Reading Hoax: Measuring Students' Critical News Literacy

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Abstract

Media literacy has become increasingly crucial in today's digital age as it is essential for students to learn how to critically evaluate news sources to identify hoaxes and make informed decisions. This study aimed to evaluate the impact of a media literacy course that had been running for 20 years on students' critical news literacy skills and critical thinking. Students were divided into two groups and asked to assess media texts. The results revealed that critical thinking was more significant for news literacy than media literacy. The study found that students' critical news literacy skills were at a moderate level, with many struggling to recognize hoaxes in media texts. This finding suggests that further study is necessary to identify the factors influencing this, as well as how students interact with hoaxes in their daily lives.

Keywords: hoax, media literacy, critical thinking, critical news literacy

1. Introduction

The media literacy movement in Indonesia began in the 1990s, but it only gained momentum in the 2010s. The development of media literacy in Indonesia can be divided into three periods: the search for forms from 1990 to 2000, maturation from 2000 to 2010, and slow development thereafter (Syukri et al., 2019). The current period is referred to as slow development because the media literacy movement is now experiencing a decline and is being replaced by a broader scope, namely digital literacy(Ganiem & Agustina, 2023). Over the past three years, the echoes of the digital literacy movement have overshadowed the meaning of the media literacy movement itself. Moreover, several studies use the terms media literacy, digital literacy, and digital media literacy interchangeably (Limilia & Aristi, 2019).

Despite being in existence for over three decades, formal education in media literacy is not widely practiced in Indonesia. Only recently has media literacy been included in the school curriculum as a separate subject. However, some educational institutions, such as Lentera Insan, Semi Palar, and the Early Childhood Care & Development Resource Center (ECCD-RC), incorporate media literacy material into their curriculum or offer it as an extracurricular activity, as shown in a study by Rumah Sinema (Hendriyani & Guntarto, 2018). Furthermore, several universities, including the University of Indonesia, Bandung Islamic University, Diponegoro University, Padjadjaran University, and Paramadina University, have been active in promoting media literacy since its early development in Indonesia.

Media literacy courses have been offered at the Faculty of Communication Sciences at Bandung Islamic University (Fikom Unisba) since 2010. Initially, the course was only taught to journalism majors. However, since 2017, it has become a mandatory course for all students at the faculty. This is part of the faculty's efforts to keep up with the demands of communication and information technology development.

In light of the prevalence of digital communication, it is crucial for individuals, especially students, to possess adequate digital media literacy skills. This encompasses several competencies, including the ability to find, access, and consume information and content from various sources; critically analyze and evaluate data; create creative messages; contemplate and act ethically; and participate in social activities, either individually or in conjunction with other parties (Hobbs, 2011; Sulaiman & Ahmadi, 2020; Susilo & Smith, 2023).

Given the recent advancements in technology and science, many researchers have focused on the subject of news literacy (Ashley et al., 2013a; Capraro & Celadin, 2022; Ireland, 2018; Tully, Vraga, & Bode, 2020; Tully, Vraga, & Smithson, 2020a) due to the emergence of the post-truth era, the abundance of information, and the prevalence of

hoaxes in the media. News literacy, also known as news media literacy, is used to evaluate media messages (C. Fisher, 2018; Tugtekin & Koc, 2020), comprehend the news (Jang & Kim, 2018; Rahayu et al., 2019; Tafriet et al., 2019; Zainal et al., 2020; Zannettou et al., 2019), and consume news critically (Ahmadi, Lisnur, et al., 2023; Azevedo, 2020; Barton, 2019; Friesem, 2019; Rahardi, 2020; Tully, Vraga, & Smithson, 2020a). Studies suggest that critical thinking skills, particularly related to the consumption of news content, are crucial in the digital age due to an increase in hoaxes, false news, and various forms of misinformation.

Research on critical media literacy and news literacy has been conducted using various contexts and methods, particularly in media literacy, which encompasses news literacy as a key aspect of its study. News literacy covers the study of hoaxes, false information, and fake news, from production to distribution and consumption. Moreover, news literacy evaluation is often linked to the development of critical thinking skills.

Studies on media literacy, particularly news literacy, are often associated with diverse audiences. Students in the Gen Z age range are a potential audience for the media (Satriani et al., 2022). Furthermore, this group dominates internet usage in Indonesia, as it has been established that the highest internet penetration is in the 13-18 age group. On top of that, almost all (99.16%) of them are connected to the internet (APJII, 2022)[1]. Thus, the ability to consume media critically becomes crucial for these students as they are preparing to become the future leaders of the country. However, data indicates that Gen Z students tend to be inattentive and have difficulty detecting hoaxes (Dailysocial.id, 2018)[2].

This study aims to measure the impact of media literacy course and students' critical thinking skills in recognizing real news and fake news on the level of news literacy among students at Fikom Unisba. The objective is to assess students' ability to identify hoaxes and determine effective approaches for teaching media literacy in the classroom to enhance students' critical news literacy skills.

A plethora of studies on news literacy has been conducted, including one on news literacy skills in a meme-driven world (Ireland, 2018). This study was based on the premise that many individuals lack the necessary skills to distinguish real news from false news, and often rely on social media memes for information. The study's findings suggested that while librarians may not be able to entirely eradicate fake news, they can limit its spread by teaching library users how to recognize fake news and identify trustworthy sources. In this study, news literacy referred to the ability to differentiate between factual and fictional content and to identify reliable news sources.

Maksl conducted research on students who had taken news literacy courses and found that the courses improved their media literacy, knowledge of current events, and motivation to consume news (Maksl et al., 2017). This research provided an effective news literacy model and curriculum based on the news media literacy model. In the current digital age, news literacy is essential for citizens and refers to the ability to use critical thinking to assess the legitimacy and accuracy of the news from various sources, such as print, television, radio, and the internet.

The Stony Brook University news literacy curriculum was developed based on the news media literacy model, providing students with the knowledge and tools to become informed news consumers. The curriculum focuses on journalistic principles and ethics, various forms of news media, and the ways in which news media can shape public opinion, as well as the impact of technology on news delivery. By examining these topics, students develop a deeper understanding of the news and the ability to question and evaluate news sources for accuracy and bias. The curriculum also emphasizes the importance of seeking diverse perspectives and sources, as well as media literacy principles, such as verifying information, recognizing cultural and ideological biases, and understanding the role of advertising in news media. Through this curriculum, students become more critical readers, viewers, and consumers of news.

In the post-truth era, news literacy requires users to adopt a critical and questioning approach toward media sources,

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[1] https://dataindonesia.id/digital/detail/apjii-pengguna-internet-indonesia-tembus-210-juta-pada-2022. Based on the results of a survey by the Indonesian Internet Service Providers Association (APJII), there are 210.03 million internet users in the country in the 2021-2022 period.

[2] https://dailysocial.id/post/laporan-dailysocial-distribusi-hoax-di-media-sosial-2018. Hoaxes have become a major issue in the digital age, with a variety of platforms - such as Facebook, WhatsApp, and Instagram - being used to spread dubious or false information. A survey conducted in Indonesia by Jakpat Mobile Survey Platform and dailysocial revealed that 82.25% of respondents encountered hoaxes on Facebook, 56.55% encountered them through WhatsApp, and 29.48% encountered them on Instagram.

When it comes to detecting hoaxes, 44.19% of those surveyed were unsure if they could identify them. When facing hoaxes, 51.03% of respondents preferred to stay silent and did not believe the information shared. This surveyed highlighted the need for increased efforts to educate users on identifying hoaxes and debunk false information, in order to reduce their spread and impact.

enabling them to identify and differentiate information based on evidence and sound judgment. A study by (Ku et al., 2019) explored the relationship between social media news consumption, news media literacy, and critical thinking skills among 1,505 young people aged 12-18. The study found that internal motivation for news search, conscientiousness towards algorithms that personalize news on social media, and a habit of tracking news sources were all skills closely associated with critical thinking regarding real-life news. Regression analysis showed that news consumption and news media literacy had both unique and collective impacts on an individual's ability to think critically about the news. Additionally, the study found that the combination of news literacy and news consumption resulted in higher levels of critical thinking among young people.

Fact-checking is an activity closely associated with critical news literacy. A study conducted by (Ahmadi, Sulaiman, et al., 2023; Fardiah et al., 2021) examined the fact-checking literacy of the COVID-19 infodemic on social media in Indonesia through the Instagram account @jabarsaberhoaks (Ahmadi & Adzhani, 2019). The study found that the account admin conducted fact-checking by searching for data on various hoax themes and verifying them with sources from verified media, authorized agencies, and expert sources, both locally and internationally. The fact-checked articles were then uploaded to Instagram to help the public understand and respond appropriately to the COVID-19 phenomenon. This study highlights the importance of stakeholders intensifying their campaigns to educate the public about COVID-19 information as a form of literacy.

A study conducted by (Pradekso et al., 2018) investigated the effects of digital media literacy campaigns on young people's understanding of fake news or hoaxes. The study found that participants who attended the training had a basic understanding of the terms and meanings of fake news or hoaxes but required assistance in detecting and distinguishing between real news and fake news on social media.

News literacy examines a person's ability regarding news consumption and media messages. It is the study of an individual's capacity to understand the media and its messages when consuming news. (Tully, Vraga, & Bode, 2020) investigated how news literacy messages can be effectively disseminated on social media platforms such as Twitter using quantitative path analysis. The study's findings suggest that multiple and repeated messages are necessary to effectively change people's perceptions of misinformation and their beliefs in news literacy.

News literacy encompasses an individual's ability to identify hoaxes as part of their critical thinking skills. (Mansur et al., 2021) conducted a quantitative study to measure how well adolescents can differentiate between genuine news and fake news, and how fake news affects adolescent cognition. The study was conducted with 100 students attending SMKN 57 Jakarta by administering a questionnaire. The results showed that students' cognition did not have a significant effect on their ability to recognize hoaxes.

Social learning theory, developed by Albert Bandura in 1986, is an extension of the traditional behavioristic learning theory and proposes the S-O-R model (Stimulus-Organism-Response), which states that individuals produce responses when given a stimulus. This theory emphasizes the role of cues in affecting behavior and internal mental processes. Bandura's theory suggests that humans are capable of learning and adapting to new situations and experiences, and can learn from observing the behavior of others (Bandura, 2001). This is known as vicarious learning, and it is an essential part of the social learning theory.

Bandura's social learning theory is based on five assumptions: (1) learning primarily takes place through imitation or modeling; (2) individuals actively decide which behaviors to imitate and how often; (3) imitation or modeling is a form of learning that occurs without direct experience; (4) indirect reinforcement is as effective as direct reinforcement in facilitating and producing imitation; and (5) internal mediation is necessary for learning, as it affects the outcome when sensations and sensory inputs form the basis of learning and behavior (LESILOLO, 2019). Learning media literacy in the classroom is one way to apply social learning theory, making it the primary theory in this study.

Media literacy refers to the ability to understand, analyze, access, and evaluate the messages communicated through the media (Potter, 2018; Tully, Vraga, & Smithson, 2020b). Teaching media literacy in formal education is a form of social learning (Limilia et al., 2019) that has been explored by researchers. (Nizomi et al., 2018)proposed four goals of media literacy: critical awareness, discussion, critical choice, and social action. Critical awareness is especially important in ensuring audiences are exposed to the right information and understanding the news (Hendriyani & Guntarto, 2018). By teaching media literacy, students can become more informed and better-equipped individuals who are more likely to make sound decisions and take appropriate social action.

The Center for Media Literacy (Ciurel, 2022) defines media literacy as the ability to access, analyze, evaluate, create, and interact with media in all forms—from print to video and the Internet. Within this context, media literacy is a 21st-century educational approach that provides a framework for developing these skills and understanding the role of media in society. Tallim's definition of media literacy, as summarized by (Sukasih et al., 2015), emphasizes the importance of being able to filter and analyze the messages that inform, entertain, and sell to us daily. This entails

applying critical thinking skills to all media.

In this study, a media literacy course is utilized as an intervention for the experimental group to assess its impact on the critical thinking skills and news literacy of students. Therefore, the evaluation of student media literacy is not conducted using a specific tool but rather through examining the effects of the media literacy course on the critical thinking and news literacy skills of students.

News literacy, also known as New Media Literacy (NML), focuses on how people engage with news media, including the motivations of those who create news, various interpretations of media messages by audiences, and the differences between reality and media representations. The goal of NML is to equip audiences with the knowledge and skills necessary to better understand, interpret, and evaluate news media. This requires developing critical thinking skills, such as the ability to differentiate between news and opinion, identify bias and spin, verify the accuracy and credibility of news sources, and recognize the influence of emotion and persuasion in the news media (Ashley et al., 2013b). Additionally, it involves learning to analyze the ways in which news media shapes public opinion, as well as how and why news media is produced.

By having a better understanding of news media and its various influences, individuals can become more informed and active consumers of news media. This can lead to increases in media literacy, which not only has numerous positive implications for society, but can also help individuals make better decisions, become more aware of their biases, and be better prepared to engage in meaningful dialogue about news media.

To measure students' NML level, Ashley et al. (2013) developed a tool that breaks down the concept into three domains: author and audience (AA), message and meaning (MM), and representation and reality (RR). The AA domain looks at how writers target specific audiences for profit. The MM domain addresses how messages contain value judgments that can be interpreted differently by different audiences and how these messages can be crafted to influence audience behavior. Finally, the RR domain looks at how media filters and eliminates information to shape the perception of reality. Although some formal education institutions have begun to implement NML in their curricula, there is still work to be done to maximize the effectiveness of teaching media literacy.

In his book, The Anatomy of Fake News, (Higdon, 2020) argues for the need to include Critical News Literacy (NML) education in media literacy to combat the spread of fake news. Developing critical thinking skills is essential in order to critically analyze news consumption and avoid basing opinions solely on existing beliefs and preferences. If individuals rely on convenience, emotional appeal, popularity, or other heuristics instead of evidence or facts, they risk creating an "echo chamber" where they only receive content from like-minded individuals with the same point of view.

Critical thinking skills are essential for individuals to think objectively and reflectively. According to (A. Fisher, 2008), critical thinking involves the skillful and active interpretation and evaluation of observations, information, and arguments. It is crucial to consider diverse perspectives in order to form a well-rounded opinion. With the advent of digital news platforms, social media has become an immediate and significant factor in news dissemination. This increased influence of news media means that users can contribute to its development and feel more connected to the news (Kurnia et al., 2023; Park et al., 2021; Sveningsson, 2015).

Social media algorithms contribute to an environment where critical thinking about news is challenging due to filtered information reaching audiences. At the same time, social media platforms encourage heuristic news consumption by enabling users to quickly scan headlines, keywords, images, or other news highlights without taking the time to fully comprehend and evaluate the content (Zwaan et al., 2017).

In the post-truth era, it is essential for news audiences to be able to distinguish between biased and unbiased information. To this end, (Ku et al., 2019) developed a measuring tool consisting of four items to assess four sub-skills of critical thinking in consuming news, namely (1) Understanding News Content and Purpose; (2) Distinguishing Facts from Claims; (3) Identifying Trends; and (4) Evaluating the Evidence. This ability is extremely valuable and should be measured by direct application to identify hoaxes in the media. With further education and training, news consumers can become more aware of their own biases and better equipped to distinguish truth from fiction.

The term hoax has long been used to describe misinformation or fake news. Other phrases that are regularly used interchangeably with hoaxes include fake news, misinformation, disinformation, and information disorder. However, UNESCO (Ireton, Cherilyn & Posetti, 2020) specifically does not use the term fake news as it undermines the work of journalists and that news is something that is created through journalistic procedures, so there is no room for fake news. However, many researchers still use the term fake news with their respective arguments. In this study, the term hoax will be consistently used, but it does not exclude the use of other equivalent terms, such as misinformation, disinformation, or fake news.

According to (Firstdraft, 2017) , there are seven forms of misinformation circulating in the media. The first form is

satire or parody, which typically has no harmful content but can be misleading. Satire is created to criticize certain events and includes elements of parody, irony, and sarcasm. Satire does not include harmful content, but some people still consider it the truth. The second form is misleading content, which is intentionally created to discredit someone or an organization. Misleading content is formed by using original data such as photos, statements, or facts but edited in a way that has no relation to the original context.

The third form is imposter content, where a piece of information materializes the announcement of a famous and influential figure. Imposter content can also be in the form of imitation content using the reputation of a party or organization. The fourth form is fabricated content, which is considered the most dangerous form of fake content. This content is created with 100% content that cannot be justified and is usually in the form of fake job vacancy data and others.

The last three forms are false connections, fake context, and manipulated content. False connections are usually uploaded for profit in the form of sensational content. Fake context is content presented with poor narration and context, containing statements, images, or videos of events that have happened somewhere but are not accurately presented. Manipulated content contains edited information published by major and credible media, formed by editing existing content to deceive the public.

UNESCO's 2018 publication, "Journalism, Fake News and Disinformation," delineates three categories of hoaxes: misinformation, disinformation, and malinformation (Ireton, Cherilyn & Posetti, 2020). Misinformation refers to incorrect information that those who spread it mistakenly believe is valid and trustworthy. Disinformation is fabricated information created by parties with the intent of deceiving the public to influence their opinion and gain benefit from it. Malinformation is information that contains elements of truth but is presented in a way that is detrimental to others or not in the public interest. This can take various forms, such as verbal harassment, hate speech, discrimination, and the dissemination of information resulting from violations of privacy and personal data.

2. Methodology

The variables in this study consist of the media literacy course (X), students' critical thinking (Y), and students' news literacy (Z). The operationalization of these variables is derived from the concepts of critical thinking for news (Ku et al., 2019) and news literacy (Ashley et al., 2013a). The media literacy course variable is treated as a treatment in this experimental research design.

Table 1. Concept, Construct, and Indicator

NO.	CONCEPT	CONSTRUCT	INDICATOR
X	Media Literacy Course	The Media Literacy Course at Fikom Unisba	The Media Literacy Course is given at Fikom Unisba as a treatment that differentiates students who have and have not taken the media literacy course
Y	Critical Thinking	Critical thinking ability in consuming news	Figuring out the Content and Purpose of News
			Identifying Facts from Claims
			Recognizing Trends
			Assessing Evidence
Z	News Literacy	Knowing how and why people engage with news media, understanding how they make sense of what news they consume, and knowing how individuals are affected by their own news consumption	Author–Audience Audiences can read newsmakers' desire for profit and target specific audiences
			Message–Meaning Audiences understand that messages containing judgments may be interpreted differently by different audiences and that these messages are crafted using specific production techniques designed to influence audience attitudes and behavior
			Representation–Reality The audience knows that the media filters and removes information, influencing the perception of reality

Data for this study were collected through a questionnaire distributed to 120 Fikom Unisba students using a Google Form. Students in the fifth semester who had taken the media literacy course were selected as the experimental group, while the control group consisted of students in the third semester who had not taken the media literacy course. The Google Form containing the questionnaire was distributed via WhatsApp groups for classes with the assistance of several lecturers.

The questionnaire distributed in this study consisted of three parts: the self-identity section, the news critical thinking section, and the news literacy section. In the first part, the students provided their personal information and answered an open-ended question related to their knowledge of hoaxes. The second part of the questionnaire required students to identify whether a given text was a hoax, opinion, or news, and explain the reasoning behind their choice. The texts were in the form of writing, photos, and videos.

Furthermore, in the last section, the students were asked to respond to 15-point statements to measure their level of news literacy. The news literacy questionnaire was presented in the form of an agreement scale consisting of 15 items using a 5-point Likert Scale (1 – Strongly Disagree, 2 – Disagree, 3 – Undecided, 4 – Agree, and 5 – Strongly Agree). This section was divided into three indicators referring to the NML measurement tool developed by (Ashley et al., 2013). The following is the list of the statements given:

Table 2. News Literacy Scale

INDICATOR	ITEM
Authors and audiences (AA)	1. Media corporation owners impact the content material produced. 2. News corporations pick information based totally on what will attract the biggest target audience. 3. Individuals can locate news sources that reflect their political values.
Messages and meanings (MM)	4. People pay greater attention to information that suits their ideals than information that does not. 5. Two human beings might see the same information and have different interpretations. 6. People are stimulated by the news whether they recognize it or no longer. 7. News coverage of political candidates will impact public opinion. 8. News is designed to seize the attention of the target market. 9. Lighting fixtures shape how people are presented in news media, for better or for worse. 10. Manufacturing techniques can be used to persuade viewer perceptions. 11. The photographer decides what is most important when taking a picture.
Representation and reality (RR)	12. The news makes reality more dramatic than it is. 13. A story with a great picture is more likely to appear in the news. 14. A story about conflict is much more likely to feature prominently. 15. A journalist's first duty is to tell the fact and truth

Participants in this study consisted of 120 students, who were randomly selected from a population of 348 semester-five students and 367 semester-three students. The experimental group and control group were each composed of 60 participants, with the sample including 46.7% male and 53.3% female students, as shown in the following diagram:
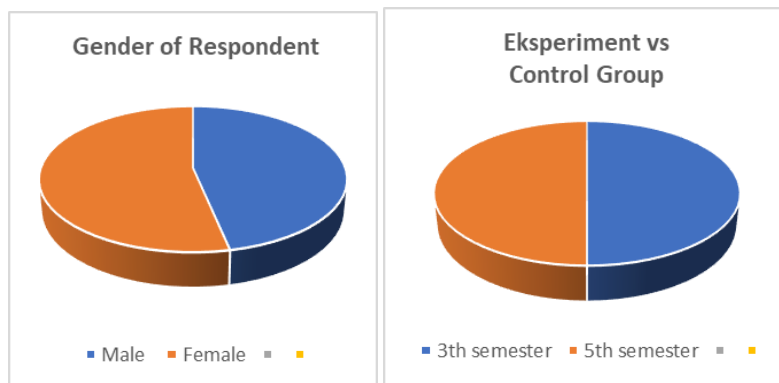

Figure 1. Respondent's Composition by Group and Gender

The data obtained through the questionnaire were statistically analyzed using the Lilliefors normality test to determine whether the data were normally distributed. This test was conducted using the SPSS application by entering the data on students' critical thinking and news literacy scores. Prior to the analysis, the data were divided into the control and experimental groups to measure the effect of the media literacy teaching treatment.

The hypotheses in this study are:

1) H_0 = Media literacy course has no significant effect on students' critical thinking skill

H_1 = Media literacy course has a significant effect on students' critical thinking skill

2) H_0 = Students' critical thinking skill has no significant effect on the level of students' news literacy

H_1 = Students' critical thinking skill has a significant effect on the level of students' news literacy

3) H_0 = Media literacy course has no significant effect on the level of students' news literacy

H_1 = Media literacy course has a significant effect on the level of students' news literacy

3. Results and Discussion

3.1 Data Analisys

The results of the normality test for critical thinking and news literacy data in the control and experimental groups are shown in Table 3.

Table 3. Normality Test

		Average	SD	L count
1	Y_1	1.850	0.988	0.222
2	Y_2	1.617	0.922	0.323
3	Z_1	58.433	5.549	0.072
4	Z_2	58.883	9.760	0.128

The Lilliefors method was used to test the significance of the primary data before processing it into a frequency distribution table. The largest $| F (x) – S (x) |$ value of each data was compared to the value of the Lilliefors table. For a sample size of more than 30 respondents, the Lilliefors table value is 0.886. The results indicated that the data of both the experimental and control groups were normally distributed.

The measurement of the correlation value test results between variables refers to the following correlation categories:

0.00 - 0.199   = very low

0.20 - 0.399   = low

0.40 - 0.599   = moderate

0.60 - 7.99   = strong

0.80 - 1.00   = very strong

The X-to-Y correlation shows a value of 0.80, which falls within the very strong category, indicating that the media literacy course has a significant effect on students' critical thinking. The coefficient of determination is 0.64, indicating that the media literacy course affects 64% of students' critical thinking skill. The remaining 36% is affected by other factors. The results of the X-Y variable correlation test are shown in the following table:

Table 4. Regression X to Y

Regression Statistics	
Multiple R	0.802706
R Square	0.644336
Adjusted R Square	0.641322
Standard Error	0.574407
Observations	120

Variable Y has a correlation value of 0.88 with Z, which belongs to a very strong category. This means that critical thinking skill has a significant effect on the level of students' news literacy. The coefficient of determination for the variable Y to Z is 0.77, which means that 77% of the variation in students' news literacy can be attributed to their critical thinking skill, while the remaining 23% may be affected by other factors. The results of the correlation test for the variable Y to Z are shown in the following table:

Table 5. Regression Y to Z

Regression Statistics	
Multiple R	0.880823
R Square	0.77585
Adjusted R Square	0.77395
Standard Error	3.760125
Observations	120

The X to Z correlation value shows 0.69 or belongs to the strong category, meaning that the media literacy course has a significant effect on students' news literacy. The coefficient of determination for X to Z is 0.47, which means that the

media literacy course affects 47% of students' news literacy. Other factors affect the remaining 53%. The results of the correlation test for the variable X to Z are shown in the following table:

Table 6. Regression X to Z

Regression Statistic	
Multiple R	0.690953
R Square	0.477417
Adjusted R Square	0.472988
Standard Error	5.741304
Observations	120

With a value of $\alpha = 0.05$, the significance value of X to Y is less than α, so it can be concluded that there is a significant effect of the media literacy course on students' critical thinking skills. The regression significance test of variables X to Y is presented in the following table:

Table 7. Significance X to Y

	df	SS	MS	F	Significance F
Regression	1	70.533	70.533	213.774	0.000
Residual	118	38.933	0.330		
Total	119	109.467			

The significance value of Y to Z is also less than the predetermined α value. It means that there is a significant effect of critical thinking skill on the level of students' news literacy. The regression significance test of variable Y to Z is shown in the following table:

Table 8. Significance Y to Z

	df	SS	MS	F	Significance F
Regression	1	5774.644	5774.644	408.433	0.000
Residual	118	1668.348	14.139		
Total	119	7442.992			

Since the significance value of X to Z is less than the value of α, it can be concluded that there is a significant effect of the media literacy course on students' news literacy. The regression significance test of variable X to Z is shown in the following table:

Table 9. Significance X to Z

	df	SS	MS	F	Significance F
Regression	1	3553.408	3553.408	107.801	0.000
Residual	118	3889.583	32.963		
Total	119	7442.992			

The regression equation shows that the effect of variable X on Y is negative, meaning that the increase in the pursuit of media literacy is not directly proportional to the increase in students' critical thinking skills. The regression equation between X and Y is shown in the following table:

Table 10. Regression Equation X on Y

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	-0.567	0.166	-3.417	0.001	-0.895	-0.238	-0.895	-0.238
X Variable 1	1.533	0.105	14.621	0.000	1.326	1.741	1.326	1.741

Next, the effect of variable Y on Z shows a positive relationship, meaning that an increase in students' critical thinking skill affects an increase in students' news literacy. The regression equation between Y and Z is shown in the following table:

Table 11. Regression Equation Y on Z

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	46.069	0.711	64.772	0.000	44.661	47.477	44.661	47.477
X Variable 1	7.263	0.359	20.210	0.000	6.551	7.975	6.551	7.975

Finally, the regression equation between X and Z shows a positive relationship, meaning an increase in the media literacy course will increase students' news literacy. The regression equation between X and Z is shown in the following table:

Table 12. Regression Equation X on Z

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	42.333	1.657	25.542	0.000	39.051	45.615	39.051	45.615
X Variable 1	10.883	1.048	10.383	0.000	8.808	12.959	8.808	12.959

Other results obtained in this study showed that the average skill of students to recognize hoaxes, news, and opinions in the media was still low, with a score of 1.85 for the experimental group and 1.62 for the control group out of a total score of 4. Meanwhile, the average score for news literacy was 58.43 for the control group and 58.88 for the experimental group out of 75 points. This indicates that the level of students' news literacy is still at a moderate level.

Table 13. Comparison of Experiment and Control Group Score

Score	Experiment Group	Control Group
Critical Thinking	1.85	1.62
News Literacy	58,88	58,43

The frequency distribution of the value distribution of students' critical thinking skill in the control group that has not taken media literacy course and the experimental group that has taken media literacy course is visualized in the following diagram:
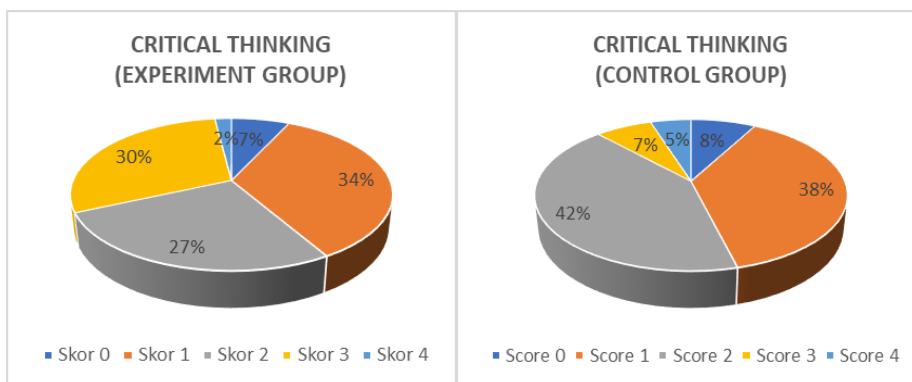

Figure 2. Critical Thinking Score

The measurement of critical thinking using a Likert scale shows that the experimental group is dominated by a score of 3, accounting for 34%, while the control group is dominated by a score of 2, accounting for 42%. This means that in the experimental group, there are more students who answered questions correctly, namely 3 out of 4 questions.

Meanwhile, the frequency distribution of students' news literacy level in the experimental group who has taken the media literacy course treatment compared to the control group who has not taken the media literacy course is visualized as follows:
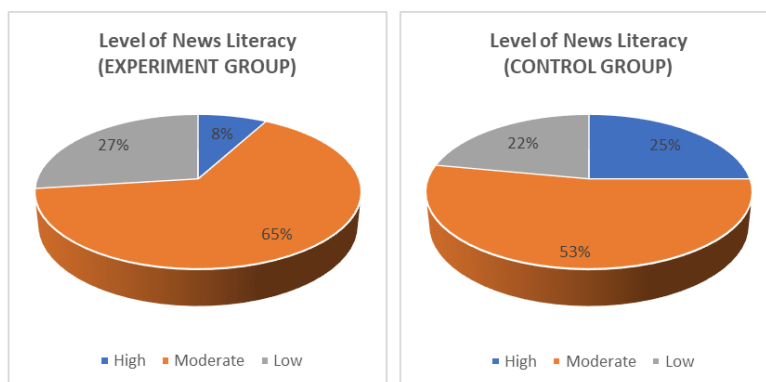

Figure 3. Respondent's Composition by Experiment vs Control Group and Gender

The majority of students in both the experimental and control groups demonstrated a moderate level of news literacy. In the experimental group that had taken the media literacy course, 65% showed a moderate level of news literacy, while in the control group, it was 53%.

3.2 Critical News Literacy

The application of the critical media literacy framework in learning enables students of all grade levels to analyze messages conveyed through various media forms in a critical manner (Allen et al., 2022). Media literacy is a crucial skill for students of all grades, as it enables them to critically analyze information conveyed through various media forms. This is especially true for news literacy, which requires the ability to think critically about the news. However, the findings of this study suggest that media literacy courses alone may not necessarily improve the level of news

literacy among students, especially in terms of their ability to recognize hoaxes, news, and opinions in the media. The study indicates that media literacy courses that do not emphasize this ability have little effect on increasing student news literacy competence. On the other hand, the ability to think critically, as an intermediate variable, significantly affects the level of students' news literacy.

Jolls and Johnsen emphasizes the importance of critical news literacy, noting that it is a critical-thinking skill for the 21st century (Jolls & Johnsen, 2017). He proposes three strategies for teaching critical thinking and how to consume media responsibly: (1) Reinventing current events by discussing actual events and analyzing how the information was produced or disseminated; (2) Exploring the power of information by discussing its impacts, both positive and negative; and (3) Fact-checking challenges, which involve students verifying facts themselves. These strategies can help students gain a higher level of news literacy and become more informed citizens.

The current digital information ecosystem requires individuals to have the ability to distinguish between real and fake news. Although students in the Gen Z age range tend to be tech-savvy, this study found that recognizing hoaxes in messages is not easy. Another study by (Pereira & Moura, 2022) suggests that media literacy education, especially critical news literacy, should be included in formal education curricula to develop critical thinking skills, which can be utilized to identify hoaxes in the media. In Indonesia, the government has created a media literacy module for elementary school students, which is expected to be implemented and expanded in schools.

3.3 How Students Read Hoax

Although many students are capable of critical thinking, they still require assistance in correctly identifying whether a text in the media is a hoax, news, or opinion. In theory, as digital natives, the students possess a technical understanding of digital media. This is supported by the Katadata Insight Center (KIC) survey conducted in collaboration with the Ministry of Communication and Informatics (Kominfo, *Kementerian Komunikasi dan Informatika*) in 2021, which revealed that 60% of Gen Z respondents have a high level of digital literacy. The survey referred to the four pillars of digital literacy, namely Digital Skills, Digital Culture, Digital Safety, and Digital Ethics.

It is evident that students have a good grasp of digital literacy and are aware of what is considered a hoax and what is news or opinion. However, the ability to recognize whether a text in the media is a hoax, news, or opinion is a skill that must be learned and developed. It is not enough to understand the technical aspects of digital media – analytical and critical thinking skills are also necessary for students to assess the accuracy, relevance, and trustworthiness of the text.

To help students develop critical thinking skill, educators must equip them with the necessary knowledge about digital media and the tools to evaluate and analyze the text. This could include teaching students about the four pillars of digital literacy. Educators should also encourage students to develop the habit of questioning, researching, and verifying the accuracy of information. Additionally, providing students with real-world exercises, such as case studies and role-playing activities, can help them hone their analytical and critical thinking skills in recognizing and discerning hoaxes, news, and opinion.

In this research, students are given 5 examples of information and asked to identify whether the information is a hoax or not. The hoaxes presented in the experiment included political, entertainment, gender, health and religious hoaxes. All five are presented in the form of text, images with narration, and videos.

However, this study found that the students' ability to recognize hoaxes as part of their Digital Skills was low. Although they conceptually understand what hoaxes mean, they need help to differentiate between hoaxes, news, and opinion when presented in the form of media text. Several factors can make a person unable to recognize hoaxes, as found in previous studies. These factors include a lack of a critical attitude to explore evidence or carry out fact-checks on the news being consumed (Allen et al., 2022); the habit of consuming media sporadically and not in-depth (Zwaan et al., 2017); a preference for information that is currently trending in society, displayed in a short message with an attractive graphic design (F. Darmawan, D. Fardiah, R. Rinawati, K.L. Fadillah, 2022); the belief that they can easily recognize hoaxes (Papapicco et al., 2022); information abundance in the media and the existence of aggregation and clickbait (Molyneux & Coddington, 2020); and existing political, cultural, social, and emotional conditions (Anom et al., 2022; Currie Sivek, 2018; Rosenbaum et al., 2021; Schrøder, 2019; Wahyono et al., 2020).

4. Conclusion

Media literacy lessons that have been given through separate courses do not have a significant effect on increasing students' news literacy. This could be because the method of teaching media literacy places less emphasis on critical thinking skill, which is crucial for recognizing the accuracy and trustworthiness of information in the media, including whether it is a hoax, news, or opinion. The novelty of this study lies in using critical news literacy as a benchmark for measuring the success of media literacy education in the classroom. Furthermore, there is still a need for further research to improve students' ability to recognize hoaxes in media messages, which should be studied more broadly and comprehensively.

This research provides an overview of students' ability to recognize hoaxes and the effectiveness of a media literacy course in developing critical news literacy. However, there are limitations to this study. One limitation is the small sample size, which limits the generalizability of the results. Another limitation is the lack of inclusion of other potential predictors that may affect students' media and news literacy.

To address these limitations, future researchers could use Structural Equation Modeling (SEM) as a multivariate analysis technique to identify factors beyond the critical thinking skill that affect students' news literacy. Additionally, qualitative research methods could be used to gain a more in-depth understanding of how Gen Z interacts with hoaxes in their daily lives.

Acknowledgments

Not applicable.

Authors contributions

Not applicable.

Funding

Not applicable.

Competing interests

Not applicable.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Redfame Publishing.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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