

**General rights:**

© 2020, Emerald Publishing Limited. This AAM is provided for your own personal use only. It may not be used for resale, reprinting, systematic distribution, emailing, or for any other commercial purpose without the permission of the publisher.

## **Enhancing the effects of university education for sustainable development on social sustainability: the role of social capital and real-world learning**

**Marta Rey-Garcia**

School of Economics and Business, University of A Coruña, Campus de Elviña,  
A Coruña, Spain, and

**Vanessa Mato-Santiso**

C+D Research Group, School of Economics and Business, University of A Coruña,  
Campus de Elviña, A Coruña, Spain

### **Abstract**

**Purpose** –To understand the roles that social capital and real-world learning may play in enhancing the effects of university education for sustainable development (ESD) on social sustainability.

**Design/methodology/approach** – A conceptual framework that identifies the plausible effects of university ESD on social sustainability along three outcome dimensions (think-act-leverage), broadening desirable program learning outcomes, and proposing enabling roles for social capital and real-world learning, is substantiated and validated through qualitative insights from a focus group. The framework serves to structure a survey to alumni of a postgraduate program in sustainability (2011-2018). Hierarchical clustering analysis is used to identify differences in perceived, sustainability-related effects of the program on direct beneficiaries and their relationship with stakeholders in their communities.

**Findings** –Implementation of real-world learning in partnership with organizations in the community that actively involves alumni not only extends desirable effects beyond individual program learning outcomes and outside the academia but may also renew them over time.

**Practical implications** – University administrators should foster the creation of new social capital of students and alumni, and their commitment with service-learning and other credit-bearing opportunities as actionable enablers to enhance the social sustainability effects of university ESD.

**Originality/value** – The paper contributes to a dual theoretical and empirical void related to the effects of university ESD on the social dimension of sustainability through the proposal of a conceptual framework and quantitative assessment of the dynamic effects of university ESD at the local level.

**Keywords** University education for sustainable development, Social sustainability, Social capital, Real-world learning, Service-learning, Postgraduate programs

**Paper type** Research paper

## 1. Introduction

Research interest in education for sustainable development (ESD) grew considerably between 1992 and 2018 (Grosbeck et al., 2019). In parallel, not only a broad consensus emerged that education is pivotal for achieving sustainable development in practice (UNESCO, 2014), but also quality education was recognized as one of the 17 Sustainable Development Goals (SDG) of United Nations' 2030 Agenda for sustainable development (UN, 2015). The commitment of universities with ESD, in particular, visibly advanced since 1990, when the Talloires Declaration urged universities to “engage in education, research, policy formation and information ... to move toward a sustainable future” (ULSF, 1990, p. 1). Currently, universities are critical for attaining sustainable development along two main venues: implementation of sustainable management in their operations and campuses (Leal et al. 2019a), and university ESD or integration of sustainability policies, contents and tools in university teaching, learning, research and outreach activities (Leal et al., 2019b).

The impact of university ESD should ideally be assessed in terms of its net effects across all three dimensions of sustainability: economic, environmental and social (Elkington, 2004). University ESD affects not only production techniques, consumption patterns or the biophysical environment, but also impacts social sustainability, that is sustainability-related changes in the relationships between relevant university stakeholders, internal or external, and other individuals, social groups or organizations in their surrounding communities (Wolff and Ehrström, 2020). These changes are both necessary steps towards impacting broader societal transformation, and a goal of ESD per se.

However, a deeper understanding of the social dimension of sustainability in a university ESD context is still needed to fully grasp its potential contribution to self-transformation of universities and to the transition of societies towards sustainability. On one hand, the social dimension was integrated late into debates on sustainable development, leading to a lack of theoretical and empirical studies in comparison with the other dimensions (Eizenberg and Jabareen, 2017; Wolff and Ehrström, 2020). On other hand, disentangling the social effects of ESD requires integrating the perspective of multiple stakeholders, including external ones and, more broadly, that of society and politics (Aikens et al., 2016); through interdisciplinary, holistic approaches (Grosbeck et al., 2019).

By contrast, the attention of extant ESD literature has mostly focused on the environmental dimension of sustainability from the perspective of two groups of internal stakeholders: a) students and faculty in connection with the development of adequate teaching and learning strategies towards acquisition of key competencies in environmental sustainability; and b) university administrators as regard to the integration of environmental sustainability policies (“greening”) in higher education institutions. Consistent with this, previous ESD research has largely originated at the intersection between education educational research (59.51% of total publications), green sustainable science technology (31.43%). and environmental studies (22.77%) and sciences (17.37%) (Grosbeck et al., 2019).

The apparent lack of “a clear theoretical concept of social sustainability” (Littig and Griessler, 2005, p. 5) has led to conceptualization efforts from different disciplines such

as Sociology, stating that it is “a quality of societies” that “signifies the nature-society relationships, mediated by work, as well as relationships within society” (p. 11). From the perspective of human needs and work-related institutional arrangements, the central elements of social sustainability are wellbeing, social justice, human dignity and participation (Littig and Griessler, 2005). Additionally, in university settings, it encompasses “elements like cultural diversity, gender issues, individual capabilities, and quality of life” (Wolff and Ehrström, 2020, p. 4178).

From a theoretical angle, social sustainability is often associated with the concept of social capital, as a reflection of the value of social relationships along two dimensions: a) a normative dimension, composed by a set of norms embedded in the social structure of a group (values and mutual influence) that leads participants to concerted action; and b) a resource dimension, that focuses on group relationships (with participants competing for resources that can be harnessed or transferred) and the benefits of networks (Fulkerson and Thompson, 2008). Nevertheless, the concept of social capital has rarely been used to understand how university ESD may impact social sustainability. Instead, academic discussion on the social dimension “has focused on the ways individuals benefit from social relationships: such as individuals' improved professional opportunities and outcomes... while the impact of social capital and networking on social change has not been sufficiently considered” (Dlouha et al., 2018, p. 4264).

From a practical viewpoint, there is the expectation that university ESD not only improves individual employability, but also that it “can qualify people for the role of active participant and provide them with the proper learning experience to democratically achieve sustainability” (Van Poeck and Vandenabeele, 2012, p. 544). Thus, social sustainability uptake in university education depends not only on teaching and learning directives, but also on actual implementation of policies and strategies with participation of internal and external stakeholders, “so the universities can make links to the real world” (Wolff and Ehrström, 2020, p. 4181).

Therefore, the understanding of program learning outcomes needs to be broadened to capture relevant effects of ESD on social sustainability. Expected key competencies in sustainability –cognitive, affective and behavioral effects of university ESD on students– have been traditionally defined as “the set of knowledge, skills and attitudes required to successfully perform functions of a sustainability work setting” (Charli-Joseph et al. 2016, p. 382). However, if graduates are to effectively cope with society’s most difficult problems, university ESD needs to contribute to further other social sustainability competencies of students across three knowledge clusters: 1) strategic, involving systemic, anticipatory, normative and action-oriented competencies; 2) practical, involving implementation competencies to bridge the think-action gap; and 3) collaborative, involving competencies needed to work in teams and with different stakeholders in the community (Brundiers et al., 2010). Furthermore, the values of social sustainability –trust, common meaning, diversity, etc.– need to be handled also in the policy development and enactment realm, in order to lead to changes in practices (Aikens et al., 2016).

This is where real-world learning opportunities that expose students to real-world problems in real-world settings may come into the picture as potential enablers of the effects of university ESD on social sustainability. Such opportunities “help students

increase their understanding of sustainability problems (knowledge), and complement their methodological competence in applying problem-solving approaches (strategic competence cluster)"; while at the same time allowing them "to gain hands-on experience in how to link knowledge to action for sustainability (practical competence cluster)" (Brundiens et al., 2010, p. 312).

In this context, the goal of this article consists of understanding the roles that social capital and real-world learning may play in enhancing the effects of university ESD along the social dimension of sustainability. More specifically, which roles do these two mechanisms play in the pathway that connects the activities of university ESD with its desirable effects on students, alumni and the local community, ultimately impacting social sustainability?

In responding to that question, this research aims at filling the aforementioned voids in the literature in two specific ways. From a theoretical perspective, it proposes a multi-level, multi-stakeholder, and multi-dimensional conceptual framework that explores the roles that social capital and real-world learning may play as mechanisms intervening on the social value chain of university ESD. The concepts of social capital and social sustainability are operationalized at a micro-level that encompasses the interactions between participants in university programs in sustainability (specifically, students and alumni) and their relationships with other individuals and organizations in the community. The framework is substantiated through integrating insights from literature on ESD, social impact evaluation, and social capital.

From an empirical perspective, this study contributes to alleviate the "paucity of research which examines [universities'] contributions towards sustainability efforts at the local level, i.e. in the places they are situated" (Leal et al. 2019b, p. 1004). To this end, the proposed conceptual framework is used to ground an in-depth case study on the portfolio of ESD activities of a corporate-sponsored Chair in a public university between 2011 and 2018. The program under analysis includes a postgraduate diploma in sustainability (equivalent to 25 ECTS or 625 hours of certified academic training per year), an annual lecture series and real-world learning opportunities (mainly service-learning projects). Plausible effects of ESD along the social dimension may include changes in knowledge, behaviors, perceptions and welfare conditions, among other factors. This research focuses on social sustainability-related changes along the three aforementioned knowledge clusters (Brundiens et al., 2010) as perceived by program alumni. Mixed methods are used for collecting data from two groups of relevant stakeholders: a focus group with sustainability experts and a survey to program alumni. Finally, results are discussed, and conclusions and implications drawn. Also, limitations of the research are acknowledged, and further lines of study are suggested.

## **2. Theoretical background**

### *Measuring the effects of university ESD on social sustainability*

Social impact is defined as "the change caused within a 'social system' (outcomes that result from outputs delivered by an intervention) minus the change that would have happened anyway ('deadweight')" (Anheier et al., 2019, p. 5). The value approach to the social effects of organizational interventions provides a useful frame to trace the pathways between the value proposition of ESD programs, their social change model

and their effects on the community and society (Ebrahim, 2019). The social or impact value chain refers to the different levels of effects accomplished as a result of the combination of inputs and activities: program outputs (immediate effects, for example number of real world learning opportunities), outcomes (intermediate direct effects on target beneficiaries and communities) and impacts (long-term and net effects, both direct and indirect, on whole issues, for example social sustainability) (Van Tulder et al., 2016).

However, measuring the effects of ESD on social sustainability is not easy due to conceptual and practical reasons. First, sustainability challenges are generally “complex problems that are characterized by long-term implications and non-linear behavior; cut across economic, social, and environmental domains on local to global scales; and display high degrees of urgency and damage potential” (Brundiens et al., 2010, p. 309). Thus, multiple levels of analysis (micro-, meso- and macro-), stakeholders (internal and external), and levels of effects (outputs, outcomes and impacts) should be taken into account and their interconnections explored. Second, the concept of social sustainability is strongly value- and culture-laden (Wolff and Ehrström, 2020). Third, measuring the levels of social capital in a community or society is not an easy task either, as its most relevant components are tacit and relational, and individual attitudes, perceptions and behaviors may provide proxy measures but do not assess social capital per se (OECD, 2001). Fourth, practical barriers include the limited utility of economic approaches to social impact when it is difficult to recruit a control or benchmark group, or when symbolic outcomes are involved (e.g. changes in values and norms as a result of ESD); the causality or attribution problem; measurement problems; and the fact that under multiple-stakeholder contexts numerous and subjective criteria of performance should be relied upon (Anheier et al., 2019; Liket et al., 2014). ESD, in particular, may be considered a paradigm example of an “emergent” strategy for social change, as there is high uncertainty about cause-effect or “the causal logic or pathway through which a set of interventions is expected to lead to a long-term goal” (Ebrahim, 2019, pp. 38-39); and low control over the activities and conditions necessary for producing the desired long-term outcomes. Fifth and last, a shared understanding about the meaning of impact should be developed prior to implementing the measurement of ESD activities that are co-produced in partnership (Van Tulder et al., 2016), as is the case with many real-world learning opportunities.

In order to overcome these challenges, social impact evaluation frameworks are being broadened to include “indirect measures of actual effects, or subjective impressions of impact” (Kendall and Knapp, 2000, p. 112), including stakeholder perceptions of change. Also, the “outcome” reporting question (*how much have we contributed to the intended beneficiaries?*) should be answered first if impact (the net contribution of ESD on social sustainability) is to be assessed over the long-term (Liket et al., 2014, p. 176-177). Thus, understanding the transformative potential of university ESD on social sustainability requires assessing, in the first place, its (perceived) effects on its target beneficiaries (Rey-Garcia et al., 2013, 2017), i.e. program participants and their social capital.

#### *The role of social capital in the effects of ESD on social sustainability*

The definition of social capital hereby adopted, as “networks together with shared norms, values and understanding that facilitate cooperation within or among groups”

(OECD, 2001, p. 41), is integrative of its normative and resource-based dimensions (Fulkerson and Thompson, 2008). Social capital is composed by three structural elements: 1) social networks of both formal (to organized groups) and informal connections (to non-organized groups), that facilitate collective flows of information and participation; 2) social trust, or the level of trust developed among individuals in a community, both generalized –towards people in general- and particularized –within certain social groups-; and 3) institutional trust, in connection with perceptions by individuals of the effectiveness of the policies, management and behaviors of entities that they relate directly or indirectly with (Jones et al., 2013).

Research has linked social capital, and access to such capital, to a myriad of positive social outcomes: improved health, greater self-reported survey measures of wellbeing, lower crime rates, or better-quality government (OECD, 2001). In the realm of sustainability, studies on the role of social capital in reducing poverty and promoting sustainable development have emphasized the role of institutions, social arrangements, trust and networks in allowing individuals, groups communities for more efficient problem solving (World Bank, 1998).

It is remarkable that the first known reference to the influential idea of social capital in its contemporary sense was made in the context of its importance for education and local communities (Woolcock, 1998). In the case of universities, extant literature has mainly explored the role of social capital as regard to the effects of ESD and university management on environmental sustainability. First, the role of social networks has received the most attention. At the institutional level, the external impact of university networks as drivers of the overall ESD policy environment has been recognized (Dlouha et al., 2018). At the individual level, the role of dense social networks in transmitting information about environmental regulations, standards and impacts of university operations has been highlighted, as increased levels of knowledge by students and other stakeholders are a prerequisite for the success of greening efforts (Jones et al., 2013). Second, the role of social trust has been explored in connection with the assumption that the perception of environmentally responsible behaviors by peers (e.g. through recycling practices) may foster the creation of a green culture among other stakeholders. Third and last, the role of institutional trust has been underlined in connection with the idea that both the stakeholder collaboration (consistent with SDG 17), and top management involvement are needed in order to increase the effectiveness of greening efforts (Jones et al., 2013).

Along this line of reasoning, it may be argued that enhancing sustainability-related social capital among relevant stakeholders –that is networks of individuals and organizations that trust each other, share sustainability knowledge, and cooperate to put it knowledge to action– may be both one of the most desirable outcome effects of university ESD, and an enabler for broader social sustainability impacts. On one hand, university ESD may enhance personal resources of graduates towards improved employability and social recognition. On other hand, social capital may enhance the effects of ESD beyond the group of program beneficiaries through three mechanisms (Lin, 1999): 1) facilitation of useful information flows; 2) social credentials and reinforcement of individuals' identity and recognition as belonging to a social group with similar resources, interests and values that motivates behavior consistent with them; and 3) social ties that influence organizational stakeholders who play a critical role in decisions involving individual actors.

### *The role of real-world learning in the effects of ESD on social sustainability*

ESD literature calls for adequate teaching and learning strategies towards acquisition of key sustainability competencies, including pedagogical innovations that provide opportunities for interactive, experiential, transformative, real-world learning (Grosbeck et al., 2019). There is a consensus “that sustainability education should include a variety of capacity-building pathways that engage ‘head, hands, and heart’” (Brundiers et al., 2010, p. 310). Real-world learning should address an actual sustainability problem/challenge, provide students with the opportunity to apply the concepts and methods learned in the classroom to address it with faculty supervision and involve collaboration with relevant stakeholders outside academia; striving to produce actionable contributions to the problem/challenge (Brundiers et al., 2010). Beyond extracurricular activities, its implementation requires integrating within ESD curricula techniques such as problem- and project-based learning (PBL), service learning (SL), community-based research or role-playing.

Empirical evidence has confirmed the potential of real-world learning opportunities for transformative ESD beyond traditional program learning outcomes (Charli-Joseph et al., 2016) and along all three dimensions of sustainability. In the case of PBL, making students work through actual interactions of human decisions and the biophysical and social environment within the classroom may prepare them to solve real-world, interdisciplinary sustainability problems once they become working professionals and active citizens. Furthermore, it may also change their consumptive patterns as measured through EFA (Brody and Ryu, 2006; Ryu and Brody, 2006), or foster personal development, affective learning outcomes, and the willingness to solve environmental and societal problems through community involvement (Savage et al., 2015).

As regard to SL, it is defined as “a credit-bearing educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civil responsibility” (Bringle and Hatcher, 1996, p. 222). Different from internships, acquired knowledge is process rather than output oriented. Participating students collaborate in the diagnosis and solution of real-world sustainability problems with organizations in the community; while the new role of faculty is to accompany both the students and the partner organizations during the process of establishment, development and conclusion of SL (Grosbeck et al., 2019). The resulting experience-based learning includes the provision of a meaningful work, reflective thought engaging students in higher order thinking skills, problem solving, analysis of complex issues, and evaluation. Studies show that SL has significant positive effects on a diversity of outcome measures, that are strongest for academic performance measures (specially writing skills), but also include values (commitment to activism and to promoting racial understanding), choice of a service career, or plans to participate in service after college. Furthermore, students who participate in SL develop “more sophisticated metacognitive abilities, better strategic planning and task-analysis skills, and better ability to discriminate useful from insignificant information” (Molderez and Fonseca, 2018, p. 4400). Along this line of reasoning, we propose that PBL and SL may be pivotal in putting social capital to action across the three knowledge clusters (Brundiers et al., 2010) towards social sustainability.

### *A proposal for a conceptual framework*

Under the light of previous discussion, our proposed framework (synthesized in figure 1) defines a sequence of the “plausible effects” (Van Tulder et al., 2016, p. 8) of university ESD along the social sustainability dimension. First, the framework takes into account multiple levels of effects and stakeholder groups beyond students’ program learning outcomes, e.g. other outcome effects that can be attributed to changed relationships between students and external stakeholders like alumni and other individuals and organizations in their surrounding communities. As students acquire key sustainability competencies, they may propend to apply them in their domestic, professional and social realms; in doing so, they may tend to influence other individuals and organizations in their networks to think or act more sustainably. Specifically, sustainability-related knowledge and shared norms and behaviors acquired by graduates may spill-over to SL partners and other organizations that students and alumni relate to from different professional or civil roles (i.e. employees, entrepreneurs, consultants, clients, suppliers, volunteers, trainers, authors, members of formal networks, etc.).

Second, the framework integrates three outcome dimensions in correspondence with the social sustainability competencies to be developed by university ESD across the three knowledge clusters (Brundiers et al., 2010): 1) the “think” dimension: program learning outcomes, or (perceived) effects on individual levels of key competencies for sustainability –knowledge, values, norms, attitudes, skills and perceptions–, encompassing relationships between program’s students, alumni and faculty; 2) the “act” dimension: (perceived) effects on behaviors of program recipients in the individual or household realms, particularly consumer and domestic behaviors, encompassing relationships with closest indirect beneficiaries (relatives and friends), and individual application of key competencies to real sustainability problems in the domestic or professional realm; and 3) the “leverage” dimension: the (perceived) influence that current and former program recipients (direct beneficiaries) may exert on other acquaintances and organizations they relate to from their professional or civil roles; so that they too think or behave in more sustainable ways. Thus, the leverage dimension tries to capture the community outcomes of social capital in action.

Third, the framework proposes two key mechanisms enabling the social sustainability effects of ESD: 1) real-world learning opportunities; and 2) social capital, that may be fostered by ESD and, at the same time, enhance the social outcomes of individual-level effects. While PBL may be crucial to bridge the “think” and the “act” dimensions, SL methodologies may be pivotal to bridge the “act” and “leverage” dimensions; further enabling the creation of shared social sustainability norms and resources, as relationships between program participants and with other individuals and organizations in the community (particularly SL partners) are built.

[Please insert Figure 1 here]

### **3. Methodology**

A case study on the portfolio of ESD activities of the Inditex Chair of Sustainability at the University of A Coruña (UDC), Spain, was developed using mixed methods, in



order to create a research outcome stronger than either method individually. Merging quantitative and qualitative methods enables exploration of more complex aspects and connections. Qualitative methods (e.g. focus groups) imply the generalization to theory by persuading through rich description and strategic comparison across different cases (Yin, 2004); whereas quantitative methods (e.g. surveys) lead to results that are generalizable to populations (Malina et al., 2011). In Table 1, the methodological approach employed is explained in detail.

[Please insert Table 1 here]

From a qualitative approach, focus group discussion is frequently used to gain an in-depth understanding of social issues. This technique aims to obtain data from a selected group of individuals to discuss a specific topic, aiming to draw from the complex personal experiences, perceptions and attitudes of the participants through a moderated interaction. Focus group discussion is perceived as a cost-effective and promising method in participatory research. Composition of the group depends on the aim of the research, and number of participants should range between 4 and 15. 6-8 participants are deemed sufficient as focus groups with more than 12 members are difficult to manage and may be split into smaller groups with independent discussions (Nyumba et al., 2018). This technique was selected as the most appropriate to integrate different insights from recognized professionals in the field of sustainability and ESD. To that end, an online focus group with 8 sustainability experts from different sectors (academic, business and third sector) was held on April 25<sup>th</sup>, 2019 and moderated by authors.

Regarding the quantitative approach, an online questionnaire survey, targeted to the 215 alumni of the first seven editions of the Chair (2011-2018), was developed. The goal was to overcome the limitations of research focusing on the effects of ESD on students during the academic year. Not only most of the social sustainability outcomes unfold over time, lagging past the end of each year; but also, alumni may tend to have more insight on the dynamics of career development and a heightened sense of civil engagement with sustainability issues than current students.

The questionnaire was structured in four sections: 1) extent of participation of alumni in the Chair's activities; 2) perceived effects by alumni of their participation in the postgraduate diploma and lecture series in alignment with the Chair's mission and across the three outcome dimensions; 3) perceived effects by alumni of their participation in team/SL projects in alignment with the Chair's mission; and 4) socio-demographic profile of alumni (e.g. gender, age, educational background, occupation, geographical area where they develop their professional career, etc.). With the exception of the latter, all variables were measured using Likert scales from 1 to 5 (where a score of 1 is low and 5 is high).

The survey was emailed and remained open between May 10 and May 30, 2019. It achieved a total of 66 responses that constitute the final sample employed in our research. The predominant profile of alumni is female (71.2%), aged between 25 and 34 (42.8%), and with an academic background in law and/or business administration (21.9%) (see Table 2).

Although there is no minimum response rate below which survey estimates are necessarily subject to bias (Groves, 2006, p. 650), one of the main problems of a survey-based methodology is nonresponse bias. To assess its potential existence, a comparison between respondents' results and the "known values" for the key subgroups of total population (e.g. age, gender, education, etc.) was undertaken (Armstrong and Overton, 1977). According to this method, it can be stated that there is no evidence of nonresponse bias if the response rates are similar across subgroups (Groves, 2006). In this research, comparison between survey responses and the total population resulted in no statistically significant differences across subgroups (see Table 2).

[Please insert Table 2 here]

A hierarchical clustering technique was used to combine cases (i.e., alumni) into homogeneous clusters by merging them together one at a time in a series of sequential steps (Blei and Lafferty, 2009; Yim and Ramdeen, 2015). Data were analyzed in two steps or phases. Firstly, a hierarchical cluster analysis was carried out using SPSS software to identify different groups according to: 1) the self-reported, perceived effects of the postgraduate diploma and lecture series on alumni for each of the three outcome dimensions considered ("think", "act" and "leverage"); and 2) the self-reported, perceived effects of team/SL projects for the "think" and "act" dimensions. In a second step, cluster analysis allowed identification of the most influential factors that may contribute to enhancing the outcome effects of the Inditex-UDC Chair on alumni and other beneficiaries.

#### **4. Analysis of the case**

##### *The Inditex Chair of Sustainability at the University of A Coruña (UDC) (2011-2018)*

The Inditex-UDC Chair of Sustainability was created in 2010 as result of a partnership between Inditex, a global fashion retailer, and the public University of A Coruña (UDC) in the province of A Coruña, Spain. The mission of the Chair consists of fostering social responsibility and sustainability within the university community and amidst society at large (including other public administrations, companies and nonprofits). According to the emergent nature of the initiative (Ebrahim, 2019), and in the face of the challenge of increasing control over the activities and conditions necessary for producing the desirable outcomes, the academic director of the Chair designed a portfolio operational strategy, consisting of bringing together "a wide range of activities that, in combination, are likely to increase its control over outcomes" (Ebrahim, 2019, p. 42). The Chair's portfolio of activities includes: 1) a postgraduate diploma offered during one semester per year; 2) dissemination through an annual lecture series; and 3) credit-bearing, real-world learning opportunities such as problem-based or service learning teamwork in partnership with organizations in the community, resulting in knowledge creation and exchange between students, alumni and local external stakeholders (knowledge transfer).

Regarding *academic training* activities, the Chair's Postgraduate Diploma on Sustainability and Social Innovation (*Curso de Especialización en Sostenibilidad e Innovación social* or *CESIS*) started in 2011. CESIS students acquire key competencies and tools to advance the environmental, social and governance dimensions of sustainability (ESG) at the organizational and societal levels. The curriculum builds on

an interdisciplinary approach and emphasizes innovation and good governance as tools towards the joint creation of economic, social and environmental value. As regard to teaching methodology, all sessions are based on the PBL approach and most are taught by sustainability professionals who challenge students with real-life problems relevant to the field. Students actively participate in case-study sessions, role-playing, structured debates and teamwork around these problems. Once a year they mix with alumni in a case session that is part of the continuous education opportunities that are offered to nourish the alumni network (Inditex-UDC Chair of Sustainability, 2020).

Regarding *dissemination*, the Chair organizes a year-round lecture series (*En Código Abierto*) that is open to the broader community and tries to create awareness about sustainability-related topics. Attendance among alumni is substantial. Furthermore, students, alumni, faculty members and SL partners share a private group in the social network LinkedIn.

Regarding *knowledge transfer*, students must complete team projects on how organizations deal with ESG challenges in practice. During the first four editions team projects dealt with these challenges through PBL methods, using online available information from/about real organizations. From the 5<sup>th</sup> edition onwards, team projects became SL projects developed in partnership with organizations in the community. Students collaborate with them to define the sustainability problem, perform a diagnosis and plan for solutions and produce actionable recommendations towards sustainability. SL projects are undertaken by highly diverse teams of 4-5 students, each under the guidance of two alumni: a methodological tutor, and one mentor facilitating teamwork dynamics and communications with the partner organization. The goal of SL projects is double fold: 1) students learn better by applying the acquired knowledge on sustainability to interdisciplinary, complex problems associated with real organizations; 2) these organizations may benefit from students' and alumni fresh perspectives, expertise, voluntary commitment and actionable advice. In fact, SL partners frequently hire CESIS graduates. Key outputs and other performance indicators of the first seven editions of the program are summarized in Table 3.

[Please insert Table 3 here]

#### *Output-outcome matrix*

Qualitative insights from the focus group were used to validate the conceptual framework that emerged from the literature (see Fig. 1) and to apply it to the case under study in order to identify the connections between: 1) the different outputs or activities of the Chair that directly accrue to students, alumni and the community (the CESIS, the lecture series, and the team/SL projects); and 2) measurements for perceived effects under the three outcome dimensions in the framework (think, act and leverage) (see Figure 2). The resulting output-outcome matrix was used to structure the survey questionnaire.

[Please insert Figure 2 here]

#### *Hierarchical Clustering Results*

First, hierarchical cluster analysis shows two clearly different groups across each of the three outcome dimensions and the team/SL projects: a larger group of alumni for whom the perceived effects of the program are more substantial (cluster 1) and a smaller group for whom the perceived effects of the program exist but are less substantial (cluster 2). Average values of all variables considered are significantly superior in the case of cluster 1 (in blue) relative to cluster 2 (in red) (see Figure 3).

[Please insert Figure 3 here]

Second, and regarding the variables that have been analyzed under the different outcome dimensions and for the team/SL projects (see Table 4), we can highlight the following results:

1) “Think” dimension: perceived effects of participation in the postgraduate diploma and lecture series were more substantial as regard to social responsibility and good governance of organizations; and less substantial as regard to eco-efficiency, climate change or circular economy. A possible reason is that the weight of environmental contents in the diploma was relatively small during the first editions. There is no significant difference between clusters.

2) “Act” dimension: perceived effects of participation in the postgraduate diploma and lecture series were more substantial as regard to sustainability of alumni’s consumer behaviors, in terms of housing and its supplies (water, energy) and loyalty to brands committed to ESG. However, they were less substantial for nutritional habits and leisure/entertainment. There are differences between alumni from cluster 1 and 2: e.g., the expenditure on other training ESG programs adopts one of the highest values for cluster 2, and one of the lowest for cluster 1. This is consistent with the fact that perceived effects of the CESIS were more significant for the latter.

3) “Leverage” dimension: the perceived effects of CESIS and lecture series were more substantial in terms of professional opportunities in ESG positions and integration in sustainability networks. However, they contributed to a lesser extent to the production of publications on ESG topics or more sustainable products. A possible interpretation is that these two effects require a longer time to happen.

4) “Knowledge transfer” dimension: participation in team/SL projects mostly contributed to increasing alumni’s specialized knowledge in identifying the priority stakeholders for an organization (stakeholder mapping), conducting an analysis of the entity's material issues (materiality analysis), and developing an action plan with specific actions to respond to real sustainability challenges. However, team/SL projects contributed to a lesser extent to the application of knowledge to the solution of real sustainability problems in their daily life and professional environment. Again, a possible interpretation is that implementing sustainability plans in real life requires longer time spans.

[Please insert Table 4 here]

Third, and consistent with the increased levels of both individual commitment and social capital that are needed as graduates move across the three outcome dimensions – from “think” to “act”, and finally to influencing others to think/act sustainably–, the

number of alumni in cluster 1 decreases at each step for the postgraduate diploma and lecture series, parallel to the increase of the number of alumni in cluster 2 (Table 4). However, if the perceived effects of team/SL projects on the “think and act” dimensions are considered, the number of alumni in cluster 1 (41) reaches a level similar to cluster 1 for effects of the postgraduate diploma and lecture series on the "act" dimension (42).

Fourth, and regarding the most influential factors that may contribute to enhancing the social outcomes of the Chair’s sustainability program, three variables emerge as the most explanatory of differences between clusters 1 and 2 (see Appendices 1 and 2):

1) *Participation of students in SL projects in partnership with organizations*: in general, perceived outcome effects are more substantial for students who participated in SL projects in partnership with real organizations (with a higher portion of alumni from editions 5<sup>th</sup>-7<sup>th</sup> in cluster 1); compared to those who did plain team projects (with a higher portion of alumni from editions 1<sup>st</sup>-4<sup>th</sup> in cluster 2). In particular, effects are most substantial for the 6<sup>th</sup> edition, with the largest portion of junior students (with 12 recent graduates and/or without previous work experience over a total of 28 students); and the least substantial for the 4<sup>th</sup> edition, with the smallest portion of junior students. Thus, the age mix of students may provide an additional explanation for the differences between editions within each cluster.

2) *Participation of alumni in tutoring/mentoring roles and new relationships with students and other stakeholders*: overall, cluster 1 includes a larger portion of alumni that undertook roles complementary to that of students, most notably as tutors or mentors of team/SL projects, thus establishing new relationships with current students, other alumni and faculty from different editions of the program, and with SL partner organizations.

3) *Previous ESG experience of students*: as may be expected, cluster 1 includes a larger portion of alumni who had no previous working experience in the ESG realm when they applied for admission into the CESIS.

## **5. Discussion**

The longstanding insight from ESD literature that both real-world learning opportunities and social capital enhance the transformative potential of ESD for society (Wolff and Ehrström, 2020; Brundiers et al., 2010) is confirmed through quantitative analysis for the specific realm of social sustainability. Regarding real-world learning, and beyond confirmation the utility of PBL for the acquisition of key competencies by students, results highlight the importance of partnerships between higher education institutions and relevant stakeholders outside academia. Partnerships for SL are crucial not only to achieve "academic enhancement, personal growth and civic engagement" (Molderez and Fonseca, 2018, p. 4400) of graduates, but also to extend social sustainability outcomes to the surrounding community. This insight, in alignment with the idea that partnerships are necessary for the achievement of other SDG on a macro-scale (UN, 2015), is now quantitatively supported in a local context.

Commitment of alumni with new roles and relationships emerges as another powerful enabler of outcome effects across different student cohorts. If extant literature has treated real-world learning as one of the key teaching and learning strategies towards

acquisition of competencies in environmental sustainability (Grosbeck et al., 2019), this research calls for appropriate management of the creation of social networks, social trust and institutional trust between all relevant stakeholders (Jones et al., 2013). Along this line of reasoning, achievement of desirable program learning outcomes through adequate pedagogical strategies would be a necessary but insufficient condition for the fulfilment of social sustainability impacts. The expected cognitive (what graduates should know), affective (what graduates should care about) and behavioral (what graduates should be able to do) effects of ESD on individuals (Charli-Joseph et al. 2016) need to be actioned through social capital in order to impact the broader community and societal transformation. The combination of partnerships with alumni involvement to implement real world learning not only extends outcome effects outside the academia, but also renews them over time.

University administrators need not only to leverage the social capital that new students bring to the classroom, but also to build additional social capital in alignment with the missions of their ESD programs through formal mechanisms that reinforce social sustainability-related information, social credentials and social ties (Lin, 1999). This may be done through fostering networks of social relationships that encompass both the individual (facilitation of alumni networks and offering of continuing education opportunities and dissemination activities) and the institutional levels (facilitation of partnerships with organizations in the community) and allow for cross-fertilization between program cohorts. Results further highlight the importance of managing social capital from the very classroom, by integrating mechanisms such as mobilizing alumni to participate as tutors or mentors in credit-bearing initiatives, particularly those that are developed in partnership. An enabling circle is fed as team/SL project tutors/mentors are selected by the academic director among alumni from different cohorts that show a deeper individual commitment with the program, but also end up showing more substantial outcome effects over time. Alumni in tutoring/mentoring commitments not only bring back their own social capital to the program, but also build new relationships with current and former students and faculty, as they must attend a number of new sessions, visits or workshops in the academic year they become mentors/tutors.

Finally, results suggest that outcome effects on social sustainability are non-linear. At an individual level, not only a course graduate may leverage sustainability in the organization he/she is committed with (as employee, consultant, supplier, etc.), and not behave sustainably in the domestic realm; but also outcome effects are less substantial for students who already had previous experience in the ESG realm. At an aggregate level, perceived effects of the training and dissemination activities where students/alumni (215) tend to massively participate lose intensity at every step across outcome dimensions (cluster 1 decreases in size). However, and thanks to the social capital actioned by the relatively small group of alumni who tutored/mentored students (44), the number of alumni with substantial changes in competencies and behaviors as a result of their participation in team/SL projects is similar to the number in cluster 1 of the “act” dimension of training and dissemination activities. Thus, relationships between the alumni who develop tutoring/mentoring functions and other stakeholders (students, alumni, faculty and SL partners) may act as a mediating variable between program outputs and outcome effects (Figure 1).

## **6. Conclusions**

This research highlights the importance of real-world learning that is deployed through partnerships as a lever to enhance the outcome effects of ESD and offers an integrated understanding of the role that changes in social capital play when enacted in the context of SL activities.

From a theoretical perspective, the framework integrates outcome dimensions and stakeholders (students and alumni) that have been mostly explored by extant literature in a disconnected way and/or from an environmental sustainability perspective. It highlights the importance of going beyond traditional program learning outcomes to consider the effects of ESD on social sustainability in a holistic way; that is integrating the broader effects on households, workplaces and community organizations that can be reasonably accrued or attributed to changes in direct beneficiaries (students and alumni) and their relationships as a result of the program.

From an empirical perspective, this research: 1) proposes operational measures for the “think”, “act” and “leverage” dimensions of outcome-level effects; 2) applies a quantitative technique to cluster alumni according to the intensity of outcome effects; and 3) undertakes a comparative analysis that facilitates identification of the enablers – SL and social capital– that may enhance the effects of university ESD on social sustainability. We are confident that the measures used in this quantitative research to proxy outcome effects, used in combination with the conceptual framework, may be useful to guide further assessments of the impact of university ESD on social sustainability in local contexts.

Both enablers –SL and social capital– mutually reinforce each other through a virtuous circle where alumni participation in tutoring/mentoring duties in the context of team/SL projects mobilizes and nourishes social capital within and outside the alumni network and beyond the duration of the annual program, ultimately enhancing social sustainability effects. The network of social connections and the set of shared values that students and alumni jointly develop over time and across editions is both a desirable learning outcome of ESD and a key lever to enhance its impact on the community. This line of reasoning is consistent with the idea by Bennett and Papi (2014) that the traditional concept of service learning should be “flipped on its head” to become learning service, where learning is not the outcome of serving the community, but a pivotal component of service itself. Focus of SL should shift from learning “for the community” to learning “with the community”. In the field of sustainability, students serve the community because they learn to think, act and leverage for sustainability with the community.

As regard to implications for academic administrators, recruiting a diverse student cohort (in terms of socio-demographics, professional and academic background, and work obligations) seems key to enhance social sustainability. Junior, unexperienced students may adopt senior, ESG-experienced students as role models in sustainability, take advantage of peer learning or benefit from their social connections, as the latter tend to be more strategically located and/or hierarchically positioned in networks. Senior, ESG-experienced students, in their turn, may benefit from the fresh perspectives, digital competencies and willingness of junior students. However, our results evidence that social sustainability outcomes of one-size-fits-all programs are less substantial for students with more ESG experience/seniority. Thus, personalization of course contents and methodologies and customization of outcome metrics according to

student profiles should be fostered in order to optimize outcome effects for diverse student groups.

Finally, this research suggests that university administrators and faculty should reconceptualize social capital as a crucial asset to realize the potential of ESD for social change, that is under their capacity to grow and nourish. An emerging new role for them in the realm of social sustainability would consist of facilitating the advancement of students and alumni across the sequence of plausible effects identified in this research. Nourishing relationships with alumni networks and community partners in full integration with the academic curriculum seems key to leverage social capital as a renewable resource for social sustainability over the long term.

## **7. Limitations and further research**

Limitations of this empirical research are acknowledged, as it is a survey-based, mono-stakeholder exploration and the sample, though representative, is limited in size. Furthermore, data are based on self-reports of socially valued outcomes and therefore may be subject to desirability bias. Lastly, the fact that this research covers a long period of time in order to contribute a dynamic perspective on outcome effects has also drawbacks. First, ex ante motivations and ex post expectations of alumni (including employment prospects after graduation) varied widely as the economic crisis originating in 2008 developed and declined during the period of analysis. Secondly, memories of the alumni that graduated first are for sure weaker –and probably also more biased- than those of alumni of the 2018 class.

Further research should include in the analysis negative effects and relevant stakeholders other than students and alumni, and the methodological approach should be broadened accordingly. In order to fully assess the effects of team/SL projects across the leverage dimension, the perspective of partner organizations (in grey in figure 2) should be also taken into account. It would be necessary to find out to what extent and with which results they have actually implemented the sustainability actions recommended by the students as part of their SL projects. A focus group in combination in-depth interviews with SL partner representatives may be useful. Also, as the mission of the Chair prioritizes sustainable university management, effects across other university stakeholder groups should be taken into account. A focus group and/or in-depth interviews with the constellation of stakeholders that the Chair is accountable towards (Inditex as funder, UDC Social Council as promoter, UDC Secretary General, UDC Vice-Provosts for Research and for Social Responsibility, the Dean of the Economics and Business School, etc.) would be needed to explore the perceived impact beyond direct beneficiaries. Also, local media coverage of the Chair's activities is another proxy for its social sustainability effects as it helps in assessing the visibility of sustainability topics within the community. Media support the effects of the program on relevant stakeholders and society both directly, by providing information about the Chair's activities to prospects and reinforcing attendance and participation, and indirectly, by raising awareness about the importance of sustainability and supporting the Chair's outreach efforts within the community.



## References

- Aikens, K., McKenzie, M. and Vaughter, P. (2016), "Environmental and sustainability education policy research: A systematic review of methodological and thematic trends", *Environmental Education Research*, Vol. 22 No. 3, pp. 333-359.
- Anheier, H. K., Krlev, G. and Mildenerger, G. (2019), *Social innovation: comparative perspectives*, New York: Routledge/Taylor and Francis.
- Armstrong, J. S. and Overton, T. S. (1977), "Estimating nonresponse bias in mail surveys", *Journal of marketing research*, pp. 396-402.
- Bennett, C. and Papi, D. (2014), *From Service Learning to Learning Service*, working paper, Stanford Social Innovation Review, 8 April.
- Blei, D. and Lafferty, J. (2009), "Topic models", in Srivastava, A. and Sahami, M. (Ed.), *Text Mining: Classification, Clustering, and Applications*, Boca Raton, FL: Taylor and Francis Group, pp. 71- 94.
- Bringle, R. G. and Hatcher, J. A. (1996), "Implementing Service Learning in Higher Education", *Journal of Higher Education*, Vol. 67 No. 2, pp. 221-239.
- Brody, S. D. and Ryu, H. C. (2006), "Measuring the educational impacts of a graduate course on sustainable development", *Environmental Education Research*, Vol. 12 No. 2, pp. 179-199.
- Brundiers, K., Wiek, A. and Redman, C. L. (2010), "Real-world learning opportunities in sustainability: from classroom into the real-world", *International Journal of Sustainability in Higher Education*, Vol. 11 No. 4, pp. 308-325.
- Charli-Joseph, L., Escalante, A. E., Eakin, H., ... and Bojórquez-Tapia, L. A. (2016), "Collaborative framework for designing a sustainability science programme: Lessons learned at the National Autonomous University of Mexico", *International Journal of Sustainability in Higher Education*, Vol. 17 No. 3, pp. 378-403.
- Dlouha, J., Henderson, L., Kapitulčinová, D. and Mader, C. (2018), "Sustainability-oriented higher education networks: Characteristics and achievements in the context of the UN DESD", *Journal of Cleaner Production*, Vol. 172, pp. 4263-4276.
- Ebrahim, A. (2019), *Measuring Social Change. Performance and accountability in a complex world*, California: Stanford University Press.
- Eizenberg, E. and Jabareen, Y. (2017), "Social sustainability: A new conceptual framework", *Sustainability*, Vol. 9 No. 1, p. 68.
- Elkington, J. (2004), *The Triple Bottom Line: Does it All Add Up*, Routledge.
- Fulkerson, G. M. and Thompson, G. H. (2008), "The evolution of a contested concept: A meta-analysis of social capital definitions and trends (1988–2006)", *Sociological Inquiry*, Vol. 78 No. 4, pp. 536-557.

Grosseck, G., Țîru, L. G. and Bran, R. A. (2019), "Education for sustainable development: Evolution and perspectives: A bibliometric review of research, 1992–2018", *Sustainability*, Vol. 11 No. 21, p. 6136.

Groves, R. M. (2006), "Nonresponse rates and nonresponse bias in household surveys", *Public opinion quarterly*, Vol. 70 No. 5, pp. 646-675.

Inditex-UDC Chair of Sustainability (2020), "Official website of the Inditex-UDC Chair", available at: <https://www.catedrainditex.com>.

Jones, N., Roumeliotis, S., Iosifides, ... and Evaggelinos, K. (2013), "Students' perceptions on environmental management of HEIs and the role of social capital", *International Journal of Sustainability in Higher Education*, Vol. 14 No. 3, pp. 278-290.

Kendall, J. and Knapp, M. (2000), "Measuring the performance of voluntary organizations", *Public Management Review*, Vol. 2 No. 1, pp. 105–132.

Leal Filho, W., Brandli, L., Becker, ... and Marans, R. (2019a), "Sustainable development policies as indicators and pre-conditions for sustainability efforts at universities: Fact or fiction?", *International Journal of Sustainability in Higher Education*, Vol. 19 No. 1, pp. 85-113.

Leal Filho, W., Vargas, V. R., Salvia, A. L., ... and Vaccari, M. (2019b), "The role of higher education institutions in sustainability initiatives at the local level", *Journal of cleaner production*, Vol. 233, pp. 1004-1015.

Liket, K. C., Rey-García, M. and Maas, K. (2014), "Why Aren't Evaluations Working and What to Do About it: A Framework for Negotiating Meaningful Evaluation in Nonprofits", *American Journal of Evaluation*, Vol. 35 No. 2, pp. 171-188.

Lin, N. (1999), "Building a network theory of social capital", *Connections*, Vol. 22 No. 1, pp. 28-51.

Littig, B. and Griessler, E. (2005), "Social sustainability: a catchword between political pragmatism and social theory", *International journal of sustainable development*, Vol. 8 No. 1-2, pp. 65-79.

Malina, M. A., Nørreklit, H. S. and Selto, F. H. (2011), "Lessons learned: advantages and disadvantages of mixed method research", *Qualitative Research in Accounting and Management*, Vol. 8 No. 1, pp. 59-71.

Molderez, I. and Fonseca, E. (2018), "The efficacy of real-world experiences and service learning for fostering competences for sustainable development in higher education", *Journal of Cleaner Production*, Vol. 172, pp. 4397-4410.

Nyumba, T. O., Wilson, K., Derrick, C. J. and Mukherjee, N. (2018), "The use of focus group discussion methodology: insights from two decades of application in conservation", *Methods in Ecology and evolution*, Vol. 9 No. 1, pp. 20-32.

OECD (2001), “The well-being of nations: the role of human and social capital”. Paris: OECD Centre for Educational Research and Innovation, available at: <http://www.oecd.org/site/worldforum/33703702.pdf>

Rey García, M., Álvarez-González, L.I. and Bello-Acebrón, L. (2013), “The untapped potential of marketing for evaluating the effectiveness of nonprofit organizations: a framework proposal”, *International Review on Public and Nonprofit Marketing*, Vol.10 No. 2, pp. 87-102.

Rey-García, M., Liket, K. C., Álvarez-González, L. I. and Maas, K. (2017), “Back to Basics. Revisiting the relevance of beneficiaries for evaluation and accountability in non-profits”, *Nonprofit Management and Leadership*, Vol. 27 No. 4, pp. 493-511.

Ryu, H. C. and Brody, S. D. (2006), “Examining the impacts of a graduate course on sustainable development using ecological footprint analysis”, *International Journal of Sustainability in Higher Education*, Vol. 7 No. 2, pp. 158-175.

Savage, E., Tapics, T., Evarts, J., Wilson, J. and Tirone, S. (2015), “Experiential learning for sustainability leadership in higher education”, *International Journal of Sustainability in Higher Education*, Vol. 16 No. 5, pp. 692-705.

ULSF (1990), *Report and Declaration of the Presidents Conference*, Tufts University, Medford, MA.

UNESCO (2014), “Shaping the future we want: UN Decade of Education for Sustainable Development; final report”, available at: <https://unesdoc.unesco.org/ark:/48223/pf0000230171>

United Nations (UN) (2015), “Transforming our world: the 2030 Agenda for Sustainable Development”, available at: <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>

Van Poeck, K. and J. Vandenabeele (2012), “Learning from Sustainable Development: Education in the Light of Public Issues”, *Environmental Education Research*, Vol. 18 No. 4, pp. 541–552.

Van Tulder, R., Seitanidi, M. M., Crane, A. and Brammer, S. (2016), “Enhancing the Impact of Cross- Sector Partnerships: Four Impact Loops for Channeling Partnership Studies”, *Journal of Business Ethics*, Vol. 135 No. 1, pp. 1-17.

Wolff, L. A. and Ehrström, P. (2020), “Social sustainability and transformation in higher educational settings: A utopia or possibility?”, *Sustainability*, Vol. 12 No. 10, p. 4176.

Woolcock, M. (1998), “Social capital and economic development: Toward a theoretical synthesis and policy framework”, *Theory and society*, Vol. 27 No. 2, pp. 151-208.

World Bank (1998), "The Initiative on Defining, Monitoring and Measuring Social Capital Text of Proposals Approved for Funding", working paper, Environmentally and Socially Sustainable Development Network, Social Capital Initiative, 2 June.

Yim, O. and Ramdeen, K. T. (2015), "Hierarchical cluster analysis: comparison of three linkage measures and application to psychological data", *The quantitative methods for psychology*, Vol. 11 No. 1, pp. 8-21.

Yin, R. K. (2004), *The case study anthology*, SAGE publishing, Beverly Hills, CA.