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Research Article

Bridging Differing Theoretical Perspectives On Sustainable Higher Education For Effective Implementation- Towards An Integrated Model

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Abstract: Education for Sustainable Development (ESD) is a significant force in equipping future professionals and leaders with sustainability competencies and thereby transforming societies. However, it is clear from the literature that Higher Education Institutions (HEIs) do not completely comprehend the idea behind this challenge. ESD has been implemented in different ways and most of the Higher Education Institutions (though a lot of efforts have been done in this sector in the last decade) do not have a clear cut strategy for education for sustainability. In this paper we suggest a good starting point for the implementation and evaluation of ESD in HEIs. Due to the interconnectedness of different practices, presence of multiple stakeholders and the multi dimensionality of the concept, the ESD model for HEIs require a design with theoretical inspirations from different schools of thought. This article discusses the outcome based theoretical approach to ESD and develops an integrated, holistic and inclusive model – Transformative Human Development Model- for the realization of ESD in HEIs.

Keywords: Education for Sustainable Development, Transformative Human Development Model, Higher education, Capability theory, Transformative learning, Change theory

Introduction

The conception, development and implementation of innovative, result oriented ESD programs and practices in higher education institutions demands a multi dimensional, well inclusive, and structured theoretical framework. "Education for Sustainable Development (ESD) is commonly understood as education that encourages changes in knowledge, skills, values, and attitudes to enable a more sustainable and just society for all. ESD aims to empower and equip current and future generations to meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development" (UNESCO, 2018).

ESD has been implemented in different ways and the instructional design is not well understood. "One of the reasons for the lack of research in implementation of ESD practice may be the lack of a conceptual framework for designing powerful learning environments in ESD" (Sinakou et al., 2019). Wals (2013) emphasizes the need for an enhanced framework for a more holistic approach to the implementation of sustainable development. It can ensure an integrated and comprehensive approach to the reorientation of higher education to tackle sustainability in action. Dubey et al. (2017) points out that "the literature is in its nascent stage, and it is clear that there is a need to understand what elements are truly unique to sustainable education, how these elements are connected to each other, and how the integrations of these elements helps to achieve sustainable education – i.e., a need to generate a theory".

Boström et al. (2018) emphasized the importance of "combining approaches from different perspectives" in ESD research and the need for identifying ways for "individuals (experts, citizens, politicians and others) and collective actors (organizations, communities) to develop reflexive capabilities to promote change" towards a more sustainable society. The literature review leads to the need for answering an array of questions that are pertinent to fulfilling the vision of UN SDGs. The research questions addressed in this research are:

1. How different theoretical concepts lay sound and logical foundation for a multi-dimensional ESD framework?
2. How these theoretical concepts contribute to the different stages of an integrated ESD model and what are the elements at these stages?

This research attempts to address this void by developing an inclusive and integrated framework that can be operationalized in HEIs. In this paper we discuss the applicability of three relevant theoretical concepts- Capability theory, Transformative Learning Theory and Theory of Change- which approach sustainability learning from three

different perspectives such as human development, transformation and change management respectively, and suggest an integrated framework created with conceptual inputs from these three theories.

1. Theoretical Approaches to ESD

This part discusses about the relevant theoretical approaches that contribute to the concept of education for sustainable development and its application in higher education institutions.

1.1. Capability Theory and ESD

Amartya Sen's Capability Approach (CA) offers an extensive point of view of development where everything spins around individuals' well-being and has risen as a genuine elective model of progress and advancement in the recent decades. The Human Capability Approach centers around two things: capabilities to function and freedom to accomplish. For Sen (1999), "Capabilities are real opportunities for a person to achieve valued functionings or the substantive freedom to achieve alternative functioning combinations or the freedom to achieve various lifestyles". He clarifies that "a functioning is an achievement, whereas a capability is the ability to achieve".

Sen's methodology gives the important basic theoretical structure and functional rules for the required reorientation of educational frameworks. To Sen, public education is significant and crucial in its impact on individuals' very own lives and in the relation between individuals and society. By fusing Sen's human capability approach, we accomplish more prominent lucidity of definition, purpose and qualities of ESD.

A useful definition of ESD must have two components namely 'agency' and 'educational applicability' (Landorf et al., 2008). The key concepts of Capability Approach – 'functioning', 'capabilities' and 'agency' - can contribute to create a framework for managing the curricular, pedagogical, and evaluation choices of ESD. Rajapakse (2016) comments that, "Incorporating Amartya Sen's Capability Approach, when assessing higher education, provides a broader, multi-criteria framework that answers the need for a normative ideal. Indeed, it focuses on social justice as the metric for evaluating and shaping universities". Sen has drawn attention to community inequalities by recognizing human heterogeneity and diversity and welcomed human agency. He promotes the use of engagement, democratic dialogue and deliberative democracy when shaping priorities, taking decisions and affecting policies (Rajapakse, 2016).

The Capability Approach has long term implications in sustainable education. Landorf et al. (2008) redefines sustainable development as sustainable human development in the context of capability theory. For them, education for sustainable human development is not just an extra environmental education and its focus is not on human capital development. Instead, it instructs educators to help individuals to accomplish socially determined basic capabilities.

As indicated by Sen, everyone is qualified for well- being, both now and later on. Educators should in this manner assess the logical circumstantial conditions deciding individual's capabilities to accomplish well- being or prosperity and measure results and future prospects in like manner. Yet, it is the instructor's obligation to develop democratic dialogue (participatory process which ensues from a practitioner's perspective rather than from a theoretical knowledge) among various partners to distinguish essential 'capabilities' and socially and culturally valued 'functionings' in the communities in which they work. Following this procedure will help to design locally pertinent educational program, curriculum, pedagogy and assessment tools.

1.2. Applications of Transformative Learning Theory in ESD

Transformative learning Theory (TLT), in which the thinking of students is challenged by disorienting dilemmas, is considered as an adult learning theory. Then the students are motivated to use their critical thinking skills and questioning skills to check whether their basic beliefs and convictions about the world are right. 'Transformative Learning' is a concept derived from the Theory of Transformative Learning, developed and popularized in 1978, by adult educationalist Jack Mezirow. Moving away from conventional educational methods of rigid memorizing, transformation theory analytically explains processes that question existing knowledge structures (Adamson & Bailie, 2012).

Mezirow accepted that this adjustment in conviction happens when individuals face a "disorienting dilemma". Disorienting dilemmas are encounters that don't match with an individual's present convictions about the world. At the point when confronted with a disorienting dilemma, individuals are compelled to rethink their convictions in a way that fits this new insight with the rest of their world views. This frequently occurs through 'critical reflection' with regards to discourse with others (Howie, P.& Bagnall, R., 2013). Mezirow proposed that the transformation process disentangles in ten successive stages.

Enkhtur & Yamamoto (2017) aptly says that "one of the most referenced theories in Adult Education Quarterly Journal (Christie et al., 2015), Transformative learning theory predates the idea of 21st century learning skills". The expectation about transformative learning is that "better individuals will build a better world" (Christie et al., 2015). Higher

Education Institutions (HEIs) are expected to engage students in this increasingly internationalized and globalized environment not just in local or national problems, but also in global developments and emerging concerns. Sincere efforts must be taken to improve their critical thinking skills so that they can work effectively in our highly dynamic and challenging environment. However, many authors (Lin & Cranton, 2005; Glisczinski, 2007; Blackie et al., 2010; Stevens Long et.al., 2012; Blake et al. 2013) have noticed that the traditional education is still giving more emphasis to the traditional educational concept that learning will meet market expectations and thus molds students to fit into the existing capitalist frameworks and values through instrumental teaching which is far away from a more holistic view of the universities' position in this age of global ecological challenge.

Many researchers (Lin &Cranton, 2005; Carter, 2005; Stevens- Long et. al., 2012; Brown & Brown, 2015; Christie et al., 2015; Enkhtur & Yamamoto, 2017) underlined the importance of critical reflection, participative dialogue, student centered learning, community involvement and service learning components in higher education. These elements and activities will provide learners opportunities to expand their world views and are relevant and highly applicable in ESD as well.

Mezirow (2000) states that participatory pedagogy which encourages meaningful self –reflection and makes a contribution to modified thoughts and behavior, is the root of transformative learning. The theory provides an overview of the teaching and learning procedures which are fundamental to the transition to a sustainable lifestyle. The importance of linking sustainability education to transformative learning is the promotion of group engagement and the capacity to cope with ambiguity and confusion (Ryan& Cotton, 2013).

Transformative learning is impossible without transformative teaching and it focuses on personal experience, inter-disciplinary and trans- disciplinary approach (Balsiger, 2015), opportunities for service learning, self managed interaction with values, emotions and knowledge, living laboratories and a role shift. Teachers promote students' learning and co- learning in participatory environments. Within academic leaning environments, disorienting dilemmas frequently arise, as teachers provide space for constructive interaction with new ideas. Teachers can create opportunities for critical thinking by providing materials that brings in fresh ideas. Students should be engaged with new ideas by journaling, interacting with other students and critically challenging their own beliefs and assumptions. Providing students with opportunities to connect to those who are going through the same transformation process will inspire them and accelerate the rate of transformation. Studies indicate that students should also get opportunities to act on their new found beliefs or new perspectives, because true transformation can't happen until students can make important move that acknowledge their new conviction.

1.3. Theory of Change and ESD

Change Theory (ToC) is a special kind of technique used in business, philanthropy, non-profit and government sectors, for planning, engagement and assessment, to facilitate a social change. ToC was originated in 1990s based on program theory and evaluation, as a modern method of evaluating the concepts that drive projects, programs and initiatives aiming at political and social change. Theory of Change describes change procedure by sketching out the causal linkages within an intervention. It determines the short term, intermediate and long term outcomes. Well defined changes are diagramed as the "outcomes pathway", indicating every "outcome" in a logical relationship with every other and the sequential flow as well. The connections between the "outcomes" are clarified by means of "rationales" or "arguments" explaining why an outcome is considered a prerequisite for another (Clark & Taplin, 2012).

By adopting a change model, executors can take better decisions about strategy and tactics. The accessibility of tracking and assessment of data through this method, enables educators and policy makers to periodically refine the ToC. In the case of ESD the frequent traditional approaches (Austin & Bartunek, 2004) cannot be fruitful.

ESD can be considered as a program or change initiative with clearly defined inputs and outcomes. Since ESD requires clear policy initiatives, planning, support and implementation strategies, for the application of theory of change, stake holders have to distinguish between desired and real outcomes and need to model the desired outcomes before deciding the courses of action to attain such outcomes. Weiss (1995) suggested using a technique to evaluate the series of outcomes anticipated as a result of a change program and to prepare an assessment method to monitor whether such predicted outcomes are really achieved. The goal of ESD is a potential transformation in the individual as well as society towards the creation of a more sustainable world. Focusing only on processes and methods will leave us only in vague assumptions about the results instead of concrete fact based understanding. A well planned structured, measurable and outcome based approach will help the stakeholders to ensure effective implementation of the ESD programme and subsequent progress assessment for making the necessary improvement in the programme for getting the desired results.

The higher education sector can initiate potential future oriented changes at many levels to support the sustainable development move in all its possible dimensions. Educators and teachers are transformative agents and catalysts to evaluate the efficacy of transformative learning strategies in formal and informal environments, to provide proof of

progress, strengths and results of transformative learning initiatives and risks, opportunities and challenges in "teaching for change" (Taylor, 2009; Romano A., 2018).

3. Transformative Human Development Model – An Integrated Model for Higher Education for Sustainable Development.

From the above discussions it is obvious that albeit the three theories contribute conceptually to sustainability education, the application of any single theory is inadequate to offer a complete operational frame work. Instead a combined approach, including the relevant attributes of Capability Theory, Transformative Learning Theory and Theory of Change, effectively explain the functioning of sustainability models. UNESCO in a series of publications underlines the significance of framing a good learning model for ESD.

UNESCO in 2014 introduced "Global Action Programme (GAP)" on ESD. It identifies five priority action areas such as "advancing Policy, transforming learning and training environments, building capacities of educators and trainers, empowering and mobilizing youth, accelerating sustainable solutions at local level". UNESCO (2014) also considers ESD, as "holistic and transformational education which addresses learning content and outcomes, pedagogy and the learning environment and achieves its purpose by transforming society".

In fact all the three theories have implications in sustainable higher education – CA, for explaining the freedom of choice and capabilities for a better functioning; TLT, for a desired transformation as a result of experience; and ToC, to bring in a desired change through structured approach. This joint approach of TLT, CA and ToC, is more holistic and inclusive and we call it 'Transformative Human Development Model' (THD Model) for sustainability education which transforms the higher education institutions to 'sustainability laboratories'. The Transformative Human Development Model contemplates the transformation of the whole system including students, faculty, institution, stakeholders, policies and society itself.

The phases of the new THD model have been arranged based on the major structural and conceptual contributions of these theories to ESD. The different phases of the model and the essential elements of each phase are given in the figure 1. Figure 1 depicts how each of these theories is related to and contributes to the integrated approach, Transformative Human Development model. The dotted lines represent the conceptual congruity between the different stages of the theories.

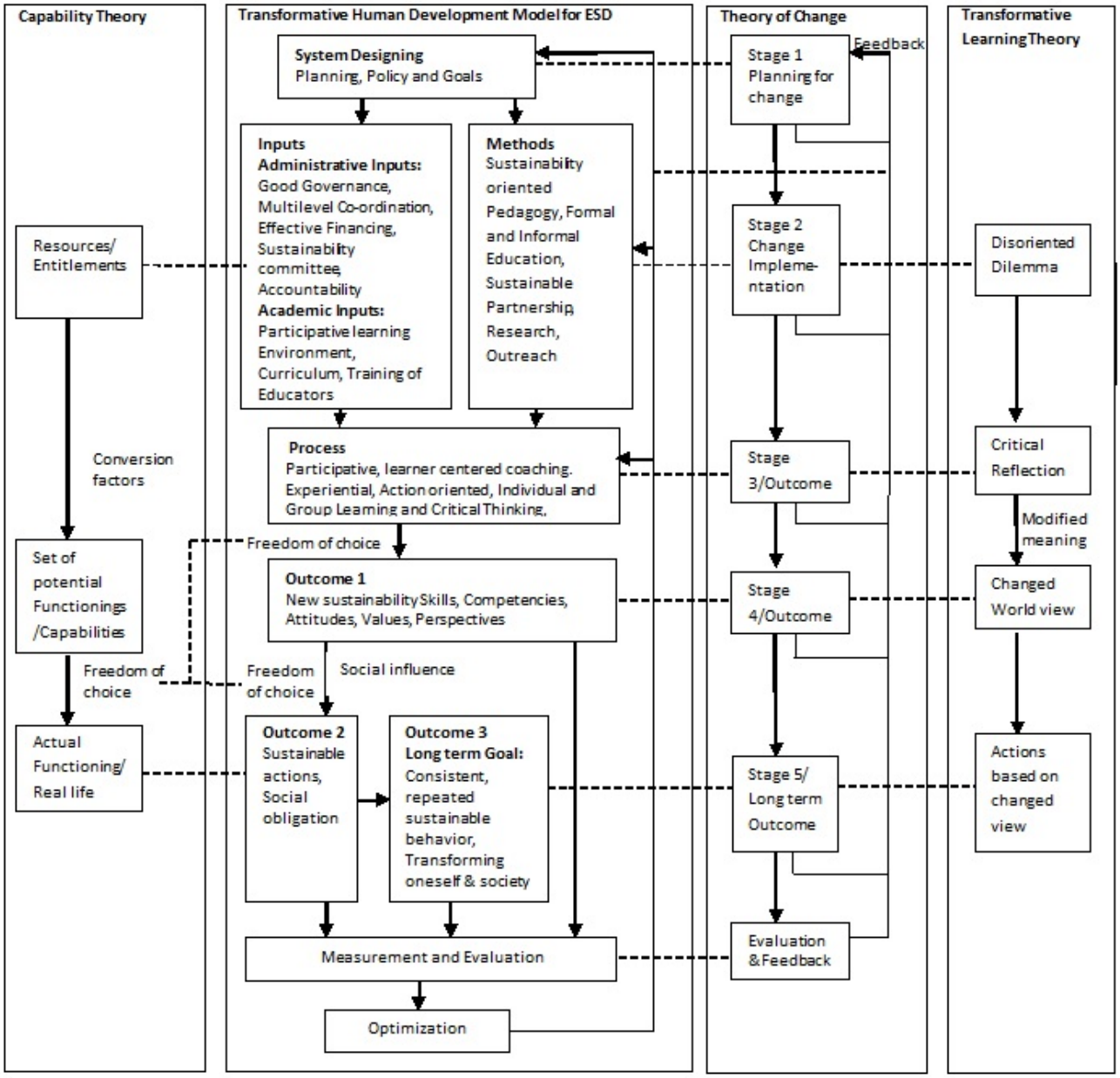

Figure 1: Transformative Human Development Model for HESD
Source: Developed for this research by the authors

The first phase of THD model concentrates on ESD system designing activities such as planning, goal setting and policy decisions. Planning is the first step suggested by ToC and is one of the most crucial time and project management techniques. "Policy presents a set of ideas or a 'what to do plan', officially agreed by a group of leading persons" (Lukman & Glavic, 2007). Along with planning and policy support the learners must be provided with all the inputs and entitlements (specified in Capability Theory) that initiates a positive change process in their attitudes and behavior of the learners. Capability theory specifies about the presence of these entitlements and resources for creating capabilities and transformative learning theory for creating a disorienting dilemma in learners which later on will result in critical thinking and changed world views.

The administrators of change require the coordination of the key inputs such as financial, infrastructural, training, administrative and partnership support from government and institution authorities. Good governance of ESD programme requires well inclusive partaking of key players and development and collaboration with multi-faceted partnerships. The Governments have the responsibility of ensuring the transparent, just and participatory nature of

governance in HEIs. The three crucial factors needed for the fine governance of education are accountability, participation and inclusivity (UNSG, 2014; UNESCO, 2015).

Coordinating the different financing streams such as "domestic public, domestic private, international public, international private and blended finance" (UNSG 2014) to achieve a great impact is pivotal in the implementation of sustainability education. Though there are various sources of financing for education such as foreign funding (bilateral and multilateral agencies) and private sources (individuals, private organizations) as noticed by EFA Global Monitoring Report (2012), it is generally accepted that the governments have the responsibility for holding a suitable mechanism for ensuring the long term funding of education (Didham & Ofei-Manu, 2015).

The major problems faced by the HEIs in the implementation of the ESD incorporate the lack of administrative support and non-existence of an official body responsible for SD execution. Successful implementation of the ESD system requires the creation of a body responsible for all operations, from planning and policy making to execution, evaluation and optimization. Accountability is another critical factor that drives the policies and actions to achieve the objectives. This also contributes to good governance and control of the program. The obligation and commitment of the parties involved in the ESD process should be ensured by means of appropriate mechanisms.

For transformative learning to take place transformative teaching is a pivotal requirement. Teachers have the responsibility for the acquisition of skills and knowledge by the students that allow them to deal with SD problems (Sinakou et al., 2019). Positive learning environment upholds the rights of learners and ensures their freedom of choice, one of the key element of Capability theory. Successful learning in ESD is closely related to the learning environment, developed by teachers in the class. Studies show that students achieve deeper and multifaceted viewpoints, the ability to apply prior knowledge in a new setting and the capacity to link knowledge values and experiences in ESD with participatory learning environment (Sinakou et al., 2019).

The teaching and learning in ESD requires a paradigm shift. Fresh approaches need to be adopted (Cortese 2003; Sibbel 2009; Aktas et al. 2014; Eizaguirre et al. 2019) and faculty should include sustainability principles and global issues within the curriculum. To make the university graduates more competitive and responsible as future employees and decision makers, they are expected to have sustainability, social and entrepreneurial competencies (Monika Sady et al., 2019). Aleixo et al. (2018) highlights the importance of introducing 'sustainability' as a subject in the curriculum to enhance the role of HEIs in promoting sustainable development. Many authors pointed out that the global demand for measures to promote the reformation of the curricula of higher education towards sustainability is replicated through national policies and strategies and international dialogues on sustainable growth (Mader et al.,2013; Lozano et al.,2013; Tilbury,2014; Mula et.al., 2017).

The Council of European Union (2018) emphasizes on the relevance of providing formal as well as non-formal education since both forms are crucial in acquiring competencies. Transformative Learning practices provides an opportunity for interactive and constructive learning for sustainability. Transformative learning for enhancing the capabilities for sustainable actions and social change necessitates sustainable partnerships with local society, industries, NGOs and other stakeholders. This will provide young learners the opportunity to engage in experiential learning and critical thinking. A reliable tool that contributes to the academic and social problem solving is sustainability research. Berchin et al., (2019) defines community outreach on sustainability as "the HEI's initiatives to engage with the communities in its surroundings in a mutually beneficial process of sustainable development".

Higher education sector should be responsible for creating the ethical and technological skills required to guarantee a high quality life for future generations (Sharon and Wright, 2006; Lukman, & Glavic, 2007). The development or enhancement of reflexive capabilities to facilitate sustainable transformation and to overcome the cultural and structural forces that impede progress towards a more sustainable society is the first and primary outcome anticipated from ESD. Sustainable actions of young individuals lead to environmental and social well-being. The ultimate aim of sustainability education is its long term outcome that includes repeated and consistent sustainable behavior and individuals transforming one self and society towards a sustainable future.

Measurement and Evaluation is a crucial step to understand whether the ESD programmes of HEIs have been really contributing to the sustainability of society. The feedback and evaluation report must be considered as an input to planning and organizing stage. This stage is one of the key processes suggested by ToC which leads to the identification new techniques. Optimization involves identification of new improved and innovative methods for ESD progress. Such approaches encourage innovation and development that contributes not only to the progress of the university, but also to the local and regional development. The THD Model is a comprehensive framework which presents the elements that are vital for ensuring the effective and efficient implementation of sustainability education.

5. Discussion and Implication

The exploration is tending to the requirement for assessing the use of theoretical ideas from multiple dimensions to provide a structural framework that speaks to the shifted necessities of sustainability higher education for powerful usage and gainful working. Despite investigating the key primary contributions of the theories for conceptualization

and practice of HESD, the study additionally reveals insight to outline an HEI procedure for sustainability education, the absence of which was highlighted in the investigations of Aleixo (Aleixo et al. 2018 b, Aleixo, 2020). The significant elements that summonses the thought have been fused in the model which offers a common methodology and platform for a wide range of HEIs to pursue the realization of ESD goals. A discussion on CA and TLT together with ToC helped to generate an understanding on the nature of ESD and how the ESD design, content, methods and evaluation can be executed in HEIs. Besides, the framework is flexible, sensitive and dynamic in recognizing the diverse administrative, academic, institutional and societal conditions in which the change process takes place. Combining the three theoretical concepts has been done with an intention to build a broad spectrum to figure out the ways and means to foster ESD infusion. This attempt brings together a range of essential components which fulfill the requirements of ESD.

In Transformative Human Development Approach, the students are empowered with freedom of choice, participative learner centered coaching, and social learning, where they acquire new skills and competencies as a result of critical reflections and new thinking. The short term outcome 'sustainable actions' of young learners is expected to lead them to the long term objectives of sustainable education like 'consistent sustainable beahaviour' and 'individual and social transformation towards sustainability'. This research and Transformative Human Development model would be a move towards solving the current issues such as lack of clarity in implementation of ESD, lack of support, "green washing" in ESD (Wals, 2013), and quality and efficiency of ESD. It is presumed that the model can be used by educators, HEI administrators, ESD coordinators and all other decision makers associated with ESD programmes, policies and execution.

2. Conclusion

The higher education framework can do a better job in advancing ecological and social sustainability for a healthy improvement of the nation. To enable the sustainable transformation of young learners and society, we need a more elaborate understanding of different theoretical dimensions pertaining to this area. In this research we have emphasized the need for a holistic and inclusive model, in order to improve the conceptual understanding and practical implementation of ESD in higher education sector. We proposed and developed an integrated model- Transformative Human Development Model- incorporating the relevant aspects of three theories - CA, TLT and ToC- pertinent to ESD. The theoretical Model presented by the study aligns with the multi dimentional nature of ESD.

This implementation model reminds us that ESD goes beyond gaining knowledge or learning theories relevant to sustainable growth. It must be an integrated and holistic education programme aimed at preparing the young generations to operate within a complex world. This research systematically examined the current literature on the ESD status of HEIs, the theoretical approach by researchers and practitioners, applicability of different theories on SD, and UNESCO guidelines and reports, in order to provide an integrated idea of the main concepts of ESD. It complements previous research on ESD approach and practice and contribute a more holistic understanding on the requirements and components of ESD. The scope for empirical testing of the model provides ample space for future enquiry on this rapid developing field. In this paper we suggest a good starting point for the implementation of ESD in HEIs. But this initiative must be developed and complemented with specific scientific methods to carryout tasks at each stage with the help of specialized task teams.

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