

DEVELOPING INTERACTIVE FLIPBOOK BASED DIGITAL HANDOUTS FOR NEWS LITERACY AMONG INDONESIAN STUDENTS

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Abstract: *The rapid advancement of information technology has transformed the way students access, understand, and disseminate information. However, the low level of news literacy among senior high school students increases their vulnerability to misinformation and fake news. Therefore, engaging, interactive, and easy-to-understand learning media are needed to support news literacy education in schools. This study aims to develop an interactive flipbook-based news literacy handout as a supplementary learning resource for students of Indonesia. This research employed the ADDIE development model, consisting of Analysis, Design, Development, Implementation, and Evaluation stages. The research instruments included validation sheets from subject-matter experts and media experts, as well as student response questionnaires. The sample involved 30 twelfth-grade students of Indonesia to evaluate learning comprehension and user experience. The results showed that the interactive flipbook-based handout was categorized as highly feasible by both subject-matter and media experts in terms of content accuracy, clarity, visual design, and usability. Student responses also indicated increased understanding and engagement in learning news literacy. Therefore, this interactive flipbook-based handout is effective in enhancing students' news literacy and is suitable as an alternative learning medium in schools.*

Keywords: *News Literacy, Interactive Flipbook, Handout, Media Development*

Introduction

The development of digital technology and social media has significantly transformed the way people, particularly students, access, understand, and disseminate information (Anwas, 2019; Potter, 2020). This condition requires students not only to receive information, but also to possess critical skills in evaluating the accuracy, credibility, and relevance of the news they consume.

However, the high intensity of news consumption is not always accompanied by adequate news literacy skills. Many students still experience difficulties in distinguishing between facts and opinions, assessing the credibility of news sources, and identifying bias and information manipulation. As a result, students are vulnerable to accepting and even disseminating inaccurate information (Hobbs, 2020; Khoirunnisa & Sari, 2023).

The results of preliminary observations of Indonesian students in schools show that news literacy instruction is still delivered in a limited manner and has not been integrated into specific teaching materials. Teachers tend to rely on textbooks and verbal explanations, while students obtain most of their news information from social media without systematic instructional guidance (Kemdikbud, 2020).

Several previous studies have shown that the use of interactive digital learning media can enhance students' understanding and engagement in the learning process. Digital-based learning media allow the integration of text, visuals, and interactive elements that help students comprehend learning materials in a more concrete and engaging way (Mardiana & Ramadhan, 2022; Mulyadi et al., 2021). One form of digital media that has the potential to support news literacy learning is an interactive flipbook-based handout, which presents content in a concise, systematic, and easily accessible format.

Nevertheless, studies that specifically develop interactive flipbook-based news literacy handouts for senior high school students remain limited. Most existing research focuses on general media literacy or the development of learning media for specific subjects. Therefore, further research is needed to develop news literacy learning media that are designed in accordance with students' needs, characteristics, and media consumption habits.

Based on these issues, this study aims to develop an interactive flipbook-based news literacy handout as a supplementary learning resource for students in Indonesia (Aini et al., 2020; Lestari & Handayani, 2021). The development of this media is expected to help students improve their news literacy understanding, foster critical attitudes toward digital information, and serve as an innovative and relevant alternative learning medium in response to the challenges of education in the digital era.

Literature Review

News Literacy in the Context of Digital Education

Condition increases the risk of the spread of fake news and misleading information, particularly among students who are active users of digital media (Hobbs, 2020; Susilo et al., 2021). Therefore, strengthening news literacy through formal education is regarded as a strategic effort to equip students with critical thinking skills in dealing with the flow of digital information.

Several studies indicate that students' levels of news literacy remain in the low to moderate category, especially in terms of information evaluation and verification skills. Students tend to accept news based on headlines or popularity on social media without conducting further checks on the sources and content of the information. This condition suggests that news literacy cannot develop optimally without structured and continuous educational intervention.

The Role of Learning Media in Strengthening News Literacy

Educational institutions play an important role in developing students' news literacy competencies. Effective news literacy instruction does not rely solely on teaching methods, but also on the availability of relevant, engaging, and contextual learning media. Learning media function as a means of bridging abstract concepts with more concrete and applicable learning experiences (Mardiana & Ramadhan, 2022).

Research in the field of media education indicates that the use of digital-based learning media can enhance students' engagement and understanding. Digital media enable the integration of various elements, such as text, visuals, audio, and animation, which can accommodate diverse learning styles. In the context of news literacy, digital learning media can be used to present real news examples, news analysis simulations, and interactive critical thinking exercises (Kahne et al., 2022).

However, news literacy instruction in schools is still often delivered conventionally through lectures or textbooks, making it less engaging for students. This condition causes students to experience difficulties in connecting learning materials with the realities of news consumption

they encounter in their daily digital media use. Therefore, innovation in learning media is needed to present news literacy materials in a more contextual manner that aligns with the characteristics of the digital generation.

Interactive Flipbooks as Digital Learning Media

Interactive flipbooks are a form of digital learning media that present instructional content in an electronic book format resembling printed books, but enhanced with interactive features. This medium allows the integration of text, images, illustrations, animations, and navigation tools that facilitate users' access to learning materials. Interactive flipbooks can also be accessed through various digital devices, thereby supporting students' learning flexibility. Numerous studies indicate that interactive flipbook-based learning media have great potential to enhance students' learning motivation and comprehension (Aini et al., 2020; Mulyadi et al., 2021).

The visual and interactive presentation of content encourages students to be more interested and actively engaged in the learning process. In addition, flipbooks enable the organization of materials in a concise and systematic manner, making it easier for students to understand complex concepts. In the context of news literacy, interactive flipbooks can be used as digital handouts that present core materials in a compact format, accompanied by case examples, visual illustrations, and contextual explanations. This media allows students to learn independently and repeatedly according to their needs. Therefore, interactive flipbooks have the potential to serve as effective learning media in supporting the strengthening of news literacy among senior high school students.

Method

This study employed a Research and Development (R&D) approach aimed at developing and evaluating the feasibility of an interactive flipbook-based news literacy handout as a learning medium for senior high school students. The development model used was ADDIE, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation (Sugiyono, 2022). The analysis stage was conducted to identify the needs of news literacy learning and students' characteristics. The needs analysis was obtained through preliminary observations and informal interviews with teachers and students.

The results of the analysis indicated that students have a high level of exposure to digital news, but this exposure is not yet supported by learning media specifically designed to enhance news literacy (Sugiyono, 2022). The design stage focused on planning the interactive flipbook-based news literacy handout. At this stage, learning objectives, content scope, and visual media design were determined.

The news literacy materials were organized in a concise and systematic manner, covering basic concepts of news, the distinction between facts and opinions, source credibility, and awareness of fake news, while considering the characteristics of senior high school students. The development stage involved transforming the design into a handout product in the form of an interactive flipbook that integrates text, visual illustrations, and interactive navigation.

The developed product was then validated by subject-matter experts and media experts. The subject-matter expert validation aimed to assess the relevance, accuracy, and clarity of the news literacy content, while the media expert validation focused on visual aspects, instructional design, and the technical quality of the media. Feedback from the experts was used as the basis for revising the product. The implementation stage was carried out through trials involving students as media users. The trials were conducted in two phases: a one-to-one trial involving three students and a small group trial involving thirty students in Indonesia. During this stage, students used the interactive flipbook handout in news literacy learning activities and were then

asked to complete response questionnaires to measure their level of understanding, ease of use, and perceived benefits of the learning media.

The evaluation stage involved analyzing data obtained from subject-matter expert validation, media expert validation, and student response questionnaires. The data were analyzed using descriptive percentage statistical techniques to determine the feasibility level of the interactive flipbook-based news literacy handout as a learning medium. Based on these development stages and evaluation procedures, the research results are presented and discussed in the *Results and Discussion* section, which includes the media development process, expert validation outcomes, and students' responses to the developed interactive flipbook handout.

Result and Discussion

This section presents the results of the development and evaluation of the interactive flipbook-based news literacy handout developed using the ADDIE model. The research findings focus on the feasibility level of the product based on evaluations by subject-matter experts, media experts, and students' responses obtained through one-to-one and small group trials. The results of the subject-matter expert validation indicate that the developed handout meets the feasibility criteria in terms of content relevance, clarity of learning objectives, and accuracy of news literacy materials. These results suggest that the presented content is relevant to the learning needs of senior high school students and is systematically organized and easy to understand.

Furthermore, the results of the media expert validation show that the interactive flipbook-based handout demonstrates good visual and technical quality. Aspects of design, layout, and navigation were assessed as supporting the ease of use of the media in the learning process. These findings indicate that the developed interactive flipbook is appropriate for use as a digital learning medium. Students' responses to the use of the interactive flipbook handout were obtained through one-to-one and small group trials. The results of the student assessments show very positive responses, particularly in terms of ease of use, clarity of the material, and the usefulness of the media in supporting the understanding of news literacy. This indicates that the developed media is well accepted by students as a supplementary learning resource. In addition to questionnaire data, brief interviews conducted during the one-to-one stage with three students revealed that the interactive flipbook-based news literacy handout helped students understand the material more clearly. Students reported that the visual appearance and concise presentation of the content made them more interested in reading and comprehending the handout.

One student stated that the material on distinguishing between facts and opinions became easier to understand because it was accompanied by examples relevant to news encountered on social media. Another student mentioned that the simple flipbook navigation facilitated independent learning without causing boredom. Meanwhile, the third student indicated that the handout was beneficial in increasing awareness of fake news frequently encountered in daily life. These findings from the one-to-one interviews demonstrate that the interactive flipbook handout is not only technically feasible but also relevant to students' learning needs and capable of supporting initial understanding before being implemented in the small group trial.

Detailed results of the assessments are presented in the following tables:

Table 1: Validators

Subject	Expert of	
Material Expert	1	Chairperson of Indonesian Research Literacy Organization
	2	Indonesian Language Teacher, North Sumatra Province
	3	Civics (PPKn) Teacher, North Sumatra Province
Media Expert	1	Lecturer in Graphic Design, North Sumatra Province
	1	One to One (3 students)
	2	Small Group (30 students)

Source: primary data.

The following are the results of the student evaluations as well as the validation results from the material experts and media experts.

Table 2. The material experts' validation

No	Aspect	Number of items	Total Score	Max. Score	%	Criteria
1	Usability	1	14	15	93%	Eligible
2	Learning Objective	3	39	45	87%	Eligible
3	Technical Quality	3	40	45	89%	Eligible
4	Benefits	1	14	15	93%	Eligible
Total		8	107	120	89%	Eligible

Source: primary data.

Based on Table 2, the results of the material expert evaluation indicate that the interactive flipbook-based news literacy handout falls into the *very feasible* category. This finding suggests that the presented materials are aligned with the learning objectives and are easy for students to understand (Mulyadi et al., 2021).

Table 3. The media expert's validation

No	Aspect	Number of items	Total Score	Max. Score	%	Criteria
1	Media	6	30	30	100%	Eligible
2	Learning Design	5	23	25	92%	Eligible
Total		11	53	55	96%	Eligible

Source: primary data.

Based on Table 3, the results of the media expert validation indicate that the aspects of visual design, navigation, and technical quality fall into the *very feasible* category, indicating that the interactive flipbook meets the criteria as a digital learning medium (Aini et al., 2020).

Table. 4. Students assessment

No	Aspect	Number of items	Total Score	Max. Score	%	Criteria
1	Learning Objectives	4	501	600	84%	Eligible
2	Benefits	7	934	1050	89%	Eligible
Total		11	1435	1650	87%	Eligible

Source: primary data.

Based on Table 4, the results of student evaluations in the one-to-one and small group stages show very positive responses toward the interactive flipbook-based news literacy handout. Students reported that the media is easy to use, the materials are easy to understand, and the handout helps improve their understanding of news literacy, indicating that the media is highly feasible for use in learning activities.

Table 5. Teachers Assessment

No	Aspect	Number of items	Total Score	Max. Score	%	Criteria
1	Learning Objectives	3	14	15	93%	Eligible
2	Benefits	5	24	25	96%	Eligible
Total		8	38	40	95%	Eligible

Based on Table 4, the teachers' assessment of the interactive flipbook-based news literacy handout shows an overall percentage of 95% with an eligible category. This result indicates that the learning objectives are clear and well-aligned with instructional goals, and the handout provides meaningful benefits in supporting the learning process. Therefore, the developed handout is considered suitable for use as a supplementary learning medium in senior high school.

Table 6. Percentage Validation and Assessment Result

No	Subject Testing	Validity Result	Percentage Qualification
1	Material Experts	89%	Very Good
2	Media Experts	96%	Very Good
3	Students	87%	Very Good
4	Teachers	95%	Very Good

Source: primary data.

The results of this study indicate that the development of an interactive flipbook-based news literacy handout is a relevant solution to support news literacy learning in senior high schools. These findings are consistent with previous studies stating that interactive digital learning media can enhance student engagement and comprehension in the learning process (Mulyadi et al., 2021; Mardiana & Ramadhan, 2022).

From a pedagogical perspective, the use of interactive flipbooks provides a more contextual learning experience compared to conventional media. The integration of text and visuals helps students understand news literacy materials more concretely, thereby encouraging the development of critical attitudes toward digital information (Potter, 2020; Hobbs, 2020). In addition, student response results indicate that this media is able to bridge the gap between students' habits of consuming digital news and the instructional needs of news literacy education in schools.

Therefore, the interactive flipbook-based news literacy handout is not only feasible as a learning medium but also has the potential to serve as an effective supplementary learning resource for enhancing students' news literacy and critical thinking skills in the digital era.

Conclusion

This study developed an interactive flipbook-based digital handout for news literacy using the ADDIE model. The validation results indicate that the handout is highly feasible as a learning medium. The material experts' assessment reached 89%, the media experts' assessment achieved 96%, and the teachers' assessment obtained 95%, all of which fall into the very good category. These results show that the handout meets the criteria of content accuracy, instructional suitability, visual design, and usability.

In addition, student assessments through *one-to-one* and *small group* trials resulted in a percentage of 87%, categorized as very good. This finding indicates that the interactive flipbook-based handout is engaging, easy to use, and effective in improving students' news literacy. Therefore, the developed handout is suitable to be used as a supplementary learning medium for senior high school students.

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