

EDUCATION FOR SUSTAINABLE DEVELOPMENT AND THE INTERNATIONAL BACCALAUREATE

EDUCACIÓN PARA EL DESARROLLO SOSTENIBLE Y EL BACHILLERATO INTERNACIONAL

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ABSTRACT

In our times, there is an urgent situation, which is affected by inter-continental issues related to the environmental situation. Problems such as the lack of water, pollution or global warming are directly or indirectly affecting to some areas in our planet, some of them really damaged already. Further, some sectors of humanity are making an urgent call to make actions and therefore a change in our mentalities. For that reason, the international educative community feels their responsibility as formers of students of the presents and adults for the future. The intention of this paper is to diffuse and to summarize common methodologies used in Education for Sustainable Development, observe different roles in school communities and their collaboration in ESD and how international educative programmes, and more in particular the International Baccalaureate aids and develop those green influences at schools with its pedagogy, statements and mission with their particular global perspective.

Key words: Sustainability in IB, International Baccalaureate, Eco-schools, Education for sustainable development and Integration.

RESUMEN

En nuestra era, existe una situación urgente, relacionada con temas de índole intercontinental y ligada al medio ambiente. Problemas como las sequías, contaminación o el calentamiento global están afectando directa o indirectamente algunas zonas del planeta, algunas ya muy dañadas. Consecutivamente, algunos sectores de la humanidad realizan una llamada urgente para realizar acciones respecto a este hecho y por consiguiente un cambio en mentalidades. Por esta razón, la comunidad educativa internacional se siente responsable en formar a sus alumnos del presente y adultos del futuro. La intención de este escrito es la difusión y puesta en común de metodologías usadas en Educación para un Desarrollo Sostenible y observar los distintos roles en centros educativos, sus colaboraciones con EDS y cómo los programas de educación internacional, y en concreto el Bachillerato Internacional (IB) ayuda y desarrolla aquellas influencias amables con la ecología en escuelas con su pedagogía, declaraciones y misión con su particular visión global.

Palabras clave: Sostenibilidad en el IB, Bachillerato Internacional, Eco-escuelas, Educación para un Desarrollo Sostenible and Integración.

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INTRODUCTION

In our present times, where climate change is becoming more and more evident and where other urgent environmental problems, such as the lack of fresh drinking water and the pollution of oceans and cities are pressing issues, there is a worldwide call for the defence of damaged regions around the planet and to protect fragile areas. This particular vision of our global society is shared by many inhabitants, associations and governments: they take on this challenge and ask for urgent changes. Education can play an essential role in the process of becoming more sustainable. Already many campaigns are being originated in schools and other institutions and there is the wish to spread the message of sustainable development in a global process. In addition, there is a need for some educators to address knowledge acquisition related to this environmental crisis. Actions are already taken from teaching and learning fields related to environmental sciences or sustainable development. The knowledge from these fields can be implemented in the existing school curriculum by dividing it in economic, social and ecological paths and relate these concepts to formal subjects. By contrast, other organizations defend a teaching and learning experience of sustainability in its own subject. But what kind of approaches does education have for sustainability development? Originally, in 1978 UNESCO already stated that education has an influential position in green education, and that educative organisations should incorporate this pedagogy into their systems, so learners would be dispensed with the knowledge, skills and orientation that are required to find answers to environmental enquiries. In the light of that, the institution insists that due to the essence of the environmental education, many unofficial or casual actions can bring attention to the community involvement and motivate different initiatives. After that, during the United Nations Conference on Environment and Development (UNCED), the same organization started to talk about Education for Sustainable Development (ESD) by the proposal of *the Decade of Education for Sustainable Development* (DESD), and was UNESCO the lead agency (Wals, 2012). Since then, ESD has been adopted in a wide range of countries. Projects that include youth camps, seminars, contents including children's literature, learning expeditions, and designed issues (UNESCO-UNEP, 1978) supported by youth associations, governmental groups or trade unions to rise green responsiveness and decrease the human footprint on the planet (Wals, 2012). Furthermore, the international effort to include ESD is visible, there are official educational programmes and those integrate the concepts of sustainability into their conventional courses, units and pedagogical items (Mogensen & Mayer, 2005). The objective is to get learners ready for eco-friendly topics in an agricultural or city surrounding (UNESCO-UNEP, 1978). However, it is still a challenge for some docents to include topics, such as ecology, in a productive integrative teaching model (Wals, 2012). Moreover, it is interesting to observe rural school models, how pupils are in contact with nature in those schools, how they explain some subjects through their learning experiences in the local ecosystem and through strong connections with the country side community (Smeds, Jeroen, Kurppa & Vieraankivi, 2011). In some cases, there may be the resources to set up a green based pedagogic system (Inwood, 2013). In addition, those resources can obtain advantages in ESD by the use of certain technologies and opening opportunities in the curriculum (Johnson, Adams, Becker, Cummins and Estrada, 2014). Lastly, UNESCO (1978) also recommends to include in the international curriculum experiences that establish contact between learners and workers, engineers, designers or farmers who are influential in their sector in regards to sustainability. Sustainability is a global issue and needs to be tackled in a combining effort of countries around the world. This suggests that the education for sustainability also needs to be approach from an international perspective (UNESCO-UNED 1978). The International Baccalaureate (IB) has a proven track record regarding international education (Taylor & Porath, 2006), so IB could be a promising candidate for promoting ESD into the curriculum. This research is about exploring the following idea: *Education for Sustainable Development and the International Baccalaureate*.

Moreover, the literature researches founded was around ESD, sustainability at schools, eco-schools and IB. Additionally, from this last fact, the essential questions in this research based in ESD are:

- What kind of activities are promoted by the different school's communities around sustainability?
- Are there any networks that share and develop common sustainability projects? If yes, how do those networks implement sustainability in the school curriculum?
- Can the International Baccalaureate empower ESD?

Due to the nature of the IB, and their initiatives in several fields (Tsumagari, 2010), there were inquiries to become familiar with the green methods possible and if schools were using some sustainable strategies (Monroe, 2003) with it. Then, different IB guides were used as an extension although the main objective was the inspection and outline of the most outstanding scientific articles in sustainability and education for a cohesive understanding through IB education.

1. METHOD

To investigate about the research question, knowledge about IB and the practical implementation of the IB-curriculum is required and knowledge about ESD. Also, green influences in education have been studied, in the form of scientific literature and its documented experiences. In a later stage the research will synthesize the gained insights.

The literature research uses the search terms:

- Sustainability, IB, and/or Eco-schools
- Education for sustainable development

The search terms were used in combination with 'integration' and 'curricula'. Table 1 presents the articles that were selected for this research.

Table 1. List of the main scientific articles and books processed in this paper.

ARTICLE	RELEVANT CONCEPTS AND REASON FOR USE	ADDED VALUE TO THIS WORK	PARAGRAPH
Belue Buckley, J. (2015). "Constantly in the Making": Pedagogical Characteristics of Education for Sustainability in Postsecondary Classrooms. <i>Journal of College and Character</i> , 16(1), 9-21.	Methodology classification of Education for a Sustainable Development.	ESD connection with the international issues: Distribution, approaches in the concept-based curriculum and teacher role.	<i>Results. Approaches of Education for Sustainable Development in an International Education.</i>
Hahn, K. (May, 1965). Harrogate Address on Outward Bound. Speech at the Conference at Harrogate, UK	Origin and essential Concepts in international education. Important components in holistic education.	Approach of international education for ESD in the CAS programme of the IB DP.	<i>Results. Approaches of Education for Sustainable Development in an International Education. Discussion. Can the International Baccalaureate empower the EDS?</i>
Martin, R. A., Tanyu, M., & Perry, S. (2016). Structures and programme supports for creativity, action, service in the international baccalaureate diploma programme: An implementation study in Turkey. <i>Journal of Research in International</i>	Description in the IB CAS programme in Turkey.	Features and actions in CAS.	<i>Results. Approaches of Education for Sustainable Development in an International Education.</i>

Education, 15(2), 120-136.

Mogensen, F., & Mayer, M. (2005). <i>Eco-schools: trends and divergences</i> . Austrian Federal Ministry of Education, Science and Culture. Austria.	A complete study of green methodology and a comparison between international Eco-schools.	Eco-schools features. Approaches to de curriculum. Teacher role. Students possibilities.	<i>Results. Approaches of Education for Sustainable Development in an International Education. Discussion. A closer proposal from sustainability to IB education.</i>
Monroe, M. C. (2003). Two avenues for encouraging conservation behaviour. <i>Human Ecology Review</i> , 10, 113–125.	Analysis of way to actions for ESD	Analysis of action at school is relevant for green education, it fixes strongly with the dialogue in international education.	<i>Results. Approaches of Education for Sustainable Development in an International Education. Discussion. A closer proposal from sustainability to IB education.</i>
Peterson, A. D. C. (2003). Schools across frontiers: The story of the International Baccalaureate and the United World Colleges. Chicago and La Salle, Illinois: Open Court Publishing.	Origin of IB education and framework of its uses in all stages of a person's education.	Approximation and links between International education and Environmental education.	<i>Results. Approaches of Education for Sustainable Development in an International Education. Discussion. Can the International Baccalaureate empower the EDS?</i>
Stagell, U., Almers, E., Askerlund, P., & Apelqvist, M. (2014). What Kind of Actions are Appropriate? Eco-School Teachers' and Instructors' Ranking of Sustainability-Promoting Actions as Content in Education for Sustainable Development (ESD). <i>International Electronic Journal of Environmental Education</i> , 4(2), 97-113	A complete paper about sustainable introduction and actions with Eco-schools.	Introduction of ESD in curriculums. Actions.	<i>Results. Approaches of Education for Sustainable Development in an International Education. Discussion. Can the International Baccalaureate empower the EDS?</i>
UNESCO-UNEP (April, 1978). <i>Final Report Intergovernmental Conference on Environmental Education in Tbilisi (Ex-USSR)</i> . ED/MD 49.	Report, connections, suggestions and conclusion about global sustainable education	Essential point in common for green education between different national educators. Features in students, teachers and curriculums. Suggestions to develop ESD.	<i>Introduction. Discussion. Can the International Baccalaureate empower the EDS?</i>
Wals, A. E. (2012). <i>Shaping the education of tomorrow: 2012 full-length report on the UN decade of education for sustainable development</i> . UN Conference of Environment and Development. (pp.5-100). Paris: UNESCO.	Report for UNESCO and summary of the UN Decade of Education for Sustainable Development.	ESD politics in different countries. ESD different methodologies.	<i>Introduction. Results. Discussion.</i>

Warburton, K. (2003). Deep learning and education for sustainability. *International Journal of Sustainability in Higher Education*, 4(1), 44-56.

Innovational approximation to green education.

Characteristics of ESD in common with IB. Description of ESD approaches in subjects.

Results. Approaches of Education for Sustainable Development in an International Education. Discussion. Can the International Baccalaureate empower the EDS?

Source: Original material

To recollect, this paper is about two key aspects. Firstly, the International Baccalaureate curriculum with its intercontinental pedagogic perspective and secondly, Education for a Sustainable Development.

This research focusses on the possibilities for IB, as IB is a well-recognised international institution (Taylor & Porath, 2006). Furthermore, in their statements and origins, they have established their intercultural philosophy and their entrepreneurial spirit (Peterson, 2003), what made the curriculum even more attractive for the research. their instruction for principal global issues and their learner profile.

2. RESULTS

The literature research reveals what is considered a positive environment for the implementation of green education at school, their way to influence in the school curriculum and their effective methodology.

What kind of activities are promoted by the different school's communities around sustainability? Are there any networks that share and develop common sustainability projects? If yes, how do those networks implement sustainability in the school curriculum?

For an optimal efficiency, schools need to contemplate links to the outside, and therefore an enrichment in new methods, information and experiences that those connections could offer in ESD (Wals, 2012).

2.1 GREEN SURROUNDINGS CONTEMPLATED IN SCHOOLS

Firstly, the impact that a favourable context at school is essential for a constructive introduction of green learning. Those school that contemplate the identification as a green school or sustainable school, try to conduct their communities to a set of directions in sustainability (Wals, 2012). Strategies and institutional surroundings are an important key in this process (Belue Buckley, 2015). Repeatedly, those institutions establish environmental committees to smooth the path of skills such as stimulate the ESD by teachers to students (Warburton, 2003). Those contexts are key to incorporate new quality green methods, and consequently the school can evolve with those environmental influences a strategy for EDS together (Monroe, 2003). Furthermore, proper surroundings provide effective instruments to encourage teachers, outside participation and raise again new orientated objectives and methods, such as index of involvement, self-assessment or creative enterprises (Wals, 2012). Generally innovative ideas and introduction of contemporary actions are key to rise a different direction (Mogensen & Mayer, 2005). On the contrary, there are other ways to approach school scenarios, like measuring the environmental conditions of the building, or a direct influence in the curriculum. However, the combination of both paths is the most effective for a variety of those groups (Wals, 2012).

2.1.1 A global model to spread. Green education networks

Official networks accepted by schools aids the educative centres to get recognitions. National educative organizations or diverse associations in sustainable fields can orientate them to get their objectives (Wals, 2012), both sides, local and international organisations with ecological philosophy are strong coalitions to expand a sustainable influence at school (Belue Bucley, 2015). In the light of seeking those international educative links, the model of Eco-schools contributes to local schools around the world by sharing more than a protocol and activities for students. They aim to change mental maps of education towards a sustainable path to those who need and wish it. Like in the whole planet, they have been contemplating the issue of sustainability as a real need since some decades ago (Ringdahi, 2012). But let's see a global overview of Eco-schools.

2.1.2 Eco-schools

For many years, this organization evolve the answer inquired by many individuals in different societies. Their petition focus on a global change from different perspectives, including in education. Further, this educative alliance believes in a powerful pedagogy that can contribute to a change in a variety of educational communities (Dunlop, 2010). Besides, they point to a collaborative model to contribute for a mentality change, actions and consequences in that population (Stagell, Almers, Askerlund & Apelqvist, 2014). For that reason, this ecological and pedagogical network presents to the world actions to encourage a normative for who desire to become a green school (Stagell et al., 2014). Once the school decides to enter into the programme, they compromise to take action by the impact in their lessons and in the school context (Ringdahi, 2012). Then, Eco-schools rise their green policies and emphasize their commitment in a progressive change, a final report and three crucial aspects of their strategy (Ward & Schnack, 2003) which include an identification of essential standards to strive in an Eco- school planner and its contemporary approach in those lines, a collection of those norms more appropriate for the plan and the recognition of three advanced situations to establish environmental philosophy: Science and Technology hereafter, connections with the nature in the upcoming and a collective transformation driven destiny (Mogensen & Mayer, 2005). Furthermore, many schools participate through the Primary, Secondary and Professional education in the global arena, more than 30000 schools in 51 countries (Ringdahi 2012) around the world adapt their curriculums to this green protocol (Dunlop, 2010). Moreover, the initiative for an international programme of sustainable education promotes an improvement of the curriculum with an eco-friendly environment, including in the construction of the building (Ringdahi, 2012). On top of that, this intercontinental web includes concepts like photovoltaic cells, solar thermal collectors, alternative energy sources, wood, vegetable gardens including roof top, (Mori, 2007), solar cookers, water tanks, wetland restoration, eco-challenge or healthy tuck-shop (Ringdahi 2012). Every educational centre with an agreement with the Eco-school's programme receives support to improve their curriculum, different equitation and sustainable actions around the school community. Also, there is a registration fee that the school pays every year. When the academic course is done, they upload their actions to eco-schools for an assessment (Ringdahi, 2012). The results come with the Eco-school award: after reflected their advance in their portfolio and its assessment by Eco-schools, the most prosperous institutions achieve a green flag in order to recognize their effort with their projects and previous to it they can obtain a bronze and silver award (Ward & Schnack, 2003).

2.1.3 Actions

Apart from their statements, this giant of the environmental education drives different educative communities into different performances through teaching and learning. Although outdoor activities are demanded (Stagell et al., 2014), there are plenty of facilities inside the building (Mogensen & Mayer, 2005). Moreover, there are a differentiation between collective and individuals' activities

(Wals, 2012) promoted by Eco-schools. To put an illustration, there are some inside and outside possible actions carried singly:

- Recycling
- Vegetable garden
- Public transport or use of bicycle instead of car
- Composting
- Economize water
- Gather trash
- Lower acquisition of clothing
- Lower meat quantities in the menus
- Economize energy

In addition, as a collective, students, teachers and parents can initiate different campaigns, such as:
Inform others about sustainable habits

- Plan for gathering trash
- Effect in the coordination teams
- Influence in the politics
- Be linked with NGO's (Stagell et al., 2014).

As commented previously, the model of Eco-schools focusses on transform mind-set and actions of communities through a teaching and learning experience. They want to rise themselves with their activities, besides they aim an introduction of their curriculum (Stagell et al., 2014) at school. However, they understand an order in this process: awareness of sustainability will come by the effect of actions and procedures at school, and then a change in the mentality of people will come, rather than to convince the population to make the change first, which is less effective (Belue Buckley, 2015). Then, students and teachers will experience the new systems and rise their environmental knowledge (Ringdahí, 2012).

2.2 APPROACHES OF EDUCATION FOR SUSTAINABLE DEVELOPMENT IN AN INTERNATIONAL EDUCATION

Significantly, features in Education for Sustainable Development pedagogy is interesting for a comparison with the International Baccalaureate (Hil, 2012). Theoretically, a variety of quality examples of national and international curriculums are designed to promote ecological education (Mogensen & Mayer, 2005). Furthermore, they encourage cognition, creativity, critical thinking, problem solving and collaboration (PCSD, 1994, Warburton 2003). On the contrary, a powerful green education requires a previous practice of those abilities in students if profit outcomes are wanted, accordingly, motivation in learners and transfer skills in their way to knowledge are significant here (Warburton, 2003). In the light of that, a closer analysis will offer some standards for a sustainable education practice: a sustainable “scenario” at school, where trainers, teachers and students are involved in a movement besides the official curriculum (Mogensen & Mayer, 2005); green influences connected in the formal subjects and ethics standards, where the school ideology accept the mission for a movement towards empathy, risk taking and care of the planet from their community. According to Belue Buckley (2015), three standards compose a successfully green experience at school:

- A sustainable environmental at school.
- Green concepts connected in the formal curriculum.
- Moral standards.

Moreover, this author also agrees with those general field standards relate to each other, and together with the school context, its curriculum and community, they form a whole green educative experience. For instance, moral orientation is carried by teachers who connect their subject with ESD. Their responsibility includes knowledge and content acquisition in their subject and by using

this knowledge as reflection and practice they ensure this process (Warburton, 2003). For example, if a teacher wants to point to measure of CO₂ emissions or the benefit of renewable energy, the use of values will be immediately in class (Belue Buckley, 2015). Moreover, the content in the formal curriculum is taken as a documentation for a better comprehension and awareness (Warburton, 2003). While subjects content alludes to values or ethics, they also implicate an ensured knowledge in their practices (Belue Buckley, 2015). Nowadays curriculums turn towards new skills acquisition perspective. The core of knowledge acquisition is not based in a fixed learning by rote (Haloburdo & Thomson, 1998), from a traditional educational point of view, whereas educators encourage students to investigate more in a set of sources (Monroe, 2003). Additionally, this way to the excellent in knowledge is considered as a path to understanding as a reflection (Belue Buckley, 2015).

In future, green educators expect different national and international curriculum to be extended with their vision (Wals, 2012). Likewise, in a short term they assume the introduction of applicable items into their subjects (Warburton, 2003). For a more efficient stimulus in students, they need to find their key to comprehension: a curriculum that place its significant in answering why pupils are learning will show its sense to them, and at the meanwhile, it will explain them solutions to international issues (Belue Buckley, 2015). That's why, tools that can be acquired by ESD are important: to integrate this innovational green methodology (Conde & Sánchez, 2010).

2.2.1 Connections with a concept based curriculum

According to the Guide to the MYP eAssessment, of the International Baccalaureate Organization (2014), this international curriculum offers a knowledge acquisition based in interdisciplinary concepts, in that sense students reach their status of critical thinkers. Such an education contemplates an interdisciplinary structure and encourage learners to contrast and combining thinking patterns in different phases (Warburton, 2013). On top of that, traditional subjects are essential for comprehension of sustainability in schools (Belue Buckley, 2015), where sustainability can appear as part of the content (Wals, 2012). For example, History can explain the interaction of the human being with the environment, or Science subject relate chemicals with contamination in the oceans. Further, different topics can be observed in different scales through the discipline perspective. Then, the role of educators consists in dispensing student's tools to operate and measure, so they can recognize these issues through disciplines in an economic, environmental and equity framework. Moreover, the teacher must offer cognitive and physical material, flexible experience and a scaffolding to critical thinking (Warburton, 2013). With this in mind, ESD combine different subjects with educational actions through a new perspective in environmental issues. The election of those activities is crucial for a successful quality (UNESCO-UNEP, 1978). In this line, sustainability can be interpreted by a discipline support (Belue Buckley, 2015) in its whole holistic constitution, in other words, a set of subjects can diverge in their scientific explanations, although they coincide in a scale approximation (Warburton, 2013). In addition, some of the outcomes are normally results of a deep understanding. Generally, an intense understanding has a crucial meaning in education and singularly in sustainable pedagogy, due to the fact that its holistic framework gives the chance to construct and arrange diverse patterns of data. Further, a deep comprehension is linked to the evolve of critical thinking or creativity and at the same time it achieves an efficient learning (Warburton, 2003).

2.2.2 Areas of sustainability networks

Consequently, a mention for other cases of effective international cooperation in ESD. Many lands keep on effort to introduce the environmental defence (Wals, 2012). At higher educational courses, they can use debates those areas of knowledge in debates, seminars or training sessions about their ecological issues. However, sustainability education concerns not only to pedagogical areas in a

country, also health, agriculture, lands and mines, community development can be also involved as a part of a sustainable country (UNESCO-UNEP, 1978). As advantages, they invite to use existing structures, especially in regional offices and centres. Despite this, some of those green networks suggest formal education for educators too (UNESCO-UNEP, 1978). For the past decades, the lack of licensed teachers in green areas rise considerably, mostly in upper education. Professional who can deal with ESD and education are required (Mogensen & Mayer, 2005). Also, EDS teaching courses should also include cooperation exchanges and sometimes international aids are indeed. What's else, new green trends create and plan programmes adding their aims, ideas, methodology and activities at school and outside (UNESCO-UNEP, 1978). Those projects admit sustainable challenges is educative communities, and consequently they consider the achievement as an evolution and an innovation for the future in its social, scientific and natural level through pedagogy (Mogensen & Mayer, 2005).

2.2.3 Connections with the ib. Creativity, action and service (cas) curriculum

This component of the Diploma Programme core (Martin, Tanyu & Perry, 2016) ratifies some characteristics of ESD beyond de content (Belue Buckley, 2015) in some of its exercises. Firstly, the education offered by International Baccalaureate with CAS includes a recognition for its philosophy statement (Martin et al., 2016). It cares for a global understanding, consideration between cultures and peace in the world, issues that are treated in international education and ESD cares about (Hopkins & McKeown, 2002). For that reason, one of the key of CAS is the input to the character and personality of the student (Hahn, 1965). They must be involved in the IB philosophy and its student description too. Originally, CAS philosophy was evolved by the pedagogical experts, they claimed for an educational curriculum where the student worked in physical aspects and contributed to their community and therefore individuals grow in all aspects of their live (Peterson, 2003). Furthermore, Kurt Hahn gave impulse to this outside school learning in the curriculum, his desire was to rise student's personalities (Hahn, 1965). Then, the International Baccalaureate implement this educative action in its curriculum. Nowadays it incorporates the five accomplishments standards including personal achievement, abilities, personal aptitudes, social features and international consciousness, characteristic directly linked to a green learner (UNESCO, 1978). Moreover, the CAS guide advices the learners to create an additionally meditation on all their actions and a final essay where they explain their CAS experience by the DP IB Guide (2012). Additionally, sustainability has a place in CAS projects due to its four standards allocated in its activities, such as resolved and existing projects, with its results, personal achievements, with its idea, procedures and outcome (Martin et al., 2016), and finally a contemplation and deliberation of the personal experience and acquired skills (Conde & Sánchez, 2010). In addition, for a nicer use, these participative projects should provide an explorative path for learning experience, inform about aims, deliver a plan and assessment, offer a set of opportunities, ideas and projects deliver by a student and a real compromise from the learner. Similarly, patterns of ESD must follow the same path to the excellence (Stagell et al., 2014). Also, students approximate their commitment with their experiential path to knowledge and make a multi-significant experience from it (Warburton, 2003). Furthermore, some other school staff may be included in the CAS projects. Then the coordination takes the guidance, making a visible assistance from the school too (Martin et al., 2016). There is a variety of procedures for students to develop their reflection skills. When the connections with Theory of Knowledge are provided, the facility to experiment the learning cycle through reflection increases and it thought their values (Martin et al., 2016), likewise environmental education also does (Belue Buckley, 2015). Guidance of the CAS coordinator offers an essential experience in occasions, then the learners obtain the way to reflect. For instance, some patterns such as evaluate the concept, patron, templates of student's reflection and share them, including future proposal (Martin et al.,

2016). At the same time, learning results on a principled aptitude are an essential factor with students. It presents an impact in the student's empathy (Warburton, 2003) and the outcomes of their actions in other people and communities.

3. DISCUSSION

3.1 A CLOSER PROPOSAL FROM SUSTAINABILITY TO IB EDUCATION

Globally, there are plenty scholar strategies at schools (through their programme, afterschool plan or clubs) and printed and digital material for educators. The mission of education for sustainability is the integration in the curriculum (Wals, 2002) two paths with the holistic practice, a framework that gather the whole mission (cognitive pedagogy) (Mogensen & Mayer, 2005) originally subject-based though concepts and far from the tangible actions, although nowadays explores the global issues through interdisciplinary concepts (Wals, 2012) and a serialise practice (gradually methodology), therefore, it will focus more on features and activity (working methodology) (Mogensen & Mayer, 2005). In that sense, those variety methodologies align themselves into a two ESD patterns exercises of the curriculum. Firstly, sustainability can be acquired by learners through conventional subjects, teachers use it as a tool to explain the cognitive part of their disciplines (Wals, 2012). Through the concept-based curriculum, learner understand what they are learning and why they are learning. It is barely possible to performance without winning experience from effort (Mogensen & Mayer, 2005). This innovation comprehension offers higher outcomes than a conventional methodology. Therefore, green involvement is an efficiency tool in teaching and learning process for international networks (Ward and Schnack, 2003), including International Baccalaureate and together with Eco-schools. On the contrary, it is important to insist that excellent educational outcomes will depend on the quality of students' actions, critical thinking and knowledge acquisition (Ward and Schnack, 2003). Secondly, a more specific approach of the curriculum will include actions involving several green activities and more adequate into a service learning guide dedicated to sustainability and designed by teachers will improve the character in IB schools and their mission with the school coordination, with the involvement of teachers, parents, students and the local community. Those strategies are based for many sustainable schools, they objective to promote participation and entrepreneurship as a part of their planner (Wals, 2012).

Moreover, green educators contact their learners in a construction of their knowledge with important global issues. Furthermore, teachers coach their students in their way to quality into their methodology context due to the regular changes in information (Belue Buckley, 2015). Also, educators involve students in evolve actions and links to identify real necessities by pedagogical programmes (Monroe, 2003). In other words, a service learning experience give also advance in formal subjects' new advantages (Belue Buckley, 2015), that's to say, when the learning service takes an achievable place in learners, it gives them more initiative and self-determination in their knowledge acquisition. In addition, the role of the teacher must include a set of nonconformist activities for ecology in education, in some manner it subscribes to their evolution of "will to act skills" (Peterson, 2003) and therefore it may conduct them to query about their perspective in this methodology. In addition, education for a sustainable development emphasize responsibility in learners in terms of eco-practices (Wals, 2012). Those students also make decisions about administration in space, energy and other resources at school, actually, there is a list of facts that are able to show evidence to students in class. Some possibilities of debate are open in an educative space, like energy footprint or water facilities. On the contrary, in some ESD research, students follow in their subjects' issues such as deforestation or contamination in oceans, normally out for their current life. Although they are also preeminent, those topics are not obvious at schools. Sustainability coordinators

can also encourage and orientate learners in their living-learning experience or service- learning actions (Belue Buckley, 2015).

3.2 CAN THE INTERNATIONAL BACCALAUREATE EMPOWER THE ESD?

3.2.1 Creativity, action and service (cas): a resource for sustainability orientation

This mandatory in the Diploma programme of the IB allows some samples of sustainability activities according with its content, sources and procedures (Martin et al., 2016), for instance, the analysis of the water around a school, as a sustainable practice. Some trends consider water as ecosystems, and in this experience designed for students requires a holistic framework that recognises connection between the physical, chemical biological components in its environment, and separate disciplines, including the ecology, then it could have some connections with other disciplines in the curriculum (Warburton 2003). Moreover, for a successful ESD experience, students need to explain their goals, for example in the service and debate about it UNESCO-UNEP, 1978). For that, outdoor activities such as walks through the neighbourhood, fish tank data collection, the creation of a IB camp or tree planting day (Lugg, 2007) analysis like their life style or how sustainable their camp was (Higgins, 1997). Also, it is possible incorporate green habits inside the building, for example, recycle material, and sometimes use it for creative ways, such as design with litter (Björkvall et Archer, 2016). Other action described is the planning for sustainability of health programmes (Shediac-Rizkallah & Bone, 1998) so students learn about the importance of hygienic in their everyday habits, or the learners can check the presence of bacteria at school in the institution laboratory for instance.

3.2.2 What is the meaning of the cas programme for a green student?

In the IB programme model, there is an explanation of “a holistic educational experience” going beyond the acquisition of knowledge, to include education to the “whole person”. Here, is where sustainability obtains a place in the curriculum. Students also need to develop “will to act” skills and action to contribute for a better society (Peterson, 2003), including in environmental actions. The Diploma Programme education considers the coverage for all levels in a person. It explains why students assimilate and investigate different aspect of their environment and life lessons, they develop “will to act” abilities and therefore their perception and offering to a better society advances notably (Peterson 2003). Moreover, the Guide to MYP eAssessment (2014) says that Creativity, Action and Service programme helps to the holistic experience grounded by a supportive learning environment. In addition, Kurt Hahn, founding director of United World College movement, promoted an education outside the classroom, outdoor adventures residential visits, field-works, in other words, an advance from theory to reality (Hahn, 1965), there are also some similarities with the green education. In the light of that, the core of Diploma Programme encourages a long-life learner, compassed, inquirers, knowledgeable, thinkers, communicators, principled, open-minded, risk-takers, balanced and reflective students (Wells, 2012). Therefore, they effort together with activities from a movement aptitude point of view (Jensen & Schnack, 1997) with that, the IB Diploma Programme Guide (2012) says that the school community does not want to stay in an innovational point, whereas it also includes directly motivation for learners to take part in actions, for instance, conferences, debates, or other possibility of inclusion in the pedagogy life of the institution. For that reason, a key aim in IB education for ESD is an excellent comprehension of their learners (Martin et al., 2012) and the school staff around the intercontinental and local issues and disputes of interests (Lundegård & Wickman, 2007).

3.2.3 Esd learner profile

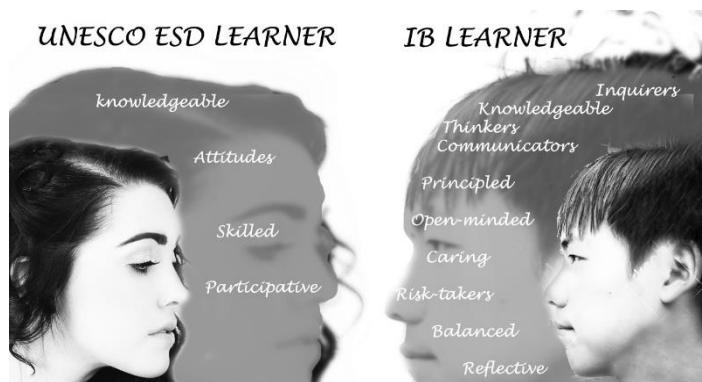
UNESCO (1978) considers that Education for a sustainable development should inform to the community about the connections between ecological issues in cities and rural areas. Moreover, education should be a gift to individuals for achieve a level of sustainable and comprehension abilities. Additionally, it advocates for new mental patterns of human beings and population.

Likewise, a sustainable learner profile is described as:

- Knowledgeable
- Attitudes
- Skilled
- Participative (UNESCO-UNEP, 1978).

Similarly, a comparison with the previous principles can have some common references to the Learner profile of the IB (Wells, 2011). The figure 1 will describe and compare both descriptions.

Figure 1. A comparison between UNESCO Sustainable learner and IB learner



Source: Original material

In the IB programme model (figure 1), there is an explanation of “a holistic educational experience” going beyond the acquisition of knowledge (UNESCO-UNEP. 1978), to include education to the “whole person”. Students also need to develop “will to act” skills and action to contribute for a better society (Peterson, 2003), additionally, both descriptions apply for skills acquired by service to the community and empathy as a consequence of their actions (UNESCO-UNEP. 1978) (Wells, 2011). Similarly, Creativity, Action and Service programme helps to the experience grounded by a supportive learning environment. Further, values and ethics are important in this guide (Martin et al., 2016), where the student gain character (Hahn, 1965).

3.2.4 The importance of esd in a formal education

Despite there are extra requirements still needed for sustainable education evolution (economic sustain, trainings for educators and leadership) (Wals, 2012) current movements call for a sustainable education integrated with formal education and adapted to the level of students in order to acquire knowledge in different subjects (Warburton, 2003). This innovative educational system serves new points of view and the possibility to adapt their activities to any national curricular. Content, methods and activities must be adapted to the learner course and necessities, in the light of understanding those sustainable issues. Moreover, this sustainable education should keep the responsibility to each nation for a positive use and to insist in serious worldwide issues in its ecological, economic and political perspective (Wals, 2012). For instance, taking actions in their responsibility of reducing carbon footprint or pollution in oceans. At the same time, this innovative pedagogical role in the formal educative guide must share their models with different countries.

Further, the idea is to spread this mind-set from a holistic education to schools, homes and communities (UNESCO-UNEP, 1978).

In addition, occasionally school community are moved by values and emotions (Belue Buckley, 2015). A guidance and inspirational direction to the students for a deeper understanding can be gamming, in other words, enthusiasm. Very interesting outcomes of a large research in activities was found, that the students increase their enthusiasm for the subject (Henry, 2002). Nowadays, the 21st century skills include the acquisition of knowledge (Conde & Sánchez, 2010) with dynamics like games (Ricci, 1994). Of course, knowledge can be acquired also by memory, but by experience the process is more successful and exciting (Ward and Schnack, 2003). Games provide an innovative platform to students and they can enjoy the experience in a way that a text books and conventional lessons are limited. For instance, the educational game *Kahoot* can be used in the classroom and the results are students more focus, interested in the topic and enjoying while learning (Dellos, 2015). Similarly, the C's of education (creativity, cognition, collaboration and communication) (Orduna, Ortiz y Genir., 2012) can be introduced in sustainability by fervour or in other subjects. In the same line, they scaffold time their sustainable vocabulary with some function of the game at the same time. On the other hands, both of the learners' profiles analysed before, show a character where the learners are aware of their emotions, whereas also other people's and communities 'situations. This engagement will show to the learner the way to knowledge acquisition, and what is more important, why they are in this process (Ward & Schnack, 2003)

CONCLUSION

As far as I am concern, international education, and concretely International Baccalaureate is still in its way for a full experience together with Education for a Sustainable Development. Whereas many initiatives from IB schools have already started and stayed, there is a full path to go across in green terms. Definitely, international cooperation is essential and one of the most progressive skills in Education for a Sustainable Development since its beginning. Networks like Eco-schools encourage school communities to this purpose by actions and after all a change in mentalities. A partnership of these webs together with International Baccalaureate will spread their message in a productive and organised way, and consequently, a nicer perspective for our global environment. Favourably, the IB curriculum empowers strongly this green methodology, together with its students and teachers, although still ESD does not have a fixed place in the IB pedagogy.

As community with international perspective and engaged with issues concerned to humanity, I strongly suggest that International Baccalaureate should continue with its labour in those important issues including sustainability, and who knows, maybe in the future EDS has an even more powerful voice in the IB methods.

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