Article

Learning Sustainability Entrepreneurship by Doing: Providing a Lecturer-Oriented Service Learning Framework

Jantje Halberstadt [1], Christoph Schank [1], Mark Euler [2] and Rainer Harms [3,*

1   ISPA/W&E, University of Vechta, 49377 Vechta, Germany; jantje.halberstadt@uni-vechta.de (J.H.); christoph.schank@uni-vechta.de (C.S.)
2   ZE Zentrum für Entrepreneurship, PFH Private University of Applied Sciences, 37073 Göttingen, Germany; euler@pfh.de
3   NIKOS/ESIM, University Twente, 7500 AE Enschede, The Netherlands
*   Correspondence: r.harms@utwente.nl

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Abstract: Due to its growing practical relevance, sustainability entrepreneurship receives a high degree of academic attention. However, literature on how to educate sustainability entrepreneurs remains scarce. A promising didactical approach in this context is service learning. We ask if service learning is an effective way to educate sustainability entrepreneurs, and which framework conditions impact those educators. First, we draw on an established sustainable entrepreneurship capability framework and provide direct evidence from entrepreneurship educators about the effectiveness of service learning. Second, based on grounded theory, qualitative interviews with those educators reveal a framework composed of personal and institutional factors that they have to navigate when provide service learning. Our findings contribute to the interface of service learning and sustainability entrepreneurship by highlighting its effectiveness and the framework conditions for educators.

Keywords: sustainability; entrepreneurship; education; service learning

1. Introduction

At the intersection of the sustainability and entrepreneurship discourse, the topic of sustainability entrepreneurship is a relevant area of practice and inquiry [1,2]. Although the body of research on sustainability entrepreneurship has grown considerably in recent years, scholars have not agreed on a common definition. It is criticized that all too often sustainability entrepreneurship is narrowed down to entrepreneurial solutions for ecological issues [3]. Most actual terms take all areas of sustainability into account, while some only count entrepreneurial action as sustainable when both green and social aspects are addressed at the same time [4] and others arrange either social or ecopreneurial work under the roof of sustainability entrepreneurship [5]. We follow the latter and broadly define sustainability entrepreneurship as any entrepreneurial activity that contributes to generating societal impact or solving societies' problems, which covers a variety of activities and approaches. Sustainability entrepreneurship, thus, includes social and eco entrepreneurship as it '[...] aims to preserve the environment and to support lives and communities, while identifying and exploiting business opportunities and eventually developing future products and services' [6] (p. 204). Sustainability entrepreneurs recognize, explore, and exploit entrepreneurial opportunities that address social and/or ecological issues, and hence provide social value. They act as change agents by addressing societal problems [7–9].

Given the crucial role that sustainability entrepreneurs play in our society, we argue that fostering sustainability-oriented entrepreneurial thinking is a task for higher education institutions.

This task results from the confluence of broad societal trends. First, it is increasingly accepted that universities assume, next to education and research, a "third mission" of societal engagement [10]. An entrepreneurial university is one of the ways that the third mission is addressed. Second, we witness a change in the structure of companies, from large entities to smaller business units or even independent ventures [11] and a change in innovation from closed innovation to open innovation [12]. Third, we argue for a growing public awareness of sustainability topics, which is also reflected in the interests of students. Finally, we argue that the worlds' sustainably problems are "wicked" problems that require multidisciplinary approaches at scale, such as those facilitated by entrepreneurial thinking [13]. If this is so, then the question of how to best implement sustainability-oriented entrepreneurial thinking in the education of higher education institutions becomes relevant.

Sustainability entrepreneurship education research [14–16] has done a tremendous job in highlighting eco and/or social entrepreneurship education [17–19]. Authors have carved out and analyzed key competencies for sustainability entrepreneurs that (future) education should address [15,20]. However, research on innovative teaching formats that address sustainability entrepreneurship competencies is still scarce.

Service learning is an innovative teaching format that shows great promise for sustainability entrepreneurship education. The term 'service learning' addresses a wide range of didactics such as experiential learning [21], including volunteer and community service projects, field studies and internship programs [22]. Service learning brings field education and community service together and thus stands for a rich, innovative form of experiential education [23]. Although service learning and sustainability entrepreneurship education have common foundations and could prove to be powerful allies in the context of higher education, a joint discussion on these two topics lacks [24].

If it is true that service learning can be an effective teaching format for sustainability entrepreneurship, the question on how to best implement it become relevant. Hence our research question is: Which institutional and personal factors are crucial for a successful implementation of service learning for sustainability entrepreneurship education?

This question is particularly relevant for educators and educational policy makers who what to foster sustainability entrepreneurship by facilitating its implementation. An answer to our question can inform university management, curriculum developers, and lecturers in how to maximize effectiveness of sustainability entrepreneurship education.

2. Theory

2.1. Sustainability and Entrepreneurial Competencies for Educating Future Sustainability Entrepreneurs

Sustainability entrepreneurs need entrepreneurial competences as well as sustainability competences [15,20,25]. Entrepreneurial competencies can be grouped in a framework of five competence sets [20]: *Opportunity competence* is seen as important since it enables entrepreneurs to detect and exploit opportunities by systematically developing adequate problem solutions [26,27]. *Social competence* allows entrepreneurs to frequently interact with stakeholders and to create and maintain entrepreneurial networks [28,29]. *Business competence* is needed for enterprise management. It covers the use of different resources as well as taking decisions and implementing, evaluating and constantly reworking business strategies [30–32]. *Industry-specific competences* include specific market and technical experiences and knowledge [33–35]. Finally, *entrepreneurial self-efficacy* is underlined as relevant for the initial idea forming as well as the implementation and the managing process, since it constitutes the ability to belief in one's own entrepreneurial competence and counts as one of the strongest individual level predictors [36–38].

Sustainability competencies are more and more taken into consideration in the academic discourse [20]. Scholars deliver different approaches of how to conceptualize them to educate sustainability entrepreneurs [39–42]. Recent studies have focused on competencies for sustainability in

different working or business contexts, i.e., those specifically relevant for corporate social responsibility managers [7,43,44].

To integrate entrepreneurial and sustainably competences, Lans et al. [20] derive a set of seven key competencies for sustainable entrepreneurship based on Wiek et al. [45] and Dentoni et al. [46]. This competence set was empirically validated by Ploum et al. [15], who introduced a validated competence framework for sustainable entrepreneurship. We chose the Ploum et al. [15] framework because it has many previous (conceptual) studies as their foundation and aggregates them. Hence, it is an integrated, not a fragmented framework. In addition, Ploum et al. [15] is a recent work and aggregates most previous studies. Finally, their framework is empirically validated on a sample of over more than 400 potential entrepreneurs, which adds to its credibility. The framework consists of the following six key competencies:

(1) Strategic management and action competence: This is a combined competence that consists of the ability to actively involve oneself in responsible actions for the improvement of the sustainability of social–ecological systems and the ability to collectively design projects, implement interventions, transitions, and strategies for sustainable development practices [40,47,48]

(2) Embracing diversity and interdisciplinary competence: The ability to structure relationships, spot issues, and recognize the legitimacy of other viewpoints in business decision-making processes, be it about environmental, social, and/or economic issues [40,49].

(3) Systems thinking competence: The ability to identify and analyze all relevant (sub)systems across different domains (people, planet, profit) and disciplines, including their boundaries [45].

(4) Normative competence: The ability to map, apply, and reconcile sustainability values, principles, and targets with internal and external stakeholders, without embracing any given norm but based on the good character of the one who is involved in sustainability issues [45,50].

(5) Foresighted thinking competence: The ability to collectively analyze, evaluate, and craft "pictures" of the future in which the impact of local and/or short-term decisions on environmental, social, and economic issues is viewed on a global/cosmopolitan scale and in the long term [45].

(6) Interpersonal competence: The ability to motivate, enable, and facilitate collaborative and participatory sustainability activities and research [45,51].

This set of competencies is a validated foundation for the development of education on sustainable entrepreneurship. However, research on the development, implementation, and evaluation of concrete teaching formats that address the competencies that allow for sustainability-oriented entrepreneurial action lacks. Biberhofer [17], for example, stress that future pedagogical approaches should be more explicitly competence- and not only knowledge-oriented and suggest a variety of teaching and learning approaches, e.g., reflective learning, collaborative learning, experiential learning, problem-based learning, interdisciplinary learning, transdisciplinary learning, and transformative learning [25].

Among the different teaching forms, one approach seems to imply so far largely untapped potential, since it unites several of the aforementioned approaches: service learning. We continue to introduce service learning, cave out its theoretical foundations, and argue why we consider service learning as explicitly suitable for educating future sustainability entrepreneurs.

2.2. The Service Learning Approach and How It Can Contribute to Sustainability Entrepreneurship Education

Service learning is an approach that links the classroom with the outside world [52]. In service learning, students engage in community service while at the same time, they gain academic knowledge and skills. Examples of service learning are teaching hospitals [53,54], international development projects [55], and technology-based service learning.

Service learning differs from traditional artificial education settings [56,57]. Compared to other forms of education, reference to reality, reciprocal exchange with partners from practice, and didactically supported reflection of theory and practice are specifically important in service learning [58]. Service learning is a form of experiential learning, that addresses various competencies simultaneously [59,60].

Service learning may be an effective way to educate about the various competences needed by future sustainability entrepreneurs [15]. We now review the literature with regard to the connection between service learning and the sustainable entrepreneurship competencies suggested by [15]. In general, we found that service learning increases those competencies.

Concerning the *(1) strategic management and action competence*, some studies show that service learning has a positive impact on students' ability to apply what they have learned to 'the real world' [61–63]. Action competence is supported by service learning. For example, service learning fosters students' career development [64–66]. Service learning contributes to the development of self-efficacy and leadership skills which can be related to the entrepreneurial strategic management and action competence [57,64,67,68].

The *(2) competence to embrace diversity and interdisciplinary*, is shown to be positively influenced by service learning. For example, service learning reduces stereotypes [69,70]. Furthermore, service learning courses strengthen the cultural understanding and intercultural exchange [71–73]. Pless et al. [74] show that significant learning took place in the area of cultural intelligence and intercultural competence as a result of a service learning approach. Students also show increased willingness and ability to work in interdisciplinary teams and appreciate diversity [68,75–77]. Hanks and Icenogle [78] even show increased intergenerational competence for a specific service learning setting.

(3) Systems thinking and normative competence can also be improved by service learning. Early studies stated that service learning helps to build and to apply values that enable students to create a reflective opinion on how the world is and should be. It increases the awareness of societal problems [61] and the analytical skills to evaluate them with regard to the given circumstances [79,80]. This also requires critical thinking and cognitive skills. Both are said to be positively influenced by service learning as well [64,81–84]. Simons and Cleary [70] also refer to service learning as an approach that raises the desire to make a difference.

(4) Foresighted thinking competence is an integral part of classic leadership theories, [85,86] and has hence a strong place in the didactics research agenda. Studies that deal with building leadership skills through service learning come to positive results. For example, in the context of teaching financial literacy, Sabbaghi et al. [87] state that service learning may lead to a greater ability to foresee the likely outcome of situations (foresight). The same effects can be found, for example, in physician assistant education [88] and in nursing education [89]. In principle, service learning is closely related to competencies that promote anticipatory, forward-looking action and thinking [90,91].

(5) Interpersonal competence is affected by service learning in several ways. Pless [74] emphasizes the impact on personal self-development consisting of self-awareness, changing perspectives on life, realizing the importance of relationships, and work-life-balance. Together with stakeholder engagement and relationship management they merge interpersonal competencies, such as communication skills, empathy, and flexibility into community building as a learning area addressed by service learning. However, most of the authors specifically see improvement in students' personal identity [66,92,93], their self-confidence and awareness [64,94,95], as well as their presentation and communication skills [96–99].

These studies show that service learning is can effectively enhance the competences related to sustainability entrepreneurship. At the same time, these studies show a variety of approaches to service learning, in a variety of learning environments. In addition, students might experience service learning in different ways. In sum, service learning can address a variety of important competencies and thus has immense potential for sustainable entrepreneurial education.

But this potential has not yet been fully exploited—which seems to hold specifically true for non-American environments, since service learning is still said to be a US-American approach that has not been globally taken up. 'Put differently, is service-learning just an intellectual MacDonalds burger that has travelled to Africa as a consequence of Americanization and/or globalisation?' [100] (p. 4). The question remains why service learning—despite its proven potential—has not travelled to

or at least not settled down in other regions, e.g., Europe, especially in German-speaking countries. Although there are individual studies on service learning in German-speaking countries, current research is hardly sufficient [101–103]. Literature on factors creating a supportive environment is especially scarce, and we see a certain gap of empirical research in this field for European countries. Hence, we focus on the image of service learning below and analyze why and under which conditions service learning approaches are (not) being used. In addition, we investigate factors influencing the successful development and implementation of service learning in higher education using the example of Germany, Austria, and Switzerland.

3. Methodology and Research Design

Our methodology is based on a qualitative approach. We access the perspective of university lecturers in Germany, Switzerland, and Austria accessible via a systematic study design. Our methodology follows, with special reference to the theory-generating approach and method of Witzel [104], the tradition of the Grounded Theory [105], and ties in with the rich tradition of qualitative research in educational contexts [106–109]. According to Creswell [110], such an approach is useful to unveil the meaning of a phenomenon from a participant's point of view within a context which has not yet been researched thoroughly or in which the researched group of people (university lecturers) has hardly been focused on.

Although this is a methodologically open approach in principle, the knowledge regarding sustainability and entrepreneurial competencies in the context of service learning that has been systematically gained in previous chapters is not withheld, but rather integrated into an *'inductive-deductive mutual relationship'* in the tradition of Witzel [104] (p. 1). This problem-centered orientation as a *'discursive dialogue procedure'* [111] (p. 145). gradually introduces the researcher's theoretical knowledge into the research process and aims at a systematic development of the participants' views on the problem. This will be utilized to set parameters for sampling, data collection, and data analysis to provide structure and openness to the process. This openness and structure, which enables the gradual introduction of theoretical knowledge, is made possible by a specific communication strategy. This generates story-telling as well as gaining comprehension. Working on understanding the subjective view of the respondent, the interviewer gradually makes communication more precisely address the research problem [104]. We will discuss later how deductively made assumptions can be introduced into the open process.

Our sampling follows Robinson's [112] four-point approach to qualitative sampling, selection of sample universe, sample size, sample strategy, and sample sourcing. We only use few criteria to define our sample universe or target group, thus allowing for a broad universe homogeneity, yet leaving room for (and even facilitating) intentional heterogeneity. Inclusion criteria are years of experience as a university lecturer as well as knowledge and understanding of service learning and competency-oriented teaching. Another selection criterion is an affinity towards (not necessarily all) contents like entrepreneurship, sustainability, and economy in a broad sense. Finally, the respondents had to be employed by a German, Swiss, or Austrian university. The participating researchers hold or have held academic positions in these countries. For each country, local work experience helped to discover hidden meaning in the interviews. Researchers without that local work experience had more critical distance and were able to challenge initial attributions of meaning. Both perspectives led to a deeper understanding.

However, within this sample universe, heterogeneity—and thus a variety of perspectives—was intended. This was achieved especially by selecting lecturers who match the above-mentioned criteria, but (intentionally) make no use of service learning. The aim was to ensure the inclusion of personal and institutional barriers. Sample size was flexible within the boundaries of a theoretical sampling according to the tradition of the Grounded Theory, enabling a procedural expansion up until the theoretical saturation. Our study reached this saturation after 21 interviews with lecturers from all three of the above-mentioned countries—a reasonable quantitative measure with regard to comparable

contexts [112–114]. The description of the sample is given in Table A1. As a sample strategy, we chose the theoretical sampling as a non-random way to ensure heterogeneity (countries, age and gender, types of universities and subjects, usage of service learning, etc.) within the homogeneity of the sample universe. This resulted in a high variance as well as theoretical saturation. Sample sourcing was realized pragmatically via the identification of lecturers that made obvious use of service learning—or did not use it anymore, or did not use it despite knowing about it. To identify these groups, we also used referral processes like snowball sampling [112].

Semi-structured interviews in the tradition of the problem-centered interview [115] served as the means for our data collection via the following instruments: short questionnaire and interviewing guideline (both pre-tested), tape recording, and postscripts. The latter include situational thoughts of both interviewer and interviewee concerning further proceedings or aspects that had not been considered yet, thereby adding to the theoretical sampling and thus eventually to the theoretical saturation.

The inductive–deductive mutual relationship was driven by Witzel's [104] communication strategy and uses open stimuli as well as thematically differing groups of questions. The communication strategy can be divided into two flexible phases: Communication which generates story-telling and communication which generates comprehension. Story-telling clearly stands in the inductive, open tradition, whereas the comprehension strategy allows the introduction of prior knowledge in a deductive understanding. Story-telling strategies follow in a first step preformulated introductory questions that act as stimuli and give the interviewee complete supremacy over the description and interpretation of the situation.

At this point, the interviewer hardly intervenes in the interview process and gives the interviewee a monological right to tell his or her story. After that, still following the principle of induction, a general exploration is aimed at the successively disclose the subject's view of the problem. The interviewer makes inquiries that deepen, widen and detail the course of the story. Ad-hoc questions may gain necessity if topics of interest are left out by the interviewees but are needed to secure comparability of the interviews [104]. This kind of questions must handle carefully to avoid a question-and-answer game in this part of the interview.

The main strategy to gain is the specific exploration that characterizes the flexible transition to the deductive strategy. At this time, a priori assumptions that make a study meaningful and possible [116], can be explicitly and openly introduced into the research process. The interviewer can now bring in existing knowledge (about sustainability entrepreneurship or service learning) or assumptions gained in the interview. As a result, the perspective of the interviewee can also be compared with that of the interviewer in the sense of a "communicative validation".

In accordance with prior knowledge from literature, the interviewing guideline was structured along the lines of the following questions:

- To what extent can service learning address and build up sustainability entrepreneurial competencies?
- And which institutional and personal factors are crucial for a successful implementation?

The interviewing researchers used qualitative content analysis [117]; their findings were deductively and inductively extracted from the material. Considering that the concepts of content analysis and thematic analysis in research practice are often synonymous or considered as interchangeable [118], our analysis is in the tradition of a thematic analysis insofar as special patterns into data are identified, analyzed and described [119]. Witzels remarks regarding object-oriented analysis were also taken into account. All interviews were transcribed according to the recommendations and rules of [120], which support a computer-based analysis. To carry out the evaluation we use the program MAXQDA. Hence, to analyze the interviews, we first created overarching categories according to the interviewing guideline. Based on this, we coded all relevant text passages and allocated them to the suitable categories. A code book and coding conducted by the researchers ensured inter-coder reliability. The interviews were conducted by three researchers who

regularly coordinate an exchange each other during the fieldwork. In some answers, participants came up with new content that did not fit the predefined categories. Thus, we created inductive categories. These were either subcategories of our deductive categories or entirely new categories based on the respondents' answers.

4. Results

4.1. Service Learning and Its Contribution to Sustainability Entrepreneurship Competencies

We begin to scrutinize the claim that service learning contributes to the development of sustainability entrepreneurship competencies (Section 2.2). While we found evidence in the literature in support of this claim, we sought additional evidence as the effectiveness of service learning needs to be established before it is relevant to address the question on how to implement it.

The respondents agreed that service learning is a format that is explicitly suitable to advance the key competences for sustainability entrepreneurship (see Section 2.1). However, the respondents point out that the effectiveness of service learning depends on the specific competence and on the didactical format. One interviewee summarized: 'Well, I support service learning, because I am convinced that it really contributes to competence development in a broad way. But service learning seminars are not the same, you know, they can be so different. It is up to the lecturer to set the gals and the focus. [. . .] So it is up to the lecturer's decision which competencies are explicitly addressed' (IP1). Another interviewee highlights the '[. . .] collaborative character and social learning, which, while addressing a real-world problem, takes place simultaneously in a safe space' (IP14 in particular).

Some competencies, however, are underlined as being influenced by service learning more often and/or regardless of the formats' focus or the practical partner: *(2) embracing diversity and interdisciplinary competence* as well as *(6) interpersonal competence.* The acquisition of *(2) embracing diversity and interdisciplinary competence* seems to be the very nature of the service learning approach since it involves a variety of different people and connects different disciplines. As one interviewee states: 'The students have to be prepared for dealing with external partners and various stakeholders. They might even have to deal with inconvenient questions from unpopular clients' (IP3).

While working in heterogeneous teams, the students are also said to gain (6) interpersonal competencies. 'In doing so, they [the students] broaden their networks and improve their communication skills and interpersonal competencies, because they are forced to act outside of the academic cosmos.' (IP3) Motivation and communication skills as important parts of interpersonal competence are emphasized, as the following quotes show: 'The students should independently discuss the task and agree on goals with their partner. We stay in the back, but remain moderators' (IP9), or 'Within the groups, they constantly have to update each other, they stay on the same page, you know. [. . .] And they also have to present their progress to the partners on a regular basis. That trains the ability to interact, to communicate.' (IP2) Even beyond the development of communicative competencies, the collaborative nature of service learning has proven fruitful. 'Intensive cooperation with partners and working in interdisciplinary teams offers great opportunities. These group dynamic elements alone teach students a lot about themselves, so they know their own competencies better' (IP14).

In addition, *(1) strategic management and action competence* is also mentioned to be influenced by service learning quite often. Especially the action competence is underlined, because students are motivated to create their own ideas and optimally bring them into action to a certain degree. 'While volunteering, the students are directly involved in responsible activities that contribute to society. They produce solutions for the real world' (IP18). The action competence, however, seems to be more generally addressed while the strategic management competence is dependent on the specific service learning format and can be more or less emphasized. However, if the focus lies on strategic management competence in particular, service learning offers students the unique opportunity to make mistakes under real conditions and to learn from them: 'What is interesting here is the area of

failure, in particular with regard to learning experiences in a safe space and their potential for strategic competence development. Making mistakes can be a special learning experience' (IP14).

(4) Normative competence is also stated as being addressed by service learning. On several occasions it is emphasized that dealing with normative questions is a core aspect of many service learning courses. 'Service learning develops courage and an ability to ask critical questions, helps to build a sense of social responsibility and leads to a deeper understanding of what is meaningful' (IP14). Yet, if and how intensively normative thinking can be affected by service learning may vary due to the arrangement of a specific format and priorities set by the lecturer. It is stated as crucial that the reflexive parts enable the students to be aware of and rethink existing own and other values. Regarding the normative competence development, one interviewee even said: 'You don't give them time to reflect, you fail' (IP17).

(5) Foresighted thinking was also mentioned by some of the interviewees with regard to the solutions that the students develop for and in cooperation with the partner organizations. They mainly referred to the projects that students develop with a focus on real future impact generation. 'We cannot even avoid thinking of the future consequences. That's part of the game. You have to think about future developments and future consequences of your action, and of course of other people's decisions. It all has consequences for the students' work' (IP2).

(3) Systems thinking competence, however, was barely mentioned. When it was, the lecturers either stated that every practical experience, especially in connection with a sustainability issue, contributes to a better understanding of the whole system, or they referred to the alignment of the service learning format as well as the students interests and previous educational backgrounds: 'Yes, today, even the origin of a tea bag can very easily stimulate systemic thinking. The real world is often complicated and confusing and students need to deal with information deficits' (IP14). As one of the interviewed lecturers framed it, 'Depending on the aim of the course and the students' academic origins, you might need to add a lecture where you can talk about how the practical work fits into the whole picture. [. . .] It is not possible to understand the overall view when focusing on one side of the coin' (IP13).

In sum, the results strengthen the impression that service learning is an approach with specific potential for being applied to sustainability entrepreneurship education. Depending on the design of the service learning, all relevant competencies can be addressed, built up, and deepened.

4.2. Service Learning and Its Organizational and Personal Factors

With regard to the factors being critical for the successful creation and implementation of service learning formats, the results lead to three key dimensions that we explain below. First, a learning environment that consists of beneficial teaching conditions is needed. Second, the (potential) lecturers themselves have to be able and motivated to offer service learning approaches. And third, the chosen format itself has to have an appropriate quality to contribute to the development of sustainability entrepreneurial competencies.

4.2.1. The Learning Environment

Concerning the learning environment, several factors can be crucial. The interviewed lecturers stated that universities should encourage their staff to engage in lecturing in general and to act innovatively in generating new approaches. That requires continuous lecturer training as well as room for exchange and for testing new ideas. Being provided with the adequate knowledge and (further) developing approaches together with others is said to strengthen the self-esteem and motivation. As one interviewee stated: 'I found it interesting to try something new and I really want my students to learn, you know, I mean I really care if I can contribute something. But I just did not really know. The workshop helped a lot. And I was able to share my thoughts and discuss them with my colleagues' (IP10).

Working together with other lecturers does not only play a significant role when it comes to the idea formation, but also for the implementation. It was also stressed that the interdisciplinary service

learning, especially combining sustainability and entrepreneurship, often requires various teacher competencies and thus affords team-teaching, which should also be recognized and supported by the higher education institutions. This was even criticized by the interviewed lecturers, especially those not offering service learning: 'It is additional work anyway. And then I do not feel I have the complete qualification. I am teaching in business and entrepreneurship, but do not feel secure with the teaching of sustainability [. . .] See, and then I have to fight for the dean's permission that I can share the teaching with a colleague, or teach together? That's exhausting' (IP15).

Besides the personal resources like time (e.g., for additional preparation and organization) and knowledge that have to be invested, some lecturers also mentioned that being able to provide a proper service learning format also needs financial resources. 'I was able to pay for my travels from my account. Well, because I got enough external funds; I wonder how others deal with it. Especially the younger colleagues do not have the chance to cover these costs' (IP18). And later on: 'But the students had to pay for themselves. I felt bad that they had to cover their costs. [. . .] Anyway, even though I had the money, they said I was not allowed to spend it on this certain group of students since there is a German law saying that it has to be equally distributed amongst all students. [. . .] So I had to use quite some tricks. Others might have thrown the towel already' (IP18).

Besides that, the interviewees said that they do not feel recognized and that they strive for some kind of appreciation. They mentioned this from three perspectives. First, they stress the general importance of a teaching-oriented environment and criticize the direct and indirect periodization of research activities in academic realities. One lecturer expressed: 'On the one hand, they want us to be different and innovative. Our university always underlines that. But on the other hand, I do not see that they really appreciate involvement in teaching. I have the impression that they only want to embellish their curricula. Or they don't know what it really means. It takes time and resources. And in the end, it's those who publish that get the rewards. And the positions' (IP2). Additionally, honoring specific investments into innovative and practically oriented teaching is said to positively contribute to both the general awareness of new lecturing approaches and their impact on students and the specific motivation of certain lecturers. Giving a positive example, some mentioned, for instance, that their universities announce best practice cases or award teaching prizes. Last but not least, the specific additional investment in the development and realization of service learning courses should be recognized, as stated by one lecturer: 'As I said, it's way more fun. But you pay for it with more work. I wish my colleagues would also see that' (IP4).

The third dimension takes into account that it does not only take a supportive and appreciative environment, but also the formal and legal structure to provide service learning. This was stressed as missing in several cases and given as a strong explanation why service learning is not considered in the lecturers' course compilation. Even those who were able to offer service learning courses underlined the necessity of a structural and curricular basis—which is said to be still lacking at a lot of German-speaking universities. More flexible guidelines for offerings and formats in the module descriptions and in the study program outlines are needed in order to attain more options for integrating practice and less bureaucratic barriers. 'It is practically impossible without a certain structural environment. And that is still scarce in Germany' (IP7). Practical examples were given by those lecturers who benefitted from study programs at their universities that schedule trans- and interdisciplinary modules in addition to the core topics of study, e.g., the so-called 'contextual studies' at the University of St.Gallen or the 'complementary studies' at the Leuphana university of Lüneburg. If the formal requirements complicate or impede the provision of service learning, most lecturers shy away from the effort of developing such innovative courses and enforce them against all restrictions. 'I am not the one to blame. Let me be honest, it is impossible here. Look at the examination rules. They are developed on a very old-fashioned understanding of learning. But they are still in place. And they still set the base' (IP8). As the only way of offering service learning under these conditions, the interviewed lecturers suggest extracurricular formats and even presented some successful examples. However, it also requires structures that support and allow such educational

activities. It was mentioned that, for instance, it is important that implementing an extracurricular course counts towards the lecturers' workload, because of the contribution to the overall further development and additional education of students.

4.2.2. The Learning Format

The interviewed lecturers strongly underlined the importance of developing a suitable learning format that fits the needs of the formal environment as well as the requirements concerning the sustainability entrepreneurial competence development. One lecturer warned: 'Be aware that service learning is not a sure-fire success. It has to be carefully designed' (IP15). While the interviewees mainly agreed on the positive overall impact of service learning on certain competencies, e.g., communication and team-working skills as a form of interpersonal competencies, addressing other competencies is said to be dependent on the design of the format. It is advised to think about the competencies that the teachers intend to achieve and set a focus before creating the format. As one lecturer said, 'You must be careful that you don't try covering everything. Better concentrate on certain input and focus on selected competencies. Otherwise you don't really get the students attention. And you can easily get bogged down in details' (IP17). Another lecturer reported success by focusing on a certain competence development: 'It was so good to see how they (the students) improved after the pitch trainings. The presentations they delivered to [name of organization] were nearly professional' (IP18).

Besides, it was stressed that it is crucial, but challenging to find the right balance between sustainability and entrepreneurship related input. Interestingly, we found two different ways of facing this problem. One option was that the practical partners were sustainability-oriented and the students worked on entrepreneurial activities; the other option was selecting start-ups or established companies with the students working on sustainability issues. For example, they create entrepreneurial solutions for sustainability problems from within existing organizations (sustainability intrapreneurship). Depending on the direction, different approaches and tools could be taught, e.g., applying a (sustainability) business model canvas or a sustainability competencies tool.

In addition, there are different ways of integrating service learning into teaching formats. While, for instance, the volunteering can be supplemented by a full additional seminar, it is also possible to offer regular input and/or feedback and reflection sessions. They also advised considering carefully whether to work with one or several partner-organizations. IP18 reports: 'I have experience in two different formats. [...] When working with several partners it is more work, e.g., organizing the tasks and coordinating the student groups, but it better fits the students' interests. Well, in the end, the results were different. Some turned out well, others did not. When the students all worked with one NGO, we had a small seminar and they worked in different departments. This was easier to handle, but the risk is higher. If the partner is not reliable, the whole plan might not work out'. Another suggestion was the creation of an opportunity for students to generate and test own sustainability entrepreneurial projects.

The partner selection, however, turns out to be another success factor. The partner organizations do not only have to fit the needs of the format and the lecturers' addressed competencies, but should also be reliable in terms of transparent and frequent exchange. They should be aware of the fact that the success of the service learning approach for both sides depends on the quality of interaction. 'The partners are very important. And it is important that they are informed upfront about demands, goals and expectations' (IP6). Different expectations must therefore be carefully analyzed and moderated: 'Expectation management is crucial' (IP19). If it turns out well, long term cooperation can be developed, as stated by one lecturer: 'I got an email from two students the other day. They kept working for [name of an NGO] after the course had finished' (IP11).

As a third factor, an applicable didactical concept can be underlined. In comparison to the requirements expressed concerning the design of the teaching format, the statements regarding the didactical format were less related to the specifics of service learning for sustainability entrepreneurship. Lecturers especially stressed that it is critical to formulate clear problem statements and tasks. 'It is important that the students know whats's going on. They have to be aware of what is expected' (IP19).

That is seen as important in order to avoid distraction. Additionally, the examination performance has to be applicable. It is frequently criticized that the module descriptions often do not allow for suitable forms of examination. If there is flexibility, it is seen as a positive exception: 'The students delivered a business plan and a videotaped pitch presentation. I know that it is not the normal case that you have this freedom in teaching. At the [name of university] this was totally different. The students had to write an exam. That does not make any sense with service learning' (IP2). As suitable forms, the lecturers especially mentioned sustainability business models/plans, presentations, learning diaries and reflections, as well as mixed forms of examination. Moreover, it was pointed out that creating room for interaction and supporting feedback loops is more relevant for service learning than for traditional teaching formats like classical lectures. This was explained by the fact that service learning in general needs a very flexible structure and, thus, indicates frequent interaction with the lecturers, the partners, and the peers. Our results indicate that this effect might even increase when working in sustainability entrepreneurial practice, since it is the lecturers' responsibility to ensure that the students keep working in the right directions and that planned topics appear so that the relevant knowledge and the selected competencies can be imparted.

4.2.3. The Lecturer Aptitude

Next to the formal surroundings and the quality of the courses, the human resources, i.e., the lecturers themselves are indicated as extremely relevant for the development and implementation of successful service learning. Without motivated and competent teachers, no service learning format can be offered. As stated above, service learning comes with an increased workload for the lectures on the one hand. On the other hand, it has the potential to lead to outstanding learning results while being more fun for all participants, and positively contributes to societal development. This is why the lecturers' answers indicate that intrinsic motivation is a precondition for engaging in service learning. 'If it's not in your heart, you fail' (IP18), or 'People only get involved in these new approaches when they have a strong interest in education—or have a personal interest in one of the sustainability topics' (IP7). This might hold specifically true for entrepreneurship education, since lecturers with an economy or management-oriented background might be more aware of the missing rewards that could extrinsically motivate them, as explained by one lecturer: 'Offering service learning does not pay off. And I have learned to calculate. It's my business. See, I am more or less at the beginning of my academic career and, you know, it prevents us from the important stuff. You don't get extra payment and it has no impact on your academic future. Well, besides a negative one probably' (IP16).

Nonetheless, there are also some hints that extrinsic motivation—if being supported—can have a positive influence on the creation and realization of service learning. This is especially the case if the academic business rewards it. 'My colleague and I once won the [name of an award] for our course [was a service learning format]. That was an extra motivation and it also pimps my CV' (IP17); 'I got an excellent student evaluation, even though their workload was also high. And of course you can put it on the table when you negotiate bonus payments' (IP15). Unfortunately, this seems to be an exception until now, as underlined by a lot of the interviewed lecturers: 'Let's face it: At the end of the day it is money and publications. That counts. This is how it works' (IP13).

Others, however, stress that being intrinsically motivated counts as the better motivation for service learning anyway, because then the lecturers really see the goal behind it and can act authentically in the service learning setting: 'I am convinced that you can only do a good job here if you really like what you are doing. Some people are not born for teaching. You should neither force them nor try to attract them by wrong incentives' (IP18).

Finally, being motivated is a necessary, but not sufficient condition for successful service learning. Our interviewees stress that it also takes certain skills and competencies of the lecturers with regard to designing and offering service learning courses. Awareness of and knowledge about the service learning approach is seen as a precondition. This includes supportive tools for developing and structuring service learning-based formats like a sustainability competencies tool or a sustainability performance tool [121].

In addition, it is underlined as essential that the lecturers also have profound knowledge in the study subject. In our case that means that they can combine entrepreneurship and sustainability knowledge. And this is seen as scarce; one lecturer asked: 'How many experts in sustainability entrepreneurship are out there? What do you think? But this is what we need here' (IP2). Another one put it like this: 'You have to be experienced in both fields. There can be so many questions coming up. And when the students ask something that you don't know—you never know. And you also do not want to make a fool of yourself in front of the partners' (IP1). That quote also leads to another sub-factor underlined as important: educational self-efficacy. The interviewees' answers often pointed to the importance of a certain self-confidence and the belief in one's capability to develop, organize and execute service learning courses. 'You have to be an experienced and self-confident teacher. There is so much that you have to know and so much that can go wrong' (IP2). They also refer to the different role that a lecturer has compared to traditional teaching: 'You have to be able to act more like a mentor and coach, and be flexible' (IP12). In this regard they particularly underlined the risk that lecturers face because of uncertainties from two perspectives: uncalculated practical changes and additional demand of knowledge that emerges from the practical work. People who do not dare to accept these challenges might not be successful lecturers for a service learning format. 'I just do not think I am the right person for it. I mean, I have to be prepared. I like being prepared. Then I feel safe' (IP8).

5. Discussion and Conclusion

5.1. Discussion

The aim of this study was to identify the crucial institutional and personal factors for a successful implementation of service learning for sustainability entrepreneurship education (Section 4.1). We began by scrutinizing the link between service learning and the development of sustainability entrepreneurship competencies. All educators provided support that service learning is effective. Thus, we can support much of the current literature on the service learning and sustainability entrepreneurship interface (see Section 2.2, as well as [24,122]. We note that while the previous literature on this question is at best indirect, we contribute by providing direct observations in support of service learning for sustainability entrepreneurship.

We continue to identify the personal and institutional factors that facilitate the implementation of service learning in this context. Factors related to the environment, the format, and the teachers' aptitude, were identified. We now bring them together in a unified framework (see Figure 1). A more granular representation can be found in Table A2 in the Appendix A.

At the macro level, important steps are already taken through the *learning environment*, which depicts the entire academic environment of the lecture. In particular, this includes the support structure provided by the university (financial support, training, coaching and exchange of lecturers, team-teaching, etc.) and the general acceptance and remuneration for a complex form of teaching. In addition, at this level, universities have different degrees of openness for the integration of practice partners and different levels of bureaucracy for co-operation.

The meso level, the *learning format*, starts with the concrete course design. The various forms of service learning are very diverse and have different focuses. Each format has to be carefully designed and must consider the students' demands as well as the institutional requirements. In particular, the lecturer is responsible for providing the corresponding feedback options and forms of examinations as well as for winning over suitable practical partners—which seem to be explicitly crucial for the success of the format.

The micro level represents the lecturers themselves or the *lecturer aptitude*. This includes competencies, knowledge, methods and awareness that the lecturer must bring to a successful process. And as an interesting side effect, lecturers also seem to gain knowledge competencies and network-contacts—which, on a longer-term perspective, can cause self-reinforcing effects leading to more and better quality of the service learning provided. Finally, much depends on the motivation of the lecturer, be it intrinsic or extrinsic.
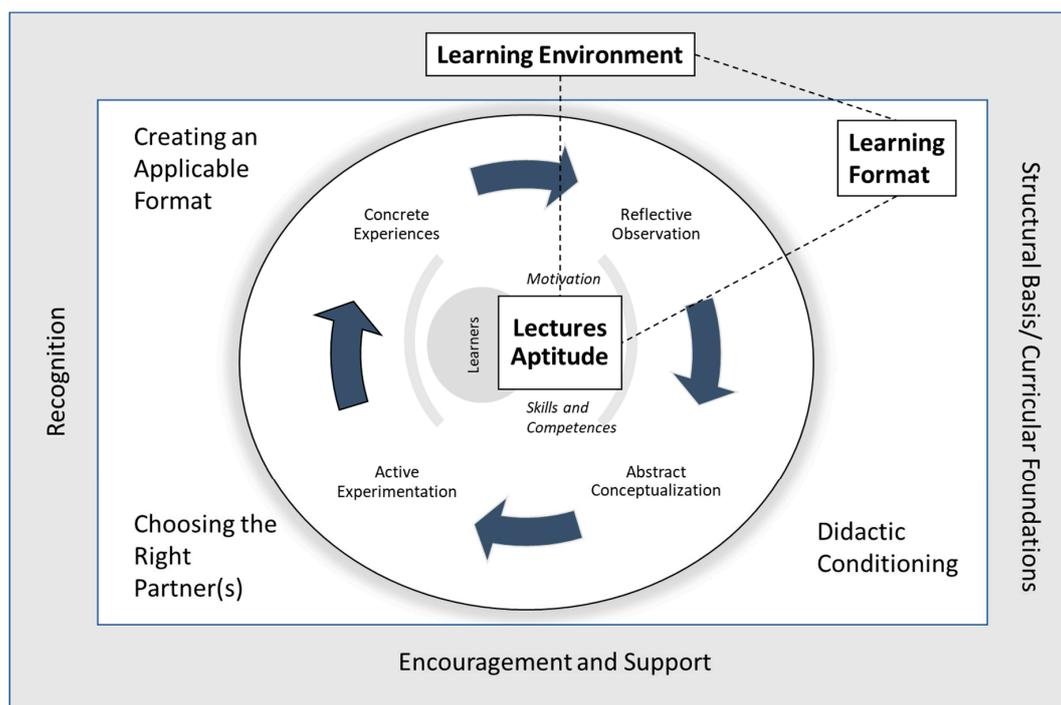
Figure 1. Lecturer-oriented service learning framework.

A lecture-oriented framework of service learning widens the view beyond the interaction between lecturers and students and, in particular, shows that this intensive, innovative and complex form of learning is highly dependent on external influencing factors. Successful service learning makes tremendous demands on the lecturer and, to a certain extent, leaves him or her dependent on the institutional support structure. Corresponding to this finding, lecturers emphasize aspects like intensive preparation, high complexity and balancing between securing societal impact and learning outcomes at the same time [123–125].

Our framework is suitable for analyzing the interactions between the lecturer and the organizational environment. It draws attention to institutional conditions that can differ substantially between different universities and even between different departments. A lecturer-oriented framework should illustrate that service learning is not detached from the possibilities of the universities, the curricula and the lecturers themselves.

Future research in the context of the lecture-oriented service-learning framework could go in-depth on the cycle of experiential learning [21] that serves as a foundation of service learning. We may begin to explore the relation between the framework factors and each step in the Kolb framework, in order identify success factors and bottlenecks.

We would like to sensitize readers to the crucial result that experiential learning according to Kolb [21], which essentially takes place among lecturers, students and partners and which forms the center of our framework, is crucially dependent on personal and organizational influencing factors.

5.2. Limitation and Conclusion

Our contributions have to be seen in the light of the shortcomings of our research. We focused on a qualitative approach that has limitations in the area of generalizability and intersubjective interpretation of results. Future research can open up additional data sources, for example through participatory observations or focus group discussions, and can and benefit from mixed method research. We also call for further research on validating the proposed framework.

In addition, we argue that at the abstract level, our framework (see Figure 1) may be applicable in various educational and cultural settings. However, this claim needs to be scrutinized. The framework

conditions may be different in high school rather than higher education settings [96,126]. For example, the level of complexity of service learning projects, and liability questions for underage education shape the implementation of service learning. With our sample we cannot cover the variety of lecturers' knowledge cultures, as they can be socialized in e.g., natural sciences, humanities or arts. By focusing on social science and business, we do not differentiate between subject conditions or disciplines.

Also, cultural settings matter. Our research was set in the German-speaking higher education sector. Here, community service, integration of practice partners and service learning itself have much less of a tradition than in North America and must continue to gain acceptance. This mainly puts pressure on the intrinsically motivated lecturers, who sometimes carry out service learning in the face of internal resistance. Accordingly, it is difficult to obtain an appropriate curricular anchorage. As far as Butin [127] (p. 474) is concerned, the following applies in particular to German-speaking countries: 'Service-learning is all too often positioned as a co-curricular practice, funded through "soft" short-term grants, and viewed by faculty as "just" an atheoretical (and time consuming) pedagogy that may be detrimental for traditional tenure and promotion committees to take seriously'.

It has to be considered, however, that the factors and issues carved out should not directly be transferred to other cultural areas. While we were able to derive important information for drawing a comprehensive picture for the German-speaking teaching and learning environment, cultural, political, and societal specifics of, for example, African or Asian countries remain unconsidered. This could be central for further research.

Nonetheless, some practical implications can already be derived from our study. Our framework does not only function as a structural guide for discovering research gaps and setting up innovative research questions as shown in Section 5.1, but also delivers information for a better understanding of possible influence factors on successful sustainability-entrepreneurship-oriented service learning and their interplay. We, for example, have shown that ideas for innovative service learning formats only arise in a suitable environment where lecturers get support and appreciation for getting involved in this field. Curriculum developers could, hence, offer service learning specific (idea generating) workshops in order to spread information and offer support. On the formal side, the service-learning formats need room to be integrated in the study programs or alternative ways, like extracurricular offerings to the students, to be implemented. Fostering service learning in general as well as its application to sustainability entrepreneurial topics should thus be seen as a strategic decision at university management level that needs to be pushed from various directions.

In addition, the format itself needs to be tailored to the specific requirements of the formal and informal environment as well as the main competencies that should be addressed. Our results point to choosing the right partner as a particularly crucial factor, where reliability and trust might play a more important role than factors related to the practical partners size or success. Especially in the area of sustainability entrepreneurship, lecturers should be aware of the wide range of possible partners that can be taken into consideration—ranging from charities and nonprofit organizations over social or eco start-ups to traditional companies. Building up (digital) partnership-networks could lead to long-term cooperation in service learning for sustainability entrepreneurship.

Our study also highlighted the importance of the lecturers being involved and that it needs people who are especially motivated and competent for developing and offering service learning in the area of sustainability entrepreneurship. Thus, it is not only necessary that the lecturers pick the right partner organizations, but also that the right people are motivated to engage with service learning. In order to impart sustainability entrepreneurial competencies the lectures themselves might need a specific set of competencies and characteristics. Deepening the understanding of lecturer specific competencies in this field is another interesting task for future research. However, for lecturers as well as the study program or university management it is important to know that service learning does not seem to be a 'one-that-fits-all-solution'. Even though our results indicate the certain suitability for sustainability entrepreneurial competencies, it is neither a magic bullet nor appropriate for every type of lecturer.

But with the right people involved service learning can be underlined as a promising supplement to traditional teaching with huge potential that has not yet been realized.

To conclude, we have contributed to the service learning and sustainable entrepreneurship literature. Our findings give support to those who want to experiment with service learning, as we provide direct evidence on the effectiveness of service learning to the development of sustainability entrepreneurship competences. We also find framework conditions that educators need to consider when then they generate and execute service learning in this area and that university administration and curricula developers have to be aware of when planning more experience-oriented teaching.

Appendix A

Table A1. Description of the Sample.

Person ID	Gender	Age Group	Academic Position	Types of University	County	Subjects	Experience Service-Learning
IP1	Female	40–45	Lecturer	University	Germany	Sustainability Entrepreneurship	High
IP2	Male	40–45	Lecturer	University	Germany	Management, Entrepreneurship	High
IP3	Female	40–45	Lecturer	University	Germany	Cultural Studies, Entrepreneurship	High
IP4	Male	40–45	Professor	University of Applied Sciences	Austria	Management, Entrepreneurship	Medium
IP5	Female	46–50	Lecturer	University	Switzerland	Communication	Medium
IP6	Female	36–40	Teaching Coordinator	University	Germany	Educational Sciences	High
IP7	Male	40–45	Professor	University	Germany	Psychology	Medium
IP8	Male	50–55	Lecturer	University of Applied Sciences	Germany	Communication	High
IP9	Male	56–60	Professor	University	Germany	IT, Entrepreneurship	High
IP10	Female	40–45	Professor	University	Switzerland	Management, Entrepreneurship	Medium
IP11	Female	50–55	Professor	University	Germany	Politics	Low
IP12	Male	56–60	Professor	University	Germany	Business Education	High
IP13	Male	40–45	Professor	University	Austria	Management, Entrepreneurship	Low
IP14	Female	31–35	Lecturer	University	Austria	Transdisciplinary Learning, Sustainable Development	High
IP15	Male	36–40	Professor	University	Germany	Management, Entrepreneurship	Medium
IP16	Male	36–40	Professor	University	Germany	Management, Entrepreneurship	Low
IP17	Female	26–30	Lecturer	University	Germany	Sustainability Entrepreneurship	Low
IP18	Female	40–45	Professor	University	Germany	Management, Entrepreneurship	High
IP19	Male	36–40	Professor	University	Germany	Educational Sciences	High
IP20	Female	36–40	Assistant Professor	University	Germany	Educational Sciences	Medium
IP21	Male	36–40	Assistant Professor	University	Switzerland	Management, Sociology	Medium

Number of service learning lessons taught: low (up to 2 lessons), medium (3 to 5 lessons), high (6 and more lessons).

Table A2. Dimensions and Sub-Categories of the framework.

Aggregated Dimensions	Sub-Categories I	Sub-Categories II
Learning environment (beneficial teaching conditions)	• Encouragement and support	• General encouragement to engage in lecturing and to develop innovative formats • Continuous lecturer training and exchange • Creating room for testing approaches • Facilitating team-teaching • Financial support (for e.g., traveling costs or assistance)
	• Recognition	• General appreciation for efforts in teaching (instead of mainly rewarding research activity) • Acknowledgement of innovative teaching forms and integrating practice into teaching • Recognizing and honoring of the additional investment (of time, stress, resources) in SL-formats
	• Structural basis/ curricular foundations	• Flexibility in configuration of seminars (adjustment of module descriptions and examination regulations) • Increasing possibilities of integrating practice • Less bureaucracy and creating space for testing new approaches • Integration of trans- and interdisciplinary modules into study programs • Creating an environment for extracurricular courses
Learning format (structure and quality of certain course)	• Creating an applicable format	• Fit to teaching and learning environment • Setting a focus and meeting the content related requirements • Decision between different forms, e.g., sequential integration or SL-focus
	• Choosing the right partner(s)	• Suitable volunteering environment • Reliable partnership relation • Open communication
	• Didactic conditioning	• Appropriate problem statements and task definitions • Designing suitable assignments/ exams • Feedback and interaction
Lecturer aptitude (appropriate personal characteristics)	• Motivation	• Intrinsic motivation, e.g., aiming at student development or contributing to solving societal issues • Extrinsic motivation, e.g., acknowledgement, improved career options or financial rewards
	• Skills and competencies	• Awareness of service learning approach • Knowledge about service learning (and supportive tools/ techniques) • Ability to develop and implement suitable formats • Knowledge in the respective subject(s) (including supportive tools/ techniques) • Educational self-efficacy

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