

Self-Assessment Tools in Entrepreneurship Education

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Abstract

Entrepreneurship self-assessment tools (ESATs) are widely used in entrepreneurship education (EE) to assess learners' entrepreneurial competencies and tendencies. Nevertheless, there does not appear to be a corresponding debate around the level of their use, application or impact in reflecting, and potentially shaping, entrepreneurial identities. The purpose of this structured literature review is to critically appraise the current research literature on ESATs. The findings highlight that despite the use of ESATs in EE, there is little sense of a shared discourse around these tools and how they might shape learner's entrepreneurial identities. The paper identifies divergent themes related to how entrepreneurship is defined and what should be measured. This paper represents the first comprehensive literature review of ESATs, identifying gaps in research and areas for future inquiry. It challenges the EE community to critically assess these tools' theoretical foundations and to foster a more robust academic discussion about their role and purpose in EE curricula.

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Introduction

An important assessment instrument for educators, trainers and learners has been entrepreneurship self-assessment and evaluation tools (Moberg 2020; Wraae et al. 2018). There is an abundance of tools that can be used, the most common of which are GET2 which emerged in the 1990s in the UK, and more recently Yoop in Finland. Yet, while these tools are commonly used in EE practice, there does not appear to be a corresponding base of robust research exploring their design, use, application and efficacy or, as measures of educational impact (Rogers-Draycott et al. 2020). Furthermore, there has been little consideration of the tools as sources of identity production and affirmation.

This paper presents a critical literature review in order to begin investigating the role, purpose and potential impact of these ESATs. The authors are interested in the motivations and reasoning behind the development of these tools and the ways in which they may represent

and reproduce particular kinds of entrepreneurial identities. The rationale for this study is twofold:

1. This is an area that is under-researched (Rogers-Draycott et al. 2020). While there may be research used to underpin particular tools, little has been done to bring together and examine them and their assumptions about EE.
2. Social identity theory (SIT) posits that social identities are often constructed in intergroup relations, with social roles played by individuals depending on the context in which they are embedded (Tajfel and Turner, 1979). Nevertheless, identity is perceived as representing internal meanings, values and beliefs that often relates to how individuals identify themselves in relation to social structures (*we*), intersecting with their individual identity (*I*) – that is the notion of the self, with its unique features, beliefs and actions (Turner et al. 1987; Stets and Burke 2000; Weick et al. 2005). Social identities are therefore derived from social structures , together with individual identities, representing the self and how individuals self-categorise (Tajfel 1982).
3. Evaluation tools are not value free. They say something about how we understand entrepreneurship and the corresponding identity. Furthermore, representations do not simply reflect reality but help shape it, providing definitions and legitimacy to certain kinds of identities (Champenois et al. 2020). It is important that we understand the ways in which our teaching and education tools may be complicit with certain kinds of discourses about entrepreneurship and how they may inform learners' sense of self.

Research questions:

1. What are educators using ESATs for?
2. What do assessment tools say about entrepreneurial identities?

The authors decided to undertake a critical literature review of the subject to gain insights and answers to these two research questions (Kraus et al. 2020; Smith et al. 2022).

Structured Literature Review

A structured literature review was conducted to search for literature that would answer our research questions. The approach entailed extensive searches of relevant Business Management and Education studies (both empirical and theoretical) that provide answers to pertinent research questions (Booth 2001; Hemsley-Brown and Sharp 2003). These include Business Source Complete, Scopus, ScienceDirect, and Web of Science. We extended our searches by using internet queries such as Google Scholar and identified secondary references and further publications by authors identified in the original searches. We performed these searches using various terms related to 'entrepreneur', 'assessment', and 'measurement'

(Table 1). The intention was to ensure that, as far as possible, all literature in the field was identified, while providing pertinence to the research questions and the best evidence for the review (Tranfield et al. 2003), hence, the search did not apply any limitations to the year of publication, such as starting date.

Table 1 – Search Terms

Searches		Terms
Entrepreneurial	+	Assessment tools
Entrepreneurship	+	Assessment tools
Enterprise	+	Assessment tools
Entrepreneurship	+	Measures/measurements
Entrepreneurial	+	Measures/measurements
Enterprise	+	Measures/measurements
Entrepreneurship/entrepreneurial/enterprise assessments tools	+	Competences
Entrepreneurship/entrepreneurial/enterprise assessment tools	+	Mindset
Entrepreneurial/entrepreneurship/enterprise assessment tools	+	Higher education
Entrepreneurial/entrepreneurship/enterprise assessment tools	+	Attributes
Entrepreneurial/entrepreneurship/enterprise assessment tools	+	Behaviours
Entrepreneurial/entrepreneurship/enterprise assessment tools	+	Performance
Entrepreneurial/entrepreneurship/enterprise assessment tools	+	Evaluation
Entrepreneurial/entrepreneurship/enterprise assessment tools	+	Education

The review considered publications in the English Language from, for instance, the UK, USA, and Europe. Published scholarly journal papers (ABS V4) were prioritised. Unpublished conference papers were excluded. This resulted in 187 papers (empirical and theoretical) being selected for more detailed review.

All searches were tracked using an Excel database and selected papers were documented, with links to original sources including year of publication, journal title, authors names, and search engine source. Each publication was scrutinised for its pertinence and following strict applications of the search parameters. These reviews were conducted in batches by the research team and cross checked by another member of the same group. In the first instance, it was evident that terms related to ‘education’, ‘enterprise’, and ‘assessment’ yielded far too many citations. Besides, they were impertinent for the purpose of the review since the terms in isolation can be applied to a range of additional contexts. It was decided therefore to change the term ‘entrepreneurial assessment’ to ‘entrepreneurial *self*-assessment’ using the primary Boolean search terms: *Self*-assessment + Entrepreneurship; *Self*-assessment + Entrepreneurial; *Self*-Assessment tool; *Self*-assessment + Measurement tool; *Self*-assessment + Skill; *Self*-assessment + Competence.

The selected papers were divided among the research team and subjected to a second round of reviews to extract information about the purpose, the definition of entrepreneurship *self*-assessment tools used in the study, design, sampling, methodology, findings and implications for research. A manual coding process was applied in which papers were rejected or progressed. This coding was re-checked by another member of the team and all borderline decisions were discussed until a consensus was reached. This resulted in 38 articles coded for progression. To ensure pertinence to the remit of the review all 38 papers were revisited by the team to categorise their key features and broader themes. This was to ensure that the papers had a critical focus on the development or application of ESATs in an EE context. From this group, 18 research studies were identified and considered for further analysis (Table 2).

Table 2 – Identified Papers

Authors	Date	Title/Summary
Baggen, Y., Kampen, J.K., Naia, A., Biemans, H.J., Lans, T. and Mulder, M.	2018	Development and Application of the Opportunity Identification Competence Assessment Test (OICAT) in Higher Education
Caird, S.	1993	What Do Psychological Tests Suggest about Entrepreneurs?

Čopková, R., Gróf, M., Zausinová, J. and Siničáková, M.	2021	Adaptation of the Entrepreneurship Competences Questionnaire Based on EntreComp Framework
Dierk, U. and Dover, P.A.	2012	Measuring the Integrative Impact of Managers, Entrepreneurs and Leaders in Sustaining Innovation: A Tool for Customized Executive Education Programs
Driessen, M. and Zwart, P.	2006	The Entrepreneur Scan Measuring Characteristics and Traits of Entrepreneurs
Finez, J.	2008	Three Steps Methodology to Measure an Individual's Personal Competences for Entrepreneurship Towards a "Particular" Business Idea
Hanson, J.	2021	Developing and Evaluating the Arts Entrepreneurship Profile: A Systematic Approach
Human, S.E., Clark, T., and Baucus, M.S.	2005	Student Online Self-assessment: Structuring Individual-Level Learning in a New Venture Creation Course
Lans, T., Biemans, H., Mulder, M. and Verstegen, J.	2010	Self-awareness of Mastery and Improvability of Entrepreneurial Competence in Small Businesses in the Agrifood Sector
López-Núñez, M., Rubio-Valdehita, S., Armuña, C. and Pérez-Urria, E.	2022	EntreComp Questionnaire: A Self-Assessment Tool for Entrepreneurship Competencies
Díez-Echavarría, L., Valencia-Arias, A. and Bermúdez-Hernández, J.	2020	Tool for Measuring the Influence of the Field of Knowledge on Entrepreneurial Intention among University Students

Renko, M., El Tarabishy, A., Carsrud, A.L. and Brännback, M.	2015	Understanding and Measuring Entrepreneurial Leadership Style
Riyanti, B.P.D. and Suwartono, C.	2018	Psychometric Evaluation of Newly Developed Self-assessment of Entrepreneurial Competencies
Joensuu-Salo, S., Viljamaa, A. and Varamäki, E.	2022	Testing the EntreComp framework and its Relation to Start-up Behaviour in Seven European Countries
Satar, M.S. and Natasha, S.	2019	Individual Social Entrepreneurship Orientation: Towards Development of a Measurement Scale
Slišāne, A., Lāma, G. and Rubene, Z.	2021	Self-assessment of the Entrepreneurial Competence of Teacher Education Students in the Remote Study Process
Mets, T., Raudsaar, M., Vahejõe, K., Kaseorg, M. and Vettik-Leemet, P.	2022	Adaptation of the Entrepreneurship Competences Questionnaire Based on EntreComp Framework
Wraae, B., Tigerstedt, C. and Kratzer, J.	2018	Introducing Student Self-assessment as a New Assessment Tool in Entrepreneurship Education

For the purpose of analysis and reporting, the authors adopted a thematic analysis (Braun and Clarke 2006), derived through an interpretive approach (Burrell and Morgan 1979), which aimed to summarise the key themes already established in the literature. For the purpose of this paper, the knowledge base related to ESATs has been categorised into four themes: what is measured; types of entrepreneurship; diversity of tools and prediction vs. reflection.

Findings

What is Measured?

Across the papers, studies reflect divergent views of what entrepreneurship means and what should be measured. Several tools conceptualise entrepreneurship in terms of key traits or competencies. For instance, Caird (1991) lists creativity, locus of control, autonomy, need for

achievement and calculated risk taking as the elements that need to be measured. On the other hand, Riyanti and Suwartono (2018) suggest three clusters of competencies to be measured: achievement, planning and power competencies – the latter relates to persuasion and networks. A key difference highlighted is the expectation of planning, not evident in Caird's study, which may be considered more of a management competency than an entrepreneurial trait. Human et al. (2005) focus on five competencies which are similar but slightly different: the entrepreneurial perspective, stress and the entrepreneur, the entrepreneurial ego, creative problem solving, and the entrepreneur. The reference to the ego raises the issue of competencies that may be damaging or a risk to the entrepreneurial journey and puts into play a different version of this identity than the other authors. Mets et al. (2022) develop a more recent tool considering various competencies and attitudes, encompassing aspects such as ethics and sustainability, pointing to a version of entrepreneurship that is responsible and reflective.

Entrepreneurial Types

Several papers were interested in identifying very specific entrepreneurial identities, dependent on context and discipline-based entrepreneurship. Examples include social entrepreneurship (Satar and Natasha 2019), arts entrepreneurship (Hanson 2021), entrepreneurial leadership (Dierk and Dover, 2013), or enterprise educators (Slišāne et al. 2021). This exemplifies the diversity of entrepreneurial identities that are represented and defined by ESATs.

Diversity of Tools

The tools ranged from new models to existing ones that have been adapted by educators. For example, Human et al. (2005) relied exclusively on free tools, which they felt best measured entrepreneurial traits and competencies which they prescribed as key to entrepreneurial performance. These included the Bizmove test and Webquiz, both of which measure competencies such as energy levels and risk taking. On the other hand, Mets et al. (2022) draw from the EntreComp framework to develop a self-assessment tool. The remaining articles propose the GET2 Test (Caird, 1991) and the Opportunity Identification Competence Assessment Test (OICAT) (Baggen et al., 2018).

Prediction vs. Reflection

Across the papers reviewed, the ESATs were generally assigned to one of two functions: prediction or reflection. While some tools were created to help predict behaviour in users, others were developed to help learners reflect upon their competencies and make judgements about their developmental needs. For example, Riyanti and Suwartono (2018)

applied ESATs in an effort to predict the success of graduates who might become an entrepreneur, although they note that more research effort is needed to test these insights. Other authors focused on the reflective role of ESATs to gain subjective insights. Often they point to an objective, claimed scientific certainty, largely grounded in the literature of psychology, more specifically psychometric testing. An example of this is Driessen and Zwarts' (2006) E-Scan tool, which uses psychometric testing to facilitate self-reflection for entrepreneurs and those who want to start a business, so that they can, in turn, identify areas for further personal development. Often, the tools were considered to be able to function as both a training tool for personal reflection and development, and as predictive tools for external agencies considering investing or supporting entrepreneurs. Satar and Natasha (2009) claim their tool is for individuals who want to assess their orientation strengths at the individual level, yet it is also useful for incubators, governments, and other stakeholders who are considering supporting entrepreneurs.

Discussion/Implications

This paper opens up a discussion and critical evaluation about the purpose of self-assessment tools in EE and their mediating role in entrepreneurial identities. This study underscores the paradox between the widespread use of self-assessment tools in EE and the lack of critical academic discussion around their roles in shaping learners' entrepreneurial identities. Our structured literature review demonstrates that we, as practitioners, are not discussing self-assessment tools in any critical ways despite their wider use and popularity in the classroom. Besides, it shows the diversity of tools which have been informed by different definitions of entrepreneurship, which in turn will reproduce in our practice particular accounts of these identities. It acknowledges that, through our practice, and the tools we adopt, we represent, reproduce and validate certain definitions of entrepreneurship. Equally, these tools might exclude other entrepreneurship definitions and identities. To this extent our research encourages a more reflective and critical approach to the use of entrepreneurship self-assessment tools.

This paper represents the first comprehensive literature review of entrepreneurship self-assessment tools, identifying gaps in research and areas for future inquiry. It challenges the EE community to critically assess these tools' theoretical foundations and to foster a more robust academic discussion about their role and purpose in EE. The study looks back through an evolution of EE studies and provides an account of the different ways in which entrepreneurship identities have been represented through the lens of entrepreneurship self-assessment tools.

Conclusion

This study set out to address two central research questions: (1) What are educators using self-assessment tools for? and (2) What do assessment tools say about entrepreneurial identities? The findings reveal that educators use ESATs both for predicting entrepreneurial potential and fostering self-reflection among learners. However, there is significant variation in what these tools measure and how they are applied, reflecting different understandings of entrepreneurship.

The review identifies a clear need for more standardised frameworks to guide the development and application of these tools. By categorising the existing tools and their theoretical underpinnings, the study highlights the diversity of entrepreneurial identities represented and the critical role these tools may play in shaping learners' identity. It also notes that more attention needs to be paid to tools, their effects, and the role of context linked to identity.

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