

From Empathy to Impact: Examining Opportunity Recognition for Impactful, Socially Relevant Entrepreneurship

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Abstract: Entrepreneurship education (EE) aims to develop students' ability to identify, evaluate and act on opportunities, yet opportunity identification receives little structured attention. It is shaped by prior knowledge, experience and networks, which can limit students to familiar markets and problems. This creates an innovation blind spot in unfamiliar or underserved domains such as ageing, disability or accessibility, where socially relevant entrepreneurship is needed but user knowledge is less accessible. Empathy-based methods, such as empathic interviewing, perspective-taking, observation and immersion, offer a promising path but remain under-researched in entrepreneurship education. This working paper presents a PhD project that conceptualises entrepreneurial empathy as a teachable capability: an epistemic bridge through which students access, interpret and translate deeper user knowledge into higher-quality opportunities. Opportunity quality is multidimensional, spanning problem depth, user alignment, innovativeness, social relevance and impact potential. The research asks to what extent empathy-based methods enable students to identify higher-quality opportunities grounded in deeper understanding of user needs. It comprises four studies: a cross-disciplinary typology of empathy-based methods; an AI-supported scaffold for empathic interviewing; a randomised comparison of trained and conventional interviewing; and a study of physical immersion. Together they combine conceptual development, educational design and empirical evaluation to strengthen inclusive, socially relevant entrepreneurship education.

Keywords: Entrepreneurship Education, Opportunity Identification, Entrepreneurial Empathy, Empathy-Based Methods, Empathic Interviewing, Socially Relevant Entrepreneurship

1. Introduction

Entrepreneurship education (EE) fosters entrepreneurial mindsets and develops students' ability to identify, evaluate and act on opportunities and create value through innovative action (Fayolle and Gailly, 2008; Shane and Venkataraman, 2000). Despite the growth of EE research, little attention is paid to the earliest entrepreneurial stage: opportunity identification. Most programmes emphasise ideation, business modelling, validation and pitching, assuming students will arrive at meaningful ideas. Yet identification is neither automatic nor evenly distributed: it is shaped by prior knowledge, lived experience, disciplinary background and networks (Shane, 2000; Baron, 2006). Effectuation theory suggests entrepreneurs build on who they are, what they know and whom they know (Sarasvathy, 2001), mechanisms that can keep students close to familiar markets, users and problems.

This creates a pedagogical challenge: how can EE help students identify high-quality opportunities grounded in user needs, particularly when those needs are unfamiliar, hidden or poorly articulated? The challenge is sharpest in underserved domains such as ageing, disability,

chronic illness, homelessness or poverty, where socially relevant entrepreneurship is needed yet students lack direct knowledge or networks. Empathy-based methodologies offer a path: empathic interviewing, immersion, perspective-taking and contextual inquiry can broaden students' perspectives, uncover unarticulated needs and reframe problem spaces (Kouprie and Sleeswijk Visser, 2009). Evidence in entrepreneurial contexts suggests they lead to more original, user-aligned opportunity framing (Prandelli, Pasquini and Verona, 2016; Khalid and Sekiguchi, 2018).

Yet these methods remain underutilised and under-researched in EE. A systematic review of students' opportunity identification capability found that, across 44 empirical studies, only two used empathy-based techniques (Farrokhnia et al, 2026); a review of opportunity recognition in EE similarly finds the capability scarcely researched (Cárdenas-Figueroa and Olmedo-Navarro, 2024). A review of empathy across entrepreneurship and engineering reports a similar imbalance: entrepreneurship studies empathy mainly in relation to outcomes such as entrepreneurial intentions, mostly outside educational settings, while engineering research has paid more attention to empathy as a teachable, developable capability (Litvinov et al, 2023). This working paper presents a PhD project that addresses this gap by examining empathy-based opportunity identification and developing scaffolds for its rigorous, scalable use. The project therefore contributes by

specifying and empirically testing how empathy-based methods can expand students' access to user knowledge and improve the quality of opportunities identified in unfamiliar problem spaces.

2. Conceptual Framing

To address this gap, the project is organised around two central constructs: entrepreneurial empathy as a developable capability and opportunity quality as the principal outcome. The project conceptualises empathy-based methods as teachable epistemic bridges for opportunity identification, and entrepreneurial empathy as an overarching learnable capability through which students access, interpret and translate deeper user knowledge into higher-quality opportunities. Following Packard and Burnham (2021), empathy is treated not as a stable trait but as a trainable capability through which students engage with users' lived experiences, needs, constraints and contexts to support the identification, framing and development of meaningful opportunities. In effectuation terms, it lets students deliberately expand what they know and whom they know beyond their familiar starting point. Opportunity quality is treated as multidimensional, spanning problem depth, user alignment, innovativeness, social relevance and impact potential, and these dimensions serve as the shared evaluative criteria across the studies. The framing is especially relevant for socially relevant, impactful and regenerative EE, where underserved or marginalized groups such as older adults or people with chronic illness or disabilities have needs that are hard to identify through desk research or superficial contact. Entrepreneurial empathy may help students slow down before committing to a solution, question assumptions and attend more carefully to users and their lived experience.

3. Main Research Question

To what extent do empathy-based methods enable students to identify higher-quality entrepreneurial opportunities grounded in a deeper understanding of user needs?

4. Research Design

The question is addressed through four interrelated studies combining conceptual development, educational design and empirical evaluation.

4.1 Study 1: Typology of Empathy-based Methods

Study 1 develops a cross-disciplinary typology of empathy-based methods, combining a literature-based method review across fields such as entrepreneurship, design, ethnography, psychology and social sciences with expert interviews. It categorises methods by mechanism, educational purpose, type of user insight, difficulty and relevance for different contexts, and provides the overview from which the later studies draw: empathic interviewing is the core, scalable method for Studies 2 and 3, while the immersive methods in Study 4 come from the same typology.

4.2 Study 2: AI-supported Interview Scaffold

Study 2 develops and evaluates an AI-supported scaffold for empathic interviewing. Interviewing is widely encouraged in EE and innovation, but difficult to train and practice effectively, leading to students often interviewing superficially: they ask leading questions, pitch too early, seek confirmation and fail to probe and dig deeper. Using a design science approach, the study builds a voice-to-voice training environment with believable AI personas that prepares students for, rather than replaces, real interactions and develops their empathic interviewing capability. AI enables repeated practice in a standardised, low-risk setting and scalable training and assessment beyond human role-play alone. After a pilot, 400–500 students across several cohorts will complete pre-post simulations, rubric-based assessment and student reflections. The rubric covers active listening, open and non-leading questioning, probing, perspective-taking and responsiveness to user cues. This sample supports reliable estimates of improvement and exploratory comparisons across disciplines.

4.3 Study 3: Trained Versus Conventional Interviewing

Study 3 tests whether trained empathic interviewing improves opportunity identification beyond conventional interviewing. Approximately 60 students working in duos, producing around 30 teams, will take part in a standardised opportunity-identification sprint, with approximately 15 teams per condition. Given its exploratory nature, the study is intended to provide an initial indication of whether trained empathic interviewing improves

opportunity quality and to inform the design of larger follow-up research. The control group receives a standard interview briefing typical of many EE settings; the intervention group receives intensive empathic-interview training supported by the Study 2 tool. Both groups then interview the same user group for equal time and produce an anonymised opportunity dossier (user profile, problem and opportunity statement, preliminary value proposition, and reflection on how their understanding changed). Social relevance is built into the task and criteria. Outputs are assessed by condition-blinded expert and user juries using rubrics covering problem depth, user alignment, innovativeness, social relevance and impact. Opportunity quality will be operationalised as blinded rubric scores across the five predefined dimensions of problem depth, user alignment, innovativeness, social relevance and impact potential. An exploratory component compares business and STEM cohorts.

4.4 Study 4: Physical Immersion

Study 4 examines physical immersion and situated identification. Some needs and constraints are not accessible through interviews alone: people normalise workarounds, struggle to articulate tacit routines, or overlook systemic constraints. This small-scale, high-depth study uses observation, shadowing, contextual inquiry, accessibility audits and structured reflection in real settings to examine what immersion adds beyond interviews and how situated engagement shapes opportunity framing, depth, novelty and user alignment. It is especially relevant for unfamiliar or underserved contexts, and user groups will be selected with attention to accessibility, participant burden and ethics.

5. Expected Contributions and Implications

The project is expected to make four contributions. Conceptually, it will develop entrepreneurial empathy as a teachable capability and epistemic bridge into unfamiliar problem spaces. Methodologically, it will produce a cross-disciplinary typology of empathy-based methods for opportunity identification. Empirically, it will test whether trained empathic interviewing improves opportunity quality. Educationally, it will develop pedagogical scaffolds and assessment rubrics for entrepreneurship education.

The broader implications concern the integration of empathy-based opportunity identification into entrepreneurship curricula, particularly in STEM contexts where students may possess strong technical capabilities but require greater support in understanding users and framing problems. The project may also support more inclusive, resilient and socially relevant innovation by helping students engage systematically with underserved user groups. Outputs are expected to include openly accessible educational materials alongside academic publications. Overall, the project seeks to establish whether empathy-based methods can provide a practical and scalable means of helping students discover more meaningful opportunities beyond the limits of their existing knowledge and networks.

Ethics Declaration

No empirical data have yet been collected. The planned studies involve human participants and will proceed only after approval by my university's research ethics committee.

AI Declaration

A generative AI assistant was used to support language editing, restructuring and reference formatting; it was not used to generate the research design or any findings. All output was reviewed and verified by the author, who takes full responsibility for the paper.

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