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ASSESSING PRIMARY PUPILS' DIGITAL LITERACY THROUGH SAFE CLASSROOM SCENARIOS

Toshpulatova Niyoxon Shavkatjon qizi
A conceptual framework for evidence and instructional feedback
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Abstract

Digital literacy assessment in primary education can confuse familiarity with an interface, quality of reasoning and opportunities to practise. This conceptual article develops a scenario-based assessment design that separates these sources of evidence. A targeted analysis of DigComp 2.2, the educator-oriented DigCompEdu publication, UNICEF's scoping work and UNESCO's technology report informs the design constraints. The resulting framework links information judgement, purposeful creation, communication and safe action to short tasks, observable indicators and specific feedback. A provisional four-level rubric distinguishes prompted performance from independent explanation and transfer, while recording access and assistance separately. Worked scenarios demonstrate the difference between evidence of a pupil's reasoning and evidence of practical execution. The article does not report a pilot, a validated instrument or gains in attainment. Its contribution is a transparent assessment blueprint that can be adapted to a primary curriculum and tested through teacher review, accessibility checks and classroom trials.

Keywords: digital literacy assessment; primary pupils; scenario-based assessment; formative feedback; digital safety; accessibility; performance evidence.

1 Introduction

A pupil who completes an online quiz may be able to recognise a correct statement without being able to act on it. Another pupil may explain a safe response but struggle with an unfamiliar device. Treating both performances as a single digital literacy score can obscure what instruction should address. Assessment design therefore needs to distinguish the target competence, the conditions of performance and the kind of inference supported by the evidence.

This problem is particularly important in primary education because reading demands, language development, motor skills and prior access to technology can affect task completion. An assessment of source judgement should not silently become a test of reading a long passage. Likewise, an explanation given orally should not be treated as proof that a pupil can execute every corresponding digital action.

This article asks how short classroom scenarios can produce interpretable evidence of digital literacy without exposing children to real online risks or creating unnecessary data collection. Its contribution is a framework connecting task design, provisional scoring and feedback. The focus differs from comparative curriculum research: the unit of analysis is an assessment episode, not a national system. The framework is intended for formative classroom use and has not been validated for certification or high-stakes decisions.

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2 Materials and methods

2.1 Conceptual materials

Four institutional publications form the selected source base. DigComp 2.2 provides a named reference edition for discussing digital competence [1]. DigCompEdu offers an educator-oriented perspective on professional digital competence [2]. UNICEF's scoping paper examines children's digital literacy definitions and frameworks [3]. UNESCO's 2023 report situates technology within broader educational questions [4]. These sources differ in purpose and audience; they are not treated as equivalent assessment instruments.

The publication records and available institutional descriptions were examined to establish scope and provenance. The framework is an author-generated design informed by these materials, not a full replication of their content. Selection was purposive rather than exhaustive, and no claim of systematic review coverage is made. The sources were consulted on 7 November 2026.

2.2 Design procedure

The design followed four steps. A competence expectation was first expressed as an observable action. A short scenario was then written to make the action necessary. Next, the evidence was divided into execution, explanation and transfer. Finally, potential alternative explanations for a weak response were recorded, including language difficulty, inaccessible layout and lack of prior device practice.

For each task, the design records the stimulus, the instruction, the response mode, the permitted support and the evidence boundary. This specification makes different versions easier to compare. It also prevents an apparently authentic scenario from demanding real passwords, public posting or unsolicited contact with another person.

2.3 Status of the outputs

No children were recruited and no assessment responses were collected. The rubric, tasks and feedback examples are proposals. There are no observed score distributions, effect sizes, reliability coefficients or validity results. Examples of pupil responses are hypothetical illustrations, not quotations from participants. Local curriculum alignment and empirical testing remain necessary before use beyond ordinary exploratory classroom practice.

3 Results

3.1 A framework separating competence and conditions

The central design output is a three-part evidence record. The first part describes the target action, such as comparing sources. The second records the response, including the decision and its explanation. The third records conditions, such as teacher prompting, use of a read-aloud version and the availability of a familiar device. Conditions are not automatically interpreted as deficiencies in the target competence.

Table 1. Proposed scenario-to-evidence framework

Competence focus	Controlled task	Observable evidence	Boundary of the inference
Information judgement	Compare two prepared claims	Reason for selecting or checking a claim	Does not establish open-web search skill
Purposeful creation	Revise a small digital poster	A change linked to the	Visual polish alone is insufficient

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		intended audience	
Communication	Choose and explain a classroom message	A respectful, relevant response	One scenario does not establish habitual conduct
Safe action	Respond to a fictional request for personal data	Refusal, help-seeking and explanation	Does not prove behaviour under real pressure

The design preserves a useful distinction between recognising a principle and using it. A pupil may state that private information should not be shared but still choose a risky action in a scenario. Conversely, a correct choice without explanation may reflect guessing or a familiar classroom rule. The teacher records both the choice and the reason before deciding what additional evidence is needed.

3.2 Provisional rubric

A four-level rubric is proposed for each selected action. The levels describe task performance under stated conditions; they are not age norms. They should not be converted into claims about a child's overall digital competence without broader evidence.

Table 2. Provisional performance descriptors

Level	Descriptor	Suggested instructional response
0 Evidence not yet established	The response does not show the target action, even after clarification	Check comprehension and model the action
1 Supported performance	The pupil acts with a substantive prompt	Practise with reduced support
2 Independent performance	The pupil acts and explains the choice in the task	Introduce a changed but related case
3 Transfer within a new case	The pupil adapts the action and explains a relevant difference	Extend reasoning and examine limits

A missing response is recorded separately rather than automatically scored zero. The reason may be absence, inaccessible presentation or insufficient time. Likewise, an agreed accessibility accommodation is not necessarily a substantive conceptual prompt. Reading the instruction aloud can remove a decoding barrier, while suggesting which source is more credible changes the reasoning support. The distinction must be defined in a local task guide.

Scores are reported by competence focus rather than combined immediately. Strong performance in poster design should not compensate for unsafe sharing of personal information. A profile can show that practical operations are secure while explanation remains weak, or that reasoning is promising but device practice is limited. These profiles support different next steps and avoid a misleading single hierarchy of pupils.

3.3 Worked scenario on information judgement

The teacher presents two short cards about a familiar plant. Both contain a picture, but only one identifies where the information came from. Pupils are asked which claim

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they would use for a classroom explanation and what they would check before using the other. The cards are fictional assessment materials, not a test of whether children recognise a particular website brand.

A hypothetical response, "This one is brighter," provides evidence of a choice but not of source judgement. "This one tells us where the claim came from, and I would ask the teacher to help check the other," provides a reason and a checking strategy. Neither answer establishes that the pupil can evaluate every named source. A second case should vary the visual design so that layout does not become a shortcut to the expected answer.

The feedback identifies a next action: "You selected a card. Now explain what you know about the origin of its claim." If a pupil relies on a source label alone, the teacher can introduce two labelled but conflicting claims. This follow-up tests whether the pupil understands that a label supports investigation rather than guarantees truth.

3.4 Worked scenario on safe communication

A teacher-controlled slide shows a fictional message asking for a pupil's home address to receive a prize. The task asks what the pupil would do and whom they could ask for help. No real address, account, message sending or contact with a stranger is required. The teacher can use a paper version where device access is limited.

The evidence record distinguishes the proposed action from the explanation. Choosing "do not send" demonstrates recognition within the options provided. Explaining that the request concerns private information and identifying an appropriate trusted adult provides additional evidence. A later scenario changes the requested information or the apparent sender, testing whether the pupil can recognise the relevant feature rather than repeat a memorised phrase.

Safeguarding takes precedence over assessment if a child refers to a real concern. The teacher follows the school's established process; the classroom task should not invite public disclosure of personal experiences. Assessment notes should contain only the information needed for learning decisions. Routine use of screenshots of children's private accounts is unnecessary for this proposed design.

4 Discussion

The principal contribution is a boundary-conscious approach to evidence. Digital competence is enacted through tasks, but every task samples only a small part of a broader construct. The proposed record makes explicit what the response does and does not show. It also separates the availability of practice from the quality of reasoning, reducing the risk that unequal access is mistaken for a stable learner characteristic.

DigComp 2.2 includes competence areas addressing safe, critical and productive participation [1]. Its descriptors provide a reference vocabulary, not ready-made child assessment items. The scenarios in this article are therefore local design proposals. Their wording, complexity and response expectations need review against pupils' language and the intended curriculum. No endorsement or psychometric validity is implied.

DigCompEdu is directed towards educators across educational levels [2]. Its relevance here is the need to consider teacher capability when introducing a new assessment process. Teachers must distinguish a conceptual prompt from an accommodation, interpret partial evidence and give a useful next step. A shared scoring discussion using invented examples can expose disagreement before children's work is assessed. This is an implementation recommendation, not a demonstrated effect.

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UNICEF's scoping work explicitly concerns children and the adaptation of competence frameworks [3]. The implication developed here is that an adult-oriented description should be translated into a modest, comprehensible task rather than copied verbatim. UNESCO's discussion of access, governance and teacher preparation [4] also supports treating classroom assessment as part of a wider educational arrangement. Neither publication validates the rubric proposed in this article.

Further development should begin with teacher review of relevance, followed by comprehension checks with a small, appropriately consented group. Researchers would examine whether pupils interpret instructions as intended and whether alternative response modes preserve the target action. Subsequent trials should investigate scorer agreement, task comparability, accessibility and change over time. Sample sizes and statistical methods should be chosen for the eventual design rather than invented in advance as completed results.

One important limitation is that safe scenarios cannot reproduce every emotional or social pressure of an actual online interaction. A child who makes a careful classroom choice may act differently in another setting. Additional evidence from varied supervised tasks can strengthen interpretation, but assessment should never manufacture a risky encounter for realism. The proposed framework is a basis for formative decisions, not a prediction of future behaviour.

5 Conclusion

Scenario-based assessment can be designed to distinguish the pupil's decision, explanation and practical execution while documenting support and access. This article offers a task specification, competence profile and provisional rubric for primary digital literacy. The framework prioritises interpretable evidence and actionable feedback within safe classroom conditions. It remains a conceptual proposal requiring curriculum alignment, accessibility review and empirical investigation before broader claims about measurement or effectiveness are justified.

Declarations

This conceptual study collected no participant data. The scenarios, response examples and rubric are illustrative design outputs.

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