

Developing Critical Literacy for Entrepreneurial Search Practices in Digital Environments

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1. Research Background

Entrepreneurs increasingly rely on search engines to find information for identifying opportunities, managing risks, and solving immediate operational problems (De Saulles, 2007; Jansen et al., 2010). Although search engines provide rapid access to large quantities of information, their results are shaped by ranking algorithms, commercial interests, source visibility, and users' search strategies. In such a landscape, entrepreneurs rely on their critical literacy to evaluate, interpret, and transform information into actionable insights (Attah-Boakye et al., 2023; Orrensalo et al., 2024; Roetzel, 2019). This study investigates how entrepreneurs develop and apply critical literacy in their everyday use of search engines and how they perceive the value of training for improving these practices.

Critical literacy (CL) is conceptualized as an integrative capability encompassing information literacy (IL) and digital literacy (DL). IL concerns recognizing information needs and searching for, evaluating, interpreting, and applying information (Bawden, 2001). DL concerns the performance of these activities through digital tools and systems (Gilster, 1997). Yet entrepreneurs in digital environments face an additional challenge as the information they rely on is shaped by platforms' algorithms, digital interactions, and networked reputation systems (Elia et al., 2020; Lloyd, 2019; Smith et al., 2017). This concern shifts from whether entrepreneurs can evaluate the information content to whether they can also evaluate the environment that shapes it. Building on the complementary relationship between IL and DL and taking into account the complexity of digital environments, the concept of CL becomes necessary to capture a broader form of information seekers' judgment, emphasizing the information seekers' understanding of the information environments critically and to act appropriately within them (Bozbiyik et al., 2026; Drabinski and Tewell, 2019; Gagrčin et al., 2026). This conceptualization is consistent with the ACRL Framework's understanding of searching as strategic exploration, in which information seekers keep refining questions, keywords, sources, and strategies as understanding develops (ACRL, 2016). This study defines CL as *an entrepreneurial capability to identify information needs; search for, evaluate, and integrate information through digital tools; interpret the socio-technical structures that shape its production, visibility, and credibility; and use that understanding reflectively and strategically in entrepreneurial decision-making and venture development.*

2. Methodology

The study employed a qualitative research design including semi-structured interviews with 19 entrepreneurs operating in Finland, i.e., 10 Vietnamese immigrant entrepreneurs and 9 Finnish entrepreneurs. The approximately 90-minute interviews examined participants' search practices, learning pathways, and perceptions of CL training. The data were analyzed thematically using NVivo 15 software.

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3. Results

The findings identify five interconnected dimensions of CL in the use of a search engine. First, entrepreneurs translated business problems into searchable questions and effective keywords. Second, the findings show that entrepreneurs approach search engines as starting points within a broader information-seeking process. After identifying potentially relevant results, they examined the websites and information providers behind them and moved from search-engine results to complementary sources. The sources consulted varied according to the business problem. Regulatory and legal information was commonly checked through government websites, institutional services, or legal professionals, whereas information about markets, growth, marketing, and business opportunities was supplemented through professional platforms, experienced practitioners, peers, and business networks. CL, therefore, emerged as the capability to orchestrate multiple information sources, which helps entrepreneurs move beyond merely retrieving information from a single search to a more exploratory, recursive search process and to effective uses of search results. Third, entrepreneurs evaluated the credibility of search results by examining source characteristics, e.g., authorship, publication date, references, institutional affiliation, the quality of the content, e.g., references, peer validation, and perceived motives. Fourth, they showed practical awareness that search engines' algorithms could influence what became visible and appeared trustworthy. Fifth, they interpreted the retrieved information in relation to their particular business situations, including their industry, geographical location, business model, and prior knowledge.

Most participants developed these capabilities through self-directed, experiential learning, including repeated Google searches, keyword experimentation, trial-and-error, and practical testing of information. Formal training was considered useful when it helped participants develop more effective searching strategies. Learning pathways were broadly similar across the Vietnamese and Finnish groups. However, within this sample, Finnish entrepreneurs were generally more skeptical about formal training, whereas Vietnamese immigrant entrepreneurs were more open to structured support.

4. Theoretical Contributions

Drawing on Bawden's (2001) work, this study extends CL from the ground of information and digital literacy to address the socio-technical structures of digital information environments (Bozbiyik et al., 2026; Drabinski and Tewell, 2019; Lloyd, 2019). In this study, CL is a multidimensional construct comprising cognitive, practical, contextual, social, and experiential dimensions (Bawden, 2001; Jarrahi and Thomson, 2017; Kuehn, 2023; Lloyd, 2017). CL involves not only the ability to analyze and evaluate information, but also the capacity to apply it in practice, adapt to specific information environments, and engage with others through networks and communities. This study, therefore, strengthens understanding of critical literacy (CL) as a strategic capability that enables entrepreneurs to formulate search queries, inspect and evaluate retrieved sources, verify information, and apply it effectively. (Ahmad et al., 2020; Attah-Boakye et al., 2023; Bolek et al., 2018; Orrensalo et al., 2024). Importantly, strategic searching involves more than producing keywords or evaluating isolated results; it requires knowing when to move beyond the search engine, which complementary sources to consult, and how to integrate different forms of information.

Another important theoretical contribution is the finding that CL functions as an antecedent and an outcome of the searching process. Entrepreneurs need CL in order to effectively and efficiently search and use information search engines. At the same time, they develop CL through repeated engagement with information tasks and information environments (Jarrahi and Thomson, 2017; Kuehn, 2023; Lloyd, 2019). CL, therefore, should be understood as a part of the entrepreneurial lifelong learning process (Bolek et al., 2018; Erdogan et al., 2013). Extending this perspective, CL development is co-constructed with the information environment, linking individual-level practices with broader system-level dynamics (Kuehn, 2023).

5. Practical Contributions

These findings provide suggestions for designing entrepreneurship training. They suggest that effective training should move beyond standardized approaches to adopt more practice-based and context-sensitive formats (Detlor et al., 2022; Liang et al., 2025; Rodrigues, 2023). The finding also raises the tension between the effectiveness and attractiveness of training to entrepreneurs. While entrepreneurs with prior training experience tend to view training as valuable for developing their literacy, those who relied primarily on self-directed learning tend to express more ambivalent attitudes toward training. This indicates a potential gap in the perceived usefulness of training among this group. This suggests that program designers and educators critically consider how they market their program and to what audiences they are targeting (Detlor et al., 2022). They should take into account what motivates or even demotivates entrepreneurs to participate in training, and thus design the training structure that better addresses entrepreneurs' needs, expectations, and requirements. For example, entrepreneurs in this study value the convenience of the study in terms of time and are also interested in the opportunity to network through such events.

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