GLOBALIZATION, SENSE OF PLACE AND TRANSFOR~MATIVE LEARNING IN TIMES OF UNSUSTAINABILITY[1]

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[1]   This paper provides input for the 4th INTERNATIONAL CONGRESS OF CREATIVITY AND PE-DAGOGY to be held in Cartagena, Colombia in September 2013. Its main contents stems from: Wals, A.E.J. (2010) DESD we can? Some lessons learnt from two mid-DESD reviews. *Global Environmental Research*, 14 (2), 109-118 and from UNESCO (2009a). *Review of Contexts and Structures for ESD.* Available at: www.unesco.org/education/justpublished_desd2009.pdf The paper and the talk do not match one on one as the paper uses existing texts while the talk better reflects emerging insights.

ABSTRACT

In this talk/paper I will try to link the three themes of this conference by discussing and, indeed, critiquing, education in the context of sustainable development (ESD) from a perspective of critical thinking and transformative learning. I will argue that our quest for a more sustainable world requires a sense of place and identity as well as decolonizing pedagogies and socially responsible knowledge co-creation. The search for sustainability cannot be limited to classrooms, the corporate boardroom, a local environmental education center, a regional government authority, etc. Instead, learning in the context of sustainability requires 'hybridity' and synergy between multiple actors in society and the blurring of formal, non-formal and informal education. A good example of such hybridity can be found in the so-called 'whole school approaches to sustainability' where schools establish linkages between questions around food, energy and health and the curriculum (both espoused and hidden and the community of which it is part).

Opportunities for this type of learning expand with an increased permeability between units, disciplines, generations, cultures, institutions, sectors and so on. At the same time we must beware of the use of sustainability and sustainability education in a-critical ways that, albeit intentionally or unintentionally, lead to a consolidation of current hegemonic (economic) systems and educational practices thereby amplifying unsustainability.

I will base my argument on a review I did for UNESCO of the kinds of learning that are emerging in the context of the UN Decade of Education for Sustainable Development.

Key Words: transformative learning, transformative learning, emerging educations.

1. The UN-DESD

From the Mid-DESD reviews (Wals, 2009; SIDA, 2010) it can be concluded that around the world–although not everywhere - ESD has become an important element of environmental policy making and sustainable development strategies. It can be said that the seeds planted in the seventies at many international conferences on environmental education (EE), including the Man and Environment conference held in Stockholm in 1972 and the UNESCO-UNEP conference on Environmental Education held in Tbilisi in 1977 (UNESCO-UNEP, 1978),

found a fertile soil of broad-based mutual concern for sustainability as expressed at the UNCED Earth Summit in Rio de Janeiro in 1992 (UNESCO, 1992) and, indeed, at the World Summit of Sustainable Development in 2002 (UN, 2002) where the United Nations Decade of Education for Sustainable Development (UNDESD) (2005 -2014) was proposed and accepted. Today, many policies of a variety of governments both in the North and the South call for the integration of ESD and/or ESD-related, so-called 'adjectival' educations, such as; climate change education, development education, health education, peace education, citizenship education and environmental education both in formal education and non-formal learning (SIDA, 2010).

Inevitably ESD is not interpreted in the same way all across the globe and manifests itself differently and in some instances is not used as a concept at all as other related concepts in some instances appear more appropriate and more generative. An example from the Pacific Islands shows that the principles of, what in international policy discourse is referred to as, ESD are deeply rooted in their traditional cultures. In Tongan culture, for example, the main purpose of *ako* (learning) is to gain knowledge and understanding that is considered important for cultural survival and continuity or: *nofo fakapotopoto* which refers to 'intelligent living') (Thaman & Thaman, 2009:65). A perspective on ESD from Latin America comes from Gadotti (2008) who sees current education and educational institutions as barriers for moving towards sustainable development (SD) as they tend to reinforce the principles and values of an unsustainable lifestyle and economy. He argues for an economy that is not centered on free market, profit and continuous growth. Instead he favors a 'solidarity economy' which incorporates the principles of inclusion and social emancipation and identifies sustainability and solidarity as emergent and convergent themes. Gadotti proposes that without social mobilization against the current economic model, education for sustainable development (ESD) will not reach its goals. In addition, education for a *sustainable life*—not only for a sustainable development—is required. Which respect to these divergences in meaning it can be observed that in comparison with the early years of the DESD we see that there is less a push by the DESD's governing body, UNESCO, for a uniform and agreed-upon view of ESD and much more recognition of the need for locally relevant interpretations of ESD and related forms of educations. This shift is expressed in the mid-decade Bonn Declaration (UNESCO, 2009b):

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"The progress of ESD remains unevenly distributed and requires different approaches in different contexts. In the coming years, there is a clear need for both developed and developing countries, civil society and international organisations to make significant efforts to: Mobilize adequate resources and funding in favour of ESD, in particular through integrating ESD into national development policy and budgetary frameworks, into UN common country programming processes and other country-level policy frameworks (such as sector-wide approaches), as well as into EFA and MDG initiatives. Promote and include ESD in the priorities of foundations and donors."

Clearly, to formulate global guidelines for ESD more or less independent of culture is hardly possible. There is an inevitable tension between these guidelines and the local context which should be addressed but may not always be resolved. The UNESCO Education Sector Report of 2007 (UNESCO 2007) asks two questions; *how can we uphold cultural diversity in the age of globalization? How is it possible to strengthen minority cultures in this current wave of western culture, which is spreading around the world?* These are very important questions since there is a struggle between global and local

initiatives, also within the UN. UNESCO has a strong commitment to ESD which is locally relevant but also promotes global mandates of furthering particular educational goals 'for all' (McKenzie, 2008).

Globalization has led to exponential growth of communication possibilities and the access to information of which the authority base is oftentimes unclear or dubious. Even in the poorest parts of the world people now have access to wireless networks and use cellphones as their main lifeline. Where companies and governments have failed to provide clean drinking water for all – a development goal of the last millennium one could say – they have succeeded in rolling out wireless all over the globe (Wals, 2010). Cases have reported of people living in poverty who have come to rely on their cell phone in such a way that charging the phone receives higher priority than feeding their children. The latter illustrates the different sides of the globalization coin. As technology has in some ways provided 'access for all' to the information and communication age, and the world of consumerism, it also has disrupted the lives of many in negative ways (Ellwood, 2003; Kenway and Bullen, 2001).

For ESD the homogenizing effect of the economic liberalization that oftentimes is associated with globalization is posing a challenge (Jickling &

Wals, 2008). For instance, the rise of the knowledge society and the commoditization of education in general and higher education in particular, tend to favor the creation of a global economy with a mobile, resilient and 'life-long learning' workforce who also play the role of eager consumers of universal products at the expense of local identities, critical thinking and values alternative to material ones (Raven, 2001).

The international experts' workshop on Faith-based Organizations and Education for Sustainability (organized by UNESCO-CAT, 2007) refers to an SD-divide. First there is the 20% of humanity living "overdeveloped" lifestyles (including wealthy people in privileged areas of poor countries) who must learn to *undevelop (*or develop in an alternative direction*),* to reduce their current overconsumption and to find fulfilling lifestyles based that are not exclusively based on material values and allow for a more moderate use of natural resources. And, second, there are the masses of the poor who face quite a different challenge. The not-yet-overdeveloped rest of humanity, including all the poor in the South and all indigenous and traditional peoples, must learn to fulfill their needs (including running water, food security, and adequate health care) in a sustainable way and without falling into the lure of overdevelopment

and consumerism. Rather than being exposed to the subtle colonialism of advertising and materialism, they should be offered or, better perhaps, co-create alternative models of development. At the UNESCO-CAT workshop it was often noted that, 'not only should we in the overdeveloped world not preach sustainability to indigenous peoples: we should aim to learn from those who have been practicing sustainable lifestyles over the centuries.' (UNESCO-CAT, 2007, p16).

2. Understanding EE and ESD and its interface

The inter-relationship with environmental education (EE) is emphasized in nearly all regional reports that provided input for the mid-decade review of the Decade for Education for Sustainable Development (UNESCO, 2009a). This is no surprise as in many countries around the world EE is firmly established, particularly in formal education systems. The simultaneous existence and development of EE and ESD has given rise in some countries to questions about the relationships between the two and the call for distinctions by some or for convergence by others. The resulting confusion or stale-mate

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in some cases can hinder policy implementation. Also, it appears that in countries with a strong EE tradition ESD tends to build upon EE-structures and policies already in place particularly in countries that have interpreted EE broadly to include social, economic and political dimensions. The quote below illustrates this:

> *... issues of development, survival, livelihoods, improved quality of education and improved quality of life, and more sustainable living practices. It is perhaps for this reason that environmental educators in southern Africa have long been concerned with environmental education processes that are processes of social change (*Lotz-Sisitka, 2004, p10*).*

In countries where such a tradition is absent or weak at best, ESD and the DESD appear to have provided an opportunity to create new structures from scratch and a possibility to catch up with those countries that already had a strong EE-tradition. When analyzing the regional synthesis reports and the regional strategies, one can roughly find three different ways of viewing the relationship between EE and ESD which resemble some of the ones identified in the ESDebate held in 1999 (Hesselink *et al.*, 2000). The way the relationship is perceived tends to be related to the historic role EE has pla-

yed in a country (prominent or marginal) and the way EE itself is interpreted (broad or narrow). With regard to the former, there are countries that developed nature conservation education already over one hundred years ago. This paved the way for EE in the 1960s and 1970s, whereas in other countries this was hardly the case. In some countries with a strong EE-tradition, it is often narrowly viewed as expanded nature conservation education or a combination of environmental protection education and resource management education (e.g. several countries in Europe & North America). In other countries with a strong EE-tradition (e.g. several African and Latin American countries) it may be interpreted more broadly, in tune with the Tbilisi Declaration, to include socioeconomic and political aspects. When interpreted as such EE and ESD become almost synonymous.

Figure 1 illustrates that from a 'content'-perspective ESD and EE relate to one another. The figure shows that when both EE and ESD are interpreted broadly to include the political, social, cultural and economical (EE+ and ESD+), they become almost synonymous. Interestingly enough, when interpreted narrowly (EE-and ESD-) to mainly focus on the environmental and the ecological, they also become almost synonymous. EE in the Tbilisi spirit is generally considered EE+,

while ESD as described in UNESCO documents is generally considered ESD+ especially when related to all the Millennium Development Goals (and not just to MDG number 7 which focuses on 'environmental sustainability').

Whereas during the early years of ESD much attention was given to the meaning and content of the SD in ESD, recent ESD documents and discourse tend to pay much more attention to the 'E' in ESD. The underlying learning processes of ESD are beginning to become subject of debate. Generally speaking there appears to be a shift from *training and instruction* (simply put: telling and training people how to life their lives) to *learning and capacity building* for SD (simply put: enabling people to contribute to sustainability in a meaningful and contextually relevant way). This shift reflects the perceived need for continuous engagement in sustainability in formal, non-formal and informal settings on the one hand and the need for capacity-building, participation and self-determination for sustainable development on the other. These different
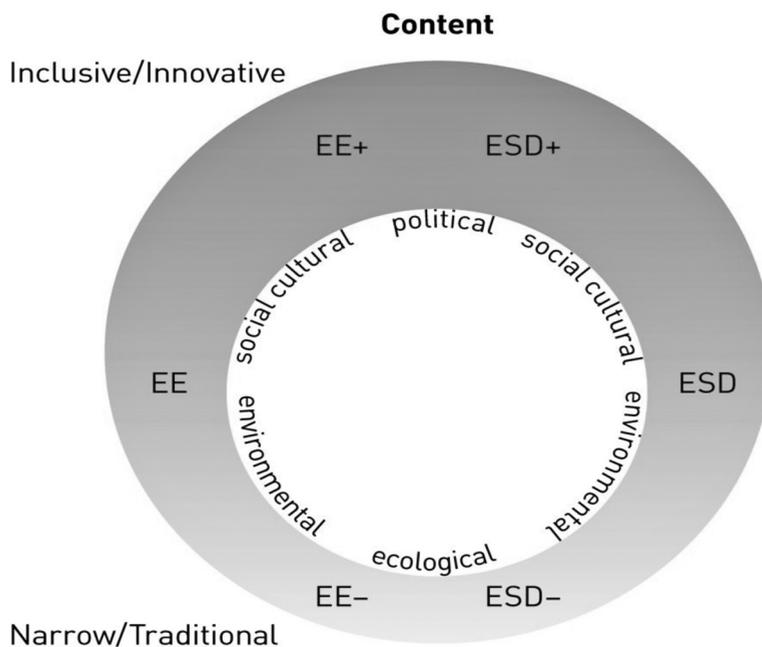

FIGURE 1. Different interpretations of ESD and EE and their relationship from a content perspective

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outlooks on ESD have important consequences and often have a social and cultural background as different societies have different boundaries for participation, autonomous thinking and self-determination, and a corresponding view of democracy.

A fundamental principle of ESD is the idea that each individual has the responsibility of participating in local and global discussions about our common future. Learning is seen as a key component of innovation that leads to social change. A central aspect of ESD is that learners develop the ability to evaluate global and inter-generational issues and formulate strategies for solving the problems that arise from these issues (Almlöv & Moberg, 2008, p74). There are differences however in the amount of space learners get to work towards their own, self-determined and co-created, solutions to sustainability issues and challenges. These differences are related to a country's or region's interpretation of democracy, participation and inclusiveness.

After all, the question: "Is education about social reproduction or about enabling social transformation?" is not answered in the same way across the globe and this results in different ways in which educators imagine the educated citizen interacting within society (Jickling & Wals, 2008:8-11). This has major implications for the way ESD is interpreted and implemented as the space there is for participation, self-determination and autonomous thinking influences the kind of ESD that emerges in a country or region. When this space is narrow, a more transmissive version of ESD is likely to result with a strong emphasis on instructional forms of teaching and knowledge transfer. When this space is broad, then ESD will emerge that is characterized by higher levels of participation, self-determination, autonomous thinking and knowledge co-creation. The latter versions of ESD require alternative teaching and learning strategies that also allow for the development of new competences. Figure 2 shows the pedagogical dimension of ESD and EE. A country's tradition in governance might affect what a country emphasizes a more pedagogical orientation towards ESD consequently implying (social) learning, participation and capacity-building or a more instrumental orientation that emphasizes a change in people's behaviour.

3. Relation between ESD and other emerging educations

The framework of the DESD International Implementation Scheme suggests that full-fledged ESD requires the integration of the three dimensions referred to earlier in this review (UNESCO, 2009a):

- the **socio-cultural dimension** which refers to issues related to human rights, peace and human security, gender equality, cultural diversity and intercultural understanding, health, HIV & AIDS and new forms of governance;

- the **environmental dimension** which refers to issues related to natural resources (water, energy, agriculture, biodiversity),climate change, rural development, sustainable urbanization, disaster prevention and mitigation;

- the **economic dimension** which refers to issues related to poverty reduction, corporate responsibility and accountability and re-orienting the market economy.

Besides EE, there are many other educations that are related to Education for Sustainable Development, all related to one of the dimensions mentioned. On the socio-cultural dimension for instance, there is Peace Education, Citizenship Education, Development Education, HIV/Aids Education, Health Education and Human Rights Education.
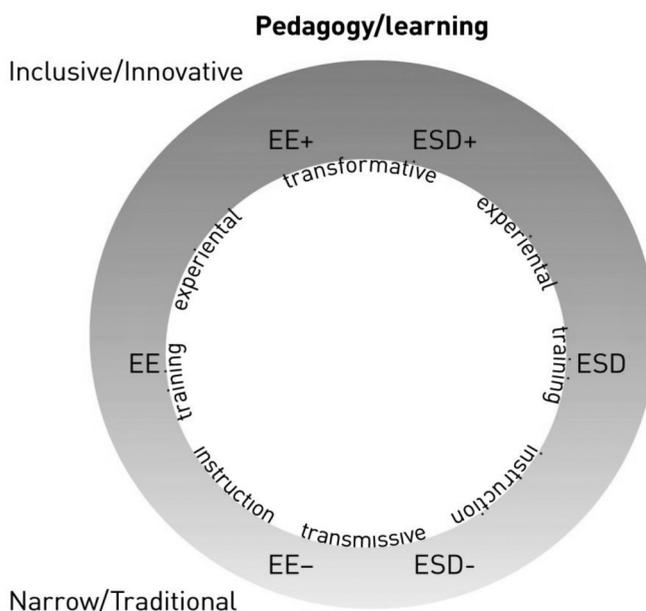

FIGURE 2. Different interpretations of ESD and EE and their relationship from a pedagogical perspective

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When it comes to the environmental dimension it is, besides EE obviously, also Biodiversity Education, Educating for Food Security and especially Climate Change Education which is very profound at this moment. The rise of Climate Change Education is seen by some as the next stage in the evolution of nature conservation education to environmental education to ESD as it addresses an overarching sustainability issue that can only be addressed in an integrative way from multiple angles, disciplines and perspectives (Kagawa & Selby, 2010). However, others, particularly within the context of the UNESCO DESD argue that climate change education is an important part of ESD just like some of the other adjectival educations (UNESCO, 2006:28). Economically, one could think of examples like Disaster Risk Reduction and Programme of Education for Emergencies and Reconstruction (PEER) which might have overlap with other dimensions as well.

It is clear there is a wide range of interpretations of ESD yet there is consensus about some core components. The kind of sustainability challenges a country faces might affect the SD-components that are emphasized. A strong history in EE but also the way EE is interpreted itself is likely to affect the meaning of ESD as well. Where such a history is lacking or where EE has been interpreted narrowly to focus on nature conservation and environmental pro-

tection, ESD can be developed and given meaning on its own terms. At the same time an emergence of a whole range of other 'adjectival' educations that tend to privilege a single ESD-issue (e.g., peace, human rights, gender, HIV/AIDS) can be seen across the globe which may require some fine-tuning so that they end up reinforcing one another rather than competing with one another. Figure 3 from the latest DESD monitoring and evaluation report tries to capture this.

4. Latin American region-specific ESD issues[2]

Within the context of the DESD, UNESCO and the Earth Charter[3] together gave

2 The LAC Regional ESD Strategy can be found (in Spanish) at: www.oei.es/decada/portadas/estrategiaregional.htm

3 "The Earth Charter Initiative" represents a diverse, global network of people, organizations, and institutions that participate in promoting and implementing the values and principles of the Earth Charter. The Initiative is a broad-based, voluntary, civil society effort. Participants include leading international institutions, national governments and their agencies, university associations, non-government organizations and community-based groups, city governments, faith groups, schools and businesses – as well as thousands of individuals. For more information go to: www.earthcharterinaction.org/
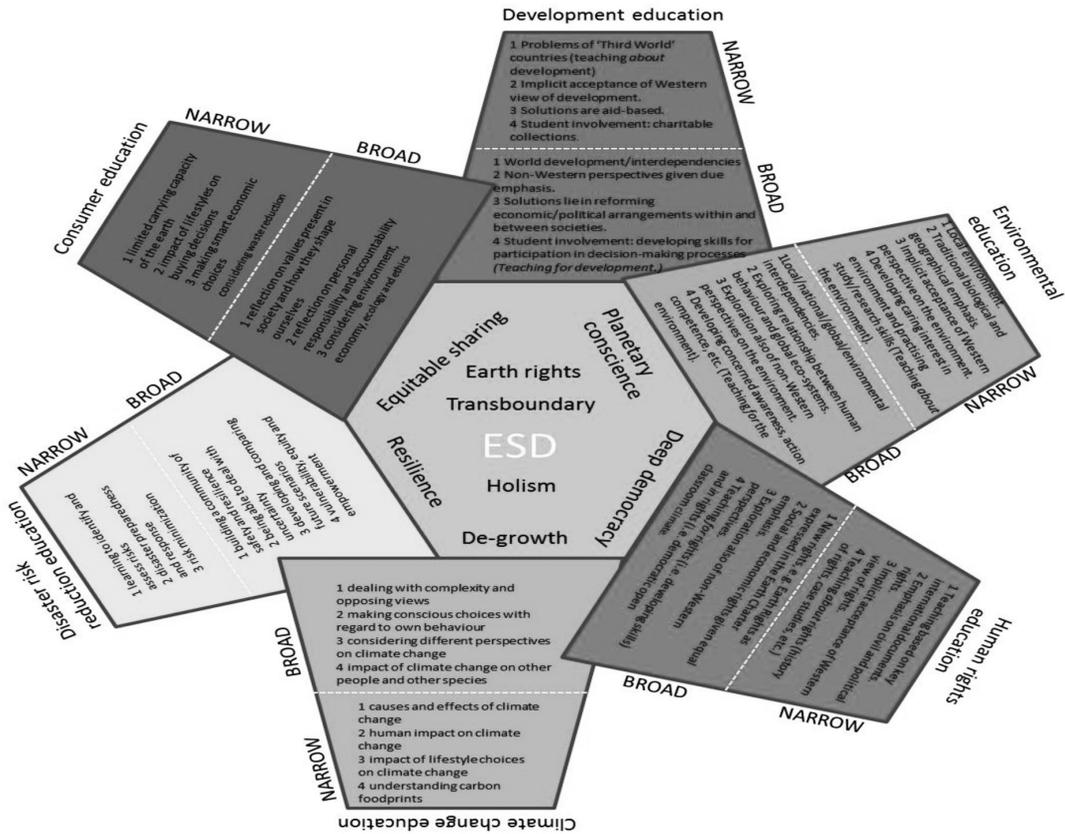
FIGURE 3. ESD as an umbrella of 'Planetary Education' (Source: Wals, 2012).

impulse to the formulation of a regional strategy for the Decade at the Latin American meeting "*Construyendo una Educación para el Desarrollo Sostenible en América Latina*", in San José, Costa Rica, 2006. Priority actions identified at the Latin America and Caribbean strategy-building conference "Building an Education for Sustainable Development in Latin America and the Caribbean,"

held in San José, Costa Rica in 2006,[4] are:

1. Involving actors responsible for political, technical, and administrative decisions in diverse spheres of government, legislation, business,

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and other organizations, in conjunction with NGOs, networks and social movements.

2. Calling upon specialists from the educational, scientific, technological and professional communities to actively participate. These also include representatives of traditional knowledge and technologies.

3. Involving those people who, because of the position they occupy, can act as barriers or drivers of processes related to the promotion of ESD, such as leaders of syndicates, communities, civil society organizations, religious organizations, communicators and journalists, coordinators of networks, coalitions, and social movements.

4. Although all members of societies are to benefit from the actions undertaken during the DESD, particular importance is given to vulnerable sectors including children, youth, the elderly, indigenous populations, and other excluded groups.

The LAC Regional Strategy acknowledges that the concept of sustainability has a potential to integrate and create synergies between diverse educational themes and other United Nations educational action frameworks that have been important in the region, namely, environmental, intercultural, peace, human rights, poverty alleviation, health, HIV, literacy, and gender equity education. Also, the agenda of the Dakar Education for All Action Framework and the Millennium Development Goals were considered as fundamental referents that need to be articulated through this Strategy.

The strategy is based on a shared vision that by the end of the Decade, through public educational policies and active participation of educators and communicators, Latin America and the Caribbean will have been able to contribute to counteract the more acute processes of environmental contamination and destruction and will have made substantial progress in the construction of just and sustainable societies.

With regards to the need to provide an adequate financial and resource base for the development of ESD in the region, the Strategy considers that it is paramount to assure that all actors, including governments, international organizations, private sector, and civil society organizations, make a joint commitment. Therefore the Strategy considers it is imperative to incorporate ESD as a priority issue in the agenda of the forums of ministers of education and environment in Latin America and the Caribbean. It also calls upon

international organizations to promote the DESD in the Region and specifically calls upon UNESCO and UNEP to jointly forge synergies with other multi and bilateral agencies, such as WHO, FAO, UNICEF, UNDP, and UNFPA. The Strategy also acknowledges the need to coordinate DESD activities with on-going regional programs[5] such as the Regional Project of Education for Latin America and the Caribbean (PRELAC) and the Latin American and Caribbean Program for Environmental Education (PLACEA).

The strategy is seen by UNESCO as an excellent regional instrument to promote ESD in Latin America and the Caribbean. It is the first regional instrument designed especially for ESD (and not exclusively for environmental education). It was developed in a participatory and consultative process which made it possible to involve various stakeholders and several coun-

tries from the region and led to a certain degree of consensus building on the topic of ESD.

5. SD 'competence'

As the 'E' in ESD is increasingly being emphasized there is more attention for the kinds of capacities of qualities people need to develop in order to be able to contribute to sustainable development. The concept of 'sustainability competence' refers to those qualities people need to have to be able to act when confronted with a sustainability challenge. SD competence is not necessarily the same as ESD competence as the latter has much more to do with one's capacity to engage people meaningfully in SD matters. Nonetheless, SD competence can help inform ESD competence as well. Recently some research has been done with respect to the meaning of sustainability competence which may inform the coming years in the DESD. Point of departure is the question: What are the kinds of outcomes of an ESD process that focuses on capacity building for SD? The Swedish contribution to a report on ESD in higher education in some European countries states the following in this regard (Wals, 2007):

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5 See for instance the Santo Domingo Declaration signed in 2009 at the Sixteenth Forum of Ministers of the Environment of Latin America and the Caribbean. This Forum of Ministers constitutes the main body for regional inter-governmental political consensus building on environmental issues and offers a space to agree on actions and reflect on the main challenges of the global and regional environmental agenda, in the context of sustainable development. The Declaration can be found at: www.global.net/iepala/gloobal/tematicas/crearpdf.php?id=6528

"The competency required for SD is manifold, but the basis of it is relevant knowledge and an ability to think, act and take responsibility out of a holistic understanding of the pre-conditions of life on earth in a global perspective. It includes the ability to continuous learning from others and the ability to cooperate over disci-plinary and professional borders, to think and analyse critically and to solve problems seeing possibilities and limitations in ones processional role. An important ability is also that of complex thinking and using specialists for different areas. Lea-ders need to have the ability to create enthusiasm and to think in new creative ways."

In the report the Dutch contri-bution states that components of sus-tainability competence include: un-derstanding sustainable development, systems thinking, adopting an integral view, personal leadership and entre-preneurship, unlocking creativity, appreciating chaos and complexity, and fostering collective change. The German contribution to the same re-port introduces the notion of Gestal-tungskompetenz (De Haan 2006). Ges-taltungskompetenz describes pupils' abilities to apply knowledge on sustai-nable development and to identify pro-blems of non sustainable development.

This means, they are able to draw con-clusions from studies into the present or future in the areas of ecological, eco-nomic and social development in their varying relations of interdependence, and take decisions on the basis of the-se conclusions, understand these deci-sions and apply them individually, as part of a community and politically in order to further sustainable develop-ment processes (Wals and Blewitt, 2010). Table 1 identifies some key elements of sustainability competence as identi-fied by Michelsen and Adomssent.

TABLE 1. Elements of Sustainability Competence (Source: Michelsen and Adomssent 2007)

Elements of Sustainability Competence

- Competence to think in a forward-looking manner, to deal with uncertainty, and with predictions, expectations and plans for the future

- Competence to work in an interdisciplinary manner

- Competence to achieve open-minded perception, trans-cultural understanding and cooperation

- Participatory competence

- Planning and implementation competence

- Ability to feel empathy, sympathy and solidarity

- Competence to motivate oneself and others

- Competence to reflect in a distanced manner on individual and cultural concepts.

An important task of ESD is to help learners appreciate and utilize difference (Wals, 2009). The development of knowledge and understanding has both personal and shared elements to it. Social interaction allows one to relate or mirror his or her ideas, insights, experiences and feelings to those of others. In this process of 'relating to' or 'mirroring' these personal ideas, insights, experiences and feelings are likely to change as a result. This mirroring may lead the learner to rethink his or her ideas in light of alternative, possibly contesting, viewpoints or ways of thinking and feeling. At the same time (learning) experiences, which are shared with others, are likely to gain importance. This is not to say that personal experiences, which are kept to oneself, are insignificant. But shared viewpoints or ways of thinking and feeling give the learner a sense of competence and belonging to the community of learners.

Another component of sustainability competence is the ability to cope with uncertainty. This is a major challenge for higher education in particular as traditionally many scientists consider minimizing uncertainty and maximizing predictability one of their key quests. The emergent uncertainty paradigm however holds that it is an illusion to think that we will ever be able to achieve zero uncertainty or even get close to that. Instead this uncertainty paradigm suggests that more science, information, knowledge might not necessarily lead to less uncertainty, it may actually lead to more as new complexities and questions arise. Instead of putting our academic minds towards minimizing uncertainty and maximizing predictability it might be more fruitful to put our energy towards *living with* uncertainty: seeing it as a given, something that can not be conquered. In light of sustainability this also implies that we need to develop a 'precautionary reflexivity' that can steer us clear of the inaction, paralysis and apathy that often results from the prevailing 'wait and see' attitude among many citizens, including scientist, which suggests that until we are not sure, and until there is disagreement among scientist and policymakers about what is happening to the planet, we have no reason to break with our existing routines and can re-

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turn to business as usual. In their edited volume on education and climate change, Kagawa and Selby write: *"As a fundamental contribution to climate change [prevention and adaptation], it seems that educational spaces should build a culture of learning awash with uncertainty and in which uncertainty provokes transformative yet precautionary commitment rather than paralysis"* (Kagawa and Selby 2010, p243).

6. Cross-boundary social learning

Perhaps most ESD activity around the world is generated not by formal government organizations but rather by NGOs who sometimes work with formal education systems but more often work in non-formal and informal learning settings (UNESCO, 2009a). Informal and non-formal education tends to refer to the collective learning that takes place outside of formal educational systems in everyday life for instance in the context of families, work places, clubs, web-based communities, etc. Non-formal learning can be more or less structured and range from the learning occurring in study groups, non-governmental organizations, social movements, youth clubs, churches, folk high schools etc. Informal and non-formal education in all their forms is characterized by being voluntary, by active participation and by the reciprocal exchange of ideas, as well as by the increasingly important influence and role of Information and Communication Technologies. Social learning is often used to refer to learning at the crossroads between formal, non-formal and informal learning between multiple stakeholders. In the context of sustainability such learning contributes to and occurs in a 'learning system' in which people learn from, as a result of and with one another and collectively become more capable of withstanding setbacks, of dealing with insecurity, complexity and risks associated with (un)sustainable practices. Such a system needs people who not only accept one another's differences but are also able to put these differences to use. There are various ways to describe social learning, but it is essentially about bringing together people of various backgrounds and with different values, perspectives, knowledge and experiences. Social learning is a process in which people are stimulated to reflect upon implicit assumptions and common frames of reference, this in order to create room for new perspectives and actions (Wals, 2007). The most important characteristics of social learning are:

- it is about learning from one another together,

- it is assumed that we can learn more from one another if we do not all think alike or act

- alike, in other words: we learn more in heterogeneous groups than we do in homogenous groups,

- it is about creating trust and social cohesion, precisely in order to become more accepting and to make use of the different ways in which people view the world,

- it is about creating 'ownership' with respect to both the learning process as well as the solutions that are found, which increases the chance that things will actually take place, and
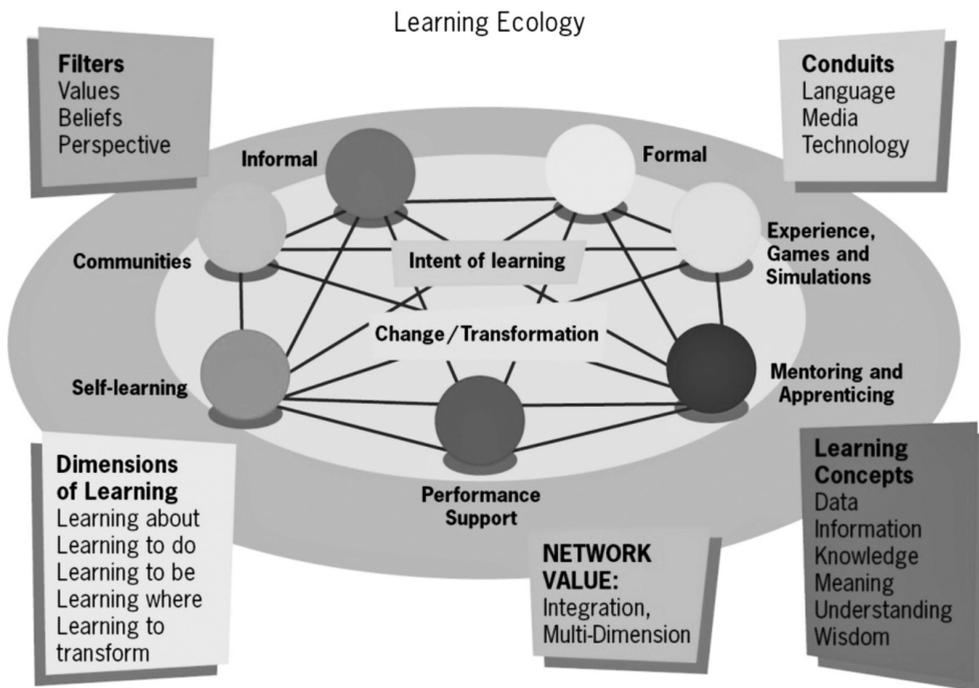
- it is about collective meaning and sense makin

In the latest DESD review (Wals, 2012) so-called "whole school approaches to sustainability" and the creation of eco-schools are identified as emerging hybrid practices that blend education, citizen science, research and community engagement (Hargreaves, 2008; Bell and Dyment, 2008). A school's grounds being converted into edible school gardens and living labs for learning about ecology, food security, carbon fixation, healthy living, with the involvement of wide range of societal actors (local garden center, a restaurant, a community organization, an environmental education center, youth, teachers, school administrators and so on) is just one example of such a configuration

George Siemens speaks of a "learning ecology" to describe the kind of learning taking place in such configurations. He uses the concept of connectivism to refer to the need for the integration of principles explored by chaos, network, and complexity and self-organization theories (Siemens, 2005). Figure 3 shows how a learning ecology is a networked, facilitated, and mediated configuration of formal and informal forms of learning revolving around a change or transformation challenge.

Finally, it can be argued that for social learning in hybrid learning configurations to be oriented towards sustainability it also needs to be:

- Integrative by considering not only the ecological and the environmental but also the economic, ethical and the socio-cultural, not only the present but also the past and the future, not only the local but also the global and the regional, not only the human world in all its diverse manifestations but also the non and more than human world;

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Learning Ecology

Connectivism: Process of creating network

FIGURE 3. George Siemens' Learning Ecology (Siemens, 2005).

- Critical by providing space for and actively encouraging the questioning of the taken for granted (e.g. continuous economic growth and consumerism and associated lifestyles);

- Change-oriented by not just focusing on awareness and understanding but by connecting awareness and understanding to action and change (e.g. through the exploration of alternative lifestyles, values and systems that break from existing ones that are inherently unsustainable.

7. Conclusion

As the DESD nears its final year, the DESD ESD is on the agenda in most countries around the world. In many countries there is coordinated effort to develop and support ESD. There is an

increased recognition and acceptance that there is no 'one size fits all' version ESD and that historically grown and current political and socio-cultural realities and specific environmental and ecological challenges make a contextual grounding of ESD essential. Such grounding in sometimes means strengthening ESD-related educations and forms of learning without using the concept of ESD itself. Whereas there may at one point have been an attempt from the international policy arena to convert the much earlier established EE into ESD there is now recognition, also within UNESCO, that this is not necessary and can sometimes even have adverse effects (UNESCO 2009a). The mid-DESD review reveals that the relationship between Environmental Education (EE) and ESD is a crucial one to understand. Blindness of the various manifestations of EE and ESD, their histories and the ways in which they relate, can lead to misunderstandings and negative effects on the implementation of both. There are important differences to be observed in terms of both the contents of EE and ESD and the underlying pedagogical and didactic dimensions which are deeply connected to a country's or region's perspectives of citizen participation and democracy. The often forgotten 'E' in ESD can be conceptualized in different ways, depending on the amount of space there is for participation, self-determination and autonomous thinking. When this space is narrow, a more transmissive version of ESD is likely to result with a strong emphasis on instructional forms of teaching and knowledge transfer. When this space is broad, then ESD will emerge that is characterized by higher levels of participation, self-determination, autonomous thinking and knowledge co-creation. The latter, more transformative, versions of ESD require alternative teaching and learning strategies that also allow for the development of new competences. A country's tradition in governance might affect what a country emphasizes a more pedagogical orientation towards ESD consequently implying (social) learning, participation and capacity-building or a more instrumental orientation that emphasizes a change in people's behaviour. It should be acknowledge that in many parts of the world EE is broadly interpreted in ways that very much mimic broad interpretations of ESD.

As the 'E' in ESD is increasingly being emphasized there is more attention for the kinds of capacities of qualities people need to develop in order to be able to contribute to sustainable development. The concept of 'sustainability competence' refers to those qualities people need to have to be able to act

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when confronted with a sustainability challenge. Some elements of such competence have been presented but much more research will have to be done about these competences and how they can be developed and strengthened.

It appears increasingly clear that the search for sustainability cannot be limited to classrooms, the corporate boardroom, a local environmental education center, a regional government authority, etc. Instead, learning in the context of sustainability requires 'hybridity' and synergy between multiple actors in society and the blurring of formal, non-formal and informal education. Opportunities for this type of cross-boundary social learning expand with an increased permeability between units, disciplines, generations, cultures, institutions, sectors and so on.

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