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SUMMATIVE ASSESSMENT FRAMEWORK FOR DEVELOPING MEDIA LITERACY OF SECONDARY SCHOOL STUDENTS IN INFORMATICS EDUCATION

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Abstract. This conceptual article proposes a summative assessment framework for media literacy in secondary school informatics education. The framework addresses the need to assess students' reasoning about digital information alongside their ability to use technological tools. It comprises five dimensions: source evaluation, claim verification, interpretation of media representation, responsible information sharing, and evidence-based content production. Each dimension is connected to observable evidence and an analytic scoring rubric. The proposed assessment combines a verification report, an analysis of a misleading media representation, and the production of a short responsible media message. A distinction is maintained between summative judgement of achievement and the subsequent instructional use of assessment findings. The article presents a task blueprint, scoring principles, implementation conditions, and a validation agenda. No student dataset or intervention results are reported. The framework is intended as a design proposal requiring expert review, piloting, and examination of scoring consistency before consequential classroom use.
Keywords: media literacy, informatics education, secondary school, summative assessment, analytic rubric, source evaluation, performance assessment, digital content.

Introduction

Informatics education offers a setting in which students can learn to evaluate, process, create, and communicate digital information. However, competence in operating software does not necessarily demonstrate an ability to judge the credibility of a message or the adequacy of its supporting evidence. An assessment that focuses exclusively on terminology or technical procedures may therefore provide an incomplete account of students' media literacy.

The UNESCO media and information literacy curriculum provides a broad educational reference for critical engagement with media and information. DigComp 2.2 similarly offers a framework for understanding knowledge, skills, and attitudes associated with critical and safe participation in digital environments. These publications provide conceptual reference points for the present proposal; neither prescribes the particular scoring system developed here. 1, 2

The central assessment problem is how to convert broad competencies into tasks that generate interpretable evidence of individual achievement. A student may identify a suspicious headline but fail to explain why it is misleading. Another may reach a correct conclusion through guessing. Assessment should distinguish these responses from a reasoned judgement supported by traceable evidence.

The aim of this article is to propose a coherent relationship between media literacy outcomes, assessment tasks, scoring criteria, and the interpretation of results.

Conceptual approach and design method

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The article uses conceptual analysis and assessment design. It does not report a systematic review, classroom experiment, or validated measurement instrument. The design process consists of defining the target competence, specifying observable evidence, constructing a task blueprint, and establishing provisional scoring rules.

Media literacy is operationalised here as the ability to evaluate sources and claims, interpret media representations, make responsible sharing decisions, and produce evidence-based messages. This is a deliberately bounded classroom definition rather than a claim to measure every aspect of media literacy.

Research on lateral reading provides a further rationale for requiring students to investigate information beyond the original webpage. Wineburg and McGrew examine how evaluators use external information to judge online sources. The present proposal translates that principle into a requirement to document relevant verification steps. 3

The assessment is summative because its primary purpose is to judge achievement at the end of an instructional unit. Its developmental contribution is indirect: transparent criteria can guide preparation, and the resulting performance profile can inform later instruction. A final score alone is not treated as evidence that assessment has improved media literacy.

Proposed framework

The framework contains five equally weighted dimensions. Equal weighting is adopted as an initial design choice, not as an empirically established property.

Dimension	Target performance	Required evidence	Raw score
Source evaluation	Investigates authorship, publication context, purpose, and relevant expertise	A source profile supported by external checks	0–4
Claim verification	Traces a claim to relevant evidence and evaluates corroboration	A verification record with identifiable sources	0–4
Media representation	Explains how wording, selection, visual framing, or numerical presentation affects interpretation	An annotated example and explanation	0–4
Responsible sharing	Makes a justified decision about attribution, privacy, and uncertainty	A sharing decision with reasons	0–4
Content production	Creates an accurate message consistent with the available evidence	A short media product with attribution	0–4

The raw total ranges from 0 to 20. If a percentage-format report is needed, the proposed conversion is:

$$S=\frac{\sum_{i=1}^{5}r_i}{20}\times100,$$

where r_i represents the score for dimension i. The conversion is only a reporting convention. It does not establish validated achievement thresholds.

A common scoring progression is proposed:

- **0:** no assessable evidence, or a response unrelated to the criterion;

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- **1:** recognition of a relevant feature without adequate explanation;
- **2:** a partly appropriate judgement supported by incomplete evidence;
- **3:** an accurate judgement supported by relevant evidence, with minor omissions;
- **4:** a well-supported judgement that explains the reasoning and recognises relevant limitations.

This general progression must be supplemented with dimension-specific descriptors. For claim verification, for example, a score of 4 would require tracing the claim to an identifiable source, examining relevant corroboration, and explaining unresolved uncertainty. Merely listing several links would not satisfy the descriptor. Repeated reports derived from one original source would not automatically count as independent corroboration.

Assessment task blueprint

The proposed assessment consists of three connected tasks.

Task A: Verification report. Students investigate a claim presented in a simulated online post. They identify the origin of the claim, examine the publisher, inspect relevant evidence, and write a justified conclusion. Source evaluation and claim verification are scored separately.

Task B: Media representation analysis. Students examine a headline, image caption, or chart that may distort interpretation. They identify the mechanism involved and explain how a more accurate presentation would change the message. This task primarily assesses interpretation of media representation.

Task C: Responsible media production. Students create a short correction or explanatory post based on the verified evidence. They include attribution and a brief note explaining what should or should not be shared. Responsible sharing and content production are scored separately.

The same feature should not receive duplicate credit under different dimensions. For instance, checking the original report belongs to verification, while accurately representing its finding in the final post belongs to production.

Assessment materials should include both reliable and unreliable information. If every example is deceptive, students may obtain high scores by rejecting all content. A defensible expression of uncertainty should also be recognised when the available evidence does not justify a definitive conclusion.

Administration and fairness

Students should receive the criteria before assessment and practise with different examples during instruction. The final task should require transfer to unfamiliar content rather than recall of a rehearsed answer.

All students need comparable access to materials and tools. A controlled digital source collection may reduce differences caused by internet access, but it measures evaluation within a supplied environment. It should not be interpreted as a full measure of open-web search competence. If searching independently is an intended outcome, a separate task with equivalent access conditions is necessary.

Visual presentation quality should receive credit only when it contributes to accuracy or clarity. Expensive software, decorative complexity, or typing speed should not become unintended substitutes for media literacy. Reasonable access arrangements should preserve the intended reasoning demand.

Rules concerning search tools, spelling assistance, and generative AI should be stated before assessment. When independent verification is the target, a generated conclusion cannot replace the student's documented reasoning.

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Validation agenda and limitations

Before implementation for consequential grading, subject specialists should examine whether the tasks represent the intended learning outcomes. Student piloting should explore whether instructions are understandable and whether tasks elicit the reasoning they were designed to assess.

Teachers should score common sample responses independently and discuss disagreements. Depending on the score structure, weighted kappa may be examined for ordinal dimension ratings, while an appropriately specified intraclass correlation may be considered for total scores. These are proposed analyses, not reported results.

Further research should investigate task difficulty, accessibility, scoring consistency, and transfer across topics. Claims that the framework develops media literacy would additionally require a study of learning over time. Summative scores collected once cannot establish such an effect.

Conclusion

The proposed framework connects media literacy outcomes with observable student work and explicit scoring criteria. Its principal contribution is a design that separates source evaluation, verification, interpretation, responsible sharing, and production while combining them in meaningful informatics tasks.

The framework remains a conceptual proposal. Its educational value and measurement quality should be examined through expert review, classroom piloting, and analysis of scoring and interpretation before broader adoption.

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