

Insights into an Action-Oriented Training Program to Promote Sustainable Entrepreneurship



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1 Introduction

The increasing awareness and importance of social justice and environmental impacts has expanded the role of entrepreneurship to integrate social and environmental goals within traditionally financially motivated business activities (Anand et al., 2021; Cohen & Winn, 2007; Dean & McMullen, 2007; Muñoz et al., 2018). While researchers and politicians alike regard entrepreneurship as an effective means to counter unfavorable market conditions and reduce poverty (Van Praag & Versloot, 2007), its potential extends toward creating sustainable outcomes for an even wider range of fields (Bacq et al., 2020; Doh et al., 2019; Markman et al., 2016, 2019). Tackling today's "large, unresolved problems" (Colquitt & George, 2011, p. 432) and contributing to sustainable development requires society to have actors capable of recognizing and implementing unconventional ideas (Eisenhardt et al., 2016; George, 2016). Entrepreneurs possess the ability to find and implement innovative solutions, and are seen as key players in creating these necessary impacts.

Entrepreneurship training has been identified as a leverage point for increasing the number and quality of entrepreneurs; meta-analytic evidence has confirmed its effectiveness (Martin et al., 2013). However, findings have also demonstrated that training programs need to be adapted if sustainability or responsible thinking, in general, are to be integrated into current curricula (Akrivou & Bradbury-Huang, 2015; Tracey & Phillips, 2007). Rather than increasing the total number of business start-ups as their ultimate goal, training courses should aim at raising awareness for sustainability and enabling the generation of environmental and social value (Gast et al., 2017; Neck & Greene, 2011; Shane, 2009). With sustainable entrepreneurship training being seen as key to promoting the recognition and exploitation of

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sustainable opportunities (Kuckertz & Wagner, 2010), it is necessary to transform existing entrepreneurship programs and develop courses that empower individuals to contribute to sustainable development.

2 Framework

2.1 Sustainable Entrepreneurship

Sustainable entrepreneurship has been recognized as a means to address social and environmental problems through the implementation of innovative solutions (Schaltegger et al., 2018; Schaltegger & Wagner, 2011). It stands for a business-driven concept of sustainability, whereby entrepreneurial activity contributes to meeting “the needs of the present without compromising the ability of future generation to meet their own needs” (World Commission on Environment and Development, 1987). Sustainable entrepreneurship specifically relates to the three fundamental components of sustainable development: economic growth, environmental protection, and social equity (the so-called triple bottom line, Elkington, 1997). While economic goals (i.e., financial profit), the focus of traditional entrepreneurship, remain an integral part of the venture, sustainable entrepreneurs simultaneously create social and environmental value. Hence, sustainable entrepreneurs have been identified as “those individuals with entrepreneurial intentions who aim to manage a triple bottom line” (Kuckertz & Wagner, 2010, p. 527). Two core challenges of systematically integrating the triple bottom line are the identification of sustainable business opportunities that “provide development gain for others” (Patzelt & Shepherd, 2011, p. 2) and finding “ways of organizing business processes in a sustainable way” (Lans et al., 2014, p. 37).¹

Sustainable entrepreneurship training, therefore, needs to explore the recognition of sustainable opportunities, challenges encountered, and the ways in which entrepreneurs implement their ideas to contribute toward a more sustainable future. In this context, it should encourage nascent entrepreneurs to see social and environmental responsibilities as a backbone for developing innovative solutions rather than as a burden (Dean & McMullen, 2007; Hockerts & Wüstenhagen, 2010). Sustainable opportunity recognition is a core step in the entrepreneurial process and has received considerable attention in current research (Choongo et al., 2016; Eller et al., 2020;

¹I chose the triple bottom line as an overarching concept for defining sustainability because of two advantages in the context of designing an entrepreneurship training program. First, it is directly applicable along the entrepreneurial process as it encourages entrepreneurs to frame both their business opportunity (starting a venture) and their business processes (running a venture) in terms of environmental, social, and economic impacts. Second, because environmental, social, and economic impacts have to be taken into account by every enterprise that considers itself or at least its processes sustainable, it is applicable to a broader range of ventures (that might come up in the training context).

Shepherd et al., 2013). Patzelt and Shepherd's (2011) opportunity-recognition framework indicates that individual-level factors such as knowledge and awareness of sustainability issues are important for recognizing sustainable opportunities, and should therefore be considered in training programs. As sustainable entrepreneurs pursue social and environmental aims as well as financial goals, they face additional challenges and increased complexities within their business activities. Often perceived (at least to some extent) as opposing factors (DiVito & Bohnsack, 2017; Kraus et al., 2017; Pacheco et al., 2010), sustainability and profitability cause trade-offs and complexities with regard to integrating the triple bottom line (Davies & Chambers, 2018; Hoogendoorn et al., 2019; Poldner et al., 2017). For example, decisions on using sustainable resources have implications for production costs as well. Existing curricula, therefore, need to be reworked to factor in these complexities (Lourenço et al., 2013; Tracey & Phillips, 2007) and enable individuals to implement sustainable processes while managing potential trade-offs when operating their businesses.

2.2 Action-Oriented Entrepreneurship Training

The process of entrepreneurship is primarily based on entrepreneurial action, not on passive behaviors or accidental events (Frese et al., 2007, 2016; Shane & Venkataraman, 2000). Thus, research has highlighted action as a key element within the entrepreneurial process (Frese, 2009; McMullen & Shepherd, 2006). A particularly effective way to promote entrepreneurial action is through the implementation of action-oriented training, which is popular in the field of entrepreneurship education (Barr et al., 2009; Frese et al., 2016; Gielnik et al., 2015; Honig, 2004; Martin et al., 2013; Pittaway et al., 2009; Rasmussen & Sørheim, 2006).

Action regulation theory provides a framework for developing such action-oriented entrepreneurship training (Frese & Zapf, 1994; Zacher & Frese, 2018). Training programs should allow participants to follow an action sequence of setting goals, forming action plans, executing and monitoring their implementation (action), and receiving (positive and negative) feedback. Participants learn relevant knowledge and skills for performing actions, and should be encouraged to actively practice these target behaviors during the training course, processing the training's content and turning it from abstract into practical knowledge. Action-oriented approaches have been shown to be particularly effective in enhancing the learning of complex tasks, as well as in complex and dynamic contexts that require adaptive thinking (i.e., the ability to adapt what has been learned to new situations) (Bell et al., 2017; Keith & Frese, 2008; Kozlowski et al., 2001; Smith et al., 1997).

To develop a course that fosters sustainable entrepreneurship, I build on an action-oriented entrepreneurship training program that has been successfully implemented in several countries around the world (Frese et al., 2016). In the next section, I introduce the methodological approach of the existing program and explain

how I developed the training program to integrate sustainability as a crosscutting theme.

3 Course Design

3.1 Key Features of the Student Training for Entrepreneurial Promotion

The Student Training for Entrepreneurial Promotion (STEP) is a 12-week course aiming to train young people, particularly in low- and middle-income countries, entrepreneurial skills, and knowledge that facilitate entrepreneurial action, i.e., starting and running a successful business. It is grounded in action-regulation theory (Frese & Zapf, 1994; Zacher & Frese, 2018) and emphasizes the use of (1) *action principles* and (2) *active learning* for allowing participants to follow the action sequence of action-oriented training (Gielnik et al., 2015).

Using *action principles* means that entrepreneurship is conveyed in an evidence-based, yet practical, way. Evidence-based entrepreneurship training is grounded on a solid theoretical foundation (Frese et al., 2012). Building upon current scientific knowledge on entrepreneurial success factors, STEP covers 12 three-hour long sessions with topics from the disciplines of entrepreneurship, psychology, and business administration. Within these sessions, participants learn fundamental skills through action principles. Action principles are applied theory and can be understood as science-based “rules of thumb” that provide practical guidance for dealing with specific tasks (Drexler et al., 2014). They inform the students about what and how they have to accomplish entrepreneurial tasks in the start-up process, helping to apply the knowledge and skills learned to real-life situations (Frese, 2009; Gielnik et al., 2015). An overview of the sessions and action principles can be found in Gielnik et al. (2015).

Active learning indicates that STEP trainees are not passive training course recipients. On the contrary, students engage in concrete entrepreneurial actions in a real business environment. As part of small groups, they start microbusinesses during the 12 weeks of STEP, and go through the entire entrepreneurial process of preparing, launching, and managing a business. Each group receives starting capital of approximately US\$100, which has to be paid back at the end of the training course. The groups identify and evaluate business opportunities, acquire materials and equipment, and deal with suppliers and customers. The goal is that their business generates profit within the 12 weeks of the program. During the training sessions, the groups learn action principles, work on exercises geared toward their businesses, present the progress of their business, and receive positive and negative feedback from both other trainees as well as the trainer. Through this, action principles are linked to concrete behavior, and participants receive real-life feedback on their

entrepreneurial actions, hence developing a refined understanding of how to apply the knowledge gained (Frese & Zapf, 1994).

Certified local lecturers facilitate the weekly sessions, guiding learners through exercises and presentations, giving feedback, and sharing their own experiences. Specifically, local lecturers can contextualize the knowledge, thus facilitating trainees' learning processes and increasing training transfer to real-life situations. Each facilitator is certified in a three-day "train the trainer" workshop to learn the action-oriented and evidence-based approach of the training program from STEP master trainers who are experts in this didactical approach. The workshop provides knowledge about the training content and educates how the materials can be applied in an action-oriented manner (Bischoff et al., 2014).

STEP has been successfully implemented at several institutions in various countries in Africa, Asia, Latin America, and the Middle East. Scientific studies have confirmed the positive effects of STEP on students' short- and long-term entrepreneurial behavior across different cohorts and countries (Bischoff et al., 2014; Frese et al., 2016; Gielnik et al., 2015, 2016, 2017). Using randomized controlled trials to assess the impact, the studies demonstrate that STEP has a significant effect on training participants versus a comparable control group that has not received the training. Randomized pre-post-test designs with a control group allow controlling for biases and methodological artifacts so that differences between the groups after the training can be attributed to STEP (Campbell, 1957; Reay et al., 2009). Short-term evaluations have shown that the training program increases participants' entrepreneurial confidence, intentions, and action planning. Long-term evaluations have indicated that STEP trainees perform more entrepreneurial actions, have a higher start-up rate, and create more jobs, even in spite of unfavorable labor market conditions. Thus, STEP strengthens participants' entrepreneurial action regulation and their subsequent success in entrepreneurship (Gielnik et al., 2015).

3.2 Integrating Sustainability at the Core of the Entrepreneurship Training Program

Building upon the proven methodology of the original training program, I developed STEP Sustainability (STEP S) by applying a multistep approach. After deciding on the new program's focus and goals, a colleague and I engaged in the evidence-based development of the training materials. Following this, we collected feedback in workshops with both German and African partners and conducted pilot studies in Uganda and South Africa. After each phase, we performed reiterative revisions of the materials. In the following, I present the core features of the course design at the current stage (i.e., after having conducted the pilot studies) before discussing the results of the pilot studies.

Similar to STEP, STEP S is an action-oriented 12-week training course. Its focus is twofold. First, it aims to educate about how to pursue a sustainable business idea,

i.e., by identifying and profitably implementing business opportunities with an environmental and/or social benefit. Second, students learn how to set up sustainable processes and management practices within their businesses, irrespective of the nature of the venture they are engaging in. These processes and practices aim to jointly consider and improve the environmental (e.g., waste management), social (e.g., employee health and welfare), and economic (e.g., profit) performance of a venture. Within the same active learning approach as described for STEP, students in STEP S engage in setting up their own ventures in groups of four to seven members. They can choose their business idea freely. Note that the ideas, therefore, include both ventures that follow a sustainable vision and mission (i.e., providing solutions to existing environmental or social problems) and “regular” businesses that integrate sustainable processes and practices within a more typical business set-up. The range of the different ventures pursued illustrates to the students that sustainability is important in all kinds of businesses.²

The goal of STEP S is to create a sustainability-oriented, entrepreneurial mindset:

- Students gain knowledge about and awareness of sustainable entrepreneurship, potentially challenging assumptions about how business works (create value beyond profitability).
- Participants are better able to identify and evaluate business opportunities that can contribute to solving social and/or environmental problems.
- Students gain a better understanding of how businesses and their processes impact society and the environment, and learn about sustainable management practices.

Rather than teaching sustainability in an extra session—and potentially promoting sustainability as a mere add-on—STEP S integrates sustainability into all aspects of the business process, establishing it as a crosscutting theme in all STEP S sessions. A colleague and I added additional content and action principles based on the evidence-based revision of the material. We furthermore conducted workshops with German and African partners from Uganda and Kenya, who also took part in developing the original STEP training materials. They have been successfully implementing STEP for several years now, and were able to give feedback on the proposed adaptations. While STEP S is still a 12-week training course, the structure of the sessions has changed to account for the importance of problem identification and sustainable opportunity development, as well as the increased complexity caused by managing the triple bottom line. We especially reworked the training program to not only cover content on economic (financial) topics, but integrated information and exercises regarding the environmental and social impacts of entrepreneurial activities at the core of the training course as well. Moreover, we scheduled ten minutes at the beginning of each session, in which the groups on a

²As mentioned within the framework section, applying the triple bottom line as an overarching concept for the training allowed sustainability to be integrated along the entrepreneurial process and more broadly within different kinds of businesses.

Table 1 STEP S training structure and description of sustainability-oriented content

No.	Session title	Description of session and sustainability-oriented content
1	Problem Identification	New session, which focuses on the identification and analysis of social and environmental problems.
2	Sustainable Opportunity Development	Students form groups based on identified social and/or environmental problems and develop solutions to/business opportunities from these problems.
3	Triple Bottom Line Goals, Plans, and Action	Groups set goals on all aspects of the triple bottom line and develop indicators and action plans accordingly. Increased anticipation of potential risks and problems, stronger focus on strengthening persistence to prevent mission drift (i.e., switching to a non-sustainable business).
4	Sustainable Marketing I	Differentiation between customers and beneficiaries, and discussion on sustainable processes and production conditions.
5	Strategic Management and Acquiring Resources	Visit by a sustainable entrepreneur to talk about his/her venture. Students discuss challenges in acquiring resources (e.g., funds) for sustainable businesses, and facilitators provide insights on access to funding (within a country's context).
6	Triple Bottom Line Accountability	Stronger focus on ethical behavior and how to manage accountability on each of the triple bottom-line dimensions.
7	Overcoming Barriers	Discussions on common barriers for sustainable enterprises and how to deal with them on a factual and an emotional level.
8	Triple Bottom Line Book-keeping I	Participants learn how to do bookkeeping for financial, environmental, and society-related indicators.
9	Triple Bottom Line Book-keeping II	
10	Sustainable Marketing II	The traditional marketing mix is complemented with sustainability inputs, e.g., product lifecycle (cradle-to-cradle). Moreover, discussions on sustainable supplier and customer relationships are integrated.
11	Sustainable Business Model Canvas	New session that focuses on economic, social, and environmental value propositions, and on how these aspects can be combined within a viable business model. Supplemented by information on how to write a business plan.
12	Registering Sustainable Enterprises	Introduction of legal and regulatory issues for legal forms of sustainable enterprises (e.g., cooperatives) within the country.

weekly basis reflected on their business decisions and experiences with regard to the triple bottom line. Our aim was for students to gain a better understanding of the interconnections, i.e., how their entrepreneurial decisions influence the environment and society.

Table 1 provides an overview of the training structure and a description of the sustainability-related content of each session. Of note is how this description corresponds to the main changes compared to the original STEP training program.

4 Pilot Studies

4.1 Uganda

STEP S was piloted for the first time in cooperation with the Makerere University Business School in Kampala, Uganda. The main goal of the pilot was to test the adapted training materials in terms of its practical applicability. We did not conduct a “train the trainer” workshop since this material had not yet been reviewed and tested. A colleague and I, both certified master trainers for STEP, and involved in adapting the material, facilitated most of the sessions. Additionally, a local lecturer conducted the session on legal and regulatory issues, providing valuable country- and context-specific knowledge. Moreover, local lecturers also attended most of the sessions to provide feedback on the training course.

Local lecturers informed business students about the opportunity to apply for a free training course on sustainable entrepreneurship. Students that were interested in the training course completed an application form and a baseline questionnaire. The participating students took part in eleven three-hour teaching units over two weeks in February 2019. An additional and concluding session took place after ten more weeks at the end of April 2019. The students developed (sustainable) business ideas in groups and implemented them between the first and second project phases. Every group received starting capital of approximately US\$100, which had to be paid back after the last meeting in April 2019.

A randomized control group design was used to evaluate the effectiveness of the training program. Both training and control group members completed a questionnaire before (T1) and after the two-week training course (T2). The control group was a waiting control group, and received a training program by the entrepreneurship center of the university after the T2 evaluation. Moreover, we asked students to fill in short daily reflection logs, and provided anonymous feedback sheets for suggestions on how to improve the training program. STEP S was a voluntary offer and not part of the regular curriculum. Although participants did not receive any credits or grades, they were awarded a certificate attesting their successful participation.

In total, 87 undergraduate students from different bachelor programs in the field of business administration filled in the application form and completed the T1 baseline questionnaire. They were randomly assigned to the training ($n = 40$) or the control group ($n = 47$). Thirty control group members and 33 STEP trainees, who attended most of the sessions and thus successfully finished the training course, filled in the T2 questionnaire.

The results show significant effects on the entrepreneurial mindset and sustainability orientation of STEP S participants. After the training course, STEP S trainees planned and performed significantly more entrepreneurial actions than members of the control group. Entrepreneurial actions measured included, e.g., doing market research, outlining a business plan, or conducting marketing. Moreover, STEP S had a positive effect on sustainable opportunity recognition, with trainees identifying significantly more sustainable business opportunities (addressing environmental

and/or social problems) than control group members. However, because of the small sample size, the results should be treated with some caution.

Our pilot experiences and qualitative analyses of the material gathered also indicated that changes and further adaptations were needed. Because we integrated sustainability as a core theme throughout the training program, but only slightly reduced the existing input, we ended up with too much content to teach within the pilot, and reworked the training materials accordingly. Some participants struggled with overcoming challenges related to setting up and running a sustainable enterprise (e.g., working outside of the “traditional” enterprise paradigm, finding suitable suppliers), and as a result switched to non-sustainable business ideas. We, therefore, adapted the training structure by increasing the focus on potential risks during the third session (*Triple Bottom Line Goals, Plans, and Action*) and conducting the *Overcoming Barriers* session at an earlier point in time (for the seventh instead of the tenth session, as it was prior to the pilot). Moreover, we realized that we had to obtain further contextual insights into the understanding of sustainable entrepreneurship and its associated challenges.

4.2 South Africa

Prior to our pilot project at the University of Limpopo in South Africa in 2020, and as a means to further revise and adapt our training materials to the context, we conducted interviews with seven local sustainable entrepreneurs. The aim was to advance our understanding of the complexities of sustainable entrepreneurship in South Africa. Our findings helped us to incorporate in the *Overcoming Barriers* session specific information on (how to deal with) the complexities and challenges of the sustainable entrepreneurial venture (e.g., lack of awareness and understanding of sustainable enterprises among market participants). Moreover, we contextualized the *Problem Identification* and *Sustainable Opportunity Development* sessions by integrating local knowledge. On top of that, the findings highlighted that “sustainable business” was understood differently than what we anticipated. Quite contrary to our definition, a sustainable business was not seen as a business that addresses the triple bottom line, but as a financially viable venture that can sustain itself in the long run. This finding helped us to adapt both the training materials as well as our evaluation measures toward a more comprehensive wording. We ran a separate test training session with 24 students of the University of Limpopo prior to the pilot project to gain further insights into the understanding of sustainability in the local context (i.e., of students who are not sustainable entrepreneurs) and how to increase awareness of the connection of sustainability and entrepreneurship.

The implementation of STEP S started in February 2020 following these adaptations. This time, I used a research design incorporating a control group that received no training, a STEP training group, and a STEP S training group. The goal was to compare differential effects to answer the question of whether STEP S trainees might suffer losses on entrepreneurial outcomes (e.g., in terms of

entrepreneurial confidence) compared to the original STEP training program. Local university lecturers delivered the training sessions. The trainers were qualified and certified in separate “train the trainer” workshops (one workshop for STEP facilitators, one for STEP S facilitators) prior to the start of the training course. STEP/STEP S was advertised through announcements by lecturers, student research assistants who supported the implementation of the training course, and posters on campus (we did not separately advertise the two different training variants). Students from all disciplines were invited to apply for entrepreneurship training. As in Uganda, although participants did not receive any credits or grades, they were awarded a certificate attesting their successful participation.

In this pilot, participants were undergraduate and postgraduate students with different study backgrounds. 226 applicants completed the baseline questionnaire before the training course (T1). Due to capacity constraints, and to evaluate the impact of STEP vs. STEP S, 114 applicants were randomly assigned to the training group, and 112 to the control group that received no training. All members of the training group could choose one of two training days. After participants chose their preferred training day, we randomly assigned one day as a STEP S (54 students) and the other day as a STEP training day (60 students). Students within both training groups formed business groups and received approximately US\$100 per group as starting capital. Unfortunately, the COVID-19 outbreak interrupted our program, allowing only five sessions to take place in person in February and March 2020, with the remaining seven training sessions conducted online via Zoom following a long interruption in November and December 2020. Only 22 STEP students and 20 STEP S students successfully finished the training course by attending more than eight of the twelve training sessions. In addition to these students, 47 control group members filled in our online questionnaire after the training course (T2). To gain further insight into STEP S, I additionally observed all training sessions and conducted multiple interviews with 18 STEP S participants over the duration of the pilot project (February–November 2020).

Statistical analyses showed that the training groups’ (STEP and STEP S) entrepreneurial confidence increased, while the control group that received no training experienced a slight decrease. Moreover, there were positive effects for STEP S trainees compared to STEP members on promoting a sustainability-oriented mindset. Specifically, STEP S increased participants’ knowledge of the environment and society as well as competencies (e.g., future thinking competence and normative competence) that have been identified as crucial for sustainable entrepreneurs (Lans et al., 2014; Ploum et al., 2018). Due to COVID-19 and the small sample size, future quantitative research is welcome to validate these results. Adding to the quantitative results, the interviews provided insight into learnings and experiences from the participants’ perspectives, indicating positive takeaways from the training program.

“Being in the presence of entrepreneurs, creative thinkers, that’s what I actually wanted. While also learning the means of running a business and also, in bonus, I actually also learned how to raise awareness, socially and environmentally. Which is also cool. I didn’t think I would actually learn that, but it’s cool. Turning into a superhero” (Interview with a STEP S participant).

5 Conclusion

Transforming entrepreneurship training is crucial to empowering individuals to create the impact needed for solving today's social and environmental problems. The developed action-oriented training program on sustainable entrepreneurship integrates sustainability as a crosscutting theme within the effective STEP entrepreneurship training. Pilot studies have yielded promising results, showing that STEP S can indeed change students' sustainability-oriented and entrepreneurial thinking and behavior. While these studies are just a starting point, and should be treated with some reservation, positive effects were visible in two very different pilot settings (e.g., university locations, participant backgrounds, length and setting of training courses), indicating that STEP S is very possibly an effective approach in facilitating sustainable entrepreneurship.

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