

Guide to the Short Digital Capital Scale (DCS)
A Practical Tool for Measuring Digital Capital in Empirical Research
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This guide outlines how to implement the Short Digital Capital Scale (DCS), a validated, 9-item instrument for measuring digital capital. Based on the theoretical framework developed by Ragnedda, Addeo and Ruiiu (2019) and validated in Ragnedda, Addeo, & Ruiiu, (2025), the DCS offers a robust yet concise alternative to the full Digital Capital Index.

1. Why Use the Short Digital Capital Scale (DCS)?

The DCS is designed to reduce respondent burden while preserving the two core components of digital capital:

- Digital Access (4 items)
- Digital Competencies (5 items)

It is particularly suitable for:

- Large-scale surveys with limited space
- Cross-national comparative research
- Studies on digital inequalities, inclusion, or skills
- Projects seeking efficient and theory-driven operationalization

Importantly, the DCS is grounded in Bourdieu's notion of capital, treating digital skills and access as *resources* that shape opportunities and social positioning.

2. How the Scale Works

Participants are asked to self-assess their online experiences using a Cantril-type scale ranging from 0 to 10:

- 0 = Not at all accurate
- 10 = Absolutely accurate

This approach enables fine-grained differentiation across individuals and groups, and is particularly effective in cross-cultural research.

3. The 9 Items in the Scale

<i>Question</i>
Below you will be offered a series of statements about your online experiences. Answer by indicating how accurate you think they are in describing you. We ask you to indicate from 0 to 10 (where 0 means “Not at all accurate” and 10 “Absolutely accurate”).
<i>Items</i>
I know how to use many devices to connect to the Internet
No matter where I am, I always find a way to connect to the Internet
I started using the Internet a long time ago
When others have a problem with using the Internet, they turn to me
I can move around the Internet knowing which sources to rely on
In the course of my online experience, I have learned how to share my thoughts through different devices and communication platforms
In the course of my online experience, I have learned how to use different tools to create textual and audio-visual content
I am able to choose the most appropriate way to protect my personal information (e.g. address, phone number, password).
When I have a technical problem with a digital device, I almost always know how to go about solving it

4. How to Use the Scale in Your Research

4.1 Scoring

Unlike traditional additive methods, the Short Digital Capital Scale (DCS) uses a factor-based scoring approach, derived through Exploratory and Confirmatory Factor Analysis.

- Step 1: Factor scores are computed based on the unidimensional structure validated through factor analysis.
- Step 2: These factor scores are then linearly transformed to a 0–100 scale for interpretability and cross-group comparability.

This transformation allows researchers to work with a continuous and standardized measure of Digital Capital, facilitating comparisons across:

- National samples
- Sociodemographic groups
- Policy target populations

The 0–100 scale is especially useful in:

- Regression analyses
- Cross-national comparisons
- Reporting to non-technical stakeholders (e.g., policymakers, NGOs)

Note: Subscale scores (Digital Access vs. Digital Competencies) are *not separately reported* in this model, as the short version was validated as unidimensional.

4.2 Research Design

- Suitable for online, phone, or in-person surveys
- Easily integrated into omnibus studies or cross-sectional designs
- Compatible with policy evaluations or studies in education, sustainability, and digital inclusion

4.3 Translation & Adaptation

- Ensure conceptual meaning is preserved
- Pilot-test translations for clarity
- Cultural equivalence must be tested in new contexts

5. Things to Keep in Mind

- Self-assessment limitations: May lead to over/underestimation or social desirability bias
- Reduced granularity: Compared to the full DCI, nuance is reduced—especially in multidimensional analysis

- Contextual testing: Always check reliability (e.g. Cronbach's α) and perform confirmatory factor analysis in new datasets
- Complementary methods: If possible, triangulate with behavioral or performance data

6. How to Cite the DCS

If you use the Short Digital Capital Scale, cite the following:

Ragnedda, M., Addeo, F., & Ruiiu, M. L. (2025). A shorter scale for measuring digital capital: Cross-national validation of the Digital Capital Scale. *World of Media*, 3, 31–54.

Addeo, F., D'Auria, V.; Delli Paoli, A., Punziano, G., Ragnedda, M., Ruiiu, M. L. (2023). Measuring digital capital in Italy. *Frontiers in Sociology*, pp. 01-12.
<https://doi.org/10.3389/fsoc.2023.1144657>;

Also acknowledge the original Digital Capital Index:

Ragnedda, M., Ruiiu, M. L., & Addeo, F. (2019). Measuring digital capital: An empirical investigation. *New Media & Society*, 21(10), 1982–2001.

Contact

If you are interested in adapting the DCS to your local context or have questions about its implementation, feel free to get in touch.

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