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## **READING THE PROVINCE: CREATING A MULTILITERACY ASSESSMENT FRAMEWORK FOR NOVA SCOTIA**

### **Abstract**

This scoping review uses systematic review methodology to survey literature on established and emerging forms of literacy and their measurement, focusing on scholarly and grey literature published since 2014. Findings emphasize the need for standardized yet context-sensitive evaluation frameworks, acknowledging regional disparities, cultural contexts, and emerging domains like digital literacy. Key challenges include reflecting multifaceted literacy outcomes such as social connection, independence, and confidence. The study was undertaken to provide an evidence base for the non-profit organization Literacy Nova Scotia as they seek to survey the state of literacy in Nova Scotia. The next phase involves a Delphi study to gather insights from Nova Scotian literacy experts, informing robust, inclusive assessment frameworks.

### **Background**

Vital to individual, provincial, and national wellbeing and development, literacy is impacted by social, economic, and political factors (Harwood, 2013). Assessing the state of literacy at national, provincial, and regional levels is challenging due to the lack of universal definition, its nature as a moving target, its inextricable integration with policy and socio-economic factors, and its unique relationship to different demographics. As Nova Scotia experiences substantial social and

economic development (Government of Canada, 2024), literacy as a concept, mechanism, tool of empowerment, and indicator of societal progress all possess different relationships to social, economic, and political realities (Hayes, 2013).

Reports and scans on the state of literacy in Nova Scotia have been produced only sporadically and without standardized methods. Sharpe's 2006 *State of the Field Review of Adult Learning Research: A Report on Theme Areas* identified the need for community-based research, the diversity of adult learning, and the promotion of university-community research alliances (Sharpe, 2006). *Literacy and Essential Skills in Nova Scotia* (2013) was the non-profit organization Literacy Nova Scotia's (LNS) second environmental scan (the first occurring in 2008-2009). It highlighted challenges such as low literacy rates among seniors and certain demographics, the need for workplace and workforce literacy programs, and barriers to accessing adult learning. It emphasized the role of the provincial government in supporting literacy initiatives and the impact of demographic changes on literacy needs in Nova Scotia. Key social economic status indicators connected to literacy—educational attainment and labour force participation—are not distributed equally throughout the province, leading to regional variations. An increasing urbanized population and a growing outmigration contributes to these variations (Hayes, 2013).

### **Research Objectives**

A scoping review was conducted surveying Canadian academic literature and international grey literature published since 2014 examining established and emerging forms of literacies and their measurement (Hare et al., 2024). It sought to determine what different forms of literacy exist, and how they have been defined and measured in scholarly literature to inform literacy assessment in the province of Nova Scotia. Our overarching research question is: What different forms of literacy have been documented and how have they been defined and measured in the literature?

### **Methods**

The methods for this scoping review adhere to the Arksey and O'Malley scoping review framework (2005) with updates by Levac et al. (2010). The review aims to identify, appraise, and chart literature on literacy measurement, emphasizing transparency and methodological rigor. It includes a comprehensive search strategy designed with librarian support, targeting Canadian peer-reviewed literature retrieved from academic databases (Scopus, LISTA, ERIC, Education Source) and global grey literature (Google, 31 organizational websites, contact with experts) limited to English-language sources from 2014 onwards (see Appendix A: General search queries). Literature was screened in two phases: first by title/abstract, and then by full text according to inclusion/exclusion criteria (see Appendix B) developed by the research team. Extracted data (Appendix C) was analyzed quantitatively and qualitatively, with results presented in narrative and tabular formats.

### **Findings and Discussion**

There is a need to develop standardized yet contextual evaluation frameworks; socioeconomic and demographic factors (e.g., education, income, regional disparities) were found to be key determinants of literacy outcomes. It is essential to consider literacy's multiple domains and purposes and how it is shaped by relationships and embedded in specific cultural and community contexts; conventional understandings and metrics of literacy therefore can and should be reconceptualized to account for broader definitions and approaches to measurement (i.e., practices rather than skills-based). Federal and provincial support remain essential to coordinating literacy initiatives and expanding access to programs, particularly in underserved regions.

Findings confirm the need for targeted literacy programs in rural areas, culturally relevant and context-specific programs and approaches that respect cultural knowledge, and flexibility in literacy measurements to account for diverse learner needs and social and cultural contexts. Challenges include a need to reflect broader, multifaceted outcomes such as social connections, confidence, and independence in daily tasks. Emerging forms of literacy, particularly digital literacy, were found to be increasingly critical to navigating and participating in society.

### **Ongoing Research**

The next step of this ongoing research program will gather insights from literacy experts and community members in Nova Scotia on how literacy may be assessed to reach a robust understanding of the state of literacy in the province. A Delphi technique will be used, a group judgment method aimed at deriving insights from experts (learners, educators, practitioners, and policymakers) on complex topics, organized into structured phases (Beiderbeck et al., 2021). First, a survey, informed by the findings of our recent scoping review, will be developed and disseminated widely across Nova Scotia. Results will be analyzed to discern sentiments, similarities, and disagreements, feeding into a one-day engagement session where preselected experts will discuss these findings. Survey and engagement session participants will include literacy practitioners, educators, and policymakers from diverse groups across Nova Scotia.

### *Data Visualization Dashboard*

An interactive dashboard informed by this study will allow the public to explore relevant data, which will be identified and collected using insights from the scoping review. It will provide a "literacy index" localized to the province of Nova Scotia as a means of quickly communicating key information for policy decision-makers and internal communities of interest (Clos et al., 2019). It will enable interaction and exploration of aggregated data to support evidence-based decision-making (Vila et al., 2018), support recommendations communicated in future LNS reports and provide a feedback mechanism for community members to submit suggestions for data inclusion, ask questions, or engage in discourse around findings (Petersen et al., 2017).

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## Appendices

### Appendix A: General search queries

#### Scopus (Scopus.com)

1. ( TITLE-ABS-KEY ( ( literac\* ) W/5 ( measur\* OR indicator\* OR metric\* OR assess\* OR evaluat\* OR framework\* OR benchmark\* OR index OR indices OR scale\* ) ) )
2. TITLE-ABS-KEY ( canadian\* OR canada\* OR "british columbia\*" OR alberta\* OR saskatchewan\* OR manitoba\* OR ontario\* OR quebec\* OR "new brunswick\*" OR

"prince edward island\*" OR "nova scotia\*" OR labrador\* OR newfoundland\* OR nunavut\* OR "northwest territor\*" OR yukon\* OR toronto\* OR montreal\* OR vancouver\* OR ottawa\* OR calgary\* OR edmonton\* OR winnipeg\* OR "first nation\*" OR metis ) OR EXACTSRCTITLE ( canadian\* OR canada\* OR "british columbia\*" OR alberta\* OR saskatchewan\* OR manitoba\* OR ontario\* OR quebec\* OR "new brunswick\*" OR "prince edward island\*" OR "nova scotia\*" OR labrador\* OR newfoundland\* OR nunavut\* OR "northwest territor\*" OR yukon\* OR toronto\* OR montreal\* OR vancouver\* OR ottawa\* OR calgary\* OR edmonton\* OR winnipeg\* OR "first nation\*" OR metis )

3. 1 AND 2

Filtered to date range 2014-2024, filtered to article, review, book chapter.

### **Google**

1. (literacy or literacies) AND (measure OR indicator OR metric OR assess OR evaluate OR evaluation OR framework OR benchmark OR index OR indices OR scale)

Limited to 2014-2024.

Limited to English.

Limited to Canada.

The first 20 pages of results for each Google search will be reviewed.

### ***Appendix B: Screening eligibility criteria***

#### *Exclusion criteria:*

- Studies published in a language other than English.
- Literature published before 2014.
- Literature published outside of Canada or focused on a geographic context outside North America. Only measurement frameworks developed in/for the Western context are considered; this is to keep the scoping review geographically focused and results more relevant to literacy systems similar to Nova Scotia.
- Conference papers, book chapters, editorials, notes, letters, books, errata, protocols, reviews (however, reviews will be flagged so that reference lists can be screened for additional studies to include).

#### *Inclusion criteria:*

- Peer-reviewed journal articles, or grey literature (report, survey, guideline, framework, organizational literature) with any type of study design will be included.

- Explicitly measure, propose means of measuring, or evaluate a form of measurement for literacy or specific form(s) literacy OR discuss attempts at doing any or all of the previously mentioned.

### ***Appendix C: Data extraction form***

#### **1. Title of study**

Copy and paste the title.

#### **2. Study population/data source**

Identify either the participant population (e.g., a sample of Nova Scotia adults 18+) or data source used (Stats Canada data of youth 8-12). Be as detailed as you can.

#### **3. Geographic context**

What geographic location does the study focus on? (e.g., Canada, US, G7 countries, global, etc.).

#### **4. Concept/type(s) of literacy**

Name the type(s) of literacy as they are identified in the study (e.g., financial literacy, or literacy as reading and numeracy).

#### **5. Definition/understanding of literacy**

Include if provided.

#### **6. Instrument used to measure/assess literacy**

E.g., the PIAAC, a knowledge test, a survey, etc.

#### **7. Indicators/Measurement**

Relating to the instrument: (e.g., a score on the PIACC, level achieved on a knowledge test, etc. which determines a level of competency)

#### **8. Key findings**

E.g., future research, calls to action, conclusions, policy implications, barriers/facilitators in defining and/or measuring literacy (e.g., institutional factors, cultural considerations, technology advancements, etc.).

#### **9. Strengths/weaknesses/limitations of measuring tool or method**

As described by the authors, not according to the extractor. Include if present in literature.

#### **10. Funding source**

If this study is funded or supported by any organization/government/special interest group, please note which one(s). (Copy the funding statement if there is one).