

EntreComp and GreenComp for Entrepreneurship. What is the 'Real' Relationship?

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Abstract: This paper seeks to explore the relationship between two educational frameworks: EntreComp, the European entrepreneurship competency framework (Bacigalupo et al., 2016) and GreenComp, the European sustainability competency framework (Bianchi et al., 2022). At first sight the relationship is just a matter of competency addressing entrepreneurship and sustainability respectively. Thus, a simple comparison between the two lists of competences would reveal two similar but different competency lists, perhaps aimed at different audiences? The reality though, we posit, is that there is an underlying conceptual emphasis on responsibility which is yet to be fully explored. This paper provides the above comparison but then explores this conceptual underpinning in the light of what we term Responsible Entrepreneurship Education.

Keywords: EntreComp, GreenComp, sustainability, responsible entrepreneurship education

1. Introduction

Many entrepreneurship educators are still not aware nor actively using the European Community competency frameworks for both entrepreneurship education (EntreComp) and for sustainability education (GreenComp). With the imperative of climate change, but also recurring questions about the role of business in society, there is a need for proper teaching in Responsible Entrepreneurship Education and this paper outlines how the competency frameworks have thus far been used in practice; and then discusses them in light of the concept of Responsible Entrepreneurship Education (REE). Justification for the emphasis on responsibility in education is provided by PRME (2022) which has developed Principles for Responsible Management Education. PRME's mission is to transform management education and develop the responsible decision-makers of tomorrow to advance sustainable development (PRME, 2022). According to Antonio Guterres, United Nations Secretary-General "The PRME initiative was launched to nurture responsible leaders of the future. Never has this task been more important. Bold leadership and innovative thinking are needed to achieve the Sustainable Development Goals." (PRME, 2022). PRME is now cited as the largest organised relationship between the United Nations and management-related higher education institutions. The theory of PRME is that managers need to be educated in six principles (see Table 4 below). However, all codes or sets of principles need to be reviewed and or updated to keep up to date with important developments. According to Avelar et al., (2022), using bibliometric research to review 135 papers on PRME, there is need for the knowledge sharing promoted and facilitated by PRME to help prepare decision makers for different situations and scenarios, and different perspectives. This supports our premise in this paper that PRME needs to be used and adapted as much for Entrepreneurship Education as Management Education in general. Arguments supporting the emphasis on Entrepreneurship Education in Universities are also presented in Jones et al., (2020). In this paper we review the two main European competency frameworks for Entrepreneurship and Sustainability, EntreComp and GreenComp, and posit that PRME can be updated or adapted for more direct reference to entrepreneurs rather than managers in general.

2. EntreComp in practice

EntreComp was published in 2016 as a comprehensive, flexible and multipurpose reference framework designed to support and inspire actions to improve entrepreneurial capacity (McCallum et al., 2020). Figure 1 provides an image of the framework which is divided into three competence areas: 'ideas and opportunities', 'resources', and 'into action'. Each of these three competence areas includes fifteen competences; and an eight-level model is provided for progression against 442 learning outcomes. As such, the framework provides a resource that can be used to design entrepreneurship programmes, evaluate learning outcomes, and for students to reflect on their competency from a developmental perspective. The framework is not designed as a pass/fail model or competent/not competent but to provide inspiration and support for educators and learners in a practical way.

Of particular significance to our analysis is that ‘ethical and sustainable thinking’ is considered a core competence, and the report put forward by Bacigalupo et al. (2016) suggests EntreComp can be applied across various value creating activities, including green enterprise or eco and social entrepreneurship.

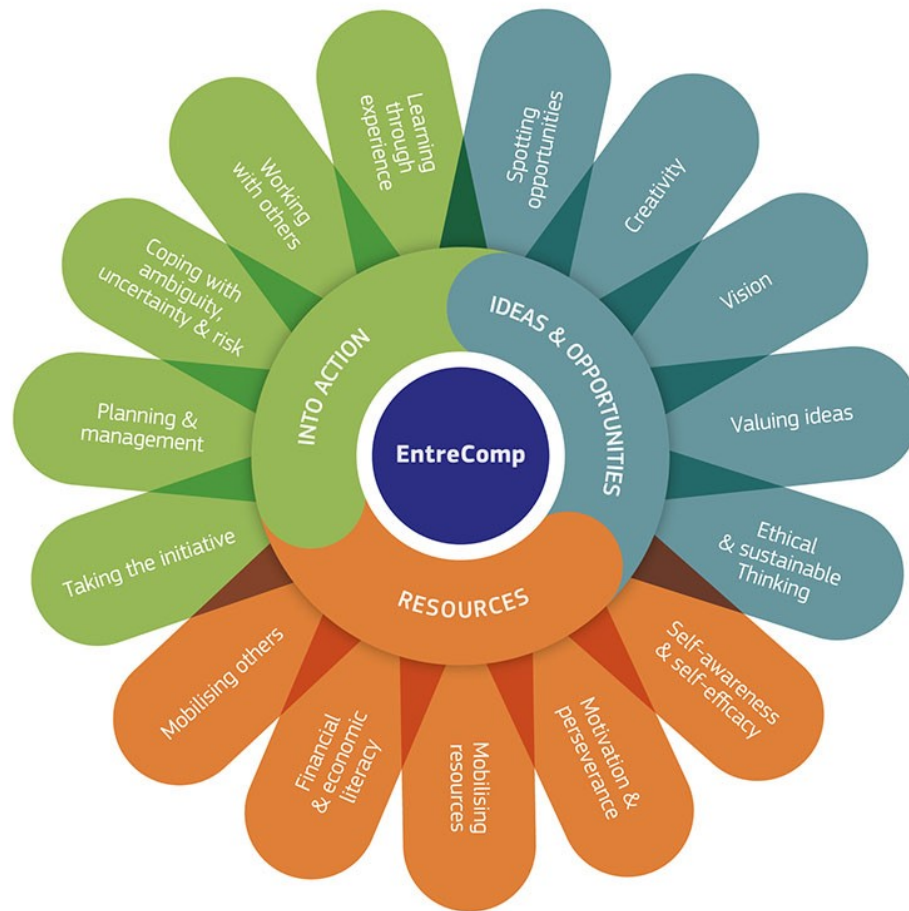


Figure 1: The EntreComp framework image. (Bacigalupo et al., 2016).

The EntreComp playbook from the European Union, Joint Research Centre, provides excellent examples of EntreComp in practice (McCallum et al., 2020). Ten case studies are included (see Table 1).

Table 1: EntreComp case studies. Adapted from McCallum (2020).

Case study title	Focus of case study	Key learning outcomes
NFLinEYE	Non-Formal Learning in the Erasmus for Young Entrepreneurs Programme.	Measures lifelong learning impact of the EYE programme.
Espacio RES	Start-ups in social enterprise, technology, agriculture, clean energy and the creative fields.	Develop, plan and organise an incubator programme for start-ups.
EU3Leader	Third-sector leaders.	Professional skills framework to foster entrepreneurial competence.
Guadalinfo	Digital competence and citizen empowerment.	Support for developing social innovation and business ideas, employability and social inclusion.
Mygrants	App providing information and formative assessment to refugees.	Scout our hidden talents among trainees and match them with job opportunities.
SFEDI	Occupational standards in the UK.	Project development, new course design and review of existing qualifications.

Case study title	Focus of case study	Key learning outcomes
Social Innovators KG	15 unemployed individuals in Graz, Austria.	Develop holistic entrepreneurial skills as part of incubator programme for social enterprises.
Startup Support South Africa	Major bank.	Workforce redeployment training to support employees at risk of redundancy to help develop their P/T enterprises into F/T income.
The Women's Organisation	Enterprise creation and growth incubation services for women.	Review and develop services, and organisational development tool for team training and strategic direction.
Youth@Work	Youth Employability and Entrepreneurship of Erasmus+ national agencies.	Tailored capacity-building training to agency staff, creation and training of a pool of trainers.

The above 10 cases have been deployed in the public sector (n=2), private sector (n=3) and third sector (n=5). This indicates that the framework is generic and can be applied and adapted across different sectors and for different purposes, just as suggested by the originators of EntreComp, (Bacigalupo et al. 2016). In fact, the above 10 cases reveal use of the EntreComp framework for a wide range of stakeholders including youth, the unemployed, the employed, for trainers, for educators, for professionals, etc. And the outcomes range from personal and professional development to strategic development, reflection, and capacity development. A particular cross-cutting theme is 'employability' and all 10 cases are mapped against employability indicators (see Table 2.).

Table 2: Employability skills mapped against 10 EntreComp cases. Adapted from McCallum (2020)

Employability skill	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Labour market skills analysis			X		x		X		X	
Outreach to the under/unemployed				X			X		X	
Assessment of skills	X	X	X		X	X	X	X		x
Personal development plan	X		X	X	X	X	X	X	X	
Design of training/development	X		X	X	X	X	X	X	X	X
Delivery of training/development	X	X	X		X	X	X	X	X	x
Careers advice					X					
Client tracking and monitoring						X				
Liaising with employers for job placement/experience					X					
Workforce development	X				X	X		X	X	
Start-up pathway	X	X		X	X	X	X	X	X	
Certificate of competence	x	X				X	x	x		X

The above table indicates which employability indicators had been specifically mapped against use of EntreComp by 2018 in these 10 cases. Indeed, the modal uses of EntreComp are in the design and delivery of training, personal development plans and start-up pathways. McCallum et al., (2020) further review the most common uses of EntreComp in these 10 cases to indicate that EntreComp has been used to promote entrepreneurship, analyse competences, assess skills, and recognise certification.

3. GreenComp in practice

Bianchi et al., (2022) describe GreenComp as a set of sustainability competences to feed into education programmes to help learners develop knowledge, skills and attitudes that promote ways to think, plan and act with empathy, responsibility, and care for our planet and for public health. GreenComp comprises four interrelated competence areas: 'embodying sustainability values', 'embracing complexity in sustainability', 'envisioning sustainable futures' and 'acting for sustainability' (see Table 3).

Table 3: GreenComp image. (Adapted from Bianchi et al., 2022)

Area	Competence	Descriptor	Examples cited
Embodying sustainability values.	Valuing sustainability.	To reflect on personal values...	Impact of fast fashion or short haul flights.
	Supporting fairness.	To support equity and justice for current and future generations...	Stop Ecocide Foundation.
	Promoting nature.	To acknowledge that humans are part of nature...	The Nature Conservancy/ The Nature Lab.
Embracing complexity in sustainability.	Systems thinking.	To approach a sustainability problem from all sides...	Green technologies.
	Critical thinking.	To assess information and arguments...	Interrelation between fast fashion, poor labour conditions, solid waste accumulation, pollution.
	Problem framing.	To formulate current and potential challenges...	Technical solutions as opposed to renewal of nature.
Envisioning sustainable futures.	Futures literacy.	To envision alternative sustainable futures...	Teach the Future.
	Adaptability.	To manage transitions and challenges...	Adapt for our Future.
	Exploratory thinking.	To adopt a relational way of thinking...	Eco-schools programme.
Acting for sustainability.	Political agency.	To navigate the political system...	Fridays for Future movement; Extinction Rebellion.
	Collective Action.	To act for change...	European Education for Climate Coalition.
	Individual initiative.	To identify own potential for sustainability...	Knowledge to Action.

The GreenComp model is represented by bees, flowers, nectar and beehives (Bianchi et al., 2022) wherein bees represent ‘acting for sustainability’ competences, flowers represent ‘envisioning sustainable futures’ competences, beehives represent ‘embodying sustainability values’ competences, and nectar/pollen represents ‘embracing complexity in sustainability’ competences. Examples supporting the competences are also shown in Table 3 column 4. There does not appear to be a playbook for GreenComp as yet. However, the examples cited by Bianchi et al., (2022) serve to show that the competences identified in GreenComp are evident in practice.

4. Discussion

According to McCallum et al., (2020), success factors for EntreComp include: it provides a common language, is holistic, easy-to-understand, trustworthy, user-friendly and flexible. The authors of this paper would add that with ethics and sustainability, cited as a core competence for entrepreneurs, this supports not just the holistic approach but also supports the emphasis on trust. Seikkula-Leino et al., (2021) caution though that use of EntreComp could be hindered by a lack of a shared vision and development of practice. Their study of n=348 respondents posits that EntreComp is a tool that is best used by the learning community as co-creators through practice-oriented reforms. This emphasis on practice is critical, and Seikkula-Leino et al., (2021) imply that this ‘real’ learning is when individual awareness of learners is supported by a learning community [this could be described as a community of practice, Author insert]. This is similar to the more recent approach of GreenComp, developed by Bianchi et al., (2022), which specifically cites ‘adopting a relational way of thinking’ as a descriptor of sustainability competence.

It is too early to evaluate the use of GreenComp per se in developing sustainability competences as the framework was only published in 2022. However, a recent ‘whitepaper’ on sustainability in startups (Yokoyama and Melde, 2020) provides evidence that sustainability is critical to startups. Their survey of 282 startups found 86% had thought about the role and relevance of sustainability for their business model with 83% seeing tangible positive effects. Further, most startups are motivated internally on sustainability and incentivised externally (51%). However, the influence of human resources within the startups was weaker at 40%. The authors conclude that whilst sustainability in corporations is largely professionalised, with clear standards and guidelines, there is

still a long way to go in startups, and indeed, with a desire on the part of many entrepreneurs to embed sustainability into their startups, now is the time for Enterprise Education (EE) to offer guidance on how this can be achieved. Further, the authors argue that Venture Capitalists also need to take responsibility to educate and influence startups; and if this is the case, then this assumption would also benefit from further study.

5. Conclusions

Both EntreComp and GreenComp provide useful competency-based tools to support the development of entrepreneurship and sustainability skills respectively. Crucially, there are clear overlaps between the two with EntreComp including ethics and sustainability as a core competence for all entrepreneurs and for its authors to explicitly state that value creating activities may include green entrepreneurship (Bacigalupo et al. 2016). This paper has further shown that responsibility is a key link shared between the two approaches with their emphasis on trust and fairness. In the corporate world, principles underpinning ‘responsible management education’ have been adopted by many leading organisations across the world (PRME, 2022) but there has been less attention to the need for what we term responsible entrepreneurship education (REE). The evidence from the impact of EntreComp which includes ethics and sustainability as a core competence, and evidence from the impact of GreenComp (by default based on data from startups on the significance of sustainability but weak HR influence), indicates that principles of responsible entrepreneurship education (REE) need to be developed. The authors have thus used the PRME principles to develop additional REE principles. We thus anticipate that these will support the use of both EntreComp and GreenComp and in particular strengthen the positive influence of HR practices in startups (see Table 4). This should also mean that communities of practice can be developed to support REE (e.g. co-creation of educational courses and materials between eco and social entrepreneurs and entrepreneurship educators). In addition, further research can be conducted on the take up of GreenComp, and its impact, which will contribute to the global dialogue on the importance of entrepreneurship and sustainability in general.

Table 4: PRME and the development of REE (Author table, adapted from PRME)

PRME principles	Descriptor	REE principles	Descriptor
Purpose	We will develop the capabilities of students to be future generators of sustainable value for business and society at large and to work for an inclusive and sustainable global economy.	Responsibility	We should ensure that ethics and sustainability are core competences that need to be developed in all entrepreneurs. We will achieve this by developing communities of practice based on methods and research to develop practice.
Values	We will incorporate into our academic activities, curricula, and organisational practices the values of global social responsibility as portrayed in international initiatives such as the United Nations Global Compact.	Entrepreneurship	We recognise that all entrepreneurs are not the same and the diversity of entrepreneurial mindsets includes eco and social entrepreneurs in addition to traditional entrepreneurs. We will treat everyone equally but also recognise this diversity in our teaching approaches by catering for such individual differences in mindset. Rather than ignoring values, a consideration of our own values and how these shape our behaviour as part of the entrepreneurial process needs to be considered.

PRME principles	Descriptor	REE principles	Descriptor
Method	We will create educational frameworks, materials, processes and environments that enable effective learning experiences for responsible leadership.	Education	We will adopt the UN PRME but adapt for REE e.g. by applying the principles to entrepreneurs, startups and SMEs not just managers and corporations. We will also use tools such as EntreComp and GreenComp in a responsible manner to educate entrepreneurs on the importance of ethics and sustainability and the development of their practice.
Research	We will engage in conceptual and empirical research that advances our understanding about the role, dynamics, and impact of corporations in the creation of sustainable social, environmental and economic value.		
Partnership	We will interact with managers of business corporations to extend our knowledge of their challenges in meeting social and environmental responsibilities and to explore jointly effective approaches to meeting these challenges.		
Dialogue	We will facilitate and support dialog and debate among educators, students, business, government, consumers, media, civil society organisations and other interested groups and stakeholders on critical issues related to global social responsibility and sustainability.		

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