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Transforming Consumer Behavior: Introducing Self-Inquiry-Based and Self-Experience-Based Learning for Building Personal Competencies for Sustainable Consumption

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Abstract: Despite growing educational efforts in various areas of society and albeit expanding knowledge on the background and consequences of consumption, little has changed about individual consumer behavior and its detrimental impact. Against this backdrop, some scholars called for a stronger focus on personal competencies, especially affective–motivational ones to foster more sustainable consumption. Such competencies, however, are rarely addressed within the context of education for sustainable consumption. Responding to this gap, we suggest two new learning formats that allow students to systematically acquire affective–motivational competencies: self-inquiry-based learning (SIBL) and self-experience-based learning (SEBL). We developed these approaches at Leuphana University Lüneburg, Germany, since 2016, and applied them within the framework of two seminars called Personal Approaches to Sustainable Consumption. Conducting scholarship of teaching and learning, we investigated the potential of SIBL and SEBL for cultivating personal competencies for sustainable development in general and sustainable consumption in particular. Our results indicate that SIBL and SEBL are promising approaches for this purpose.

Keywords: personal competencies; sustainable consumption; education for sustainable development; scholarship of teaching and learning; self-inquiry-based learning; self-experience-based learning

1. Introduction

Successfully addressing unsustainable individual consumer behavior remains one of the key challenges for sustainable development (SD) [1]. Various educational efforts have done little to change individual consumer patterns and their detrimental impact. In response, researchers called for a transformation of education for sustainable consumption (ESC) by shifting the focus of learning from a knowledge-based to a primarily competence-based approach. Such an approach would allow learners to acquire skills necessary for pursuing and professionally facilitating more sustainable lifestyles [2]. Given the complex interplay of cognitive, emotional, and motivational dimensions of consumer behavior, such an approach includes, but is not limited to, developing purely academic and disciplinary expertise. Instead, "it seeks to enhance individuals' capacity to engage with more fundamental questions that also apply to other domains of life" [2] (p. 198). In this regard, both researchers working on sustainable consumption [3,4] and ESC scholars [5,6] point to the importance of personal competencies, especially affective–motivational ones, for achieving this goal.

Despite these recommendations, common approaches within ESC still seem to focus on, or at least prioritize, the discursive–intellectual dimension of consumption-related competencies. Fischer and Barth [2] "see a great need to overcome the narrow focus on the provision of information for the sake of triggering behavioral change" (p. 199). Even though a tendency toward competence development can be observed within ESC programs in higher education, personal competencies receive little attention (compare Reference [7]). Some attempts were made to stimulate such competencies in the larger field of education for sustainable development (ESD) [8,9], for example, by introducing mindfulness practices [10] or social–emotional learning approaches [11]. However, such attempts remain scarce and fragmented. A pedagogy aiming for a systematic cultivation of personal competencies for ESD in general and ESC in particular is yet to be developed.

Addressing this gap, we suggest two new learning approaches for ESC that allow students to systematically acquire affective–motivational competencies: self-inquiry-based learning (SIBL) and self-experience-based learning (SEBL). They represent a holistic, experiential, action-oriented, and transformational pedagogy supporting self-directed and problem-oriented learning. We developed these approaches at Leuphana University Lüneburg, Germany, since 2016, and applied them within the framework of two seminars called Personal Approaches to Sustainable Consumption. Conducting scholarship of teaching and learning [12], we investigated the potential of SIBL and SEBL for cultivating personal competencies for sustainable development (SD) in general and sustainable consumption (SC) in particular.

This study is structured as follows: in Section 2, we discuss the relevance of affective–motivational competencies for sustainable consumption. While ESD/ESC scholars called for their cultivation in educational settings, the practical implementations are few and far between. In Sections 3 and 4, we introduce SIBL and SEBL as promising pedagogies that help students develop personal competencies. Section 5 constitutes the empirical part of our article. We describe the seminars based on the principles of SIBL and SEBL, outline our research design and methods used to investigate them, and share our results. In Section 6, we discuss our experience with regard to the potential of our approach for stimulating personal competencies. Despite certain limitations that are addressed, our findings indicate that SIBL and SEBL are promising approaches for cultivating personal competencies for SD in general and sustainable consumption (SC) in particular.

2. Theoretical Background

Institutions of higher education epitomize pivotal actors for sustainable development [13]. They educate future change agents by "developing knowledge, skills, values, and behaviors needed for sustainable development" [14] among students. To describe the intended learning outcome of higher (H)ESD, the concept of competence received increasing popularity among scholars during the last decade [15,16]. According to Weinert [17], competencies can be understood as "a roughly specialized system of abilities, proficiencies, or skills that are necessary or sufficient to reach a specific goal" (p. 45). This specialized system allows individuals to deal with complex demands in specific real-life situations. Dealing with these demands requires the interplay of internal structures such as cognitive, emotional, and motivational dispositions [18].

These dispositions also come into play in the case of individual consumer behavior. This behavior is inextricably woven into the living environment in everyday life. Contemporary consumption is considered as a central driver of the current unsustainable development, particularly in western societies [1]. Addressing this problem, ESC emerged as a subfield of ESD, focusing on sustainable lifestyle changes and promoting competencies that allow individuals to act more sustainable as consumers and citizens [19]. For this reason, it also received increasing attention within higher education. Under the term higher education for sustainable consumption (HESC), scholars worldwide worked on learning formats to implement ESC in institutions of higher education. The overall goal of these learning formats is to facilitate the acquisition of competencies allowing students to face and

overcome (individual and societal) consumption-related challenges in a responsible, self-determined, and reflexive manner [2].

Acquiring theoretical knowledge still seems to be the key practice within HESC for achieving this end [2], albeit evidence emphasizing that knowledge is not sufficient, and not even of primary relevance for promoting SC. This becomes particularly salient when looking at the intention–behavior gap, which is when people do not act in accordance with their intentions [20,21]. This gap is widespread in western industrialized societies: A representative survey [22] demonstrated, for example, that most Germans consider environmental protection important and express their willingness to restrict their individual consumer behavior for this purpose. Yet, despite their knowledge of the negative consequences of their consumer behavior, just few people act accordingly [23]. Findings, such as this one, suggest that transmitting knowledge might not be an appropriate leverage point for fostering SC.

More recent studies even provide evidence that a purely discursive–intellectual approach to morally laden topics, such as consumption, can even have adverse effects because of affective–motivational factors [24–26]. These factors are related to SC in two ways. Firstly, they play an important role when evaluating consumer activities and, consequently, motivating oneself to consume in a certain way. Emotions are associated consumer-related actions prior, during, and after consumption [27]. If, on the one hand, a consumer activity is accompanied by positive emotions such as joy, anticipating this emotion can be a relevant driver for this activity. On the other hand, if it is connected to negative emotions such as fear or shame, this might prevent individuals from engaging in that activity [28]. Secondly, being confronted with the pressing problems of contemporary society, for example, inequality, poverty, climate change, or species extinction, and feeling a sense of individual responsibility for these problems can be overwhelming or at least emotionally stressful [29,30]. This emotional burden can activate coping mechanisms aimed at dissolving the unpleasant emotional state by repressing, neutralizing, or rationalizing the impact of one's actions [30–32], thereby justifying and stabilizing unsustainable routines [26]. People are not necessarily aware of these processes and the role they play regarding their consumer choices, as they often occur at an unconscious level [33]. To enable individuals to pursue problem-oriented coping strategies, it is necessary to help them become aware, and to find a way to constructively deal with the source of their emotional discomfort [27].

Given the importance of the affective–motivational dimension, several scholars called out for a more holistic approach within (H)ESD/HESC. Wiek et al. [16] claimed that educational approaches would strongly benefit from learning settings that included cognitive, but also affective and psychomotoric dimensions. Hamann et al. [27] also emphasized the importance of targeting the affective–motivational dimension within HESC; learning scenarios in which these dimensions of individual consumption are addressed can help students transform emotional coping mechanisms into problem-oriented strategies and enable them to endure unpleasant emotional states, thereby strengthening emotional resilience. Moreover, Hunecke [34] underlined that "individual change processes geared toward sustainable lifestyles must be motivated by increasing subjective well-being" (p. 33). For this purpose, he suggests the cultivation of psychological resources for SD, which help them deal with the emotional challenges described above. These resources comprise the capacity for pleasure, self-acceptance, self-efficacy, mindfulness, the ability to construct meaning with regard to one's life, and solidarity. Frank et al. [35] highlighted the importance of cultivating self-reflexivity, that is, the ability to distance oneself from, observe, and critically engage with inner states and perceptions. Some of the previous points can also be found in Lozano and colleagues' [36] synthesis of competencies for SD. In addition, the authors suggested self-motivation, and the willingness and ability to take action as relevant affective–motivational competencies. Even the recent ESD United Nations Educational, Scientific, and Cultural Organization (UNESCO) report [6] stresses that "the ability to [...] deal with one's feelings and desires" (p. 10) as part of self-awareness competence is a prerequisite for pursuing sustainable lifestyles, as is the case for "self-reflection skills, values, attitudes, and motivations that enable learners to develop themselves" (p. 11). It is against this backdrop that first Murray [8] and later Brundiers and Wiek [9] held that the stimulation of SD competencies strongly "overlaps with personal

development and growth" [9] (p. 2). This literature shows the need to target the affective–motivational dimension when educating change agents for SD.

Despite the emerging consensus of the relevance of competencies such as the ability to deal with emotional challenges, current approaches within HESC are still mostly limited to or at least prioritize the discursive–intellectual dimension of sustainability-related competencies. As a consequence, students are inadequately prepared to deal with the multi-faceted challenges they may encounter in their pursuit of a sustainable lifestyle. In other words, students are unable to become change agents for SD within the domain of their consumer behaviors.

How can this shortcoming be addressed? We suggest that HESD in general and HESC in particular should focus more strongly on the development of what we subsequently refer to as personal competencies. Based on Weinert's definition of the term competence [17], we define personal competencies as abilities, proficiencies, or skills related to inner states and processes that are necessary or sufficient to reach a specific goal. These include self-reflexivity/self-awareness (including awareness of one's values and affective–motivational processes), emotional resilience, defined as "capacity to maintain competent functioning in the face of major life 'stressors'" [37], or the willingness and ability to motivate oneself for action. Likewise, the knowledge of and the ability to mobilize one's psychological resources is also a personal competency. It must be underlined that the development of personal competencies is not an outcome-oriented, instrumental enterprise to produce more sustainable consumers. The primary rationale behind building such competencies is the idea that personal competencies empower students to take better care of themselves and increase their overall subjective well-being in the face of the pressing sustainability-related challenges, which in turn enables them to address these issues in a problem-oriented manner. We argue that doing so, although currently strongly neglected within HESD/HESC, is a prerequisite for building future change agents [9]. Educational programs should aim to explicitly build such competencies.

In what follows, we introduce two new concepts specifically tailored to this end: self-inquiry-based learning (SIBL) and self-experience-based learning (SEBL).

3. Self-Inquiry-Based Learning and Self-Experienced-Based Learning

Having identified personal competencies as crucial elements for promoting SC, the question emerges as to which kind of pedagogies are most appropriate for bringing about these competencies. There seems to be general agreement that still widespread instructional approaches are not sufficient on their own to help build sustainability-related competencies [15,38]. Instead, constructivist learning approaches are suggested, in which students turn from passive knowledge receivers to active knowledge generators [39]. Two key educational approaches for that transition are inquiry-based learning (IBL) and experience-based learning (EBL) (or experiential learning).

IBL, in its widest sense, can be seen as "an umbrella term, covering a range of approaches to learning that are driven by a process of inquiry" [40] (p. 17). Pedagogies like problem-based learning, project-based learning, or case-based learning can be subsumed under this umbrella term [41]. IBL starts by posing questions, problems, or scenarios, rather than simply presenting established facts or portraying a smooth path to knowledge. Inquirers identify and research issues and questions in order to develop their knowledge or solutions to specific challenges actively. For this purpose, they also need to engage independently in the application of methods deemed appropriate for the topic of inquiry. As Huber [42] holds, IBL's main characteristic is that "learners (co-)shape, experience, and reflect the process of a research project during all important states" (p. 11). Current research suggests that IBL is not only an adequate approach for developing a profound professional and methodical competence in a particular discipline, but that it also shows promise for stimulating competencies that go beyond disciplinary demands [43]. For this reason, scholars also attribute the potential to help students develop competencies for SD to IBL [39,44]. While current empirical evidence remains ambiguous with regard to actual competence acquisition through IBL [45], Gess et al. [43] suggested that IBL can help cultivate an inquisitive stance toward problems in learners. Such a stance includes the students' ability to

take up lines of inquiry independently and engage critically with methods necessary for undertaking this inquiry.

EBL is defined by David Kolb [46] as "the process whereby knowledge is created through the transformation of experience" (p. 41). This process happens in a four-step cycle: experiencing, reflecting, thinking, and acting. The cycle begins with a concrete experience (1), followed by an opportunity to reflect on that experience (2). Learners then conceptualize and propose theories based on what they experience and observe (3). These concepts and conclusions, drawn primarily from personal experience, in turn provide the basis for future active experimentation (4). The process is cyclic because learners have new experiences based on previous experimentation [47]. According to Kolb [46], experiential learning is characterized by (i) the involvement of the whole person, including their intellectual, sensory, and emotional faculties; (ii) learners' active use of their previous life and experiences as learners; and (iii) reflection on earlier experiences aimed at evolving thinking and creating a deeper understanding of relevant experiences. Given this background, EBL seems to be a promising educational strategy for developing a host of competencies, particularly those important for SD [15,38]. This perspective is also shared by UNESCO [6], which declared EBL a "key approach" for ESD. Indeed, empirical evidence corroborates EBL's potential for stimulating the acquisition of certain competencies, such as methodological, [48], communication [49], or problem-solving skills [50].

The problem behind EBL's rationale to engage with subjective experience reflectively is that, contrary to intuition, we lack automatic access to our subjective experience. In fact, most of what we actually experience takes place on a subconscious level [33,51]. Consciousness scholars like Bitbol [52], Petitmengin [52,53], or Vermersch [51] demonstrated that a fair amount of training and explicit directedness toward subjective experience is required in order to make various aspects of subjective experience conscious. Without such training, individuals tend to reproduce representations of, and postulate ad hoc explanations for, subjective experience instead of accessing the actual experience itself [51–53]. As a consequence, the importance of reflecting on experience, as well as the integration of the "whole person" advanced by EBL advocates, runs the risk of being overlooked.

In order to unleash IBL's and EBL's potential for cultivating personal competencies, we suggest SIBL and SEBL as adaptations of IBL and EBL pedagogies capable of circumventing the dangers just listed. SIBL can be defined as an IBL approach in which the object of inquiry is the individual students themselves. The overall goal of SIBL is to develop an inquisitive stance toward and inter-subjective understanding of personal phenomena based on a systematic and controlled research procedure. Similarly, SEBL is an EBL approach in which students gain access to and develop a deeper comprehension of their subjective experience.

SIBL and SEBL are very closely related concepts, differing only with regard to the primary educational emphasis. While SIBL is also rooted in the subjective experience of learners, it is focused on methods that allow for controlled self-observation (data collection) and a valid analysis of the latter for making inter-subjective sense of personal experience. SEBL, in contrast, primarily aims at broadening and deepening subjective experience, explicitly incorporating its bodily, affective-emotional, and sensory dimensions. In practice, both approaches aim to create learning spaces enabling students to cultivate self-knowledge and build personal competencies by applying (scientific) methods to subjective experience.

4. Learning Activities of SIBL and SEBL

To achieve the educational goals behind SIBL and SEBL, it is necessary to apply appropriate learning activities that help students (1) gain access to and systematically observe their subjective experience, (2) document the latter, and finally (3) generate an intersubjective understanding of the data.

The foundation of SIBL and SEBL is a systematic training to observe subjective experience. According to Petitmengin [53], preparing individuals for such introspective activities presupposes two steps. Firstly, it necessitates a shift in orientation from the conceptual "what" to the phenomenal "how" of subjective experience. In other words, students are asked to engage with the observation of inner

states and processes without interpreting or discussing them, or making logical inferences on their basis. This constitutes a fundamental shift in perception within the university context, where the focus is usually on learning to argue, discuss, and dissect theoretical concepts and knowledge with the aim to overcome subjectivity. Secondly, it is important to systematically deepen and orient the reflection of subjective experience to all of its experiential dimensions (see Figure 1 [35]), as this reflection habitually remains shallow and tends to neglect the sensory, somatic and affective-motivational dimensions of an experience [53,54].

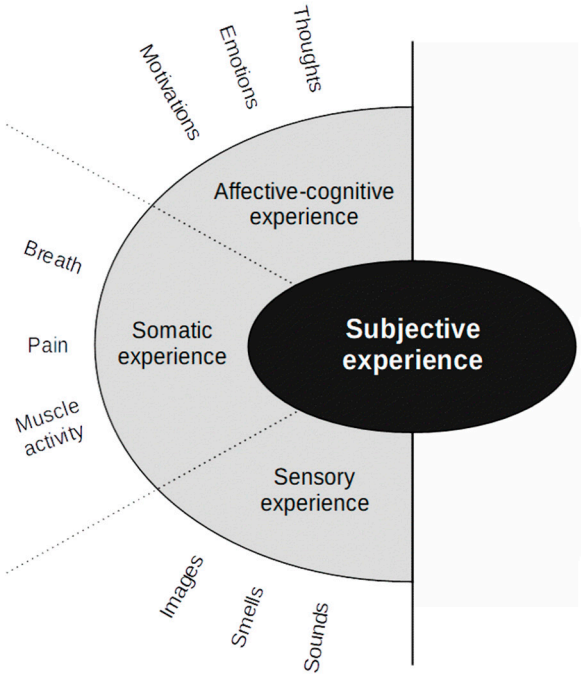

Figure 1. Dimensions of subjective experience.

Mindfulness practices are a well-established means to provide students access to their subjective experience [55]. These practices can have different foci, such as thought observation, mindful eating, breath observation or the body (e.g., in forms of a body scan, yoga, etc.). They all have in common that they aim to bringing "awareness to current experience—observing and attending to the changing field of thoughts, emotions, and sensations from moment to moment—by regulating the focus of attention" [56] (p. 232). Different mindfulness practices can allow one to direct one's attention to the different dimensions of subjective experience and to observe their one's states and processes [57,58]. This core mechanism of mindfulness practice is also associated with a number of positive effects on individuals, such as improvements in affect regulation [59], the enhancement of emotional resilience [60], an increase in self-determination [61], or the cultivation of empathy. In this sense, mindfulness training is not only a way to develop awareness of inner states and processes, but at the same time provides individuals a tool to deal with the latter.

Two activities that likewise facilitate access to subjective experience are the micro-phenomenological interview [53,54] and dialogic introspection [62]. These two activities are meant to deepen and broaden subjective experience through group dialogue and directed questions by an interlocutor. In the latter case, interviewer and interviewee look at a particular event the interviewee (recently) experienced (for example, taking a shower). The interviewer then aims to reconnect the interviewee to the concrete experience, thereby focusing on specific and increasingly detailed aspects of this event (e.g., how the skin reacted to the first instant when touched by the water). Dialogic introspection starts with a group commonly sharing the same experience. Right after the event, group members are asked to do an individual introspection focusing on their own experience which they are asked to document.

Two exchange rounds follow. In the first exchange round, each individual shares their experience in the group. In the second round, each member elaborates on those aspects they were reminded of while listening to the contributions of the others, thereby (retrospectively) directing the individual experience to dimensions previously not considered while potentially deepening one's own subjective experience.

The second type of learning activity should allow learners to make this experience subject to inquiry. In order to make subjective experience accessible to intersubjective reflection, it must somehow be externalized. The second type of SIBL/SEBL learning activity, hence, aims to verbalize and document this experience. Reflexive diaries offer a suitable way to do so, allowing learners to reflect upon specific situations and verbalize the occurring sensations of a given moment. Such writing activities are also an essential part of the larger research programs of systematic self-observation [63] or autoethnography [64]. In both approaches, the researcher observes themself in social situations, thereby gathering information about their subjective experience in these situations. Familiarizing students with systematic self-observation and autoethnography are, hence, adequate ways to engage them in SEBL/SIBL learning activities. However, we highly recommend combining these activities with a systematic introspective training, such as mindfulness, as the way people speak of their experiences is not necessarily identical to the actual experience [65]. There is evidence that mindfulness training, by generally raising the awareness of one's inner states and processes, also helps individuals verbalize subjective experience [66]. This is especially true for dyadic mindfulness practices, such as the "contemplative dyads" [67]. Alongside the micro-phenomenological interview and dialogic introspection, these practices directly lead to the verbalization of subjective experience, as they are characterized by a verbal exchange on introspective observation. These methods also have the advantage that trained interviewers can support learners in sharpening the verbalization of introspection [51–54], thus making them valuable learning activities for SEBL and SIBL.

The last type of SEBL and SIBL learning activity familiarizes students with methods that allow them to analyze (their) introspective self-reports. There is not one single analytical approach to make inter-subjective sense of such data. Instead, different methodical approaches can shed light on specific aspects of the subjective experience under investigation, while also coming along with specific blind spots. Frank et al. [68] compared three qualitative approaches for analyzing introspective self-reports, namely qualitative content analysis [69], interpretative–phenomenological analysis [70], and discourse analysis [65]. Content analysis represents a method that helps identify mutually shared patterns of subjective experience. At the same time, the method does not necessarily allow learners to further deepen the reflection of the experience under investigation, which the interpretative–phenomenological Analysis can provide. Discourse analysis, in contrast, provides a rather critical perspective on introspective reports as "communicative events that display an order and organization that embody the interpersonal and interactional orientation of language in use" [65] (p. 52).

In sum, learning through self-inquiry and self-experience requires the integration of three types of learning activities, namely (1) activities that provide students access to and train them to observe subjective experience, (2) methods for collecting introspective data, and (3) analytical tools allowing students to make intersubjective sense of this data. The provided list has no intention to be complete. It rather aims to illustrate how different learning activities can be used to help students engage with the principles of SIBL and SEBL, thereby allowing them to systematically acquire personal competencies.

5. SIBL and SEBL in Practice: The Seminar "Personal Approaches to Sustainable Consumption"

The following sections concern a seminar format based on the principles of SIBL and SIBL and developed within the context of HESC. We made use of this format in two seminars, which are described in detail in Section 5.1. In Section 5.2, we outline the research design of our empirical inquiry, intending to examine the format's potential for developing personal competencies for SC. The results are provided in Section 5.3.

5.1. Seminar Description

From October 2017 to March 2018 and from April 2018 to March 2019, we conducted two seminars at Leuphana University/Germany entitled "Personal Approaches to Sustainable Consumption". In these seminars, students developed and put into practice transformational projects aiming to make their personal consumer patterns more sustainable. Following the concept of SIBL and SEBL, students systematically observed and analyzed their inner states and processes occurring over the course of their transformation, drawing upon practices of self-observation and scientific methods in order to generate an intersubjective understanding of the process of transforming their consumer behavior. Moreover, seminar attendees were familiarized with a variety of techniques (drawn from coaching, psychotherapy, and other relevant fields) enabling them to deal with and overcome challenges by mobilizing personal resources to pursue their personal transformation projects.

The seminar content consisted of four elements: (1) theoretical knowledge concerning SD and SC, as well as their central concepts, (2) introspective training, (3) method(olog)ical knowledge related to the collection and analysis of introspective data, and (4) awareness for and cultivation of personal resources (see Table 1). Each seminar session followed a similar structure in which these elements were addressed, attending either to a particular theoretical or method(olog)ical issue. The variable content of the seminar was embedded in a fixed seminar framework in which every session began with a review of the immediately prior session. Following this review, students would then next reflect on the progress of their individual projects. While this practice offered students support in pursuing their transformational projects, it also prepared them for the analysis of their individual data at the end of the semester, offering them a forum for abstracting from their own experience and identifying intersubjective patterns at play in changing consumer behavior. This exchange was usually followed by a mindfulness exercise and then by dialogic introspection on the experience, providing an opportunity to deepen both theoretical understanding and relevance of the practice. The sessions normally ended with another short contemplative practice and an eye toward what would take place during the following session.

Table 1. Four content elements of the seminar.

Element	Content (Exemplificatory)
1. Introduction theoretical background on and central concepts of SC	• Sustainable development goals (SDGs, [71]) • The ecological footprint [72] • The concept of planetary boundaries [73] • Consumption-specific theoretical work [74] • Challenges, coping strategies, and supportive factors related to SC
2. Introspection and mindfulness training	• Sitting and walking meditation • Bodyscan • Mindful communication • Breath observation • Yoga
3. Method(olog)ical knowledge related to the collection and analysis of introspective data	• Microphenomenological interview technique • Dialogic introspection • Qualitative content analysis
4. Awareness and strengthening of personal resources	• Mindfulness practices • Motivational interviewing [75] • Practices from deep ecology [76] • Variety of team building exercises, including contemplative dyads or triads (respectively, two or three people sharing)

Following the concept of constructive alignment [77], the intended learning outcomes of the seminar can be defined as being directly in line with its content. This alignment was most clear in that the theoretical and methodical elements of the seminar aimed to increase students' knowledge in the related fields and to enable them to work with introspective data in a systematic, scientifically controlled way. These objectives were also evaluated through the course examination, consisting of an individual oral exam and a written report created by groups of two or three. The oral exam gives students the opportunity to elaborate upon the relevance of their individual transformation projects with regard to current sustainability challenges. Students were also asked during these exams to

describe the way they measured and documented progress within their projects and to deliberate upon challenges they faced. Within the written report, students then abstract from their subjective experience and systematically analyze diaries they kept while working on their projects. In these analyses, students identified overarching challenges and supporting factors with regard to the transformation of individual consumption based on the application of content analysis. Thus, the students can learn to abstract from their own individual habits to wider, intersubjective, and more general societal consumption patterns, as well as derive possible tools to drive personal and social transformation.

The overall objective of the course, however, was to build personal competencies for SC among participants. The self-experiential and self-inquiry-based approach of the seminar format intended to augment students' self-awareness in relation to consumption activities. A special focus was directed to the systematic observation of affective–motivational states and processes that might impact the progress of their transformation project. It is important to mention how the seminar avoided creating an atmosphere in which students felt "forced" to change their consumer behavior in spite of their intrinsic motivations. Instead, students were encouraged to observe their inner states and processes so thoroughly that they were able to make self-determined and responsible decisions based on an awareness of their own needs and personal boundaries. Students were also explicitly encouraged to challenge themselves in their projects to push through particular transformational challenges, thereby stimulating competencies such as affect regulation and resilience; at the same time, the seminar repeatedly emphasized the importance of self-care and pleasure by providing practices catering to them. Furthermore, different team-building exercises aimed to strengthen mutual social support among peers in the seminar.

Leuphana University provided a suitable environment for this kind of seminar format. This public university is located in Lüneburg, Lower Saxony, Germany. As of the winter semester in 2018–2019, it counts 9505 students and employs around 1150 people. It is made up of four faculties covering the fields of education, humanities and social sciences, business and economics, and sustainability. Being Europe's first and only university with a dedicated Faculty of Sustainability, educating future change agents for SD is a central goal of this institution. Its stated mission as a higher education institution emphasizes the importance of personal development alongside sustainability education and the capacity for responsible and ethical action beyond the boundaries of academic discourse for all its students. As the aims of the university's mission largely dovetail with the ideas behind our seminars, both the university and the Faculty of Sustainability provided an ideal space to implement and investigate our approach in these seminars.

As previously mentioned, we piloted two different versions of this seminar. The first seminar, offered during the winter semester of 2017–2018, brought together 30 first-year students from a variety of fields of study (business, ecology, humanities, social science). Weekly seminar sessions took place throughout the winter semester and typically lasted for three hours. Based on our experience in this first trial run, we offered a year-long and more time-intensive (four hours per week) version of the seminar during the summer semester of 2018, this time enrolling fourth-semester undergraduate students majoring in environmental science. While all students from the first cohort completed the seminar, three students left the second run after the first semester.

5.2. Method

Because the described seminar format was the first of its kind, we wanted to explore its educational potential for stimulating personal competencies for SC. In detail, we focused on three questions as follows:

1. Which insights did students gain concerning any (inner) difficulties hindering the development and implementation of their transformation projects? How did they deal with these difficulties? Additionally, which factors helped them realize their transformation projects?

2. How did students experience (the different elements of) the seminar in general? More specifically, what did they learn beyond an enriched understanding of individual consumption, and which problems did they identify with the seminar format?
3. How did the seminar effect students' consumer behavior?

Overall, data collection and analysis followed a five-step process (see Figure 2). As suggested by the concept of SEBL, student experience from individual transformation projects constitute the basis for our data (step 1). They reflected on their experiences by regularly writing research diaries (step 2). In line with SIBL, these diaries were then subject to a systematic inquiry based on qualitative content analysis in which students gathered in small groups and identified overarching patterns concerning challenges and supporting factors of transforming one's consumer behavior. The results were written down in research reports (step 3). It was not before step 4 that our work as researchers came into play. We conducted a content analysis [78] of the students' analyses, distilling and summarizing the patterns identified by students in step 3. In addition to these analyses, we also took seminar evaluations, as well as students' final reflections on the seminar experience, into account in order to address our research questions. For the first seminar cohort, a quantitative evaluation was performed, and reflections were part of the final examination at the end of the seminar. For the second cohort, we made use of Leuphana University's qualitative evaluation process called SHIFT, in which an external person moderates a discussion between students and teaching staff alongside predetermined questions concerning the seminar experience. In addition, we offered students a reflection session in which they discussed the most important lessons learned during, as well as their general experience with, the seminar. A student assistant attended this session and kept detailed records. All additional data gathered here were also subject to content analysis (see Table 2 for an overview of the data). In step 5, preliminary results were discussed with students in order to validate and refine our findings.

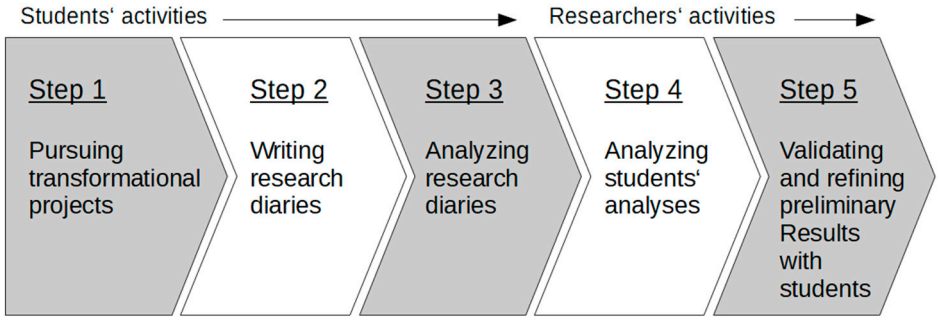

Figure 2. Five-step research design of scholarship of teaching and learning.

Table 2. Overview of the data material.

Type of Data Material	Seminar I	Seminar II
Research diaries	30	20
Research reports	5 (group size: 5–6 students)	6 (group size: 2–3 students)
Written seminar reflections	5 (included in the research reports)	15 (2 students were absent during the last session)
Evaluations	Standardized quantitative evaluation with open questions on learning effects and suggestions for improvement (13 students participated)	Qualitative evaluation (15 students participated)

Application of content analysis in step 4 followed a different procedure for the two seminars. Firstly, we undertook an inductive content analysis on the existing data material from the second seminar. While staying as close as possible to the experiences students described in their reports and their reflections, we coded the entire data material, looking for overarching categories of the phenomena described by the students, and related our codings accordingly. The resulting list of phenomena was then transformed into an analysis matrix that was applied by two student assistants in order to analyze data material from the first seminar deductively (although they had the opportunity

to add new codes when new phenomena were mentioned). In both cases, incongruencies between coders were discussed until a consensus was reached (consensual coding [79]). Findings from both analyses were finally merged into an overall results table.

5.3. Results

5.3.1. Insights into Difficulties, Coping Strategies, and Supporting Factors

In a first step, we asked which insights students gained into (inner) difficulties hindering their personal transformation projects, how they dealt with these possible difficulties, and which factors fostered the overall development of their projects.

In attempting to change their consumer behavior, students faced a series of challenges complicating their transformation projects. Regarding external challenges, they mentioned (in declining frequency) their social environment (45/50 students) (which, for example, did not accept their new consumptive patterns and exerted a perceived pressure not to change their behavior), the fact that establishing new routines was time-consuming (36) and more expensive (24), and perceived scarcity of desired consumer goods (24) (e.g., plastic-free food). Fifteen seminar attendees also described how putting their projects into practice made them realize the complexity of evaluating the implications of their consumer actions, which was also perceived as a difficulty.

Within the seminar, students were asked to bring special attention to inner difficulties and observe their inner reactions to outer circumstances. We identified three types of inner difficulties, namely (i) challenging emotional reactions, (ii) hindering emotional dispositions, and (iii) motivational challenges in regard to transforming consumer behavior. All students faced challenging emotional reactions, the most prominent being negative feelings caused by a perceived restriction due to the project (42), negative feelings due to societal reactions (33) (e.g., demand of justification for the new behavior by peers), and negative feelings prompted by a non-commitment to the self-determined project (25) (for example, feelings of guilt). Furthermore, almost all seminar attendees (45) reported feelings of being overwhelmed, helplessness, and uncertainty when dealing with the consequences of their consumer behavior and trying to find ways to avoid the latter. These sensations were usually accompanied by conflicts of identity and reduced self-esteem (39) ("Despite knowing that I do not consume in accordance to my values, I do not pursue my self-determined project"). Challenging emotional dispositions describe the affective attitude students hold toward the project and its context. Students described three kinds of such dispositions, namely (a) a positive emotional relation to the old behavior (15) ("sharing the traditional family meal on Christmas"), (b) the emotional relation to the context of the project (12) ("university seminar"), and (c) a problematic relation to the field of action (9) ("pathological relation to food"). The third kind of inner difficulty involved motivational challenges. All students reported some degree of motivational challenge. The most frequently reported challenges were a lack of motivation, missing energy for following through on one's project in the face of aforementioned inner and outer difficulties (42), being confronted with opposing needs and interests (39), and being trapped in routines that are difficult to exit (33). Finally, a lack of knowledge (29) was found to be an emotional hindrance in two key ways. On the one hand, one can only feel motivated to act differently by first knowing the impact of one's behavior; on the other, a lack of practical knowledge, e.g., in preparing vegan cuisine, strongly affects one's motivation to follow a vegan diet.

Students also provided detailed analyses of their automatic, avoidant responses to these challenges. In nine cases, unsupportive social environments especially led students to avoid potentially difficult situations in the first place (e.g., not eating with family or friends). Half of all students stated that they would regularly sidestep their entire project and the consequences of their consumer behavior ("escapism" [32]). Furthermore, they observed a tendency to reduce their own demands in terms of how sustainable their consumer behavior should be (18). Finally, all students applied some sort of rationalization or neutralization strategy, for example, by questioning (a) the detrimental impact of one's consumer behavior (27) ("denial of injury" [31]), (b) one's own responsibility for change (27)

("denial of responsibility", ibid.), or (c) the meaning of pursuing one's transformation project (18) ("denial of sense", ibid.). In 12 cases, these strategies led to a desensitization, meaning that students experienced a feeling of indifference with respect to their consumption.

During the seminar, students also gained insights into factors supporting putting their transformation projects into practice. Six factors were mentioned most frequently. Firstly, connecting to their inner resources was reported by 32 students to be very helpful when they were struggling with their projects. To remind themselves and come back to, for example, their self-care, positive thinking, their intrinsic motivation, self-responsibility, and their tools for stress-release strengthened their intention to carry out the projects and to resist falling back on old habits and routines. Secondly, this connection was facilitated essentially by the broad range of practices offered within the seminar. Most notably, mindfulness, easy yoga, empathy, or breathing exercises were mentioned by 31 students as having helped support their projects. Individual students were able to identify different practices as being particular useful and could then independently engage with preferred practices at home. Thirdly, even when students did not consume as intended, practices explored in seminar helped them accept their situation, which soothed negative emotions often experienced as part and parcel with inconsistent behavior. Fourthly, while posing particular challenges in certain situations, students' social environments also served as a major factor of support in others (31). Exchange with, perceived advocacy by, and the understanding of friends and family were also deemed essential for staying motivated through difficult phases of student projects. Fifthly, 15 students found that writing research diaries helped them in pursuing their projects as it constituted an opportunity to self-reflect and discover sources of motivation. Finally, knowledge was considered a final major supportive factor (27), although this appears to have been specific to the first seminar cohort (university freshmen) whose foreknowledge on the topic of sustainable consumption was more limited on average. In the second seminar (environmental science students), an increase in knowledge led instead to an increase in the perceptions of complexity, resulting frequently in information overload and feelings of being overwhelmed.

5.3.2. Experiencing the Seminar

The second question central to our inquiry was how students experienced different elements of the seminar. The primary goal of this exploration was to understand what potential the seminar provided for learning beyond investigating individual consumption. This implies a reflection on challenges encountered by students.

We extracted five major impacts on learning among the students' reports that were not directly related to their consumption. Firstly, all students indicated that the self-experiential approach to sustainable consumption taught in the seminar was new to them and increased their knowledge related to the diversity of perspectives through which sustainable development and consumption can be addressed. Some students even remarked that the potential of this kind of seminar shifted their whole mindset concerning the possibilities and scope of university education, as they described seminar sessions as having been very personal and variable in format, something they did not experience elsewhere in their studies. Secondly, and particularly valuable in this regard, practices of mindfulness and self-observation were introduced during the seminar, which allowed students to increase their general self-awareness substantially and provided them tools for deeper reflection beyond purely theoretical deliberation. Thirdly, nine students described how the seminar helped them cultivate more empathy, understanding, and openness to others and their life situations. In particular, they could better comprehend why other people act the way they do and why they might not be persuaded to pursue sustainable lifestyles owing to a broad range of personal challenges. Fourthly, eight students mentioned the development of self-care, self-acceptance, and self-compassion as key learning outcomes. These students further disclosed that seminar attendance helped them develop more positive relations to aspects of their lives in general. Finally, seven students indicated that the seminar strengthened their feeling of self-efficacy, allowing them, especially, to address emotional challenges, "leave the victim role", and, instead, act in a solution-oriented way.

Regarding challenges encountered within the seminar, four themes were mentioned by more than one student. The most frequent challenge mentioned by students was the need for willingness from students to engage personally with seminar content and, in particular, their personal transformation projects. In opposition to other course formats, students noticed the indispensability of taking up seminar content and activities in order better to benefit from succeed in the seminar. This sort of engagement from students hinged on their own independent pursuit of mindfulness/introspective practices, as well as regular entries in their personal diaries, which some students experienced occasionally as being too time-intensive.

The second key challenge was planned explicitly into the framework of the seminar, namely the confrontation with (inner) difficulties when putting personal transformation projects into practice (4). Despite initial information that the seminar would put students face to face with such difficulties, the intensity of the latter was underestimated by some. Talking about and sharing especially challenging inner difficulties with fellow students was a third issue encountered. Three students described certain topics addressed within the seminar as "highly sensitive, intimate, and personal". Since sharing such experiences, especially in the university context, was unusual for students, this part of the seminar threw up serious hurdles for some. The fourth challenge was related to introspective and mindfulness practices, with which students especially struggled at the beginning of the seminar. Either they did not know what they were supposed to do or experience while following these practices or they had difficulties integrating these practices into their daily lives. However, the weight of this challenge diminished over the course of the seminar.

5.3.3. Effects on Consumer Behavior

Our third research question focused on how the seminar effected students' consumer behaviors. The rationale behind this inquiry was to find out whether the abilities and skills students obtained in relation to their inner states and processes would actually enable them to pursue sustainable consumption patterns, as the relevance for action is a core characteristic of a competence. Overall, we found that the observations and learning outcomes described above influenced students on three consumption-related levels, namely their (a) awareness, (b) motivation, and (c) actual behavior.

The most widespread consumption-related effect—reported by all students—was an increased awareness of one's individual consumption patterns and, more specifically, exact details of goods consumed on a regular basis, including origin and production processes. Alongside the rise in reflection about individual consumption patterns came an enhanced knowledge of and awareness for external, environmental, and social aspects of the current consumption industries, resulting in an overall understanding of the relevance of sustainable consumption. In addition, students reported including reflective assessment increasingly in their consumer behavior. Section 5.3.1 already illustrated how the seminar attendance generally increased students' awareness for inner states and processes related to consumption; this aspect also became relevant in actual purchase or consumption situations. Here, students felt better capable of connecting to their values and needs, leading to more deliberate consumption choices instead of relying on unreflected habits or routines.

The latter point also relates to the motivational dimension of consumption-related seminar effects. Being able to relate to one's own personal values and needs when consuming reflects a shift from habitual to consciously driven and, hence, intrinsically motivated consumption. Interestingly, even students whose consumer behavior remained in line with their previous concept of sustainable consumption mentioned this effect. This demonstrates that the seminar helped the attendees root their consumption patterns in their personal values instead of orienting them toward external normative ideals of sustainability. Five students from the second seminar cohort described a similar phenomenon in which they experience a more positive relation to consumption, either due to a greater appreciation or a reduction in perceived obligations to consume sustainably. This does not entail a tendency to less sustainable consumption choices; on the contrary, as a result of this shift toward an inner orientation,

students reported an intensified feeling of response-ability and stated that less sustainable consumption choices became less attractive and even "disconcerting".

In total, 49 out of 50 students reported having maintained changes to their consumer behavior after course attendance. Remarkably, the majority of students even reported changes to their consumer behavior beyond the confines of their personal transformation projects. Moreover, they expressed a willingness to, at least partly, continue developing and putting their transformation projects into practice.

6. Critical Discussion and Outlook

In the previous section, we analyzed the learning outcomes of two seminars based on the principles of SIBL and SEBL. We investigated whether these seminars could stimulate the acquisition of personal competencies among students.

Our results provide evidence that this aim could indeed be achieved. As part of the seminar attendance, students:

- obtained detailed insights into (affective—motivational) challenges of sustainable consumption and their automatic coping mechanisms to avoid or suppress these challenges (self-reflexivity/self-awareness);
- learned to tolerate these challenges instead of falling into automatic coping mechanisms (emotional regulation/emotional resilience);
- got familiar with techniques and practices that helped them connect to, nourish, and draw on inner resources pursuing sustainable consumption patterns;
- developed a stronger intrinsic motivation to consume in a sustainable way and, hence, engage in problem-oriented action;
- reported an overall improvement to their well-being as a result of increased self-awareness, self-care, self-acceptance, and self-compassion, which in turn enhanced capability to pursue a sustainable lifestyle.

As a consequence of these learning outcomes, almost all students stated that the seminar helped them initiate and maintain changes to their consumer behaviors.

Against this backdrop, we argue that SIBL and SEBL represent promising pedagogies for systematically building personal competencies for SD and SC. In our experience, these approaches carry the potential to provide the inner foundation for engaging with sustainability-related issues. More precisely, they allow students to experience the relevance of inner states and processes and their influence on actual behaviors, leading to enhanced self-awareness and self-reflection beyond purely dealing with the related matters intellectually. Doing so allows students to connect to their intrinsic sustainability-related values and strengthen inner qualities empowering engagement in problem-oriented strategies, instead of applying emotion-oriented coping mechanisms [27]. Connecting to the inner states and processes also sensitizes students for their personal limits and helps them care for their personal sustainability [80], which is to say their "physical health or natural beauty, as well as inner features such as consciousness, spiritual, cultural, and worldview-related aspects or a sense of well-being. The inner features further include perceptions and bodily experiences, as well as thoughts and values, needs and wishes, and emotional and habitual patterns" (p. 5). As Brundiers and Wiek [9] argued, this competence is also indispensable for future sustainability professionals, as this group has a particularly strong tendency to be overburdened in the face of social–environmental crises unique to contemporary society.

Results provided here must be interpreted with some caution. A first aspect to keep in mind is that we drew our findings from students' self-reporting expressed directly after the seminars. Thus, described learning outcomes and effects on students' consumer behaviors cannot be established objectively and it remains unclear whether or not they are of lasting significance. Follow-up questionnaires might be helpful to address this question with future cohorts. Moreover,

the quantification provided above must also be interpreted with caution. The aim of our research was to explore the potential of a pilot seminar putting principles of SIBL/SEBL into practice and aiming at building personal competencies for sustainable consumption among students. On the basis of seminar attendees' written works, reflective reports, and feedback on the seminar, we extracted and grouped the most common statements related to our research questions. Given the explorative character of our study, none of these documents were standardized, meaning that students could freely choose the focus of their work, reports, and feedback. At the same time, this procedure limited the scope of the data to those experiences chosen by the students. In other words, if something is not mentioned in the documents, it does not mean that the students did not experience it. The flip side of this aspect is that it is equally impossible to guarantee that students' reports actually reflect their genuine experiences with their consumer behavior. Because the discussion of inner difficulties and challenges bound up with personal transformation projects was a mandatory part for successful seminar completion, the possibility that students invented parts of these reports, or at least stretched the truth in them in creative ways, cannot be ruled out. The development of a standardized questionnaire seems to be useful for addressing this issue. It seems to us that our results can provide an inspiring basis for exactly such a questionnaire. A third aspect to consider is the fact that we looked at two different seminars, varying in student composition, scope, duration, and actual seminar content. These differences might have an effect on the depth of students' seminar experience and learning outcomes. We did not thoroughly and systematically elaborate upon the varying effects of the two seminars. Nevertheless, future research on SIBL/SEBL should look at influential factors such as seminar scope and duration, students' disciplinary background, etc. with regard to actual learning experiences. Related to this is a fourth aspect that should be taken into account when interpreting our results: the role of teaching personnel. Several students emphasized that both seminar facilitators had a positive influence on their perception of and engagement in the seminar. On the basis of our findings, we cannot rule out the possibility that our described learning outcomes may have stemmed from the students' interactions with the teaching personnel instead of being the effect of the learning approaches themselves. In order to clarify this aspect, the same seminars should be conducted by different learning facilitators and subject to systematic inquiry. More generally, we advise undertaking comparative studies of SIBL and SEBL seminars alongside more conventional approaches to ESC in order to evaluate the pedagogies' potential for helping to develop of personal competencies.

A final and more general aspect to discuss concerns competencies necessary for teaching staff hoping to facilitate self-inquiry-based and self-experience-based learning. In our experience, facilitating these approaches demands competencies that go beyond disciplinary expertise. A familiarity with introspective practices and methods for verbalizing subjective experience is indispensable, as is the willingness to personally share and deal with affective–motivational processes. The latter also demands the creation of a "safe space" in which students feel both confident and encouraged to disclose inner states and processes to their peers and facilitators. SIBL and SEBL are based on relationships of respect and trust among students and teaching staff, and such a relationship cannot be forced, but must be built with patience. That ESD educators need competencies that go beyond disciplinary expertise is not surprising. Vare and colleagues' [81] competence framework for ESD educators, for example, shows relevant parallels to the exigencies mentioned above, highlighting "empathy" and "engagement" as important competencies for ESD educators and depicting ESD as "relational" and processes of "social learning" (p. 16). At the same time, the explicit development of personal competencies—at least as it is suggested through SIBL and SEBL—raises the seemingly unaddressed question in the ESD literature as to which personal competencies are required on the part of the educators for offering such approaches. Elaborating a framework intended to provide training in these competencies will most certainly be an important line of inquiry for teacher education for sustainable development in the future.

7. Conclusions

In this article, we introduced two new learning approaches that allow students to systematically acquire personal competencies for sustainable development in general and sustainable consumption in particular: self-inquiry-based learning and self-experience-based learning. Conducting scholarship of teaching and learning, we applied these approaches in two university seminars. Our results indicate that these approaches have the potential to increase self-reflexivity/self-awareness, emotional resilience, self-care and self-acceptance, psychological resources, and students' intrinsic motivation to consume in a sustainable way and to engage in problem-oriented action. Moreover, the vast majority reported that they changed their consumer behavior. They explained change in terms of the aforementioned learning outcomes, indicating that SIBL and SEBL might indeed develop genuine competencies for SC. Given the limitations of our study, we call for further applications of the approaches discussed here in order to further investigate the promising potential of SIBL and SEBL for educating future change agents for sustainable development.

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