Hypothesis

A Value-Based Framework Connecting Environmental Citizenship and Change Agents for Sustainability—Implications for Education for Environmental Citizenship

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Abstract: Civic agency is acknowledged as a key driver/catalyst for social transformation toward sustainability. Recent environmental citizenship education (EEC) models advocate a transformative approach for addressing environmental unsustainability (addressing underlying structural causes) and the identification of the development of change agents, as both the means for deep social transformation toward sustainability and the outcome of EEC. Given the paucity of studies looking into the psychological attributes of sustainability change agents, this work aims to deepen the theoretical understanding of the motivations that drive individuals to act as change agents and the type and extent of the change that they aspire to effect, with a view to developing competent environmental citizens. To this end, this conceptual work applies Schwartz's theory of universal values to construct a three-level framework of environmental citizenship (EC) (individual-level, community-level, and socially-transformative-level). Each level reflects an increasing level of change agency that is driven by distinct motivational values and competences. The framework shares affinities with qualitative change agency typologies in the literature but claims that these different qualitative types reflect expanding 'levels-of-concern' and an increasing extent of change, as expressed in the EC framework. The paper then discusses curricular implications for the design of meaningful EEC deriving from the framework: Effective EEC entails developing change agency by adapting learning to the EC-level of the learners and the educational organization. The proposed EC/change agency framework provides a scaffold for such curricular adaptation.

Keywords: Schwartz theory of universal values; motivational values; pro-environmental behavior; environmental citizenship; change agents for sustainability; transformative learning; adaptive curriculum; environmental citizenship education

1. Introduction

Among the central challenges confronting education today is how to prepare individuals and societies to deal with the increasing environmental-social problems associated with an industrialized, technological, urbanized, and increasingly multicultural world [1,2], which is termed a VUCA (volatile, uncertain, complex, and ambiguous) world [3]. The COVID19 pandemic demonstrates the turbulence, complexities, and unpredictability confronting citizens worldwide, necessitating responsible and ethical decision-making as an integral part of everyone's daily lives. These immense environmental–social challenges facing humanity in the 21st century are influencing the fundamental nature of citizenship and essentially reforming how citizenship is understood, and environmental issues are increasingly being framed in terms of citizenship [4]. Environmental citizenship (EC) is acknowledged as a key to addressing environmental issues and promoting individuals and societies empowered to embrace sustainable ways of living and environmentally–socially sustainable economies, technologies, and businesses [4–7]. A recent conceptualization of

EC, put forth by the European Network for Environmental Citizenship (ENEC), identifies an environmental citizen as "[...] able to identify the underlying structural causes of environmental degradation and environmental problems and as someone who has the willingness and the competences for critical and active engagement and civic participation to address those structural causes [...]" [8]. Such current conceptualizations of EC identify the role of citizens not only in individuals' actions, but also in the capacity to look at the bigger picture—to question the systemic socio-political and socio-economic circumstances that have created the environmental problems and take an active role in co-creating sustainable policy [6,9,10]. Some scholars claim that focusing solely on individual action is non-transformative, whereas it is necessary to address the broad structural oppressions related to global capitalism that are the root causes of the environmental problems [5,10,11]. Such positions acknowledge the power of individuals as a political force for positive change at the societal level.

The contemporary understanding of environmental and sustainability education (ESE) emphasizes building the capacities for critical thinking—enabling individuals to raise critical questions regarding what is going on in society and autonomously act on these [12]. Similarly, education for environmental citizenship (EEC) [8,13] aims to develop the individual's capacity, as part of one's identity as a citizen, to contribute to broader societal transformation towards sustainability. This presents an immense challenge for education. Given the complex challenges of transforming societies and changing mindsets toward enhancing pro-environmental behavior (PEB), EEC goes well beyond knowledge transmission (cognitive domain) or promoting sustainable behaviors; it emphasizes developing and cultivating the mindsets (affective domain) and capacities of individuals so that they actively engage in civic participation and have the ability to identify and address the underlying structural causes of environmental problems and function as catalysts of social change. This deeper transformative approach is reflected in the central positioning of 'agents of change' in the recent EEC model [13], which is in line with policy documents that specify civic agency a key to achieving sustainable societies [1,14].

The broad discourse on change agency identifies a range of types and roles of change agents [15,16], connects change agency to motivational values and sources of meaning [17], and specifies the different skills and competences and the different levels or scales in which change may occur in educational contexts [13,18–20]. Given the well-established connection between behavioral change and values [21–26], EEC necessitates reexamining basic assumptions and values [5] by applying transformative learning processes [27–29]. Thus, the capacity to question dominant values as part of one's EC [11] should be central to the development of change agents as both an outcome of, and a means for, EEC [18].

The aim of this paper is to elaborate and expand on the meaning of change agents in the context of EC and, through this, to provide theoretical and practical insights into the roles and implications of change agency for EEC. This will be achieved by presenting and articulating EC as a continuum expressing progressive levels, each reflecting a different degree of change agency for sustainability that is driven by distinct motivational values. The theoretical framework identifies the development of environmental citizens as a development in their capacity to act as social change agents. We begin by providing the theoretical nexus among EC, change agents, and motivational values as the theoretical foundation of the proposed framework. We then present the framework that identifies EC as a continuum, following the studies reported in [9,30], with three progressive levels of EC, which reflect advancing levels of change agency, from the *individual* to the *transformative* (*social*). The framework applies Schwartz's theory of motivational values to articulate the different levels. The discussion reflects on the framework from theoretical and practical perspectives. From a theoretical perspective, we look at how the framework corresponds with other typologies of sustainability change agents. The practical aspect elaborates on the implication of the framework for educational processes through the notion of an 'adaptive curriculum' that provides the flexibility to adapt and align EEC interventions to different EC-levels, including that of students, educators, and educational institutions.

2. Theoretical Foundations

2.1. Environmental Citizenship

The current environmental crisis is above all a crisis of values [5,31]. Addressing this crisis requires dramatic change in human relationships with the environment, and this involves changing mindsets. A key development in sustainability discourse is the advent of the notions of 'sustainability citizenship' (SC) and 'environmental citizenship' (EC) [6,9,32–35]. Developed within citizenship theory, both SC and EC entail that social and environmental responsibility should be a way of thinking practiced in our lives and daily routines, i.e., a specific mode of citizenship. Such a view of citizenship expects individuals and institutions to behave in ways that maintain the integrity of nature and improve social justice, even if this is not accompanied by a direct personal payoff or reward [6,35]. SC and EC present contemporary modes of citizenship motivated by ecological concerns, which are believed by their proponents to better fit current global challenges [6,9,35]. The citizenship theoretician, Dobson, defines EC as: "Pro-sustainable behavior, in public and in private, driven by a belief in fairness in the distribution of environmental goods, in participation, and in the co-creation of sustainability policy" [6] (p. 6). As such, the notion of EC injects into socio-environmental discourse a robust civic-political perspective that implicates not only how social institutions and organizations address, or should address, sustainability issues, but also, on a deeper level, the ways in which individuals lead their daily lives and engage in promoting sustainability. From this perspective, EC is not merely a social-environmental theory but a profound moral-political orientation of enacting environmentally sustainable behavior in the private, organizational, and public spheres [36] by defining the relationship between individuals and the 'common good'. SC and EC extend citizenship responsibilities to an expanded notion of equity and caretaking and give more weight to universal principles of democracy, human rights, and global commons [9,35,37]. Additionally, they identify the role of individuals as active participants in "co-creating sustainable policy" [6] (p. 6) by focusing on the underlying structural causes of environmental problems, which lie in the economic, social, and political structures that have led to current cultural norms [9]. Thus, some scholars claim that this new version of citizenship has the potential to challenge and change the underlying structural root causes that led to environmental and social justice problems in the first place [9].

EC's commitment to social transformation substantiates that change agency is inherent to EC. For Dobson, EC's key value is "justice between humans" [6] (p. 6). Several key characteristics of EC, according to Dobson's framework, theoretically tie this to change agency: (1) *Other-regarding motivation*—commitment to environmental sustainability as a common good that cannot be achieved through individual self-interest alone, but which requires individual effort for public benefit; (2) *Role of ethics*—in decision-making relevant to PEB, ethical and moral knowledge and considerations are as important as techno-scientific knowledge; (3) *Responsibilities*—good citizenship entails not only rights, but also environmental responsibilities deriving from other peoples' environmental rights. These responsibilities are intergenerational and international. (4) *Arena for enacting citizenship*—conventionally, citizenship action is associated with the public sphere (e.g., voting or protesting). EC adds the understanding that since practices in the private sphere impact the public sphere, responsible citizenship needs to be practiced in our private sphere as well. (5) *Critique of market-based solutions*—EC works toward achieving behavioral change by changing mindsets, which may prove more sustainable than the common non-normative managerial policy of fiscal incentives, which is a reductive (self-interest) view of human motivation. These characteristics correspond with the recent conceptualization of EC (ENEC, 2018) [8].

Like other constructs relating to human attributes, such as environmental literacy [30,38], EC is not a binary characteristic, but rather a continuum of increasing levels of cognitive, affective, and behavioral capacities applied to an expanding range of human–environment interactions [30] and 'levels-of-concern' [17]. We argue that change agency is also a developmental construct, which is seen as a progression from *individual* to *socially transformative* change agents.

Clarification is required regarding the terminology. The distinction between EC and SC is blurred. In the context of achieving sustainability, some citizenship scholars use the term EC (e.g., in [4,6,8,32–34]). Some theoreticians use the term SC [9,35]. Barry [9] specifically distinguishes between EC and SC, arguing that EC reflects a narrower, more minimalist approach that runs the risk of "neglecting the economic, political, and cultural dimensions of sustainability" (p. 21), whereas SC reflects a deeper, more ambitious approach that is not satisfied with changing one's lifestyle, but rather looks to "the underlying structural (political, economic, and social) causes [. . .], such as human rights abuses or social injustice" (ibid p. 24). Barry views EC and SC as the poles of a continuum. The notion of EC, as conceptualized by the ENEC, by addressing the underlying structural causes (see above), reflects Barry's notion of SC. Thus, in this paper, the term EC reflects the deeper, more comprehensive understanding of citizenship presented by Barry as SC.

2.2. Change Agents for Sustainability in the Context of EEC

EC highlights citizens' active participation in effecting deep structural change toward promoting environmental–social sustainability. EC thus envisages the engaged citizen as a social change agent [11,13]. EEC acknowledges this by claiming that education should enable young citizens to identify the underlying structural causes of environmental problems and engage (individually and collectively) in addressing them through enacting critical EC-actions [13]. Bringing about change in the values, beliefs, and attitudes of citizens through EEC goes beyond the unproblematic transmission or promotion of certain sustainable behaviors and views them in terms of personal and cultural identity, including the mindset to challenge the epistemological origins of knowledge and question dominant values [11]. Therefore, EC entails a transformative learning process [39]. Linking civic participation and student activism is central to EEC's approach, as indicated in the strategic positioning of change agents in the ENEC pedagogical model [13] (p. 240).

In the ESE literature, the notion of change agents refers primarily to the engagement of students in the educational process, their active participation in real-world projects (e.g., placed-based pedagogies), and their ability to develop the necessary knowledge and skills to spark change and exercise political power in their household and community [19,40–43]. The development of competent and committed teachers as sustainability change agents has also been accentuated in European policy papers and research into education for global citizenship and sustainable development [1,18,19].

Despite the acknowledgment of the need to develop change agents, there are gaps in the EEC and ESE literature concerning the specific attributes of such individuals, the motivations driving them, the objects of their concern, and the type of change they aspire to achieve. In the organizational literature, it is possible to find models and typologies characterizing different types of change agency as a complex landscape of characteristics regarding how these leaders navigate change processes. A leading example is Caldwell [15], who distinguishes between *leadership, management, consultancy*, and *team* models of change agency. The four models provide a multifaceted articulation of the different roles and actions of change agents in organizations. Van Poeck et al. [16] address change agents in the context of promoting sustainability and the implication for learning within the organization. They distinguish among types of change agents in relation to how they relate to two areas of tension in learning: Instrumental vs. open-ended approaches to change and learning and personal involvement vs. detachment from values associated with the issue being addressed. On this basis, they identify ideal typologies: *Technician, mediator, convincer*, and *concerned explorer*. They demonstrate how change agents may move among types according to specific situations.

Change agency for sustainability in the context of corporate organizations has also been linked to motivational values or 'sources of meaning' [17], particularly self-transcendence (acting beyond self-interest). This is particularly pertinent to the present context, given the deep connection between motivational values and the propensity to promote deep structural change toward sustainability [5]. An important contribution of Visser and Cranes'

work is the recognition that sustainability change agents are not homogenous in terms of their value-motivations or sources of meaning. They distinguish among four types of change agents: *Experts*, who find satisfaction from 'doing' and achievement; their level of concern is the individual, and their source of meaning is impact on the sustainability of a project or personal development; *facilitators*, who focus on relationships rooted in empowering people; their level of concern is the group, and their source of meaning is self-transcendent, enabling people to change their views and thus resonating Mezirow's [39] changing frames of reference; *catalysts*, who focus on creative values and dedication to a cause; they have the "big picture" perspective, their level of concern is the organizational level, and their source of meaning is influencing top management to achieve strategic change; and *activists*, whose source of meaning is also self-transcendent, but in contrast to the facilitator, they focus on broader socio-environmental issues, improving societal conditions and community wellbeing; their level of concern is society at large.

In educational discourse, there is a growing body of research on the skills and competences that sustainability change agents need to possess, particularly in the context of higher education [20,44,45] and teacher education [19]. Relevant skills and competences include system-thinking, interpersonal skills, environmental knowledge and management, conflict resolution, anticipation skills, and social responsibility. There is also an emerging consensus that real-world learning methods are likely to contribute to the interdisciplinary and transformational competencies that sustainability change agents need [19]. For example, problem-and project-based learning have been found to be effective in developing the competences and skills for change agents [46]. Service learning or community-based learning [47] have been effective in promoting deep and reflective learning. Lozano et al. [20] further note that change toward sustainability can span from minor to radical evolutionary changes, which can be applied also in various forms, from non-intervention to radical intervention. Thus, sustainability change processes can be seen as a range or continuum reflecting differing levels of competence and engagement and a different extent of change [20].

The notion that teachers act as change agents is not new [48]. More recent literature [18,19] identifies different levels at which teacher change agency can transpire: The student or classroom (engaging learners in critical reflection, moving beyond knowledge transmission to expose students to different perspectives and designing meaningful learning environments), the school level (reflecting a wider vision by promoting a whole-school approach that incorporates sustainability across disciplines, involving diverse school community stakeholders and networking), and the social level (teachers engage in more controversial, political SD issues and are social activists). The ENEC EEC pedagogical model [13] also identifies three scales of change toward sustainability: Local (school), national, and global, indicating that change agency can be directed to increasing levels of influence. This recent pedagogical model also identifies two dimensions in which actions promoting change can be conducted—individual or collective—as well as two spheres for enacting EC—the private sphere and the public sphere. Thus, this model enables the characterization of EC actions according to three axes: Their dimension (individual/collective), their sphere (private/public), and their scale (local/national/global). According to this model, recycling, for example, is identified as an individual action conducted in the private sphere and at the local level. Writing a letter to a minister is considered an individual action conducted in the public sphere and at the national scale. Organizing an environmental campaign or protesting is a collective action conducted in the public sphere at the national scale. The call of the young environmental activist, Gretta Thunberg, for global leaders to take action against climate change is identified as a collective action for change, conducted in the public sphere at the global scale.

In light of the inherent links between EC and change agency, we argue that EC can be framed as a continuum of progressing levels of change agency that reflect (1) differences in motivational values [17], (2) expanding 'levels-of-concern' [17–19], from the individual (e.g., students), through the group (e.g., school, in-group, local community), to the

societal (e.g., broader community or society), as well as (3) an increasing extent of change that is promoted in different contexts and levels-of-concern, from change in individual behavior via actions conducted within the private spheres (e.g., consumption choices), through civic participation in the local environment or community (including participation in decision-making and engagement in the consequent actions), to more socially transformative participation (e.g., environmental activism and involvement in pro-environmental social movements aimed at bringing about structural change). Building on transformative educational leadership discourse, especially that articulated by Shields [3], it is possible to claim that transformative change agency constitutes high-level (societal level) EC.

In order to articulate transformative change agency, we apply Shields transformative leadership theory [3,49], which may be regarded specifically as 'change agent leadership' [50]. Shields [49] conceptually differentiates between transformational and transformative leadership. Whereas transformational leadership is more about changing behavior and the organizational culture, which operates more effectively and promotes greater achievement, transformative leadership is essentially centered on promoting democratic values, countering social injustices, and supporting the ongoing restructuring of power-relations within organizations and in the wider social context. This distinction between behavioral change that works toward a greater effectiveness within the existing structure (i.e., transformational) and more profound change processes aimed at transforming existing structures (i.e., transformative) echoes the distinction between 'shallow' and 'deep ecology' approaches to addressing environmental challenges [5,51,52]. Deep ecology, in contrast to shallow ecology, is not satisfied with treating or preventing environmental problems and neglecting inequalities between over- and under-developed countries; it is rather normative and looks at the deeper issues that raise profound questions regarding the paradigm on which current Western societies are based. Thus, values are critical to deep ecology [5,52]. Furthermore, it aligns with the distinction put forth by McDonough and Braungart [53] between 'Eco-efficiency' and 'Eco-effectiveness' in their 'Cradle-to-cradle' approach. 'Eco-efficiency', as an industrial strategy, does not reach deep enough with respect to changing industrial production toward sustainability; it works within the same system that causes the problem, making it less environmentally destructive. Conversely, 'Eco-effectiveness' is based on a deeper approach that considers the larger picture—the cultural, commercial, and ecological system in which production is embedded—and addresses the deep changes necessary from a systemic perspective.

Moreover, the focus of a transformative approach is not "business as usual" [3] (p. 11). Thus, it better suits a VUCA world. Transformative leadership or change agency consists of the willingness to take personal and professional risks in the name of social justice, particularly as stakes increase and resistance mounts [54]. Kose and Shields [55] have argued that transformative leadership (i.e., change agency) is the leadership type best suited to addressing and promoting sustainability concerns, because: "It […] holds the potential to break through the disciplinary boundaries and lead to what Burns called revolution—'a complete and pervasive transformation of an entire social system'" (p. 278). Kose and Shields specified four basic characteristics that link transformative leadership to sustainability: (1) Effecting deep and equitable change that focuses on emancipation, democracy, equity, and justice; (2) deconstructing and reconstructing knowledge frameworks that perpetuate inequity and injustice, including the inequitable distribution of power; (3) emphasizing both the private and public (individual and collective) good and the need to acknowledge the interdependence of all people and the inter-connectedness with the natural world; (4) balancing critique with promise and exhibiting moral courage. These echo the desirable attributes of what we identify in the proposed framework (see below) as high *social-level* EC or *transformative change agents* (TCA).

2.3. Connecting EC to the Schwartz Theory of Motivational Values

The deep connection between behavioral change and values is well documented in the literature [21,22,24,25,56] and specifically the fact that environmental problems are rooted

in human values [5,57]. Schwartz's theory of universal values [25,58] has been widely used to connect PEB to values (e.g., in [23,56,57]) and key leadership constructs to values [59]. The connection of change agency to motivational values, which is central to EC and EEC and is therefore the focus of the proposed framework, has received less attention [17]. Since Schwartz's theory serves to ground our EC framework and its connection to change agency for sustainability, we shall first briefly introduce Schwartz's theory and then note how it has been used in the context of research connecting PEB to motivational values.

Schwartz [25,58] specified ten distinct types of motivational values and placed them on a circular continuum (Figure 1). The organization of these values on a circular continuum implies that the whole set of ten values relates to any other variable (behavior, attitude, age, etc.) in an integrated manner [58]: The closer the ten values are situated on the circular continuum (in either direction), the more similar their underlying motivation. According to the Schwartz model, these ten (later 19) [60] values can be grouped into four higher-order values, forming two dimensions: Openness-to-change (OC) versus conservation (CONS), which reflects the individual's conflict between valuing independence and inclination toward change, as opposed to resistance to change; and self-enhancement (SE) versus self-transcendence (ST), which reflects the individual's conflict between valuing self-pursuit, power, and achievement, as opposed to valuing the concern for and welfare of others. Schwartz's revised 19-value model has been shown to correspond to the original ten-value model (including the two higher-order value dimensions), with additional reference to environmental aspects [60,61].
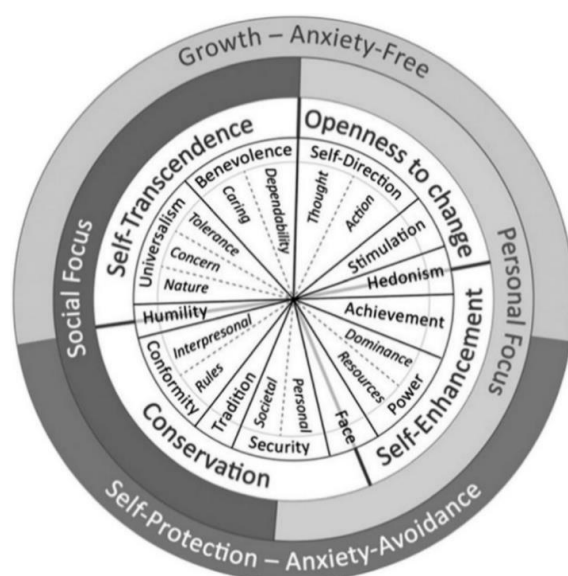

Figure 1. The revised Schwartz 19 value model of universal values (Source: Schwartz et al., 2012), [60].

Previous studies have noted the positive relation between ST and PEB and the negative relation between SE and PEB [57,62]. Apart from a few exceptions [23,57], the connection between PEB and the CONS-OC dimension of Schwartz's model, it has received less attention in the literature. Basing their claims on both theoretical and empirical evidence, some scholars who employ the Schwartz model in the context of PEB claim that it clearly distinguishes between altruistic and biospheric values [62,63], both of which compose the ST higher-order value. In other words, the altruistic and biospheric elements of ST should be treated separately, rather than under a unified ST orientation. Those holding altruistic value orientations are more likely to choose PEB for the benefit of other people, while those holding biospheric value orientations will exercise PEB if it stands to benefit the ecosystem or the environment. Additionally, biospheric values were found to have the most positive effect on PEB [57,62]. Despite this empirical evidence suggesting the importance of distinguishing altruistic and biospheric value-orientations, in our proposed framework,

we do not distinguish between them, based on the following consideration. According to EC-discourse, social issues, problems, and injustices are interconnected with environmental-biospheric issues, problems, and injustices [55]. This may be one reason for the fact that, when analyzed as single value predictors, "biospheric and universalism values behave comparably in their effect on behavior" [62] (p. 243). A basic understanding of PEB (and, more specifically, EC) is the inherent interdependencies between social and environmental issues. While there are differences between anthropocentric and ecocentric values and attitudes in relation to PEB, both orientations are present in a comprehensive understanding of EC. We argue that, from the perspective of change agency for sustainability, the clear distinction between altruistic and biospheric value-orientations does not do complete justice to the notions of EC behavioral-change, and we shall thus refer to the higher-order value of ST to account for behavioral change that targets both social and environmental injustices.

3. A Multi-Level Framework Connecting EC and Change Agency

Building on Roth's three-level conception of environmental literacy, we propose a framework that conceives EC as a continuum of developing motivations for promoting sustainability. The framework applies Schwartz's bi-dimensional organization of motivational values (Figure 2) as a theoretical scaffold to distinguish three levels of EC and articulate corresponding levels of change agency. Each of the three levels is presented in relation to Schwartz's higher-order values: Self-enhancement–self-transcendence (SE-ST) and conservation–openness-to-change (CONS-OC). The combination of the higher-order values of ST and OC is necessary to adequately account for EC and change agency: ST reflects the motivation to act beyond self-interest for the common good [37,49], and OC reflects the motivation to engage in change-oriented actions. Thus, both EC and change agents can be measured against the degree to which citizens are motivated to change, specifically directed to the common good, at times at the expense of their short-term self-interest.
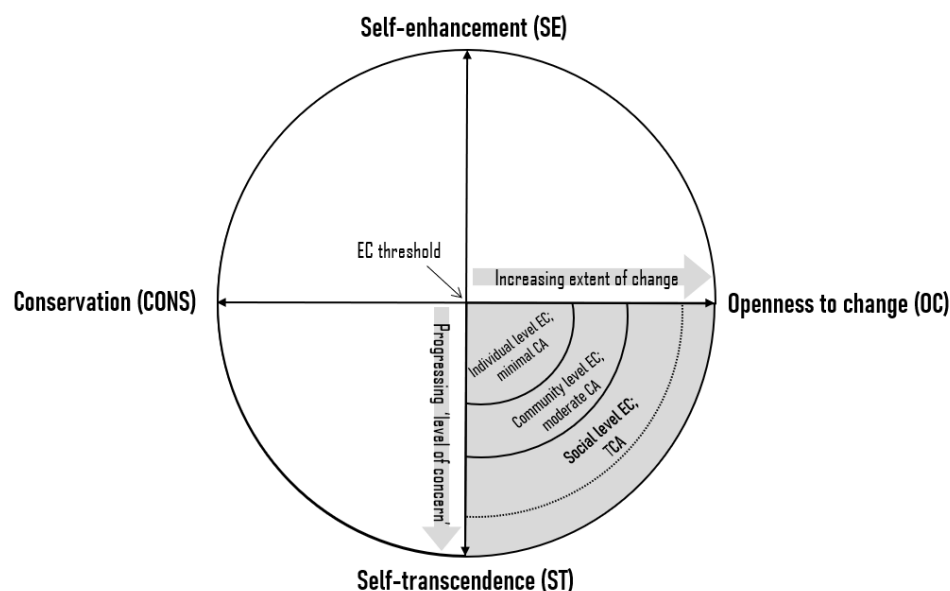

Figure 2. Three-level EC framework applying Schwartz's theory of universal values (EC—environmental citizenship, CA—change agents, TCA—Transformative change agents).

Individual level EC—Regarding the SE-ST dimension, individuals are experiencing some extent of personal change in their frames-of-reference [27,39], leading them to an awareness that their personal lifestyle impacts others' well-being and welfare. Even at this basic EC-level, individuals comprehend that decisions made in one's personal life have implications for the 'common good'. Nonetheless, the extent to which individuals are willing to act for others' benefit (i.e., are motivated by self-transcendent motivations) is limited to actions that also have personal benefits or do not entail taxing personal tradeoffs.

Accordingly, while individuals at this EC-level may exhibit a stronger commitment to OC (self-directed behavior, stimulation, and risk-taking), this commitment is restricted to change that concerns or impacts the individual self. When change is for the benefit of others at the expense of their own personal benefit, they demonstrate more moderate commitments to OC. At this first level, change agency is limited in terms of the levels of concern and extent of change.

Community-level EC—Regarding the SE–ST dimension, individuals are characterized by an increased relative importance of self-transcendence values in relation to self-enhancement values. At this level, the focus broadens beyond the individual self to encompass one's 'in-group', social community, or affiliations. This wider perspective is expressed by a greater propensity toward enhancing and protecting the welfare of those belonging to one's in-group. A person will be willing to make greater behavioral tradeoffs when these favor the 'good' of one's immediate social group, even at the expense of one's own self-interest. Regarding the CONS-OC dimension, the motivation to adopt a change-oriented mindset (e.g., willingness to engage in more demanding behavioral change, risk-taking, and openness to challenges) is enhanced and directed not only to oneself, but also to changing individuals belonging to one's in-group. We claim that the combination of these attributes (in both dimensions) at this level reflects moderate change agency. In educational contexts, for example, a student at this level is motivated to affect the EC dispositions and behaviors of his/her peers (fellow classmates) or family-members. It is emphasized that, in the context of the proposed framework, movement along the CONS-OC continuum must be associated with the SE-ST continuum. Only change-oriented thinking and behavior that is accompanied by a greater tendency toward self-transcendence values constitutes the type of openness-to-change applicable to change agency for sustainability. For example, effecting change within one's workplace (e.g., a more efficient use of the organization's resources) is in line with the meaning of moderate change agency only when such change-processes are associated with ST-values, such as diminishing gender and salary inequalities and promoting equal accessibility to a healthy work environment. A similar example is reducing the school's ecological footprint by providing food services based on locally grown food (reducing the carbon footprint and supporting the local economy) only when these food options are economically accessible to all students and do not exclude students from low-income families.

While a lot of studies use the higher-order value of ST in relation to PEB, some researchers emphasize the necessity to distinguish between the two values that comprise ST: 'Benevolence' (altruism is narrower and directed toward protecting and enhancing the well-being of one's in-groups) and 'universalism' (altruism is broader and directed to the well-being of all people and nature), since each may affect PEB differently [57,62,64]. Our proposed framework aligns with this empirical evidence regarding the behavioral distinctions between these ST-values. At the *community-level EC (moderate-level change agency)*, 'benevolence' outweighs 'universalism'.

Social-level EC—At this level, regarding the SE-ST dimension, self-transcendence values outweigh self-enhancement values: The individual is characterized by an increasingly universal or cosmopolitan perspective [37], according to which the level of concern is society-at-large [17] and expands beyond an intra-generational perspective to include an intergenerational perspective (future generations). For example, establishing a student 'green-council' as a statutory body of the school's organization that will impact future students at the school. The person will be willing to make more taxing tradeoffs at the expense of one's own benefits in terms of the time and efforts that are directed towards promoting the welfare of society-at-large and the environment. Regarding the CONS-OC dimension, the change is deep in the mindset of the individual. At this level, the individual change-agent is not satisfied with only effecting change in others, but also aspires to change the 'rules-of-the-game', namely, the existing norms that determine socioeconomic infrastructures and political decision-making processes. These actions may include engaging in public policy issues, legislation, and other societal 'leverage points' or social structures

affecting people's thinking, social norms, and behaviors [22]. Following the previous examples, a student at this level will be motivated to engage in activism targeting change in the school's policy and organization regarding the adoption of sustainability principles. By seeking profound change, this perspective reflects the 'deep ecology' perspective [5,51,52]. According to the proposed framework, the *social-level EC* reflects *transformative change agency* (TCA), since individuals' motivation and behavior reflect a type of change agent that extensively applies socially transformative attributes, namely, a combination of a high commitment to democratic citizenship values (self-transcendence pole) and a propensity toward deep change (openness-to-change pole), specifically moral courage to confront structural root causes (e.g., top-down school management practices regarding food options that are determined by pre-existing political and economic interests).

Figure 2 visualizes the integration of the three EC-levels with Schwartz's circular bi-dimensional model. The starting point for visualizing the *individual-level* EC is the mid-point on the SE-ST dimension. We postulate the mid-point as the threshold, because commitment-levels to ST below this point 'tip the scale' too far toward self-interest at the expense of the common-good. The mid-point represents a mindset that is still predominantly focused on oneself. A position beyond this mid-point towards the ST-pole reflects an increasing commitment to the welfare of others at the expense of one's immediate self-interest. Similarly, concerning the CONS-OC continuum, we propose placing the threshold for the *individual-level* EC also at the mid-point, since commitment at this level represents a change-oriented mindset that is focused primarily on change concerning individuals' actions. A position below this mid-point represents an excessive commitment to the conservation of existing norms and practices that, in the context of EC, are unsustainable both environmentally and socially. Movement beyond this mid-point reflects an increasing commitment to the type or depth of change. The SE-ST dimension reflects developing change agency mainly in relation to the 'levels-of-concern' (from oneself, through the social group, to the broader society), and the CONS-OC dimension reflects developing change agency mainly in relation to the extent and depth of change (from individual behavior, through engaging in local decision-making, to impacting social norms, policies, and legislation).

Several clarifications or boundary conditions should be made regarding this framework:

(1) The CONS-OC dimension must be linked with the SE-ST dimension: Only change-oriented thinking and behavior that is accompanied by a greater tendency toward self-transcendence values constitutes the type of openness-to-change applicable to change agency for sustainability. For example, at the *community-level EC*, effecting change, such as reducing the ecological footprint of one's organization, necessarily means that one is working on behalf of the *welfare of others* belonging to this organization, rather than for the instrumental benefits of the organization itself or of selected groups within it. Similarly, concerning the *social-level EC*, profound change that is intolerant to the welfare and rights of the broader society or the environment, but promotes the benefit only of certain groups or individuals, cannot be considered as *transformative change agency*. Only when deep societal-institutional change processes are linked to a greater commitment to the values of 'benevolence' and 'universalism' (social justice) are they applicable to the meaning of TCA.

(2) The distinction between 'benevolence' and 'universalism' [25] concerning the different effects these values have on PEB has found empirical support in previous studies [62,64]. Accordingly, in the proposed framework, at the *community-level EC*, the relative importance of 'benevolence' is greater than that of 'universalism', while at the *social-level EC*, the relative value of 'universalism' is greater. Nevertheless, the overall commitment to the higher-order value of ST will be greater at level three, relative to level two.

(3) Each EC-level represents, within itself, a range of motivations, commitments, and change-agency actions. For example, there are various degrees of *social-level EC* that reflect differences in the relative importance of moral concern in relation to self-interest (e.g., economic) concerns. Based on various psychological treatments of moral moti-

vation [65], as well as Shields [3] and Redekop's [66] realistic understanding of what ethical leadership entails, it can be expected that even those acting out of *social-level* ST motivations might be motivated by (albeit weak) commitments to self-interest. In other words, there may be differences in the kinds of actions undertaken and the degree-of-risk that TCAs would be willing to take. The coexistence of self-interest and moral inclination occurs in moral exemplars [65], for which moral action (concern for others) and self-interest (identity development) are reconciled in a model of personal development, since both motivations (care for oneself and care for others) constitute an ego-identity that is freed from inner-conflict. While Schwartz's model positions self-interest values (power and achievement) as conflicting or interfering with other-regarding values, it is certainly plausible that TCAs will also be motivated by self-interest motivations. Having said that, the general orientation of the present framework is that in cases of inner conflict, TCAs are motivated more by self-transcendent interests than by self-interest.

(4) The model assumes, in keeping with the literature, that promoting sustainable development goes together with promoting social justice, i.e., that increasing commitment to change toward more significant PEB is positively related to increasing concern for social well-being. Despite this, in view of the complexity and sophistication of human psychology and behavior, we are aware that there are circumstances that the framework does not account for, reflected in the different placement of the individual on each of the two dimensions: Individuals who are highly motivated by ST values and yet, in practice, exhibit relatively lower levels of OC reflecting *individual-level* change agency. Such cases may occur when external factors (e.g., available infrastructure or economic limitations) or internal factors (e.g., the self-confidence or self-efficacy level) inhibit the individual's motivation to engage in significant behavioral change. For example, individuals expressing a high OC (strong motivation to bring about significant behavioral change accompanied by greater tradeoffs, but who are directed to lower levels of concern (oneself or in-group). Such situations do not refute the model but demonstrate the wide range of possible placements of people along the two dimensions in reality. The framework provides a means to locate such individuals and determine the aspects in which EEC efforts can be directed.

4. Discussion

The discussion examines the proposed framework from theoretical and practical perspectives. From a theoretical perspective, we will discuss how the framework, which looks at EC and change agency as developmental continuums, relates to the literature on change agents [15–17] and motivational values [23,57,62]. From the practical perspective, we will address curricular insights for EEC derived from the framework.

4.1. Tying the Framework to Change Agency Discourse

The framework presented above aligns with other approaches to EC and closely related concepts, such as 'environmental literacy' [30] and 'sustainability citizenship' [9], perceiving EC as a continuum of developing cognitive, affective, and behavioral capacities. According to Roth, environmental literacy represents a continuum of abilities and involves levels of proficiency, i.e., stages of accomplishment along the continuum that reflect increases in knowledge, clarification, and a strengthening of dispositions and refinement of competencies, which together will be expressed in more sophisticated and effective behavior applied to a wider and increasingly more challenging range of human–environment interactions [67,68]. This is also reflected in Barry's [9] distinction between EC and SC: The movement from EC to SC reflects a developmental progression toward deeper and wider consideration beyond strictly 'environmental' concerns, to include a broader understanding of the social and economic aspects of EC as well as the social structural causes of environmental unsustainability. As earlier indicated, the meaning of EC in the proposed framework corresponds to how Barry conceives SC.

Empirical support for a three-level EC framework is found in a study that investigated the motives of Higher Education students to elect sustainability-oriented programs [69]. This study found that gaining 'procedural knowledge' (i.e., critical thinking capacities necessary for evaluating alternative courses of action and socio-political skills necessary for citizen participation) was one of their major motives in electing these programs. More pertinent to our proposed framework, this motive was expressed in reference to three expanding 'objects-of-influence': The self, the social group, and the community-at-large. Aspiring toward change in one's own personal lifestyle parallels the *individual-level* EC, influencing the school-community parallels the *community-level* EC, and at the broadest level, developing as environmental activists who influence the community-at-large parallels the *social-level* EC. Thus, the three EC-levels proposed in our framework finds empirical support in the identification of the three 'objects-of-influence' in the study of sustainability-oriented students.

The proposed framework connects EC-levels to change agency. Visser and Crane [17] indicate a gap in the literature on change agents for sustainability concerning a lack of attention to the psychological drivers, specifically the *motivational values*, that characterize the mindset and actions of change agents at different 'levels of concern'. The proposed framework addresses this gap by applying Schwartz's theory as a theoretical basis for understanding EC and, particularly, change agency. Whereas most studies applying Schwartz's theory to PEB focus on the ST-SE dimension [56,57,62], connecting EC and change agency with the CONS-OC dimension is less self-evident and has received less attention in the literature on values and environmental behaviors [62]. The present framework also incorporates the CONS-OC dimension as a theoretical basis to account for change agency attributes. Briefly, the more one is motivated by self-direction, risk-taking, and stimulation (value-attributes of openness-to-change), the more one will be willing to engage in more significant and taxing behavioral change. While some research has found a positive association between [Schwartz's] conservation values, such as 'conformity', with PEB [62], the proposed framework assumes a negative relation between conservation and PEB values, as these are inconsistent with EC attributes. This does not imply that the value of 'conformity' (to environmentally-responsible norms and regulations) is necessarily inconsistent with PEB; rather, what is implied is that 'conformity' is inconsistent with change agency for sustainability, since EC is inherently critical of the current environmental–social reality, continuously striving to change for the better the entire spectrum of social practices, norms and, at its highest level (TCA), the rules-of-the-game, irrespective of the current sustainability baseline. Katz-Gerro et al. [62] claim that future work must explore this connection, since findings regarding the association between 'conformity' and environmental action are inconsistent, which is possibly due to cultural differences. In line with this, we assert that with respect to both traditional and modern societies, the tension between OC and CONS takes on a different form in each type of society. Traditional societies, on the one hand, can contribute 'traditional ecological knowledge' [70] for promoting sustainable management in various areas, thus supporting the motivation toward CONS. On the other hand, the same traditional societies often exhibit, from a liberal-democratic perspective, unjust social norms and practices, such as autocratic authority, gender discrimination, and internal economic gaps [71], which would support the motivation for OC toward enhancing social justice. Concerning modern hyper-consumerist societies, while they may be more open to change on the social justice agenda (particularly regarding cultural minority and gender rights), it is self-evident that the very logic of consumer lifestyles involves the conservation of unsustainable norms and practices. The latter necessitates the changing of values away from CONS toward a greater openness to behavioral tradeoffs (economic or effort) at a personal and societal level, which is necessary for achieving environmental–social sustainability [72]. Two arguments address this complexity concerning the CONS-OC dimension. First, since environmental and social aspects are inseparably interlinked in the concept of sustainability, the conservation of traditional lifestyles that are offensive toward social justice are incompatible with the notion of sustainability. Second, based on the contribution

of cultural diversity in promoting a resilient sustainable society [2,5], the acknowledgment of the worthiness of traditional knowledge presupposes *openness* to the value of 'diversity' in the context of a human society. Such a perspective, we argue, reflects a high commitment to openness-to-change.

The framework aligns with current conceptualizations of EC [13] and change agency [17,18] that distinguish between scales or levels of change agency action. Bourn [18], for example, distinguishes between the role of teachers as change agents in the classroom, the school, and the wider society. Visser and Crane [17] identify different 'levels-of-concern': Individual, group or team, organization, and society. The three EC-levels, and their respective change agent levels, identified in the proposed framework share affinities to Visser and Crane's qualitative typology of change agency: The *individual-level* EC/change agency resembles the 'Expert' type change agent described by Visser and Crane in its limited focus on individual development, indicating a less taxing change-oriented other-regarding behavior. The *community-level* EC/change agency of our framework resembles both 'Facilitators' and 'Catalysts' in that it extends the focus to wider social circles (in-groups, the organization, or the community): The focus on relationships, empowerment, and promoting change in others' views ('Facilitators'), as well as the focus on the bigger (organizational) picture ('Catalysts'), resembles the extended level of concern that characterizes *community-level* EC/change agents. The *social-level* EC/*Transformative Change agent level* of our framework resembles the 'Activist' type [17] in that it adopts a critical outlook that addresses social causes of unsustainability and focuses on social injustice issues and promoting wellbeing at the broader societal level. Connecting the proposed framework to the recent EEC pedagogical model [13], the individual-level EC/change agency of the framework proposed herein can be aligned with the individual dimension and private sphere of the EEC pedagogical model, the community EC/change agency level is more aligned with the collective dimension and the private sphere, while the social EC/change agency level corresponds to both the collective dimension and public sphere. Thus, the proposed EC framework offers a comprehensive view that is theoretically grounded on both dimensions of Schwartz's theory of motivational values, distinguishing among qualitatively different change agency types that correspond to the change agency literature but arguing that these qualitatively different types also reflect increasing levels of change agency, which are reflected in expanding levels-of-concern (i.e., individual, community, and society), and an increasing extent of change that is promoted. This contribution also applies to the EEC pedagogical model: we claim that the different combinations of dimensions and spheres of the EEC model can be organized as progressing levels of change agency motivations and commitment. This framework also provides a basis for developing tools for measuring the influence of EEC on individuals' change agency level.

4.2. Curricular Implications of the Framework

Several curricular insights derive from the proposed framework. The framework's contribution lies in two major claims: (1) Developing and cultivating EC is deeply connected to developing change agency through educational processes based on transformative learning, specifically cultivating a critical consciousness and critical cognitive and action skills. (2) Since individuals are positioned differently on the EC continuum, it is necessary to adapt EEC to the learner's EC level. Such an adaptation essentially transforms the curriculum into a dynamic curriculum that changes according to the needs and context. These claims are elaborated in the following:

(1) Developing change agency attributes: Leadership and critical consciousness—The proposed framework highlights the centrality of *leadership personality* aspects that include developing an internal locus-of-action, entrepreneurial character, the ability to assume responsibility, and, therefore, risks. A curriculum committed to EC is envisioned to work in all its aspects to develop change agents characterized by an *internal locus-of-control* [73], who take responsibility for their actions (including learning), are motivated to bring about change for the benefit of society and the environment, and

have the competences necessary to promote collaborative and participatory initiatives. A curriculum that strives to develop value-oriented change agents places at the core of its pedagogical work the development of skills for autonomous thinking and action, creating partnerships, initiating change, and exercising the moral courage to take risks, which are often associated with profound change. Accordingly, the proposed framework implies an EEC curriculum that corresponds with constructivist transformative learning theories, which emphasize the meaningful construction of knowledge via practical learning experiences, namely, engagement in experiences and activities, which is a pedagogical praxis connecting initiated action and reflection [74,75]. Such a curriculum reflects a deep-change pedagogy that develops the learners extended responsibility through the learning process and encourages community involvement based on authentic participation [76–78], which have greater potential for cultivating active EC.

Additionally, the proposed framework underscores the importance of cultivating a *critical socially ethical personality*—a state of mind that is mindful of and alert to one's environment and of situations of social injustice and harm to the social-physical environment. EEC implies a curriculum that develops in the learners, starting from young childhood, an awareness of environmental challenges, of issues of social injustice and importantly, and of the connection between these [2,40,55,79]. The *critical* approach is central in both social justice discourse and EC discourse [9,13,37]. Developing a critical consciousness is dependent on several elements of the learning process: exposing learners to case studies and examples that reveal injustice and exclusion, cultivating a political awareness and critically reflective thinking that ties everyday actions to mistreatment and injustice. Accordingly, the proposed framework implies an EEC curriculum based on a place-based pedagogy, as this makes the local sociocultural, political, economic, and environmental phenomena part of the students' learning experience. Taking this further, an EEC curriculum based on the 'critical pedagogy of place' [40,80], by combining place-based and critical pedagogy approaches, emphasizes looking at how economic and political decisions impact the places where the learners' live and supports developing transformative (*social-level*) change agency attributes. Tying into this, Mezirow [27] aspires to promote critical thinking via two cognitive means: critically reflective thinking and reflective judgement. Nurturing these two qualities, which makes learning transformative, should be central to the curriculum from an early age. From a transformative perspective, enabling behavioral change is tied to change in the individual's awareness of his/her values, and transforming motivational values is the outcome of developing this form of reflective awareness. The framework proposed herein views these pedagogical means (i.e., the 'critical pedagogy of place' and transformative learning) as the foundations for developing change agents. Education that moves from a critical approach directed mainly towards oneself (e.g., exploring one's own ecological footprint) to the motivation and ability to recruit and lead others to such an awareness (e.g., convincing one's family to explore and change its ecological footprint or convincing the school to investigate the school's ecological footprint).

(2) Adapting EEC to the individual's EC level—The movement to adapt learning to the needs, learning abilities, and the world of the individual is not novel; adapting learning has been deliberated in the context of the personalization of public services, including education [81], in the context of adapting education to the individual's autonomy [82] and, more recently, in the context of adapting learning to the 21st century. These and additional aspects are increasingly evident in current educational policy papers, which insist on making curricula more "adaptable and dynamic" so as to reflect the evolving societal requirements and individual learning needs [83] (p. 18). The premise of our framework is that individuals differ in their EC-level, and EEC cannot therefore be based on a "one size fits all" curriculum [29,78]. Just as learning needs to be adapted to the students' needs and skills, so EEC should be adapted to the diversity in the students' motivational values and EC-competences. An adaptive EEC curriculum enables us to distinguish among students not only by

their different levels of academic skills (relatively easily assessed), but also different levels of motivation to act as change agents for sustainability. The given EC-level will influence various aspects of the learning process and student–teacher relations, such as the degree of students' autonomy in the learning process, the environmental–social issues selected as the focus of learning, and the nature of the educational activities in which the students are engaged. The proposed framework, in its multi-level structure, contributes scaffolding to such an adaptive curriculum.

The implications of the framework for curricular design can also be considered from the perspective of educational organization. The extent of adaptability is influenced in part by the location of the organization or school culture on the EC continuum. The higher the organization's EC-level, the higher its ability to adapt the curriculum and organizational processes to the learners' needs, motivational values, knowledge, and competences. This is because there is a connection between the position of the curriculum on the EC continuum and the extent to which it realizes democratic tenets: at the higher (*transformative*) level of the EC continuum, the school is more committed to principles of democracy and values of social justice. This is reflected in its implementing participatory decision-making processes, its less hierarchical internal power structure, and its affording students more autonomy and the ability to actively engage in their surrounding environment. These democratic characteristics allow the educational organization to become more flexible and dynamic in terms of the pedagogical–curricular processes taking place [84].

Viewing EC as a developmental continuum offers EEC flexibility and modularity (i.e., adaptability) and opens up opportunities for adapting the learning to the student's and school's placement along this continuum. While the proposed framework sets the goal of developing the organization, school staff, and students toward the *social-level* EC and *transformative change agency*, the increased flexibility and adaptability of the educational organization at this level implies that it is better equipped to tailor the curriculum and learning processes to the motivational level of the learners, in addition to those exhibiting characteristics of the *individual-level* EC and below.

5. Conclusions

Developing change agency is identified as one of the aspirations of ESE [1]. In line with this, the ENEC EEC model positions change agents as catalysts for promoting sustainability [8,13]. Therefore, it is crucial to take an in-depth look at the essence of change agency and inject it with content and meaning relating to the motivations that drive individuals to act as change agents and the type and extent of change they aspire to achieve. This was the focus of the EC framework proposed herein. Furthermore, we consider the practical implications for implementing meaningful EEC.

The proposed framework also has various conceptual and methodological implications. Conceptually, it advances the understanding of change agency and EC by relating them to Schwartz's theory of universal values, thus providing an additional grounding of the concept of change agents in socio-psychological theory. Specifically, understanding change agency and EC through the two dimensions of Schwartz's model better clarifies the kinds of motivations and practical action tendencies defining change agents. By conceptually linking EC and change agents, the framework provides an analytical foundation for the role of change agents in the EEC pedagogical model [13].

From a methodological perspective, there is a paucity of empirical study of both EC and change agency. The development of validated instruments for measuring these constructs is in its infancy. The new EC questionnaire [85] provides a novel contribution. The proposed connection to Schwartz's model (and instruments) offers fruitful methodological grounds for future empirical investigations, particularly for gaining a better understanding of the relation between EC and change agency. Additionally, the three-level EC framework offers a methodological tool for investigating the different levels of change agency in different social and organizational contexts.

Aside from the boundary limitations of the framework pointed out above (see clarifications following the depiction of the framework), future work on this EC/change agency framework would be to validate it through empirical research. An initial step would be to explore the correlation between the four higher order motivational values of Schwartz [58,60,61] that provide the scaffold of the proposed EC/change agency framework and environmental values tools, such as the well-established 2-MEV [86]. A following step would be to empirically investigate if individuals' motivational values can be profiled along a three-level scale (individual, community, and social) by employing validated tools for assessing environmental actions. We are currently engaging in empirical study addressing these steps, the findings of which will be the focus of a forthcoming paper.

Two central curricular implications for EEC derive from the proposed framework, as elaborated in the discussion (see Section 4.2 "*Curricular implications of the proposed framework*"): (a) Developing leadership and a socially critical consciousness are essential for fostering change agents, and (b) effective EEC entails adapting the learning to the EC-level of the learners and the educational organization. The proposed multi-level change agency framework contributes a scaffold for this purpose.

To conclude, the framework provides a platform for future work and research on EEC in three channels: (1) Designing effective EEC curricula, given the challenges associated with incorporating EEC in many current school frameworks; (2) developing tools for assessing the change agency levels of schools, programs, and learners, as a component of adapting EEC to different educational contexts and thus supporting more effective EEC; and (3) providing a conceptual foundation for planning teacher training and professional development.

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