Towards a Sustainable Model of Higher Education in the Araucanía Region, Chile

C Navarrete¹, G Saldías², M Carbonetti³, J M Fierro⁴ and D Sandoval⁵

¹Associate Professor. Faculty of Education, Social Sciences and Humanities. Universidad de La Frontera
²Assistant Professor. Faculty of Architecture, Arts and Design. Universidad Católica de Temuco
³Lecturer. Faculty of Arts. University of British Columbia
⁴Associate Professor. Faculty of Education, Social Sciences and Humanities. Universidad de La Frontera
⁵Research Assistant. Universidad de La Frontera

E-mail: carolina.navarrete@ufrontera.cl

Abstract. The aim of this article is to propose a critical reflection of the state of teaching sustainability in higher education in Chile. The goal is to broaden the concept of sustainability so as to understand its implication in learning civic and community values, as well as in implementing innovative teaching methodologies linked to the promotion of sustainable values connected to the United Nations’ Sustainable Development Goals. In this article, the application of a teaching methodology called Pre-Texts, from Harvard University, is explored in a sociocultural context of Chilean higher education, specifically at the Universidad de La Frontera in Chile’s 9th Region. Evidence is sought about how this methodology is relevant and effective in the teaching of two key pedagogical principles related to sustainability: the importance of community recognition and the collective work and implementation of artistic practices to promote discussion of sustainable principles based on preservation and recycling. Finally, a conclusion will be pursued around the need to implement these and similar teaching practices in higher education to promote greater awareness of the fundamental principles of Sustainable Development.

1. Introduction

The adjective “sustainable” is normally used descriptively to refer to the material condition of the world, particularly in areas related to production, construction and preservation. However, it is important to note that sustainability is, above all else, a complex idea that contains and evokes a series of values that determine the way in which as human beings we must be relate to the physical world around us. Assuming sustainability as a regulatory principle of our professional, civic and political practices, therefore, depends directly on our ability to understand, learn and replicate principles related to a sustainable way of life which, although it includes the material world, also surpasses it, because it
necessarily involves relations with other human beings and a specific way of understanding the reality that surrounds us.

Sustainable education was first defined as an education that “satisfies the needs of current generations without jeopardizing the abilities to satisfy the needs of future generations” [1]. Since then, it has been conceived as “training for conscious action, with the aim of learning to change, and which finds the best strategy in participation in real projects of transformation and change” [2]. According to the United Nations, in its 2030 Agenda, this is pivotal:

“To ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to Sustainable Development” [3].

According to Collazo Expósito, one of the dimensions of the concept of sustainability is social, which “includes lifestyle, education, the community and equality of opportunity” [4]. In this sense, education, mainly at university level, can become an ideal forum for the search, exploration and implementation of methodological strategies that promote sustainable development in society: “the university is a potential revitalizing agent of change for Sustainability, as it educates future professionals in the development of their profession, which will impact directly and indirectly on their natural, social and cultural surroundings” [4]. For UNESCO, through the Global Action Program (GAP) on Education for Sustainable Development, “the success of education for Sustainability is conditioned by the willingness and commitment of the faculty of the universities which, generally, have little support in incorporating aspects of sustainability in their teaching work” [4]. To this is added the educators’ unawareness that this dimension exists, as they do not always have adequate theoretical or practical preparation in this area. According to UNESCO, the transition to Sustainability, understood as “the most necessary single unifying central idea at this point in the history of the humanity” [5] requires that educators “link teaching in their specific field with the lifelong promotion of citizen activism” [6].

In view of these reflections, we must wonder: How can we move towards Sustainable Development in higher education? What methodological procedures could we design and apply to approach citizen activism in the university sphere? What is the impact that education could generate for Sustainability on students who are trained to work as teachers?

The idea that the current model of resource exploitation under the premise that the universe is infinite and that needs can be fulfilled with no attention paid to the “planetary emergency” [5] is unfeasible, it is a notion that must be taught and conveyed in higher education with more urgency than ever, since the alarming consequences on the environment are a threat to the common future and global social welfare.

From this premise, we consider it important to pause particularly on two of the Social Development Goals (SDGs) posited by the United Nations through ECLAC that have an impact on our way of interacting with our cultural, social and natural environment: quality education, the purpose of which is to ensure an inclusive quality education and promote lifelong learning opportunities, and the guarantee of sustainable consumption and production methods in the educational setting.

In this article we propose giving an account of the experience of putting into practice a perspective of Sustainable Development in higher education, specifically in the Comparative Literature course offered to a group of 47 undergraduates in the Teacher Training program at the Universidad de La Frontera, a state university in the IXth region in southern Chile, which has the highest rate of socioeconomic vulnerability in the country. This initiative was developed over a four-month period between October 2018 and January 2019. Worthy of note, the methodological procedure included the application of some of the pedagogical strategies proposed by the Pre-Texts program, an initiative of Cultural Agents, the founder of which is Dr. Doris Sommer of Harvard University.

As a contextualization, Pre-Texts consists of a simple, replicable pedagogical protocol in various educational contexts that incorporate the arts into education. Their proposal consists of a change in conventional teaching, where the teachers pose questions, the answers to which are known beforehand. By contrast, Pre-Texts invites students to ask questions and speculate on the many possible answers. All
this happens through artistic creation workshops. The program encourages the reformulation of the aims of the materials for democratic and environmentally friendly classrooms. In addition, it emphasizes, as part of this Teacher Training program, the combination of three complementary elements for a holistic education: advanced literacy, innovation and citizenship.

Next, we postulated that the application of the methodologies proposed by the Pre-Texts program is a teaching experience with a potentially significant impact on the increase in students’ responsibility and commitment to civic values, the environment and the transition towards sustainability in higher education.

2. Sustainable Education Through Artistic Practice and Community Commitment

The primary goal of the SDGs of interest to address is that of quality education, for which the proposal by Paulo Freire, one of the most influential Brazilian educators of the 20th century and eminent author on the Pre-Texts philosophy, is crucial to approach an understanding of what a quality education oriented towards Sustainable Development means.

According to the UN’s 2030 Agenda, “the achievement of a quality education is the basis for improving people’s lives and sustainable development” [3]. Although significant progress has been made in improving access to education overall, relevant aspects remain pending in the “achievement of the goals of universal education” [3]. Among the proposed goals, we wish to underscore the following: “By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development” [3].

As the Paulo Freire Institute in Berlin points out, education for peace is a broad concept. This is related to “people being able to feel safe from being discriminated or marginalized because of their origin, gender, sexual orientation or identity, age, social and religious affiliation, body or language” [7]. In other words, it involves neither physical nor verbal nonviolence in social relations, respect and responsibility for the natural environment, resources and future generations. In this sense, the work as educators of promoting awareness for an education of peace is fundamental, with the aim of transforming exclusionary mentalities and attitudes in both the university social context and in the global framework. One of the concrete ways that Pre-Texts proposes to subvert hierarchical and discriminatory structures is the horizontality in the relation between professor or facilitator and students, i.e., the development of a critical view of the world is ensured, but from a classroom, understood as a safe space for dissenting opinion, respect for cultural diversity, of class, gender, social, etc., promoting a democratizing spirit, where both educators and the educated have the opportunity to co-create the learning of texts, demystifying books as unquestionable objects of authority, and turning them into raw material or “pretexts” for the development of fun, educational activities. According to Freire, unfortunately, the most generalized educational practice in schools is to lead the students to be passive with texts, tending toward reading interpretation exercises to be almost an oral copy, “the child perceives early on that their imagination does not play: it is something almost prohibited, a kind of sin. The child is never invited to imaginatively relive the story told in the book, taking control little by little of the meaning of the textual content” [8].

Without a doubt, creative reading, i.e., “the reading able to open out in the re-writing of the text read” [8] is an instance that makes education possible for the citizenry, in the sense of fostering in the students the reinforcement of self-esteem, freedom, personal dignity, as well as of civic values such as tolerance, respect for others, solidarity and mutual aid, among others. In this sense, and following Freire, during the Comparative Literature course, there was a need to follow an education model remote from the “bank reading”, where the reader “eats” the content of the author’s text with the aid of the “master nutritionist” [8]. By contrast, the task of reading and re-writing was promoted, from a critical perspective, perceiving the social and cultural fabric in the texts and re-writing the books with the use of art, particularly through theater, dance, song, painting and music. An example of this practice was
that as part of the subject, the students, through cooperative work together with the teacher, organized the “Frankenstein from the Borders” Colloquium, which had a significant number of essays, drawings and the painting of two canvases for the set, preparation of costumes, musical composition, promotion of the event on radio and social networks, etc. but, mainly, an attitude of union and solidarity as a group, organized according to the democratic principle of dialogue and the attitude of listening to others, which not only contributed to knowing the text in depth, but also cemented the possibility of understanding, expressing and co-creating the sociocultural plot of the book from a critical and affective point of view. In this instance, articles 26, 27 and 29 of the UN Declaration of Human Rights are promoted, which propose that the goal of education is the full development of the human personality and strengthening of the respect for human rights and fundamental freedoms, the right of all people to freely take part in the cultural life of the community, to enjoy the arts, and to participate in scientific progress and benefits resulting from it, and that everyone has rights with respect to the community, since only within it can their personality develop freely and fully [9].

In this sense, the notion of community as a transverse axis that integrates the social, human, geographical, environmental and cultural space that generates it and in which it lives acquires great relevance. In this respect, it is appropriate to take up Freire [10] again to indicate that the university and its actors (students and teachers) should not have to limit the teaching and learning process to the confines of the classroom. The world that extends the closed and institutional space of the classroom is the community, where conflicts of power, inequality, the policies that favor environmental and social unsustainability take place and where higher education has the civic duty to be elevated as an agent of change.

From the transformative pedagogy that Freire proposes, the university architecture itself does not form the limit where knowledge is produced, imparted and received. Even if that knowledge seeks to generate critical thinking from the academic, the metaphorical and concrete confinement of the classroom, in the traditional sense where knowledge circulates unidirectionally legitimized by scientific discourse, conditions the cognitive process to a dynamic controlled by the institution. The static roles of the traditional university exclude the possibility of directly accessing other knowledge that the community, as co-educator, contains, with no endogenous mediation.

In this sense, the inclusion of community artistic endeavors as a methodology within higher education integrates collective learning as a starting point to thinking and creating mechanisms and knowledge that lead to peace, deepen democratic processes, social justice and accelerate effective transformations in the management of resources for sustainable and attainable development, present and future.

This principle of future awareness was also put into practice through use of recycled materials for the teaching activities, following the model of “La Cartonera”, used in Buenos Aires and Lima, through Eloisa and Sarita Cartonera, respectively. Both socially committed and cooperative editorial projects, with an environmental intention and for promoting reading, were used as inspirational models so that students participating in this initiative re-created book covers from the reading of texts assigned in class, from their own interpretations and making use of previously discarded unconventional materials. Thus, the work was done with the aim of making more and better things with fewer resources, involving the students in the educational process from sensitization about consumption and sustainable ways of life.

3. Results
After a full semester of applying the methodology, the results were measured in the total group of students who comprised the sample (47) through an instrument of qualitative assessment in the form of a mandatory survey centered on three axes related to the aims of the methodology: “Integral Training, “Student Participation” and “Learning Achieved”. To measure the results, an ascending numerical scale was used, from 1.0 to 5.0, with 1.0 being “completely disagree” and 5.0 “completely agree”. Next, the figures are presented with the results of the evaluation according to the three axes.
The Integral Training axis was meant to allocate the students’ opinion with regard to the civic values related to the collaboration and diversity required for sustainable education. The measurement of the axis is divided according to the following parameters: in purple: “The teacher promotes attitudes of tolerance, social commitment and respect for diversity”; in green: “The teacher promotes collaborative work among students”; and in blue: “The teacher relates the contents of this subject or module to social reality”.

The Student Motivation and Participation axis was meant to measure the students’ general willingness to participate in the activities developed throughout the course, which translates into their general acceptance of the teaching mechanics and their appreciation of the learning experiences. The measurement parameters were the following: in purple: “In this course students were encouraged to participate in the class discussions”; in green: “The teacher creates spaces of reflection, raising appropriate and challenging problems”; and in blue: “The teacher has demonstrated enthusiasm imparting the course”.

Figure 1. Integral Training Axis.

Figure 2. Student Motivation and Participation Axis
This axis sought to measure the students’ satisfaction in terms of the contents addressed throughout the course and the recognition of their usefulness in the work contexts where they must be carried out. The measurement parameters were the following: in purple: “I have learned things that I consider valuable for the profession”; in green: “My interest in the contents has increased as a result of this course”; in blue: “I have learned the contents of this course”; and in red: “In this course I have developed abilities and competencies that may be useful once I am working”.

4. Discussion
The survey results reveal the students’ general satisfaction with the contents and the processes and teaching practices implemented throughout the course. Particularly interesting are the results of the third axis, as the students surveyed will be future teachers, which is why their assessment of the contents and teaching may well mean a future willingness to replicate the same in their future teaching spaces, thus ensuring the transgenerational transmission of sustainable pedagogy.

Finally, we also believe that the broad acceptance of the teaching strategies used is due, essentially, to the explicit bond between civic and sustainable values, with updated contents relevant to the students’ reality (particularly concerning subjects of gender, preservation, mental health and caring for the environment). Fig. 2 reveals with clarity the students’ desire to become part of the class and interact with the other participants, results that must be understood in direct relation with those expressed in Fig. 1.

5. Conclusions
The transition to Sustainability in education involves a process of deep transformation, and the community educational experience plays a central role within this change. As the UN’s 2030 Agenda has indicated, there are multiple goals that are necessary to meet in education in order to convey the importance of sustainability as a community practice and directly linked to civic and democratic values.

The experience of applying the methodology of the Pre-Texts model in the educational context of higher education at the Universidad de La Frontera demonstrated the effectiveness of artistic practice to promote the development of inter-subjective bonds among subjects and in relation to their environment, from the emergence of a group comprised of educators, students, university and community. Relating (to the other, to the others) in order to understand, learn and think critically about the reality present in one’s own and in the collective experience is in a cycle of feedback where the roles (teach-learn, create-admire, transform-be transformed) are dynamic and changing. Thus, it is possible to think of the university from its impact on the local, regional and international community beyond the production of
educational and scientific knowledge, assuming its civic responsibility to generate social, political, cultural and environmental changes developed from that shared space [11]. What is shared in the community educational experience involves consideration of the problems that the natural world that supports this community is suffering, integrating reflection on the teaching process from direct human experience (in body and not only intellectually), that art, as has been demonstrated through the Pre-Texts proposal, offers in its performativity and agency on the medium and whose condition of existence is based on the harmonic relation with the other in the space we all share.

Acknowledgments
The team behind this article thanks the Agencia Nacional de Investigación y Desarrollo ANID and the Fondo Nacional de Desarrollo Científico y Tecnológico FONDECYT for the support provided through the following research projects: FONDECYT de Iniciación number 11190799 (responsible Dra. Carolina A. Navarrete González) and FONDECYT Regular number 1161253 (responsible Dr. Juan Manuel Fierro Bustos).

References
[1] Naciones Unidas 1987 Informe Brundtland. Disponible en: https://desarrollosostenible.wordpress.com/2006/09/27/informe-brundtland/
[2] Martinez Huerta J 2014 Lecciones de una Década. La firma del mes Carpeta informativa abril (Segovia, Gobierno de España: CENEAM).
[3] Naciones Unidas 2016 Desglosar el Objetivo de Desarrollo Sostenible 4 Educación 2030. Guía p 14. Disponible en: https://www.buenosaires.iiep.unesco.org/sites/default/files/archivos/ODS4_0.pdf
[4] Collazo Exposito, M L 2018 Modelo de formación dirigido a profesores de secundaria del área de las ciencias experimentales basado en la sostenibilidad (Girona, Universitat de Girona: Departament de Didáctiques Específiques). Tesis doctoral p 12-32.
[5] Bybee R 1991 The American Biology Teacher Planet Earth in crisis: how should science educators respond? 53 3 p 146-53.
[6] Naciones Unidas 2014. Programa de Acción Global ¿Es aún posible lograr la Sostenibilidad? Boletín No 93. Disponible en: https://www.oei.es/historico/decada/boletin093.php
[7] Paulo Freire Institut Berlin. Nuestras áreas de trabajo. Pedagogía de paz y transformación de conflictos Disponible en: http://www.paulofreireberlin.org/es
[8] Freire P 2010 Cartas a quien pretende enseñar (Argentina: Siglo XXI Editores) p 65-66.
[9] Naciones Unidas 2015. Declaración Universal de Derechos Humanos. Disponible en: https://www.un.org/es/documents/udhr/UDHR_booklet_SP_web.pdf p 54-60.
[10] Freire P, Shor I 2014 Miedo y osadía. La cotidianidad del docente que se arriesga a practicar una pedagogía transformadora (Argentina: Siglo XXI Editores) p 60-64.
[11] Chumaceiro Hernández A, Hernández de Velazco J, Chirinos Noroño E 2016 Cuadernos de RSO Responsabilidad social universitaria, desarrollo sostenible y ciudadanía ambiental 4 1 53-56.