic	Identify three common types of psychological obstacles to critical thinking and seven fallacies of reasoning related to media literacy.
Social Mania	Discuss the rise of social media as a mode of societal information, the initial optimism of its promise, the rise of malevolent actors and the danger of relying on it for information.
Fake News	Describe fake news and the common motivations for the dissemination of fake news and recall strategies for identifying fake news.
Conspiracy Theories	Explain the reasons why conspiracy theories are so pervasive, the motivations for those who spread them, why they are dangerous and how to apply logic to defeat them.

Instructional Design

Each lesson provides content, one or more practice activities, and several assessment options, among which are review quizzes or assessments requiring written responses. In addition to teaching media literacy alongside critical thinking, another major goal of this project was to offer instruction that is adaptable for instructors to integrate into their own course design, but also efficient, effective, and user friendly for them and their students. For this reason, the team settled on one module, rather than six, with each item identified and listed according to the lesson the module item belongs to. In the LMS, each lesson is a module item (1.1, 2.1, 3.1, etc.) followed by two more module items, a "Conclusion and Next Steps" (1.2, 2.2, 3.2, etc.) and a review assessment (1.3, 2.3, 3.3, etc.). Additionally, the module itself includes an Introduction, Overview, and a short video instructing students how to complete the module.

Each lesson was created as content in both a PowerPoint and as an html page in the University's learning management system (LMS), which used Brightspace / Desire2Learn (D2L). A major goal of the teaching innovation project was to allow for instructor flexibility to increase adoption of the instruction across the two-year institution withing the University. The PowerPoint versions of each lesson enable instructors to teach one or more of the lessons in person and assign the practice activities and assessments as homework to complete online. The LMS version of the module is replicated as much as possible in the lesson PowerPoints which includes identical content and practice and review questions.

The lessons are composed of content generated by the instructional innovation design team and resources such as infographic posters and short videos offered to the public by outside organizations such as non-partisan organizations and mainstream news outlets. These posters and videos are embedded or inserted in the LMS content to allow for a seamless learning experience online. The lesson content draws the reader's attention to key concepts and concludes with a "Want to Know More?" section offering additional articles and videos expanding on the subject matter. To hold the attention of students and increase understanding and retention, the lesson content makes use of an instructor voice, catchy themes and pop culture, and humor. For example, in "Junk Sources", multiple references, written and visual, are made to junk food. The lesson focused on critical thinking and designed to teach students about obstacles to critical thinking and logical fallacies, is titled "Zombie Logic" and includes a section on "Seven Deadly Fallacies". Each lesson is followed by a "Conclusion and Next Steps" designed to reiterate and remind students of key concepts or "take-aways", the threat of misinformation to democracy, and how they can help.

One or more practice activities are embedded in each lesson and must be completed to access the lesson's review assessment. Practice activities do not count towards a grade and provide feedback since these activities are to allow the student to practice recall and understanding and to apply any skillsets learned in the lesson. A major reason for ungraded practice activities was to minimize the need to assign or review grades beyond those generated from the review assessment. Instructors on the design team and in the faculty focus group sought to avoid over

complicating their LMS gradebook. Therefore, the module was designed to generate five review assessment grades within one grade category worth 5 to 10 percent of the student's course grade. To ensure students are completing the lesson content and its practice activity when there is no grade incentive, release conditions were attached to each review assessment that require completion of the lesson content module item and the practice activity, which is a survey in the LMS. Practice activity links take the student to an LMS survey that includes questions, some of which are based on open third-party practice resources such as the quizzes offered by the News Literacy Project or mainstream news organizations such as *The Washington Post*.

The default review assessments are six five-question review quizzes, one for each of the six lessons. These review quizzes are automatically scored multiple choice type questions to minimize the need for the instructor to review or manually grade responses. The module does include one written response question per lesson that is delivered as a discussion board prompt or an essay question in a separate quiz that instructors may choose to utilize in place of or in addition to the review quizzes. All practice (survey) and assessment questions are housed and organized within the LMS question library to allow for individual instructor modifications as to how students are assessed. The written response questions and the discussion questions are directly tied to the module learning outcomes.

To meet our goals of effectiveness, efficiency, and versatility, the module has cross-disciplinary learning outcomes, current content and practice opportunities organized in a logical and straightforward format that is easily integrated into an existing course. Therefore, the design team worked to create an optimal student experience that meets expected learning outcomes, while reducing barriers for instructor implementation and student navigation. The module includes an instructor implementation guide that provides details on module components, technical operations, student assessment options, and delivery methods. In addition, there are instructions on ongoing module evaluation, where to suggest revisions and how students receive notifications of module completion.

Due to the collaborative nature of the content development and pilot, by the end of the Fall 2021 term, the module designers were able to prepare 20 enthusiastic instructors to assign the lessons in Spring courses. Additional recruitment and training presentations were made by team members through university venues including professional development days, CETL webinars and to a related Teaching and Learning Community. To date, approximately 40 instructors have adopted all or parts of the module from the Humanities, Social Sciences, and Science departments. Most adopters have deployed all six available topics. The Honors Program of the university's largest college adopted the entire module for its orientation course. Interest continues to grow in the module and an expectation that adoption of the program expands at the home college and while being introduced across other colleges at the university.

The Study / Research Design

This study relies on student evaluation of the module's instructional design, including learning outcomes, relevancy, and avoidance of bias; and on student self-reporting of their own views, practices, and skills regarding media literacy before beginning the module and after its completion. The students completing the module and the survey are typically first and second year students seeking an associate degree from a two-year college within a four-year public university. Some students enrolled in a course adopting the module may be students of the four-year bachelor's program.

A survey was created using Qualtrics and was linked as the last item in the "Critical Thinking in the Age of Misinformation" module. Student responses were anonymous and initially gathered to inform any necessary modification and updates to the module's instructional design to ensure it achieves, as much as possible, the goals of the instructional design project and the established learning outcomes. The survey was deployed beginning with the module's pilot in the 2021 Fall semester. Given that this was a team project and initial edits followed an early faculty focus group, only minor modifications were made to the module. Updates to content to ensure the currency and relevancy of the module were made one year later. Student responses were collected throughout the 2021 – 2022 academic year and in the fall semester of 2022. After four semesters, over 600 responses were collected across multiple courses and disciplines. Among the courses in which the module was adopted are introductory sections in American Government, American History, Humanities, Psychology, Philosophy, Religion, Critical Thinking, Environmental Science, and English. A plurality of the students indicating the course in which the module was completed stated their course as Introduction to American Government. This is likely due to the inclusion of two instructors in Political Science on the instructional innovation team and the convergence of the module's content with lessons on the media and politics in Introduction to American Government, a required course in many states.

Survey questions put to students were along the following lines of inquiry, with a 5-point Likert scale used for responses:

- What degree of importance would you place on the skillsets covered in the module before beginning it and after completing it?
- How frequently did you critically evaluate information and sources before beginning the module and how might this change after completing it?
- How would you rate your ability to apply critical thinking skills when consuming information before beginning the module and after completing it?
- Consider the following aspects of the module and indicate your level of satisfaction or dissatisfaction with each one (topics, objectivity of the topics and of the module overall, and relevance of the topics to everyday life)
- How well the module achieved the following objectives: (1) increasing my awareness of the need for critical thinking and media literacy in general; (2) developing my critical
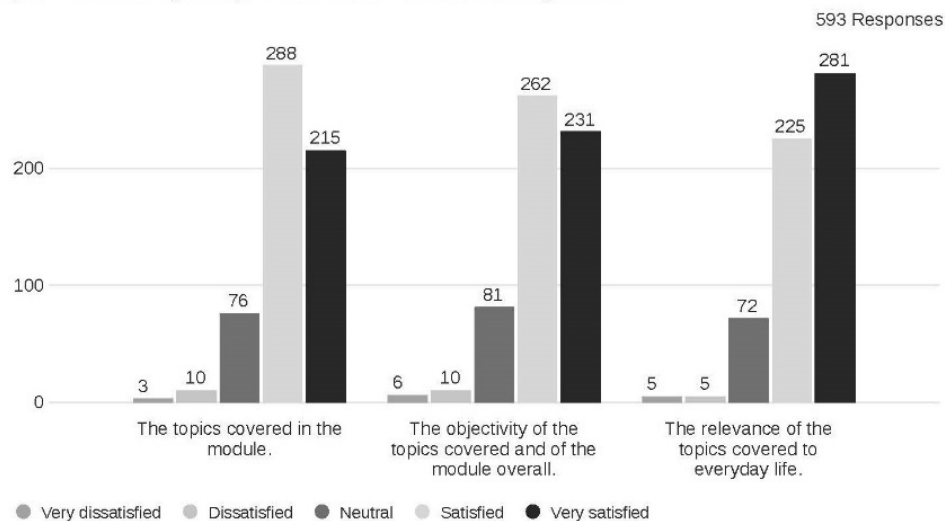
thinking skills; and (3) teaching me how to identify unreliable sources and forms of misinformation.

Findings

Roughly 590 individual student responses were used in the study once survey results were restricted to respondents who completed all the survey questions requiring self-reporting of behaviors and skills and evaluation of the instruction.

Evaluation of the Module / Instructional Design: Student satisfaction with the module was overwhelmingly positive. As shown in **Figure 1**, most of the students indicated they were either "satisfied" or "very satisfied" with the (1) topics covered, (2) the objectivity of the topics and the module overall, and (3) with the relevancy of the topics.
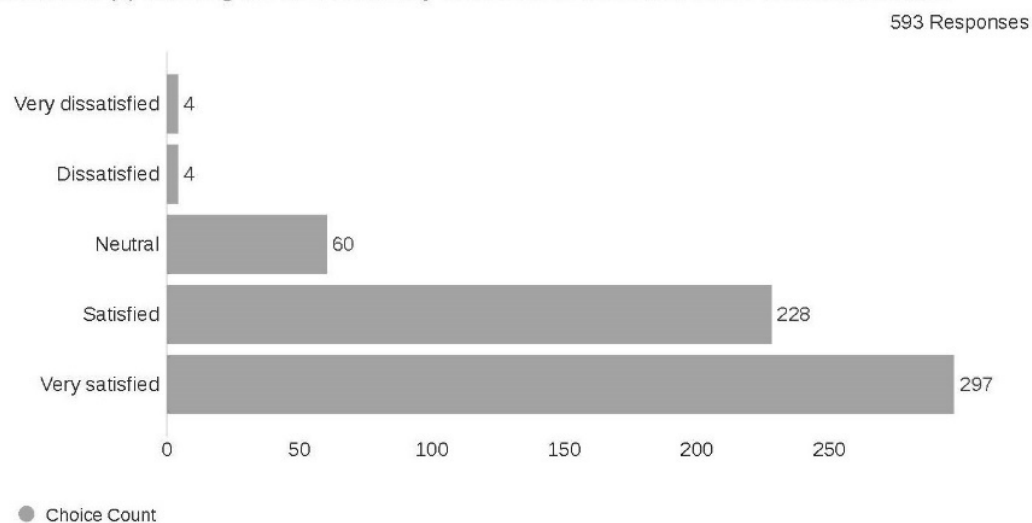
Fig. 1 - Number of students indicating level of satisfaction with different aspects of the module: topics covered, objectivity, relevance, achievement of objectives.

593 Responses

	The topics covered in the module.	The objectivity of the topics covered and of the module overall.	The relevance of the topics covered to everyday life.
Very dissatisfied	3	6	5
Dissatisfied	10	10	5
Neutral	76	81	72
Satisfied	288	262	225
Very satisfied	215	231	281

Additionally, as shown in **Figure 2**, most of the students indicated that they were "satisfied" or "very satisfied" when how well the module achieved the objectives of increasing awareness of the need for critical thinking and media literacy, developing critical thinking skills, and identifying unreliable sources and forms of misinformation. **Figures 1** and **2 show** that no more than 3 percent of the students studied indicated dissatisfaction with the instructional design measures. On average, approximately 84 percent of the students surveyed indicated they were "satisfied" or "very satisfied." Two priorities of the instructional innovation team were for students working through the module to value the instruction. Student perceptions of value

are integral to student learning. A perception of value of the instruction involves, among others, a student's belief that the content is not bias, is credible, and important or relevant to their lives. For this reason, it is especially pleasing to find a consensus among the students viewing with satisfaction the objectivity and relevancy of the instruction. In fact, "very satisfied" was the choice of the plurality of the students on the relevancy measure.

Fig. 2 - How well the module achieved the following objectives: (1) increasing my awareness of the need for critical thinking and media literacy in general; (2) developing my critical thinking skills; and (3) teaching me how to identify unreliable sources and forms of misinformation.

593 Responses

Choice	Count
Very dissatisfied	4
Dissatisfied	4
Neutral	60
Satisfied	228
Very satisfied	297

● Choice Count

Student Determinations of the Importance of Media Literacy and Critical Thinking Before and After Instruction: As stated earlier, the findings of the study stem from self-reported opinions, behaviors, intentions regarding media literacy. Questions were included to distinguish what they believed or did prior to beginning the module from their opinions and intentions formed after its completion. Given the relevancy and application of the module to current issues and events, youth reliance on new media, and the practice of skills included in the instruction, we expect to see more students placing value on the instruction, to feel better equipped because of the instruction, and to intend to be critical consumers of information moving forward. The findings of the study suggest support for this expectation.

As shown in **Figure 3**, the study found that the number of students stating that evaluating sources and news media and developing critical thinking and media literacy skills were either "important" or "very important" roughly doubled. This corresponds to a substantial decline among students who held a "neutral" position or viewed media literacy and critical thinking as "unimportant" prior to beginning the module.

Fig. 3 - Number of students assigning each level of importance before beginning the module and after completing it.
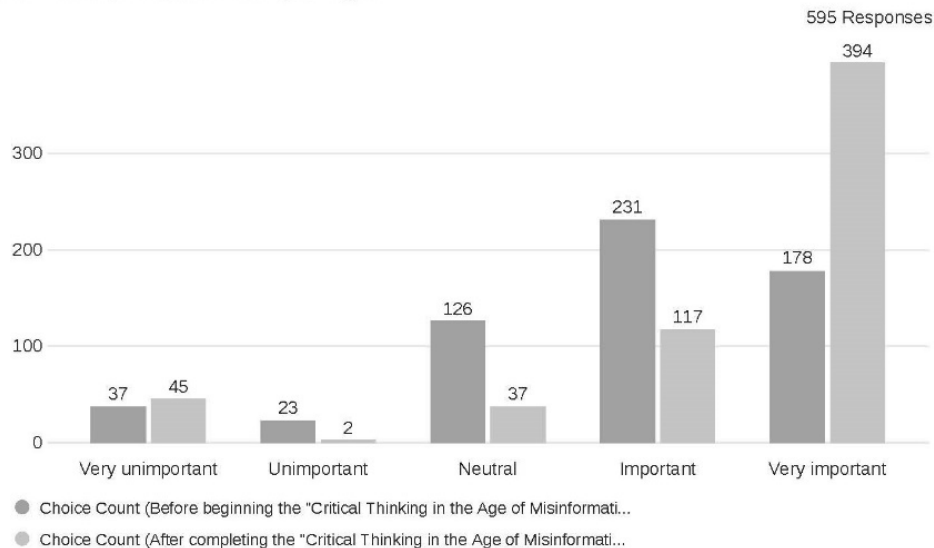
As expected, students viewing these as important before beginning the module held that view or assigned greater importance to media literacy and critical thinking if not already assigning the greatest importance. An examination of the data on the opposite end of the Likert scale shows that nearly 80 percent of those originally in the "very unimportant" category continued to hold this view. Though most of the students did not feel the topic was unimportant, most of those that did see media literacy and critical thinking as unimportant– nearly 80 percent here as well – assigned importance to the subject matter after completion of the module.

Among the students who did not view media literacy and critical thinking as important prior to beginning the module - selecting "very unimportant", "unimportant", or "neutral" - most indicated their opinion as "neutral", rather than unimportant. An analysis of the data reveals that roughly half of these students shifted to "very important", and one-fourth to "important." In sum, 74 percent of those holding a neutral position before beginning the module, believe media literacy and critical thinking to be important after completing it.

Student Assessment of Their Ability to practice media literacy before beginning the module and after completing it:

The findings concerning student self-assessment of their ability to practice media literacy before beginning the module were troubling, but enlightening. The highest number of students indicated that they were "good or average" in applying media literacy, which is to say, critical thinking when consuming information, particularly news media and social media. "Fair, but sometimes poor or inconsistent" was chosen by the second highest number of students. Out of the responses analyzed, only one-third selected "very good" or "excellent", indicating that they

were confident in their ability to evaluate sources and information. One-quarter, or one in four students, rated their ability as either "very poor" or "fair…".

As **Figure 4** illustrates, the module instruction appears to have generated very positive outcomes. The number of students stating their ability to practice media literacy as "very good" or "excellent" more than doubled from one-third to nearly three-fourths of those analyzed. The data shows substantial increases in each of those two categories compared to the numbers in those categories when students were asked to rate their abilities before beginning the module.

Fig. 4 - Number of students indicating each level of ability in applying critical thinking skills when consuming information, particularly from news media and social media, before beginning the module and after completing it.
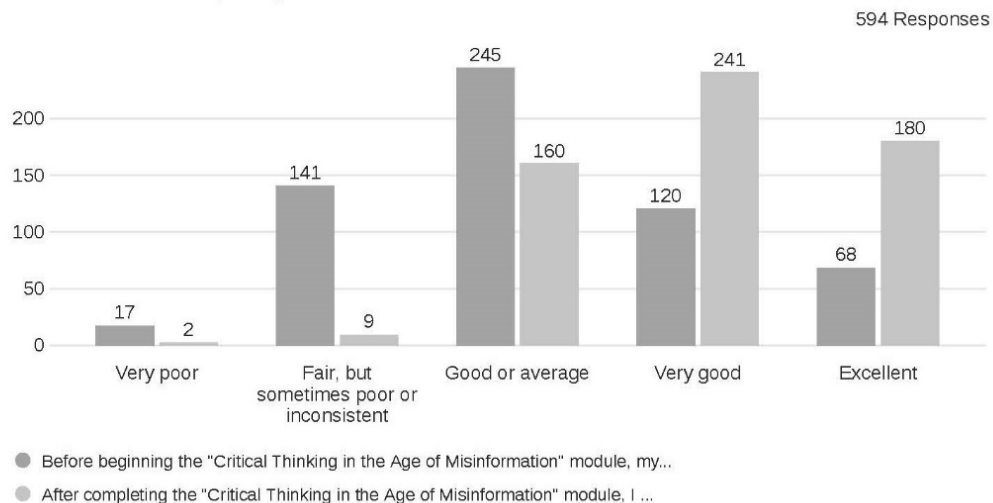

Nearly all the 67 students who rate their abilities prior to beginning the instruction as "excellent" held that their abilities remained "excellent" after completion. Though not measured in this study, it is possible that these students have a background in media literacy instruction or are media skeptics rather than critical consumers. More positively with respect to the effectiveness of the instruction, a narrow majority of the students in the very poor and fair, but sometimes poor or inconsistent categories believed that completion of the module put them in the good or average category. Also positive, is that a majority of students that placed themselves in the "good or average" category and the majority of students that placed themselves in the "very good" category shifted up one level in their abilities to "very good" and "excellent", respectively. Another one-third of the "very poor" before beginning the module students went even further to select "very good" as their post-module rating as did just under 40 percent of the "fair…" students who selected "very good". The analysis finds that out of 580 students, only 11 students - down from roughly 150 - rated their media literacy skills as fair or poor despite completion of the instruction.

Student frequency in evaluation information and sources before and after completing the module:

Among the goals sought through the creation of the module and the subsequent study were to determine the extent to which students used media literacy skills and to increase their ability but also desire to do so. As seen in **Figure 5**, the study findings suggest that most of the students – roughly two-thirds – were, at best, infrequently and inconsistent in using media literacy when engaging with information and sources, particularly news sources and those shared on social media, as indicated by the survey responses. The remaining students indicated that they "regularly" or "always" attempted media literacy prior to beginning the module. When self-reporting their frequency of applying media literacy, the plurality chose "occasionally", which was just under half of the students. This of course does not speak to the skill to which they occasionally attempted media literacy. Among those that indicated they "never" or only "rarely" used media literacy, most shifted in a positive direction in their post-module intentions, selecting to "occasionally", "regularly", or "always" use media literacy. Just under 40 percent of the "never" group indicated that would not substantially increase their frequency in media literacy application. Nearly half of those in each of the "rarely", "occasionally", and "regularly" categories indicating their pre-module behavior, shifted one level up in frequency of media literacy practice.

Fig. 5 - Number of students indicating each frequency of evaluating information and sources, particularly news sources, including that shared on social media before and after completing the module.
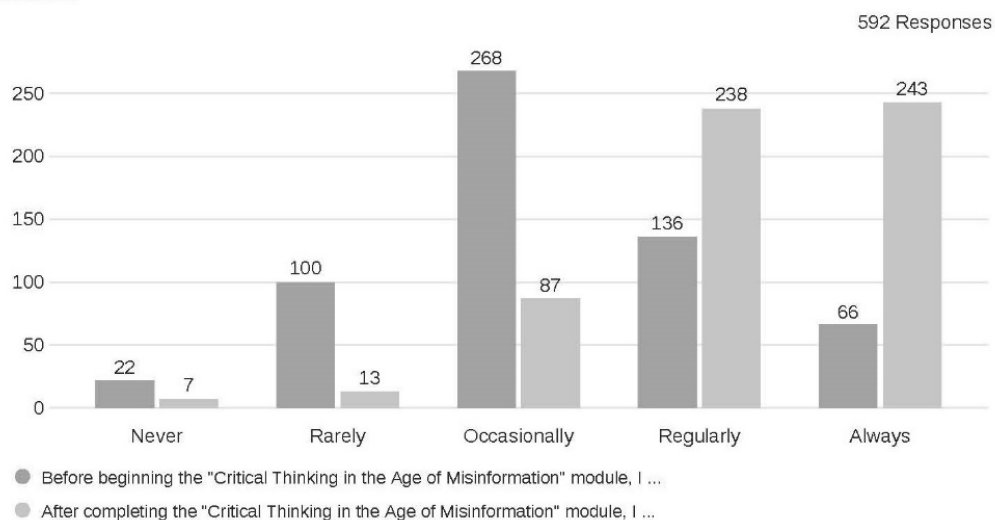
One of the most positive findings of the study is that the number of students indicating a plan to "regularly" or "always" use media literacy moving forward more than doubled from the number that self-reported regular, frequent, and consistent use of media literacy prior to beginning the instruction. Roughly 80 percent of the students indicated that in their post-module lives they would "regularly" or "always" critically evaluate information and sources. In

conclusion, it is expected that when perceptions of the value or importance of using media literacy increase alongside the ability to practice it, there will be a similar increase in application of media literacy, or at least intentions to do so.

Conclusion and Next Steps

Our objective for this project was to create an interdisciplinary module offering interactive instruction in the areas of critical thinking and media literacy. This objective was achieved by identifying and completing action items in the following areas: module development, including garnering feedback and making revisions; module implementation, both by the design team and interested faculty; module assessment, securing feedback from both faculty who use the module and from student users.

Student survey responses show a rise in the number of students that view the need to apply critical thinking and media literacy skills as important. Additionally, data suggests most students perceive themselves as better equipped to use critical thinking and media literacy skills, and plan to use these skills more often in their personal and professional lives than they did before completing the module.

In the area of Assessment, student attitudes data has been collected from for five terms to date. Assessment results will inform the next steps which include interest in expanding data collection to pre-and-post module evaluation of competency development. While feedback was secured from faculty in the development phase, another line of inquiry might be to design a follow-on faculty survey on attitudes and efficacy.

This module development project has been an invaluable experience. The seed planted in the Summer of 2021 continues to grow and is producing its first fruits of labor showing positive outcomes. With this assessment data and additional research, the design team plans to loop back to redevelopment, engage in further implementation modifications and expand assessment avenues. We are confident that this project will continue to propagate and hopefully serve as a model for the kind of innovation in SoTL research and pedagogy that collaboration between colleagues can produce at our home institution and the academic community at large.

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