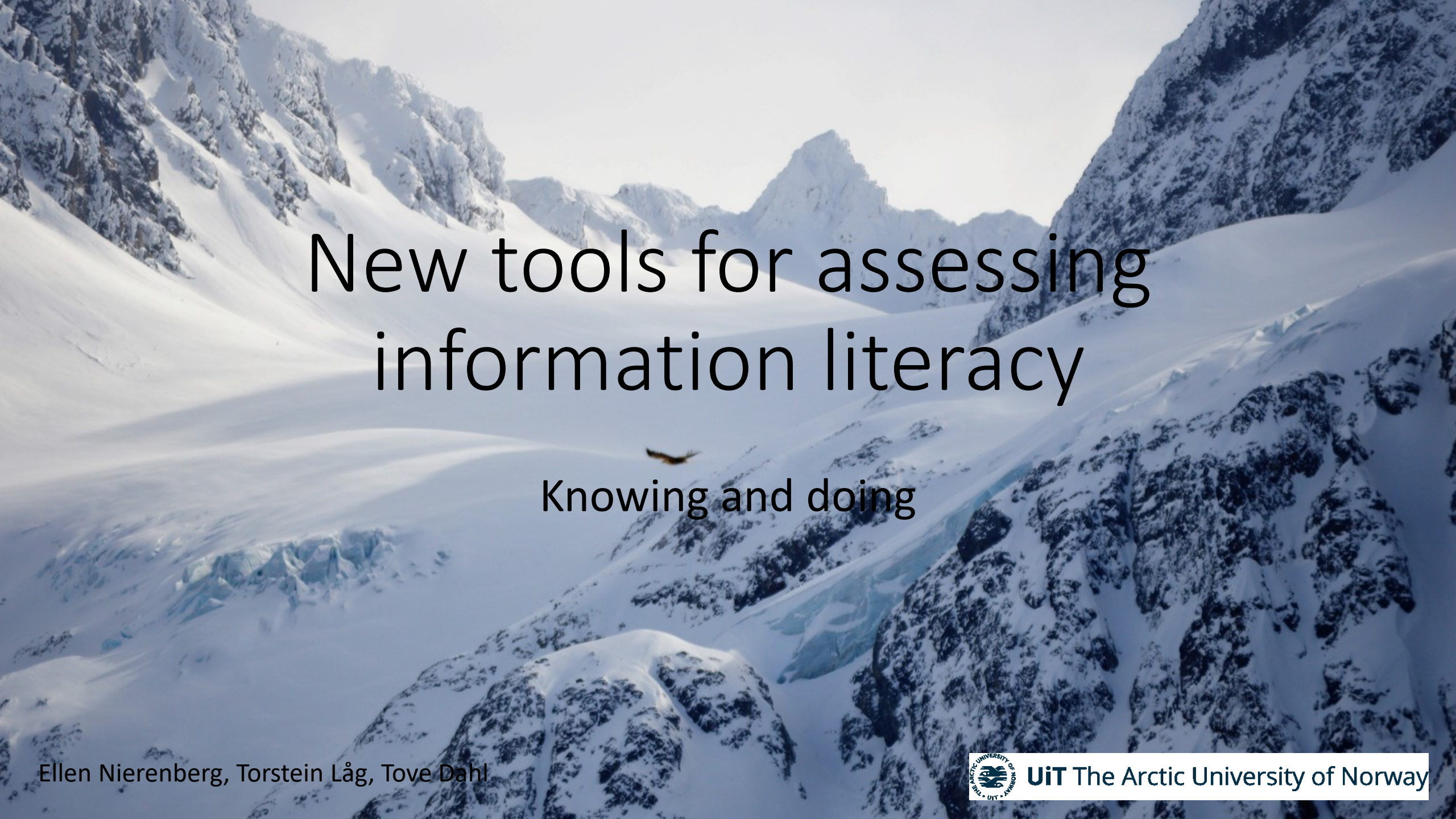


New tools for assessing information literacy

Knowing and doing

Ellen Nierenberg, Torstein Låg, Tove Dahl

UiT The Arctic University of Norway

Article reference

Nierenberg, E., Låg, T., & Dahl, T. I. (2021). Knowing and doing: The development of information literacy measures to assess knowledge and practice. *Journal of Information Literacy*, *15*(2). http://dx.doi.org/10.11645/15.2.2795

Why do we need new assessment tools?

- Important to assess student learning
- Existing measures are long, cumbersome, non-adaptable, not free
- Few have sufficient evidence of reliability and validity
- Few are appropriate for multiple disciplines or different countries
- Most are self-report measures
- Knowledge, skills, attitudes – most measure knowledge

Our goal: Develop and validate a suite of measurement tools

- well-suited for measuring IL knowledge, skills and attitudes
- easy to employ and adapt
- freely available
- universal
- objective

Tromsø Information Literacy Suite (TROILS)

1. Knowledge (KNOW)
   - Test for assessing students' knowledge of key aspects of IL
2. Skills (DO)
   - Evaluating sources: annotated bibliography measure
   - Using sources: rubric measure
3. Attitudes (FEEL)
   - Theoretically-grounded self-report questionnaire
   - Interest in being/becoming information literate

Knowing: Pilot test

- Framework analysis – criteria:
  - includes central IL concepts
  - specifies learning outcomes
  - applies to most disciplines in HE
- ANZIL Framework, 2004 (based on ACRL Standards, 2000)
- 50 multiple choice questions
- Evidence for item selection, reliability, and validity
  - expert evaluations (*n* = 5) for clarity, content accuracy, and objectivity
  - student think-aloud-protocols for readability (*n* = 5)
  - pilot sample: *n* = 268

Knowing: Final test

- Item selection criteria
  - range of difficulty
  - at least a moderate correlation with total test scores – item-total correlation
  - expert evaluation and think-aloud data
  - exploratory factor analysis
- 7 items for each of 3 core facets of IL (all source-based):
  - Evaluating sources
  - Using sources
  - Seeking information
- Several new samples took the 21-item test

Example: Source evaluation

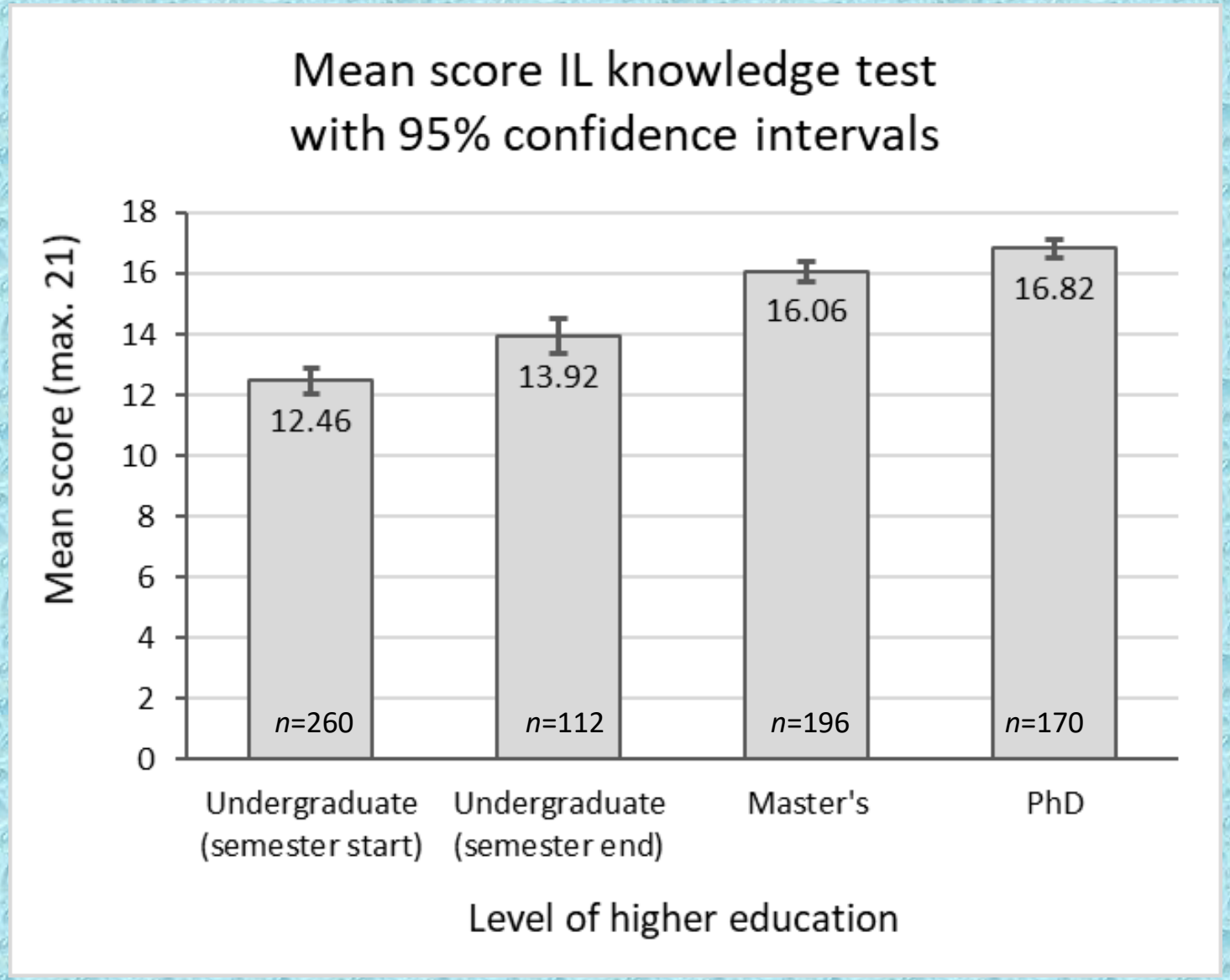
What characterizes a scholarly article?

1. It is written by a researcher from a college, university or other research institution.
2. It is published in a printed, English-language journal.
3. It is written in plain language that everyone can understand.
4. It is reviewed by independent experts in the field before being published.

Reliability and validity evidence of final 21-item test

- Reliability
  - Test-retest: ICC (*n* = 46) is .84 (7-21 days between test and retest)
  - Good evidence of reliability between the English and Norwegian versions
  - (Internal consistency is not relevant for this type of measure)
- Validity: Does test score discriminate among:
  - students at different levels of HE?
  - undergraduates at the start and end of one of their first semesters?

Results: KNOW



Doing: Assessing IL skills

- Introductory, undergraduate psychology course
- Authentic, graded assignments:
  1. Evaluating sources (*n* = 93)
  2. Using sources (*n* = 87)

Doing: Source evaluation - Annotated bibliography

1. Quality of source: 0 – 3

+

2. Variety of criteria (relevancy, accuracy, authority etc.)*

+

3. Frequency of criteria*

Total score = student's ability to evaluate sources

* based on Walton and Hepworth, 2012

Doing: Source use - Rubric

Criteria for use of sources	No	Partially	Yes
Are academic sources used to support arguments?	0	0.5	1
Are sources cited in the text when necessary?	0	0.5	1
Are the in-text citations written in correct [APA]-style?	0	0.5	1
Is the reference list written in correct [APA]-style?	0	0.5	1
Are all in-text citations listed in the reference list, and vice versa?	0	-	1

- Interrater reliability
- Inherent validity

Results: Knowing vs. Doing

Source evaluation

- Annotated bibliography: Total = Quality + Variety + Frequency
- statistically significant correlation between Quality component score and IL-test scores (weak/moderate, $r(93) = .27$, $p = .008$)

Source use

- Rubric
- statistically significant correlation between rubric scores and IL-test scores (moderate/weak, $r(87) = .31$, $p = .004$)

Dimensionality of the IL construct

- Is IL actually a unitary, latent variable construct?

- Our findings say 'No, IL is heterogeneous'. This means:
  - We should not treat IL tests as scales
  - We should not expect IL competencies to develop in sync
  - IL knowledge tests can (perhaps) tell us more than just the score

We hope you'll use TROILS!

- Tools for assessing undergraduates' IL knowledge and skills
- Benefits:
  - Students: metacognition → stimulate learning
  - IL instructors: design of IL instruction
- TROILS https://doi.org/doi:10.18710/L60VDI
  - «IL knowledge tests»
  - «Assignment based measures for assessing IL skills»
- Feedback: ellen.nierenberg@uit.no , torstein.lag@uit.no

UiT The Arctic University of Norway

Thank you!

Ellen Nierenberg, Torstein Låg, Tove Dahl

UiT The Arctic University of Norway

References

Nierenberg, E., Låg, T., & Dahl, T. I. (2020). Replication Data for: Knowing and doing: The development of information literacy measures to assess knowledge and practice [survey data]. DataverseNO. https://doi.org/doi:10.18710/L60VDI

Nierenberg, E., Låg, T., & Dahl, T. I. (2021). Knowing and doing: The development of information literacy measures to assess knowledge and practice. *Journal of Information Literacy*, *15*(2). http://dx.doi.org/10.11645/15.2.2795

Walton, G., & Hepworth, M. (2012). Using assignment data to analyse a blended information literacy intervention: A quantitative approach. *Journal of Librarianship and Information Science, 45*(1), 53-63. https://doi.org/10.1177/0961000611434999