Education for Sustainable Development: Business Modelling for Flourishing

Maya Hoveskog*1, Fawzi Halila1, Marie Mattsson1, Antony Upward2, and Niklas Karlsson1

1School of Business, Engineering and Science
Halmstad University, Kristian IV:s väg 3, 301 18 Halmstad, Sweden

2Ontario College of Art and Design University (OCAD U), 100 McCaul St, Toronto, Ontario, M5T 1W1, Canada

*Corresponding author’s email address: mayhov@hh.se

Abstract
As companies and other organizations increasingly recognize society’s demand for greater social and environmental sustainability, university and college business schools have responded with new pedagogic approaches. Business schools have begun to offer courses in business models and business model innovation that focus not only on profit-normative goals but also on social and environmental goals. This paper describes an Experiential Workshop for university undergraduates in which the Service-Learning pedagogic approach is taken and Flourishing Business Canvas is applied as a tool for collaborative visual business modelling. In the Workshop, the students work with business model innovation for a biogas production cooperative of farmer-members in southern Sweden. The students take the role of problem-owners and problem-solvers as they co-create new business models ideas for the cooperative. The paper presents the students’ achievement of three Learning Objectives as they engage in meaningful, “real-world” simulations with a high degree of autonomy that allows them to combine their theoretical knowledge with practice. Implications for educators who wish to test the Experiential Workshop in their classrooms are proposed. The paper concludes with the suggestion that Education for Flourishing is a useful expansion of Education for Sustainable Development.

Key words: business modelling, flourishing business canvas, education for sustainable development, experiential student learning, biogas cooperatives

1. Introduction

In 2011, Bill Ford, the executive chairman of Ford Motor Company, explained the change in the company’s business model – the transition from an automobile and truck manufacturer to a mobility manufacturer with the goal of improving peoples’ lives. This change reflects the increasingly popular mantra among practitioners and academics: “Innovate your business model or die.” This change also reflects modern companies’ urgent need to create novel and feasible business models aimed at achieving social and environmental goals as well as financial goals – the “tri-profitability” goals that Upward and Jones (2016) describe.

Teece (2010) states that every company has a Business Model (BM) – a kind of a cognitive map – used to make and evaluate change decisions. Such cognitive maps in the contemporary business world are typically limited to the BM elements aimed at improving financial performance. In order to create or innovate a BM, companies undertake business modelling. It refers to the set of cognitive actions aimed to represent business activities in a simplified form (i.e., a BM) as well as to iteratively experiment with the BM to evaluate alternative ways in which it could be designed (Aversa et al., 2015).

BMIs aligned with enterprise financial goals are intended to contribute to companies’ competitiveness, renewal, and growth (Campbell et al., 2013; Chesbrough and Rosenbloom, 2002; Johnson, 2010; Lambert and Davidson, 2013; Teece, 2010). Upward and Jones (2016) describe such goals and their associated BM designs and modelling as “profit-normative”.

However, as Laszlo et al. (2014) explain, today a company’s BM must offer value to all its stakeholders, not just its customers/users and investors. Often this requires the creation of a new BM or the innovation of a former BM through process of business modelling. A new
conception of business modelling incorporates the concept of “flourishing” that reflects not only stakeholders’ financial interests but also their social and environmental interests.

The term “flourishing” derives from John Ehrenfeld’s pioneering work in Industrial Ecology. Ehrenfeld (2008, p. 6, originally proposed in Ehrenfeld, 2000) concluded the only goal humanity, individually or collectively, could practically pursue, and should attempt to pursue, is "the possibility that human and other life will flourish on this planet forever". In the business world, creating/innovating BMs with flourishing goals requires deliberate, collaborative designs that address the mutually reinforcing interdependencies among stakeholders and their interdependent financial, social, and environmental interests. Willard (2012) argues that such BMs can even produce better financial results than traditional BMs in which only a few stakeholders’ interests are considered. Therefore, business schools should teach BM modelling that integrates the economic, social, and environmental factors aimed at advancing enterprise performance towards tri-profitability goals.

Thus the purpose of this paper is to describe and evaluate a pedagogic approach to BM creation/innovation that aimed at increasing students’ learning and reflection on sustainability and at increasing their ability to take practical action in business modelling for flourishing. It was used with university undergraduates in an “Experiential Workshop”. The workshop was a practice-based, collaborative experiential learning activity focused on business modelling for flourishing at a Swedish, farm-based biogas production cooperative. The workshop is an integral activity in the Developing New Goods and Services course in Business Administration at the Bachelor’s level at Halmstad University, Sweden. Of the 41 students enrolled in the course, 40 students (26 women and 16 men from 14 countries) participated in the workshop. Most of the
students had previously studied Business Administration (marketing and logistics); a few students had previously studied literature or engineering.

The remainder of this paper is structured as follows. In Section 2 we describe various theories on learning and teaching that influence our research. In Section 3 we address the linkage between business modelling and flourishing and present the Flourishing Business Canvas. In Section 4 we present our data collection and data analysis methodology. We conclude Section 4 with a description of the workshop as the main data source: its design, participants, and Learning Objectives as well as our pedagogic approach. Section 5 presents and discusses the results of our research and offers implications for educators. Section 6 summarizes our research and argues for Education for Flourishing as an expansion of Education for Sustainable Development.

2. Learning and Teaching Theory

A rich body of theoretical literature exists on learning and teaching that is relevant to the approach and goals of our workshop. Here we review several relevant theories.

Education for Sustainable Development (ESD) is the umbrella term that refers to the various forms of learning and teaching associated with sustainable development in societies. Olsson and Gericke (2016) describe two ESD teaching approaches: (i) fact-based normative teaching, and (ii) teaching that empowers and equips students to deal with sustainable development. In the second approach, students take ownership of their learning (Gremler et al.,
Experiential Learning Theory (ELT), as conceptualized by Kolb (1984) and Kolb et al. (2001), describes a learning theory in which learning occurs through action/reflection and experience/abstraction. ELT owes something to the concept of “natural learning” that Burgoyne and Hodgson (1983) described.

Other researchers who have developed and expanded on ELT include Hines and Thorpe (1995), Marsick and O’Neil (1999), and Corbett (2008). This research features cognitive learning (i.e., problem-solving), situative learning (i.e., group learning), and action learning (i.e., learning by doing). A common focus in this research is the idea of iterative steps in the process of learning. In the process, knowledge is created through concrete experience and experimentation, followed by observation and abstract reflection.

Another experiential education approach is the Service-Learning approach. Furco (1996) describes this approach as collaboration between education institutions and community institutions in which students acquire “real-world” experience in challenging situations through interaction with volunteers, professionals, and managers. Pittaway and Cope (2007) promote this approach in an entrepreneurial setting in a course designed for work-based learning in which students’ reflections are used for the course evaluation. Hawkey et al. (2012) also adopt this approach in a multi-level approach for teaching the concept of sustainability to engineering and environmental science students.

In teaching business modelling, it is essential to present relevant issues to students, to provide them with relevant experiences, and to give them the opportunity to reflect on those
issues and experiences. Kurucz et al. (2014, p. 438) promote this approach in business school education with the argument that progressive education practices “provide an opportunity to develop a new vision of management education.” It is an approach that supports the UN’s Sustainable Development Goals (SDG) recently approved as the global aspirational goals for humanity to be achieved by 2030 (UN General Assembly, 2015).

We used these approaches (ESD, ELT, and Service-Learning) and the practice of student evaluations in the design, conduct, and assessment of our Experiential Workshop.

3. Business Model Innovation for Flourishing as a Social and Experiential Practice

3.1. Business Model Innovation and Flourishing

Business model innovation (BMI) is the process of designing and implementation of novel and feasible BMs which starts with business modelling. According to Aversa et al. (2015), three phases of cognitive action (thinking, articulating, and doing) occur in business modelling. These actions intend to represent the complex business activities in a simplified form of BM designs and then to iteratively experiment to create and evaluate alternative BM designs. Thinking refers to understanding a business. Articulating refers to designing a simplified BM that may be shared and modified. Doing refers to making the decisions and creating the routines needed to implement the BM.

In discussions of BMs and BMI, a comprehensive approach is typically taken as far as how companies achieve their “profit-normative” goals. Such discussions focus on the strategic choices that promote the creation, delivery, and capture of economic value (Upward and Jones, 2016, pp. 104-105). However, in their literature review of sustainable BM archetypes, Bocken et
al. (2014) describe the effort to encourage companies to work toward substantial positive or significantly reduced negative environmental and societal effects rather than work to achieve purely financial goals. In this approach to BMI, various combinations of financial, social, and environmental satisficing\(^1\) objectives are prioritized. Table 1, which is inspired from Dyllick and Muff (2016), distinguishes between different companies’ goals towards contributions to sustainable development. Companies may choose to adopt goals anywhere on this continuum when innovating their BMs.

### Table 1: Four enterprise goals aimed at satisficing various financial, social, and environmental objectives.

<table>
<thead>
<tr>
<th>Enterprise Goals</th>
<th>Business Sustainability Typology (Dyllick &amp; Muff, 2016)</th>
<th>Informal Label(s)</th>
<th>Common Equivalent Label(s)</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Profit-Normative</td>
<td>Business-as-usual</td>
<td>Do well</td>
<td>Business-as-usual; Profit Prioritization</td>
<td>For many for-profit entities in many jurisdictions, the profit goal is first and foremost a fiduciary responsibility of the enterprise’s officers. They also have personal legal accountability.</td>
</tr>
<tr>
<td>2. Responsible Business</td>
<td>Business Sustainability 1.0 &amp; 2.0</td>
<td>Do well \textit{while} doing less harm</td>
<td>Corporate Social Responsibility; Sustainable Business</td>
<td>Doing less of something has negative consequences, and will never result in a “good” sustainable outcome (McDonough and Braungart, 2002).</td>
</tr>
<tr>
<td>3. Sustainable Development</td>
<td>Business Sustainability 3.0</td>
<td>Do well and do (some) good</td>
<td>Eco-efficiency (McDonough and Braungart, 2002)</td>
<td>As a goal, achieve United Nations (UN) Sustainable Development Goals (SDGs), is criticised because that aim does not ensure the collective future well-being of people despite the fact that SDGs are considerably better than the earlier Millennium Development Goals (ICSU, 2015).</td>
</tr>
<tr>
<td>4. Flourishing</td>
<td>Not included</td>
<td>Do good to do well</td>
<td>Eco-effectiveness (McDonough and Braungart, 2002); Tri- Profitable Business (Upward and Jones, 2016); Strongly Sustainable Business (Kurucz et al., 2016); Future-Fit Business (Kurucz et al., 2016)</td>
<td>For an introduction to Flourishing in a business context and Flourishing Enterprises, see Laszlo et al. (2012).</td>
</tr>
</tbody>
</table>

If the enterprise goal is Flourishing (#4), BMI requires making strategic choices that recognize the importance of external factors such as the environment, society, the economy (markets), a range of stakeholders (including customers), and the value propositions that meet those stakeholders’ needs. Inclusion of these factors in BMI means paying attention to environmental regeneration and social benefits in addition to financial performance. The

---

\(^1\) Satisficing, a term first introduced by Herbert Simon (1956), is a decision-making strategy when under certain circumstance decision-makers cannot determine an optimal solution.
Flourishing goal has a much broader scope than the Profit-Normative, Responsible Business, or Sustainable Development goals (Upward and Jones, 2016).

When they begin BMI, enterprises create and experiment with artifacts -- visual representations of possible BMs. With reference to the creation of BMs in BMI, Demil and Lecocq (2015, p. 34) describe artifacts, which are the “crafted results of a purposeful human action”, as visualizations “intended to synthesise and describe the way in which a business creates and captures value, and to make sense of and to portray it to the others”. These authors encourage decision-makers to create BM artifacts by scanning the environment, “making sense of their own and others’ experiences, and taking their decisions accordingly” (p. 33). The implication of this description of the creation of BM artifacts is that BMI is not a one-time event. Rather, it is a complex, collective, co-creational, and cyclical interactive systematic process that emphasizes active and social experimentation and learning.

According to recent research, an artifact that is a visual representation of a BM based on a common language is particularly effective in BMI (Hanshaw and Osterwalder, 2015; Upward and Jones, 2016). Such BM artifacts promote a shared understanding of the factors an enterprise considers in setting its goals. Thus, the use of a common language around BMs – the terms and concepts – makes it easier for people to have productive conversations that can lead to the achievement of those goals (Upward and Jones, 2016).

3.2. The Flourishing Business Canvas

Despite the discussion among practitioners and academics on the interrelationship among BMs, BMI, and sustainability (e.g., Boons and Lüdeke-Freund, 2013; Schaltegger et al., 2016), we still lack a good understanding of the frameworks and tools needed to design and
implement BMs for Sustainable Development and/or Flourishing as well as a common language for describing them. Breuer et al. (2016), for example, conclude the fundamental characteristics of BMs that promote the achievement of Sustainable Development goals are insufficiently identified, and the BM design tools are still in the early stages of development and testing.

One solution to this deficiency is the Strongly Sustainable Business Model Canvas described by Kurucz et al. (2016), which has its roots in the work of Jones and Upward (2014) and in the Strongly Sustainable Business Model Ontology presented by Upward and Jones (2016). The tool itself is a significant extension to the earlier profit-normative Business Model Ontology by Osterwalder (2004). The Strongly Sustainable Business Model Canvas is a practitioner visual design tool that uses a common language for the description and creation of BM artifacts that support enterprise goals, regardless of how they are framed. Upward and Jones (2014, 2016) refined this canvas as the Flourishing Business Canvas\(^2\) (FBC), which is the tool used in this research (Figure 1).

As Elkington and Upward (2016, p. 131) explain, the FBC is “a collaborative visual design tool that, by providing a common language for an organization’s stakeholders, allows them to effectively work together to describe their enterprise’s business model and imagine future preferred ones”.

\(^2\) The FBC is now being tested in a global programme in practitioner and academic settings by some of the 730+ global members of the Strongly Sustainable Business Model Group, a community for action research and innovation practice, hosted by the OCAD University Strategic Innovation Lab. See www.FlourishingBusiness.org and http://slab.ocadu.ca/group/strongly-sustainable-business-model-group-ssbmg for the most recent practice and developments.
The FBC consists of elements applicable to all BMs: (i) three contextual systems; (ii) four perspectives; and (iii) sixteen question blocks (Upward and Jones, 2016). The contextual systems are the Environment, Society, and the Economy. The four perspectives [derived from Kaplan and Norton's Balanced Scorecard (1996)] are Process, Value, People, and Outcomes. The sixteen question blocks are intended to provoke inquiry by practitioners as they innovate a current or future BM (e.g., Who are your stakeholders? Which activities create value?”). Typically, responses to the questions are recorded on a large poster of the canvas (1m x 1.5m or larger) using multiple post-it notes per question (see Figure 3). The process of having to agree what should be written on each post-it note provides the mechanics for building shared
understanding. Elkington and Upward (2016) provide further detail on the contexts, perspectives and a complete introduction to all sixteen question blocks.

3.3. Business Education and Business Model Innovation

For various reasons, researchers have charged that the commentary on BMI and its intended outcomes is deficient, in particular because such commentary does not offer sufficient guidance for future business leaders (Frankenberger et al., 2013; Klang et al., 2014; Laszlo et al., 2014). Other researchers charge that business schools do not provide sufficient learner-centred and reflective instruction on BMI (Hartman et al., 2013; Heineke et al., 2010; Kurucz et al., 2014; Laszlo et al., 2014; Martin, 2007).

Stemming from these charges is a call for business education that moves beyond the traditional focus on financial performance. Various researchers and educators have therefore proposed alternative programmes and courses that focus on the complex social and environmental issues. One current trend in such business education is the greater attention paid to instruction on flourishing goals (e.g., B Lab, 2016; BALLE, 2016; ICA, 1995; Kurucz et al., 2016; Missimer, 2016a, 2016b). The Aim2Florish (2015), for example, is a student-learning platform that the UN Global Forum for Responsible Management Education supports (UN PRME, 2015).

In these and other programmes, learning is conceived of as a process rather than a product. Quoting from Saint-Exupéry’s (2001) fantasy, The Little Prince, the most important instructional goal is not to teach shipbuilding to men; it is a more important goal “to teach them to yearn for the vast and endless sea.” Taking this advice as our cue, we created the
Experiential Workshop that seeks to give students experience in BMI for flourishing as they prepare to enter the business world. We call this approach “Education for Flourishing” (EfF).

4. Research Approach and Method

4.1 Research Project Setting and Background

The research presented in this paper is part of the larger action research project, Green Innovation (initiated in 2014 at Halmstad University, Sweden). The case of the Swedish, farm-based biogas production cooperative (hereafter Alpha Biogas3) that is used in the experiential workshop comes from an ongoing Ph.D. project applying an action research design on investigating possibilities for developing Swedish farm-based biogas production within the interdisciplinary research of Green Innovation. Owing to our earlier action research in the Green Innovation project aiming to solve practical problems in “real-world” situations, we were able to establish close collaboration and a trusting relationship with the Alpha Biogas management team in a joint learning process and facilitated an extended collaboration (Argyris et al., 1985; Zobel and Burman, 2004).

This paper reports on one aspect of that collaboration: an Experiential Workshop that used the Service-Learning pedagogic approach and the FBC for business modelling as a part of the bachelor course Development of New Goods and Services. Figure 2 shows how the research process is embedded in both the larger action research project, Green Innovation, the PhD project being part of it, and the bachelor course.

---

3 A detailed description of Alpha Biogas is available from the authors upon request. The name Alpha Biogas is fictitious and has no connection to the Australian company of the same name.
Figure 2: Outline of the research process.

Figure 2 also outlines the research process from deciding on the main focus of the research through the data analysis to enable the description and evaluation of a pedagogical approach to business modelling for flourishing in an experiential workshop. In the Workshop, the students work with business model innovation for a biogas production cooperative of farmer-members in southern Sweden.

4.2. Data Collection and analysis

The data used in the study were collected as an integral part of the course. Table 2 presents an overview of our data sources. The students completed two on-line questionnaires (anonymously) and wrote on-line blogs about the workshop. The lecturers analysed the students’ achievements of the Learning Objectives (LOs) based on analyses of these.

The purpose of the first on-line questionnaire (before the workshop) was to gain an understanding of the students’ expectations of the workshop and their knowledge of BMI, the relevant tools (workshops, the FBC), and their experience with the use of these tools for analyses and presentations.

<table>
<thead>
<tr>
<th>Data type</th>
<th>Focus</th>
<th>Used to analyse</th>
<th>Total no. of characters</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-line questionnaire before the workshop (BW)</td>
<td>Open questions: 3 main themes – (i) expectations; (ii) prior knowledge; (iii) prior experience</td>
<td>Students’ learning and LOs fulfilment</td>
<td>45 228</td>
<td>c. 93% (37 students)</td>
</tr>
<tr>
<td>On-line blogs after the Workshop, 150-200 words each</td>
<td>Reflections on the workshop</td>
<td>Students’ learning and LOs fulfilment</td>
<td>30 341</td>
<td>c. 98% (39 students)</td>
</tr>
<tr>
<td>On-line questionnaire after the workshop (AW)</td>
<td>Open questions: 2 main themes – (i) expectations; (ii) learning</td>
<td>Students’ learning and LOs fulfilment</td>
<td>46 362</td>
<td>75% (30 students)</td>
</tr>
<tr>
<td>8 FBC artifacts created during the workshop</td>
<td>Quantifying the ideas in each question block of the FBC, identifying unique no. of ideas, identifying 3 novel and feasible ideas for a new BM</td>
<td>The outcome of the workshop</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Discussion with Alpha Biogas representative after the workshop (AW)</td>
<td>Open discussion and evaluation on the novelty and feasibility of the 8 FBC artifacts produced and presented in the workshop</td>
<td>The outcome of the workshop</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

The purpose of the second on-line questionnaire (after the workshop) was to learn if students’ expectations of the workshop had been met and to evaluate their learning from the workshop. The students were encouraged to express their opinions of the workshop and their learning in their on-line blogs.

The analyses of our data had two purposes: to evaluate the students’ achievement of the workshop LOs; and to evaluate the workshop in terms of the FBC artifacts created. To evaluate achievement of the LOs, we used the data from the two on-line questionnaires and the blogs that together consisted of 121,931 characters. Two researchers (the principal authors of
this paper) used the two levels (Reaction and Learning) of Kirkpatrick’s (1996) Four-Level Training Evaluation Model and Moore et al.’s (2009) categories of learning in this analysis.

Figure 3: Students in the co-creation of the FBC artifacts as they discuss their responses to the FBC question blocks.

To evaluate the workshop, we examined the eight FBC artifacts derived from the FBC’s sixteen question blocks (Figure 1 and Figure 3). These artifacts, which presented the Alpha Biogas goals combined with the students’ understanding of the financial, social, and environmental contexts, were discussed with the Alpha Biogas representative.

We documented the eight FBC artifacts the students co-created in the workshop on paper and electronically. The Alpha Biogas representative and the lecturers used these artifacts in the workshop discussion.

4.3. The experiential workshop – the main data source

4.3.1. Pedagogic Approaches Used in the Experiential Workshop

The Developing New Goods and Services course that featured the workshop included lectures, interactive class exercises, and short assignments related to sustainability. Thus, before
participating in the Experiential Workshop, the students had studied and applied concepts, theories, and tools for developing new goods and services (e.g. product and service development strategy, user studies, idea and concept development, visualization and presentation). The course did not address BMI for flourishing or the FBC prior to the introduction to the workshop.

Table 3. The learning process and the outcome

<table>
<thead>
<tr>
<th>The concept</th>
<th>Set the tone</th>
<th>Thinking - scan/understand the situation</th>
<th>Thinking &amp; articulating – identify/define problems</th>
<th>Articulating &amp; doing - discover/identify potential solutions</th>
<th>Articulating &amp; doing - communicate results to advocate for change</th>
</tr>
</thead>
</table>

The process: traditional lectures combined with the Idea Experiential workshop

<table>
<thead>
<tr>
<th>Week 1-8</th>
<th>Week 6</th>
<th>Week 6</th>
<th>Week 8</th>
<th>Week 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to different topics in the course (product &amp; service development strategy, user studies, etc.). Introduction to &amp; completion of short assignments related to sustainability</td>
<td>Workshop case description</td>
<td>FBC explained</td>
<td>Experiential Workshop to jointly experiment with potential solutions</td>
<td>Presentation of the FBCs artifacts and discussion on the suggested changes at the end of the workshop</td>
</tr>
<tr>
<td>Assessing the situation</td>
<td>Secondary data desk research</td>
<td>Mapping and analysing the existing BM of the case company</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The outcome: Increase in awareness, reflection, and learning, and creation of the FBC artifacts

<table>
<thead>
<tr>
<th>The outcome</th>
<th>Number of ideas in each of the sixteen question blocks of the FBC that focus on the change.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Increased knowledge, reflection, and awareness about flourishing and business modelling</td>
</tr>
</tbody>
</table>

We applied ELT and were inspired by the Service-Learning approach (learning by doing) and the second teaching ESD approach (empowering and equipping) for the design of the workshop. Thus, the workshop was designed so that students could use the FBC to engage in business modelling for flourishing and producing FBC artifacts for a real company. This service-learning work was planned as a short-term assistance project for Alpha Biogas with its business model. The BM tool (FBC) was used by students to identify, research, and advocate for changes toward flourishing, while at the same time contributing to their increased awareness, reflection,
and learning related to business modelling (Furco, 1996). Table 3 presents the workshop learning process and its outcome.

This learning process in the workshop was intended to give students “real-world” experience of BMI as they engaged with the three phases of cognitive action (thinking, articulating, and doing) that Aversa et al. (2015) describe as essential in dealing with complex business activities (Section 3.1).

Specifically, the intended pedagogical content, apart from the broader process of innovation, was to understand business modelling at the beginning of the BMI process. The workshop gave the students the opportunity students to learn the value of experimenting, prototyping, and design thinking in which collaboration and feedback in groups are featured. Additionally, the workshop presented the students with a “real-world” business situation characterized by the realistic problems of incomplete information, high complexity, time constraints, conflicting goals, and uncertainty. In brief, the workshop gave students practice in a “hands-on” activity that allowed them, even if hypothetically, to assume the role of the practitioner rather than simply learn about a practice (Brown and Duguid, 1991).

However, in contrast with the reality of managers who also undertake business modelling, however, students don’t face the same level of risk for mistakes and failure as managers do. However, active exploration, experimentation and learning characterize the “real-world” business modelling and BMI which is also experienced by the students during the workshop.

4.3.2. **Intended Learning Objectives for the Experiential Workshop**

We prepared three intended LOs for workshop:
1. To increase students’ awareness of and reflection on how sustainability trends can be addressed via BMI (LO1);

2. To give students practice in applying the BMI tool (FBC) in order to produce a suggestion(s) for a new business model (i.e., an artifact) for a real company based on a challenge it faces. (LO2); and

3. To give students oral presentation practice as they describe their business model solutions for flourishing and receive evaluative feedback. (LO3).

To evaluate the achievement of LO1, we used two levels (Reaction and Learning) from Kirkpatrick’s (1996) Four-Level Training Model. To evaluate the achievement of LO2 and LO3, we used Moore et al.’s (2009) categories of learning: declarative knowledge (knows facts), procedural knowledge (knows how to use facts), and competence (shows how to use facts). In these analytical processes, we referred to students’ descriptions and use of FBC and the sixteen question blocks in the FBC. Independently, the lecturers and the Alpha Biogas representative evaluated the originality, clarity, content, and organization of the oral presentations.

**4.3.3. Plan for the Experiential Workshop**

We focused on two important prerequisites when we designed the 4-hour workshop. First, we had to find an organization willing to share information about their BM and to actively participate before, during and after the workshop. Second, that organization had to be interested in innovating its BM towards more sustainable or even flourishing. After some investigation, we found a suitable partner for the project: Alpha Biogas, a Swedish, farm-based biogas production cooperative, founded in 2009, legally registered as a for-profit association, and managed by 36 farmer-members. Alpha Biogas operates with a circular economy model
(animal manure to raw biogas) that provides employment to the local community inspired by another profitable Swedish farm-based biogas enterprise (Karlsson et al., 2017).

In Alpha Biogas’s initial plan, 25 farmer-members would build biogas plants for the production of heat and electric power. However, as of 2016, only three raw biogas plants were in operation. Because of the current low price of electricity in Sweden, the small scale of this activity does not presently generate sufficient cash flows to make an investment in a biogas upgrade facility. As a result, biogas production at present is not very profitable for Alpha Biogas.

Therefore, the students in the workshop were asked to work with BMI for flourishing for Alpha Biogas. Their assignment was to create FBC artifacts that would be financially profitable for the cooperative and yet remain within the social and environmental parameters associated with renewable energy produced from organic matter. The workshop was intended to encourage students’ thinking, articulating, and doing following the framework of the FBC (Ancona, 2012; Aversa et al., 2015; Demil and Lecocq, 2015; Doganova and Eyquem-Renault, 2009).

We framed these activities around four questions that were constructed by the lecturers and the representative from Alpha Biogas. Question #1 dealt with the investments needed for increased capacity and improved quality of the gas. Question #2 dealt with the value propositions needed to ensure the long-term growth of Alpha Biogas, including the installation of a bio methane upgrade facility and the ability to sell the higher margin vehicle biofuel. Question #3 focused on the partners (private, public, or public-private) needed to meet the challenges. Question #4 dealt with Alpha Biogas’s use of existing knowledge and experience from similar projects that would be useful in renovating its business model.
4.3.4. Structure of the Experiential Workshop

The students formed eight 5-member teams. As illustrated in Table 3, in Week 6 of the course, we asked the students to conduct background research on the concepts of BMI and the FBC. We also asked the students to conduct desk research, both in advance of and during the workshop, on Alpha Biogas, its industry sector, and its competitive environment. The workshop was held in Week 8 of the course.

Table 4. Design of the workshop – phases, activities, and participants (L= Lecturers, ABR = Alpha Biogas Representative, S = Students, BMI = Business Model Innovation, BM = Business Model, FBC = Flourishing Business Canvas)

<table>
<thead>
<tr>
<th>Prior to the workshop: activities (thinking &amp; articulating)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussions on the challenges Alpha Biogas faces</td>
<td>L, ABR</td>
</tr>
<tr>
<td>Joint decision on the setup of the workshop and involvement of students. Challenges posed as four questions</td>
<td>L, ABR</td>
</tr>
<tr>
<td>Instructions developed collaboratively, including: (i) background information about Alpha; (ii) four questions; (iii) what is expected; (iv) what will happen during the workshop</td>
<td>L, ABR</td>
</tr>
<tr>
<td>Instructions distributed one week prior to the workshop</td>
<td>L</td>
</tr>
<tr>
<td>Perform individual desk research; think about existing BM and ideas on innovation</td>
<td>S</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>During the workshop (articulating &amp; doing)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants expected to: i) actively participate in the discussion; ii) suggest ideas for a new BM; iii) engage in FBC prototyping and presentation; iv) discuss the new BMs; v) reflect; vi) validate Alpha Biogas’s ideas</td>
<td>L, ABR, S</td>
</tr>
<tr>
<td>Short presentation of Alpha Biogas. Question and answer session</td>
<td>ABR</td>
</tr>
<tr>
<td>Students divided into 8 groups to work with the four questions</td>
<td>L</td>
</tr>
<tr>
<td>Application of FBC iteratively to originate ideas for a new BM</td>
<td>S</td>
</tr>
<tr>
<td>Feedback on all proposed ideas (FBC artifacts)</td>
<td>ABR, L</td>
</tr>
<tr>
<td>Discussion of the presented FBC artifacts</td>
<td>L, ABR, S</td>
</tr>
<tr>
<td>Reflections on the FBC artifacts and their possible contribution to Alpha Biogas’ BMI. Short feedback on the innovativeness and feasibility of the ideas</td>
<td>ABR, L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>After the workshop: activities (doing)</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative evaluation of the FBC artifacts and choice of the group(s) with most novel ideas</td>
<td>L, ABR</td>
</tr>
<tr>
<td>Collaborative discussion of an action plan based on the ideas generated in the workshop</td>
<td>L, ABR</td>
</tr>
</tbody>
</table>

The eight groups had 2.5 hours in the workshop to propose how Alpha Biogas could create, capture, and deliver value in a new way. All groups created FBC artifacts in a series of small learning experiments as they addressed the four questions and the sixteen question blocks in the FBC. The students made oral presentations of their artifacts in the remaining 1.5 hours of the workshop.
In brief, the students completed the following four tasks:

1. Creation and presentation of their FBC artifacts to the Alpha Biogas representative for review;

2. Creation of new knowledge usable in the next iteration of the FBC artifact creation; and

3. Selection and presentation of a FBC artifact to the workshop participants for discussion.

After the workshop, the lecturers and the Alpha Biogas representative evaluated the presentations and the FBC artifacts in the context of a possible action plan for BMI at Alpha Biogas. [See Hoveskog et al. (2015) for a more detailed description of such workshop approach.]

4.3.5. Experiential Workshop Participants and Their Roles

We used criteria proposed by Gemmell et al. (2012) and used by Hoveskog et al. (2015) in assembling the workshop participants: four university lecturers (the authors of this paper), the university undergraduates, and the Alpha Biogas representative. Two lecturers have a special research interest in BMI. The other two lecturers have a special interest in biogas research.

The lecturers, as workshop “facilitators”, identified and recruited an enterprise willing to participate, and suitable for participation. They also provided advisory support for students in the workshop and encouraged them to reflect on and record their experiences and learning. With the Alpha Biogas representative, they evaluated the students’ presentations. They also evaluated the achievement of the LOs and the outcome of the workshop.
The students, as “problem-owners” and “problem-solvers”, were engaged in the cognitive actions of thinking, articulating, and doing as they worked with business modelling for flourishing tasks of creating and presenting FBC artifacts.

The Alpha Biogas representative, as “knowledge provider” and “utility evaluator”, answered the students’ questions and worked with them in an iterative, feedback process on their FBC artifacts in the workshop. He also participated in the evaluations of the presentations.

5. Results, Discussion and Implications for Educators

5.1. Achievement of the Learning Objectives

Table 5 presents a summary of the workshop results. For more detail, see the Appendix that presents illustrative student comments linked to each LO.

Many students described the following workshop elements positively: the group interactivity and collaboration; the real company case; the emphasis on BMI for flourishing in the biogas industry; the problem-solving opportunity; the creativity and divergent thinking required; and students as valuable industry resources.

Prior to the workshop, 37 of the 40 students had positive expectations about the workshop’s content and structure. Some students approved the idea of combining practical experience with theoretical knowledge.

In general I hope to learn about business models and to increase my reflections. [Student 11, BW]

I like the idea of having people from a real company with a real problem in the classroom. I think together it makes a learning opportunity for all of us. [Student 11, BW]
After the workshop, the students commented on how much they had learned about the FBC: its question blocks, its model, and its function. They also said the workshop had given them fresh and practical ideas that “boosted creativity”.

*Workshops that link schools/universities to companies in common work are proof of the quality and effectiveness of the study programme, and also of the student's experience. This work is always helpful, and I think having courses related to real economic actors is a key.* [Student 33, BW]

Thirty-eight students rated the workshop positively in the second questionnaire because it had met their expectations. Students described the workshop as “fun”, “interesting,” and “meaningful.” In the second questionnaire, thirty-two students said that the workshop format met their expectations.

*We discovered a new industry and understood its problems. We learned about the experiences of professionals. We improved our teamwork and our interpersonal skills. We now know how to use these theoretical models in practice.* [Student 9, AW]

Students praised the preparation, physical set-up, and sequence of activities in the interactive group work. Based on these evaluations, we conclude LO1 was achieved.

A number of students remarked on the value of preparing and presenting their FBC artifacts in the discussion/feedback format. They found this task confidence building. An illustrative comment is the following:

*The workshop gave me more self-confidence in working with a real company. It gave me knowledge about biogas and insights into the problems. It also improved my presentation skills.* (Student 6, AW)

Based on these evaluations, we conclude LO3 was achieved.
Table 5 Summary of the workshop results

<table>
<thead>
<tr>
<th>LOs</th>
<th>Evaluated via:</th>
<th>Data source</th>
<th>Illustrative student comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LO1: to increase students’ awareness and reflection about how sustainability trends can be addressed via BMI for flourishing</td>
<td>Kirkpatrick’s (1996) two levels: Reaction and Learning</td>
<td>(i) on-line questionnaires (before and after the workshop); (ii) on-line blog; (iii) FBC artifacts created in the workshop; (iv) discussion with Biogas Alpha representative.</td>
<td>I consider it [FBC] interesting as it extends the Business Modell Canvas and includes economic, social and ecological aspects of sustainability. [Julia W., on-line blog] We have learned that the FBC is an improvement on business model innovation. Everything is related with the sustainable approach (economic, people, environment) and allows a company to engage in viable projects and to have all the elements of the whole project in one image. [Student 10, AW] It was really convenient because this Canvas is, of course, related to strategy, but it also deals with another kind of strategy that is trending now, the environmental care and the people care. [Student 1, AW] I think the FBC pushes us to go further in the sustainability subject. It makes us think deeper about questions that we never had to think about before. We have to find the solution. I learned what the FBC is about, how to apply it, and what kind of information we need as we brainstorm. [Student 23, AW]</td>
</tr>
<tr>
<td>LO2: to give students practice in applying the BMI tool (FBC) in order to produce a suggestion(s) for a new business model (i.e., an artifact) for a real company based on a challenge it faces.</td>
<td>Moore et al.’s (2009) categories of learning</td>
<td>It was really useful to know how to use the FBC that emphasizes the concept of flourishing and sustainability. With its application to the real problem, the company in the real world, I think I would be able to use it in the future to solve other problems also . . . we tried to solve the problems the company is confronted with . . . (and) it was good to work on the ‘real’ problem. [Sung, on-line blog] It was something completely new for me. It was amazing how in just one morning we could learn the first steps and how to apply them Plus the workshop was very meaningful because we can go deep and explore this specific model in a subject where we need so many answers nowadays. [Student 23, AW] I learned that when we apply the FBC to a real case, the most important part is value. We need to think and focus on the value part, which can create more social and financial profit for the company. [Student 26, AW]</td>
<td></td>
</tr>
<tr>
<td>LO3: to give students oral presentation practice as they describe their business model solutions for flourishing and receive evaluative feedback.</td>
<td>Moore et al.’s (2009) categories of learning.</td>
<td>I learned that it is important to be clear – to show and explain your ideas to the company. You have to show the best aspect of your project because you are actually trying to convince someone that your idea is the best. [Student 1, AW] The workshop gave me more self-confidence in working with a real company. It gave me knowledge about biogas and insights into the problems. It also improved my presentation skills. Really beneficial and self-confidence building. [Student 6, AW] I really liked to present the results to the representatives. It felt like we were really involved in the cooperation and that our ideas were welcomed. [Student 12, AW]</td>
<td></td>
</tr>
</tbody>
</table>
Thirty-nine students reported they had learned how sustainability issues can be addressed in BMI for flourishing with the FBC. Others said they were able to “use” the FBC through “active participation.” They appreciated the feedback from “a real person.”

_I really liked to present the results to the representatives. It felt like we were really involved in the cooperation and that our ideas were welcomed._ [Student 12, AW]

Based on these evaluations, we conclude LO2 was achieved.

The achievement of the three LOs is best explained by the opportunity given students to work with Alpha Biogas, to experiment with BMI for flourishing, and to learn from the feedback on their FBC artifacts. By linking theory, role models, action learning, and feedback on the workshop assignment, the students benefitted from the experiential learning.

_Knowing that people are working for a better planet and are making the actual business system work is already satisfying. The opportunity to learn how to do the same is good, not only for me but for every new generation business person._ [Student 21, BW]

Some students even established contacts with the Alpha Biogas representative that might lead to future collaboration in various ways, including possible research projects. The self-confidence the students gained from the workshop experience made them more attractive as candidates for future collaboration. The students also gained an appreciation of others’ knowledge and opinions.

_The workshop is a great experience for a firm. It facilitates gathering people from different background (students, professors, professionals), and getting different perspectives on and solutions for a problem._ [Student 12, AW]

5.2. The 200 Ideas from the Workshop

The eight groups listed 347 ideas based on their responses to the sixteen FBC question blocks. Of these ideas, the Alpha Biogas representative and the lecturers eliminated 147 ideas as too broad, irrelevant, or repetitive. The remaining 200 ideas which were specific, relevant,
and novel reflected ideational productivity as measured by the opportunity for original and highly divergent influences (Gemmell et al., 2012). The students focused primarily focused on three FBC question blocks (Benefits, Goals, and Stakeholders) which indicates their understanding of the importance of formulating clear goals and involving additional stakeholders in order to achieve the benefits of biogas production (Table 6).

Table 6: Number and content of unique ideas related to each FBC question block

<table>
<thead>
<tr>
<th>FBC Question Blocks</th>
<th>Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td>Grow the farmers’ cooperative, selling the knowledge, EON-partnership, find investors, reduce greenhouse gas emissions, public transport partnership, find customer, earn profits, ways to distribute gas, make effort towards environmental protection, establish a salesperson, new market opportunities, merging with the west-coast biogas cooperative, sell overproduction, approach the farmers, share benefits together, vehicle fuel, create a new image of the company, vehicle company, create a biological brand, greenest area in Sweden</td>
</tr>
<tr>
<td></td>
<td>Total: 21</td>
</tr>
<tr>
<td>Benefits</td>
<td>Economically, upgraded gas, reach more customers, long-term vision, renewable energy, clean fuel, benefit society, reduce methane emissions, create different form of economic strategy, reduce climate change, improve the conditions of food and energy production, new market to supply, new skills, creates jobs, viable for farmers, reduces fossil fuel, waste management, promotion of renewable energy, zero emission, number of customers, CO2 footprint, subsidy</td>
</tr>
<tr>
<td></td>
<td>Total: 20</td>
</tr>
<tr>
<td>Costs</td>
<td>High investment costs, economies of scale, cost reduction, infrastructure, communication campaign, production costs, transportation costs, environmental costs, new people in the business, potential loss of partnership rights, upgrading transport, R&amp;D costs, build new pipeline, salaries, bio product extra costs, extra plants</td>
</tr>
<tr>
<td></td>
<td>Total: 15</td>
</tr>
<tr>
<td>Ecosystem actors</td>
<td>Government, energy companies, farmers, private companies, NGO, media, R&amp;D sector</td>
</tr>
<tr>
<td></td>
<td>Total: 7</td>
</tr>
<tr>
<td>Needs</td>
<td>Renewable energy, waste management, social need, esteem need, self-actualization need, profit, more cooperation, sustainable development, expanding market and resources, safety, green trend, money</td>
</tr>
<tr>
<td></td>
<td>Total: 12</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>Government, farmers, environmental groups, customer and bank, national transports, private customer, national pipeline, salesperson; recent graduates, environment, Swedish gas, board of directors, new customers, bank, EON, industries, company who control the gas grid, local authority, cities, green associations</td>
</tr>
<tr>
<td></td>
<td>Total: 23</td>
</tr>
<tr>
<td>Relationships</td>
<td>Farmers’ cooperation, government partnership, working with local companies and residents, with the University, private companies, improve relationship with farmers, improve cooperative, environment institutions, long term, fixed prices</td>
</tr>
<tr>
<td></td>
<td>Total: 10</td>
</tr>
<tr>
<td>Channels</td>
<td>Truck transportation, pipeline or using EON distribution cooperative, sponsoring marketing, face to face, workshops, phone, e-mail, local focus, info meetings</td>
</tr>
<tr>
<td></td>
<td>Total: 9</td>
</tr>
<tr>
<td>Value co-creations</td>
<td>Satisfy the government policy, long-term solution, experience, solution to global warming, sustainability, gaining reputation, support of government, being known on market, energy enthusiasm of young people, sharing knowledge, green gas, reduce ecological footprint, earn profits, new R&amp;D, heating, green cities, cooperation, transport liquid gas, ethanol</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>Value co-destructions</td>
<td>High investments, long time until available to the public, limited production, not very reliable, unawareness, no fixed demand, fluctuation, liability of energy market plan, no bank loan, support of government is not secure, expensive production, unknown market and few customers, competition</td>
</tr>
<tr>
<td>Governance</td>
<td>Alpha Biogas, improve management from members, employees and suppliers, board of directors, farmers, private companies, government</td>
</tr>
<tr>
<td>Partnerships</td>
<td>Investment subsidies, find partner associate, associate with EON, farmers, new customers from the main pipeline, cooperate with company which has gas grid, cooperation with local companies, cooperate with technological company, Swedish government, municipalities, transport company, local households</td>
</tr>
<tr>
<td>Resources</td>
<td>Manure, money, have 30 farms involved in production, farm waste, creativity and compassion from employees, funds, technical facilities, distribution grid pipeline cooperative, household waste, new plants, waste of companies</td>
</tr>
<tr>
<td>Biophysical stocks</td>
<td>Manure, crop and food waste, farm waste, waste of primary production, organic material</td>
</tr>
<tr>
<td>Activities</td>
<td>Upgrading facility, export, building joint gas pipes, B2B selling, getting the idea to more farmers, mix biogas with natural gas, sell, produce biogas, bio tourism, bio farming products, collecting manure, making a green brand</td>
</tr>
<tr>
<td>Ecosystem services</td>
<td>Reduce global warming, low greenhouse impact, renewable energy, use the waste to something new</td>
</tr>
</tbody>
</table>

**Total:** 200 ideas

### 5.3. The Three Main Ideas from the Workshop

The Alpha Biogas representative and the lecturers selected the following three ideas they thought could be of greatest value to Alpha Biogas.

* **Idea #1:** *Increased cooperation with other partners and entities* (other biogas producers and networks, certain manufacturers (e.g., the automotive sector), public actors, and Academia).*
Idea #2: *New marketing strategies* (hiring an external marketing agency and expansion of local and regional outreach).

Idea #3: *Brand creation and rural area development* (promotion of sustainability among current and new customers in order to make the area the greenest in Sweden).
The Alpha Biogas representative emphasized that successful implementation of these three ideas might create a competitive advantage for the cooperative. He described brand creation as a “novel idea that is very interesting and that includes a long-term development that is important to the cooperative”. This is also a confirmation of that LO2 was achieved.

In co-creating these FBC artifacts using the FBC that resulted in the three main ideas, the students participated in a process of action learning. This process helped the students make sense of complexity, develop their reflective practitioner skills (Holman, 2000), and increase their self-confidence as contributors to change policies that support sustainable business practices (e.g., Kurucz et al., 2014; Olsson and Gericke, 2016).

*It was really nice that our ideas really matter to him* [the Biogas representative]. [Student 3, AW]

*Knowing that people are working for a better planet and still making the actual business system work is already satisfying.* [Student 21, BW]

*We applied the learning from the class to the real situation at a real company. It was a meaningful experience!* [Student 22, AW]
5.4. Implications for Educators

First, educators who want to test the Experiential Workshop, using the Service-Learning approach adapted to the university classroom, must identify a willing external participant. A company (or other organization) increases the relevancy of the workshop for students as they study “real-world” problems and propose solutions. Second, educators must establish a classroom environment that ensures open dialogue and experimentation. Students, as members of groups working jointly to solve a problem, learn cooperation and co-creation. By thinking, articulating, and doing together, students may achieve better results, and learn more, than by working individually on a problem. As Laszlo et al. (2014, p. 65) suggest, open inquiry and dialogue “allow a group to learn its way through complexity to sustainable action”.

Educators can use our Experiential Workshop as an example of the Service-Learning pedagogic approach that helps students makes sense of complexity and enables them to develop their reflective practitioner skills (Holman, 2000). We encourage use of this approach to teach the problems and solutions associated with sustainability in most business administration courses. As Hawkey et al. (2012) argue, it is essential to draw connections on how to integrate sustainability in business settings.

We recognize the problems educators may encounter when they test the Experiential Workshop in their classrooms. Students who are more comfortable with the lecture style of teaching may be reluctant to take ownership of the workshop learning process. Finding a willing external participant may also pose a significant challenge if trust has not been established through previous cooperation with the workshop facilitators. Moreover, much commitment is required to introduce this new teaching approach: teachers and students alike may feel
discomfort because of its novelty. Yet, as the student evaluations in our research demonstrate, educators may find the potential reward is worth the risk.

6. Conclusions

Institutions of higher learning are laboratories where new ideas are proposed and tested. One such idea that has increasing relevance today is sustainability, in all its financial, social, and environmental contexts. According to John R. Ehrenfeld sustainability thinking shall move more towards flourishing which means pursuing "the possibility that human and other life will to flourish on this planet forever" (Ehrenfeld, 2008, p. 6; originally proposed in Ehrenfeld, 2000). Classrooms are ideal settings in which to engage multiple stakeholders (students, teachers, practitioners, and others) in generating new knowledge and experimenting with new ways to manage and improve contemporary “real-world” situations (Beynaghi et al., 2016; Holgaard et al., 2016; Holm et al., 2015; Kurucz et al., 2014) as they nurture “the seeds of change” (Geels, 2002).

This paper describes and evaluates a pedagogic approach to business model creation/innovation aimed at increasing students’ learning and reflection on sustainability and at increasing their ability to take practical action in business modelling for flourishing. We call this pedagogic approach Education for Flourishing. We designed and conducted an Experiential Workshop with 40 university students, an external organization representative, and the author-researchers in which students engaged in business model innovation using the Flourishing Business Canvas framework.

We formulated three intended Learning Objectives prior to the workshop that specified the goals we hoped to achieve. Working in groups, the students produced Flourishing Business
Canvas artifacts for a Swedish, farm-based biogas production cooperative intended to innovate its current business model. Three main ideas related to cooperation, marketing, and brand creation emerged from the 200 unique ideas that the students created. The achievement of the three Learning Objectives was evaluated based on students’ written commentaries and two questionnaires. All Learning Objectives were achieved.

In a call to reinvent business schools, Grey (2004, p. 178) concludes that management education requires new and imaginative alternatives that “may initially seem as outrageous as they are unfamiliar.” We propose that such alternatives include the Flourishing Business Canvas with the Experiential Workshop as the first practical example for introducing Education for Flourishing.

We recommend our Experiential Workshop for use in Education for Flourishing. We also suggest that our workshop may be adaptable to other classroom settings, other national contexts, and other subject areas. To conclude, we suggest that Education for Flourishing is a useful expansion of Education for Sustainable Development.

Acknowledgements
This study was partly funded by the Biogas 2020 Project in the EU-Interreg ŒKS programme, Green Innovation, as well as by the Swedish Knowledge Foundation (Grant No.20120315). The authors acknowledge the efforts of the members of the Strongly Sustainable Business Model Group community of action research and innovation practice who continue to develop the Flourishing Business Canvas and other tools and methods relevant for Education for Flourishing. The authors also thank the anonymous reviewers for their helpful advice and comments that helped us improve the paper.
References


Elkington, R., Upward, A., 2016. Leadership as enabling function for flourishing by design. J. Global Resp. 7(1), 126-144.


### Appendix – Illustrative Student Comments

#### Table A-1: Illustrative comments connected to the different learning objectives of the workshop

<table>
<thead>
<tr>
<th>LO1 (Awareness and reflection about how sustainability trends can be addressed via BMI for flourishing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I learnt a lot of things about Biogas and the different business models.” [Camille, on-line blog]</td>
</tr>
<tr>
<td>“I read a lot about biogas in Sweden and tried to get more information about how it works, who is interested in this field, what are the opportunities/threats…” [Millie, on-line blog]</td>
</tr>
<tr>
<td>“This is, for me, a great opportunity to discover of a new renewable energy: BIOGAS. This model (Flourishing Business Canvas) pays attention to competence on long-term sustainable development rather than short-term profit … the company should have strong branding, or hire a professional agency or service for selling, promoting the product (biogas).” [Clémence, on-line blog]</td>
</tr>
<tr>
<td>“I already knew the Business Model Canvas but this improvement of it was a real discovery for me and I appreciated the way the Flourishing Model Canvas included the sustainable approach” [Marie, on-line blog]</td>
</tr>
<tr>
<td>“I learned about biogas in Sweden and about the use of it and that it can be an alternative to regular gas…. BioGas isn’t popular yet but I think this is going to change in the future, and it can be a good solution to pollution.” [Demian, on-line blog]</td>
</tr>
<tr>
<td>“This was my first time working with the Flourishing Business Canvas. . . Even if the canvas is quite fresh as tool solver for business, it seems to be a good tool for solving business problems and considering social and environmental issues.” [Vedran, on-line blog]</td>
</tr>
<tr>
<td>“I was already familiar with the Value Proposition Canvas as we used it in Case I, but I had never heard about the Flourishing Business Canvas before. I consider it interesting as it extends the Business Model Canvas and includes economic, social, and ecological aspects of sustainability.” [Julia W., on-line blog]</td>
</tr>
<tr>
<td>“We have learned that the Flourishing Business Canvas is an improvement on business model innovation. On it, everything is related to the sustainable approach (economic, people, environment) that allows a company to generate a viable project and to have all the elements of the whole project in one image.” [Student 10, AW]</td>
</tr>
<tr>
<td>“The Flourishing Business Canvas includes social, environmental, and economical sustainability aspects, and looks at a company in a very holistic way. It is a good tool to analyse a business model and to rethink and improve it.” [Student 17, AW]</td>
</tr>
<tr>
<td>“It was really convenient because this canvas is, of course, related to strategy, but it also deals with another kind of strategy which is trending now – the environmental care and the people care.” [Student 1, AW]</td>
</tr>
<tr>
<td>“I think the Flourishing Business Canvas pushes us to go further in the sustainability subject. It makes us think deeper about questions that we never had to think about before and to find the solution. I learned what the Flourishing Business Canvas is about, how to apply it, what kind of information we need as we brainstorm. Plus we can always go further even if we don't know much about the subject. All the information about Biogas was completely new.” [Student 23, AW]</td>
</tr>
<tr>
<td>“We should have more perspectives to analyse the problem. From the environmental, society and economic perspectives to analyse the case, the process, value and people can go into details.” [Student 28, AW]</td>
</tr>
<tr>
<td>“Not only the inside factors of the company were important, but also the outside factors had high importance in shaping the company's abilities and opportunities. I could see the impact of the inside factors and outside factors at the same time, and it was great.” [Student 29, AW]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LO2 (Application of FBC to produce a suggestion(s) for a new business model for a real company)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“(The) Flourishing Business Canvas is the tool we mainly used during the workshop. I tried to focus on problems which Alpha Biogas (the companies’ network) faced, and thought deeply about solutions for improving Biogas quality, increasing funds, and making loyal customers.” [Jihyeon, on-line blog]</td>
</tr>
<tr>
<td>“It was the opportunity to use our knowledge about marketing and business but also to learn more about the Flourishing Business Canvas. I really appreciated the fact that Alpha Biogas's (the companies’ network) representative was open to new ideas.” [Millie, on-line blog]</td>
</tr>
<tr>
<td>“It was really useful to know how to utilize the 'Flourishing Business Canvas' that emphasized the concepts of flourishing and...” [Student 28, AW]</td>
</tr>
</tbody>
</table>
sustainability. With its application to the real problem at a company in the real world, I think I would be able to use it in the future to solve other problems also . . . we tried to solve the problems the company is confronted with . . . (and) it was good to work on the 'real' problem.” [Sung, on-line blog]

“I enjoyed the workshop because it allowed us to apply a real life organization to a model (Flourishing Business Canvas) and to see how it would really work. It was also good to see how some of the ideas we had come up with could help the representative (from the network companies) to think of new ideas that he could take back and possibly put into action.” [Chloe, on-line blog]

“During the workshop I learned a lot and found it very interesting to use the Flourishing Business Canvas on a real case and company problem . . . My group first summarized all information we had regarding biogas and the company . . . Afterwards we discussed many possibilities . . . At the end we decided that it would be a very good strategy to focus on the sustainable aspect of biogas and to deal with the following goal: The greenest area (region) in Sweden.” [Julia W., on-line blog]

“During the workshop we worked in groups using the Flourishing Business Canvas in order to come up with new and innovative ideas that the biogas company could use.” [Alexandre, on-line blog]

“It was really interesting to discover an industry (biogas) and its characteristics. We exchanged ideas with professionals in the biogas field and learned more about their experience. In addition, I really appreciated working in a group on concrete issues and the process of finding solutions with the Flourishing Business Canvas.” [Marie, on-line blog]

“By applying it to biogas case, I learned how we can use this model.” [Student 4, AW]

“Not only did I learn the model, but I also I learned how to apply it to a real business model and to devise the solution.” [Student 7, AW]

“In a real situation it is hard to learn how to apply what we learn, but this workshop helped by using real firms” [Student 19, AW]

“It was something completely new for me. It was amazing how in just one morning we could learn the first steps and how to apply them. Plus it was very meaningful how we went deeper with this specific model in an area where we need so many answers nowadays.” [Student 23, AW]

“In the workshop I learned a lot of things about the application of the Flourishing Business Canvas. This model clarifies ideas and organizes them in different boxes. Thanks to this model, it could be easier to find a solution.” [Student 25, AW]

“I learned that when we apply the Flourishing Business Canvas to a real case, the most important part is value. We need to think and focus on the value part, which can create more social and financial profit for the company.” [Student 26, AW]

“This case provided me with a model for analysing the key elements. In a future study, I can use the Flourishing Business Canvas to analyse the case by not simply focusing on profit. I will also consider the society and environment.” [Student 28, AW]

**LO3 (oral presentation and explanation of the FBC results)**

“We worked for a couple of hours with the canvas in our groups by coming up with ideas and solutions. In the end we had to present our ideas and solutions to the company and the class. We received really good feedback from the company and the representatives, which increased our self-confidence.” [Vedran, on-line blog]

“It will help me to present and argue for ideas in a short time to a company. I now know more about the concept of a workshop and I find this brainstorming really interesting.” [Student 10, AW]

“I really enjoyed listening to the other groups. I also presented in my group and learned a bit about presentation skills.” [Student 17, AW]

“I learned that it is important to be clear in presenting and explaining your ideas to the company. You have to show the best aspect of your project because you are actually trying to convince someone that your idea is the best.” [Student 1, AW]

“I gained more self-confidence in working with a real company. I gained knowledge about biogas, insights into their problems as well as increased my presentation skills. Really beneficial and self-confidence building.” [Student 6, AW]

“It was a thrill to present our own ideas in front of a real company because we thought maybe we found the best solution for them to help them with their problems.” [Student 3, AW]

“Applying the Flourishing Business Canvas was all about brainstorming with the group about VBEK’s issue. I really liked to present the results to the representatives. It felt like we were really involved in the cooperation and that our ideas were welcomed.” [Student 12, AW]

“First of all, it was very interesting to listen every presentation because all of us had different ideas and point of views. It was a great moment to present our ideas because the representatives were very receptive and sometimes agreed with some ideas. Trying to find solutions for a real company is more interesting than working with a case, for example, because we can really know if we have goods ideas or not.” [Student 25, AW]