

# EDUKASYON SA PAGPAPAKATAO CURRICULUM OUTCOME IN CARAGA: AN EVALUATION STUDY

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*Abstract— Oblivion results to indivisibility of human dignity and irreversible damage to the environment. Quality education has been thought of as solution and EsP (Edukasyon sa Pagpapakatao) has been added to the Philippine Curricula. This study's objectives are to: determine EsP goals and targets, assess teachers' capacity building, determine adequacy of instructional materials, evaluate outcomes of implemented goals and objectives, examine in the content whether ESD is embedded, and recommend policies to help attain the SDGs. CIPP was used as concept model, believing that EsP mainstreamed SDG4 adopting Agenda 21. As input, EsP teachers capacitated and intentional ICT4D used. In the process, textbooks plus pedagogies are the main classroom tools. As product, it is assumed that EsP learners have excellent quotients. Sampling design used was purposive-random. Cronbach's alpha tested the instruments, validated by experts, and SBM Level 3 schools contributed the final primary data. Quantitative information was treated by the measures of central tendencies, while green quotient tests and actual observations determined the data quality. It is concluded, that EsP outcomes are excellently high with substantially excellent SDG4 embedding. Recommended policies to be highlighted are Values Education for Environment, Planet Citizenship, and spirit. ICT4D standardized as used in EsP.*

**Key Words:** Oblivion, Philippine curriculum, solution, values education,

## I. INTRODUCTION

The World solution to the worldwide problem of obliviousness (Guzman & Guzman, 2000) was the DESD (The Decade of Education for Sustainable Development) 2005-2014. Before the Decade, Philippines Environmental Education Guide was made to reorient education in the Republic. During the Decade, Philippines was able to reorient education via K-12 Basic Education Program. K-12 is a worldwide accepted description of a quality education program by having a total of 12 years in elementary and high school plus day care at 5 to 6 years old of a child.

In 2014, the Decade of Education for Sustainable Development ended with sustainability assessment in education turned down as almost nothing worldwide. In connection, the proponent of this study subscribed to the Filipinos in 1999 that twenty years later will be the right time to evaluate the impact of environmental education that thought to have been infused mainly to the K-12 EsP (Edukasyon sa Pagpapakatao) curriculum. That said right time is now, year 2019.

In the Philippines, Environmental Education Guide (1999) had put emphasis across grade levels as objectives of curriculum among elementary learners to orient and develop pupil perceptions, habits and values and to encourage them to actively participate in finding solutions to community environmental problems becoming environmentally literate persons, equipped with the knowledge, skills and values

necessary to help protect and maintain the integrity of the environment. To the secondary level, the same guide stressed to enable learners to develop and practice citizenship skills, analyze cause and effect relationships, predict outcomes of different actions, and find creative solutions to environmental problems and issues that “glocally” affect daily life. In the World, Brundtland (1987), as cited by Guzman and Guzman (2000) said that “obliviousness” tops the list of the reasons for environmental degradation and that educators according to Andrew Hafner (1998) must have lack the awareness, knowledge, attitude, skills, evaluation ability, and participation in teaching the core values.

This gap is what this study addressed into to evaluate if the intended curriculum design in K-12 Edukasyon sa Pagpapakatao had been achieved by the Department of Education. This is done in order to assess whether K-12 EsP Curriculum objectives in elementary and secondary had been internalized by learners as an outcome of learning. Philippines four core values such as “Maka-Dios” (Godly, believing a supernatural Creator of universe whom worthy of worship by mankind in truth and in spirit); “Maka-Tao” (Humane), “Maka-Kalikasan” (environment enthusiasts, naturalistic); and “Maka-Bayan” (Nationalistic but definitely not antagonist instead locally grounded in global citizenship) are the transformer of character among learners whatever practices of culture they are engaging in from generations to generations. If the content of these 4 core values contextualized the Environmental Education Framework, then the objectives of becoming environmentally professional

from environmentally literate learners is also achieved as an outcome of learning in EsP under K-12 curriculum upon completing Junior High School.

### ***1.1 The Statement of the Problem***

Fruit of obliviousness is tied with the world concerns and issues on invisibility of human dignity, irreversible damage to the environment, trespassed rights specially that of children and rampant spread of HIV/AIDs, Malaria and TB just like the evolution of drug dependents and their social effects.

This study aimed at evaluating the Philippine EsP (Edukasyon sa Pagpapakatao) curriculum outcomes in Caraga knowing that the transformer core values “Maka-Dios”, “Maka-Tao”, “Maka-Kalikasan, at “Maka-Bansa” (Department of Education Order number 8. Series 2015) were embedded in the curriculum

The proponent envisioned to scan the K-12 Philippine current Values Education Curriculum and to examine the design if it they are a legitimate green curriculum, in which the didactic re-engineering is essential or not for fastest effect to the affective critical thinking of learners in the elementary and secondary schools thereby environmental efficiency and lifelong societal health revenue is evidently earned. The proponent of this assessment in particular planned to define the role of Information and Communication Technology for Development (ICT4D) in embedding the World Goals in EsP Curriculum

The spirit of sustainability was enlightened in the K-12 Curriculum Framework of the Philippine Republic. Nevertheless, the proponent spotted a gap such that in Values Education subjects, it was not specifically mentioned that the 6 years of K-12 education of a child in the elementary and 4 years in junior high school will enable the world to benefit by producing an elementary graduate and Grade 10 completers that will help work out the World Sustainable Development Goals in the year 2015 - 30

This evaluation study answered the specific objectives hunted for such as to determine the goals and objectives of EsP as stipulated in the K-12 Basic Education Curriculum; to assess the capacity building given to support teachers in the attainment of the embedded values in EsP subjects; to determine the adequacy of the instructional materials used in teaching Values Education; to evaluate the outcome of the implementation of EsP curriculum in terms of goals and objectives, classrooms dynamics, and administration support; to examine whether the ESD (Education for Sustainable Development) was embedded in EsP curriculum content; and to suggest recommendations in the attainment of the SDGs through the EsP curriculum

### ***1.2 The Scope and Limitations of the Study***

This study about the EsP Curriculum Outcomes in Caraga was conducted to the School Heads, Values Education Department Heads, Master Teachers teaching Edukasyon sa Pagpapakatao elementary and high school, ICT (Information and Communication Technology) teachers of both elementary and junior high school, EsP major teachers and/or trained teachers to teach EsP and other subject teachers who

integrate EsP in their discipline together with Grade 7 and Grade 11 learners of SBM (School Based Management) level 3 identified schools by Caraga Regional Office in School Year 2018-2019. Preliminary study however was done to non-identified SBM level 3, first to test the reliability of the research instruments used; second, when found reliable, the proponent used the result as baseline of comparison between SBM level 3 schools and SBM level 1. When the Schools Division has no qualified level 3 in 2018-2019, regionally identified level 2 school, was considered as alternative, at least one qualified school per Division. This study intends to seek the Outcomes in Caraga, but data gathering had been limited to Schools Division in provinces and cities of Agusan and provinces of Surigao, total of 4 provinces and 3 cities, due to limited time.

Further, this study was limited to the tackling of the seven objectively framed queries aimed at seeking the outcomes of the K-12 EsP (Edukasyon sa Pagpapakatao) Curriculum. Crafted questions in the questionnaire is limited to awareness level in determining the outcomes of EsP except in the Ecological Outcomes where questions are deepened using Hafner (1998)'s checklist called Green Quotient and in the preliminary study Johannesson's Key (2010) was used and other proponent's collected environmental tests from different authors. However, in the final study with SBM level 3 schools as respondent schools, the tests were limited to Hafner (1998)'s way because the proponent found it simple particularly in quantitative scrutiny. Only the Ecological intended outcomes had been tested deeply because of the proponents' interest to apply knowledge in Sustainable Environmental Education, because it is her major. The intended outcome for core Value Maka-Tao and Maka-Dios termed in this study as Emotional Quotients and Spiritual Quotients were determined simply by perceptions of respondents based on the indicators of the behavior statements in every DepEd core Values as mandated in DepEd Order Number 8 series 2015 as an accomplished goals and objectives of EsP in K-12 Curriculum.

Further, this study is specifically limited to the search of intended outcome of ESD that has been embedded in EsP in K-12 curriculum, known in this study as the mainstreamed goals and objectives of ESD being aligned in EsP goals and objectives. The scope of ESD Goals and objectives was referred to as Education for Sustainable Development aims, mainstreamed from the Sustainable Development Goal number 4 Quality Education, and delineated further by Environmental Education Guide (1999) as ten core environmental education messages.

This study has nine chapters, the first three chapters are talking of the study's introduction, the literatures used and the methods used. While the next four chapters (Chapters 4, 5, 6 and 7) answer the seven objectives of the study presented in chapter one. Chapter 8, Listed and discussed lessons learned from chapter four to seven. The last chapter (Chapter 9) summarized the findings of the seven objectives into conclusions and displays the summary of implications into recommendations. Parts of each chapter from chapter 4 to chapter 8, only include chapter title, chapter abstract, chapter introduction, chapter methods used, chapter results and discussions, and chapter conclusions and recommendations.

### 1.3 The Significance of the Study

This evaluation study scholarly tried to find the outcomes of EsP (Edukasyon sa Pagpapakatao) Curriculum in Caraga. This determined how goals and objectives were implemented in the classroom. This determined the adequacy of the instructional materials used in teaching EsP and assumed that ESD (Education for Sustainable Development) is embedded in EsP under K-12 curriculum content. This recommended actions needed to revisit the Values Education Program that would help attain the World Sustainable Development Goals in 2030. This would be useful to review Republic Act (RA) 9155 the Governance of Basic Education Act of 2001 that defines quality education as the appropriateness, relevance, and excellence of the education given to meet the needs and aspirations of an individual and society (Congress of the Philippines 2000, RA 91550). This hoped that the Congress of the Philippines precisely improve the above stated definition of Quality Education (Sustainable Development Goal No. 4) relevant to the future of present generation and to the futures of all generations to come (Brundtland,1987) and United Nations (2017)

The possible revision of policies would be significant to school administrators assigned to deliver the quality educational programs, projects and services together with the learning facilitators, the school teachers (Rule VI, the School Head); to the regional directors tasked to define a regional educational policy framework which reflects the values, needs, and expectations of the communities they serve, and who performed the oversight functions in the implementation of laws, policies, programs, rules and regulations within the responsibility of the Department of Education in the region (Rule III, Section 3.2, Numbers 1 and 14); and to the Secretary of the Department of Education commissioned to formulate national educational policies & national basic education plan, to promulgate national educational standards, monitor and assess the national learning outcomes and undertake the promulgated national educational standards, and carry out the national educational researches and studies as well (Rule II, Section 2.1, numbers 1-5).

This would stimulate revisiting of policies that landscape education for sustainable development contextualizing the 10 targets of SDG4 (Sustainable Development Goal number 4) for 2030-2105 thereby putting the targets and indicators in the core competencies in Values Education (specifically EsP in the Philippines) subjects and in all grade levels of junior high school and would promulgate national educational standards based on planet's wellness as citizens of planet Earth for generation's sustainable futures.

In particular, this study would be of great importance to schools in order to craft additional child-centered, gender-fair, and age-and-culture appropriate indicators for the behavior statements of each of the four core values of the Department of Education (DO 8, s. 2015). To teachers, this would empower them to scan the World views to develop an educated society where the challenges and benefits of diversity were embraced and welcomed by every boys and girls (DO 002, s. 2019) making a paradigm swift shifts towards an environmentally professional (Environmental

Education Guide, 1999) learners' behavior.

### 1.4 The Conceptual Framework of the Study

Fig.1 presents the conceptual analysis of the study featuring the CIPP (Context, Input, Process and Product) conceptual pattern.

The contexts are the curriculum goals and objectives of EsP scanned from RA 10533, DO 8, s 2015, DO 36 s. 2016 and DO 002, s. 2019. The goal of K-12 Basic Education Program is to holistically develop Filipinos with respect to solid moral and spiritual guiding; possession of healthy mind and body; essential knowledge, skills, values and attitudes to continuously develop learners' own self to the fullest; contribute to the development of a progressive, just and humane society; appreciates and cares for humanity, environment and world as well as pride to be a Filipino (K-12 Curriculum, 2012).

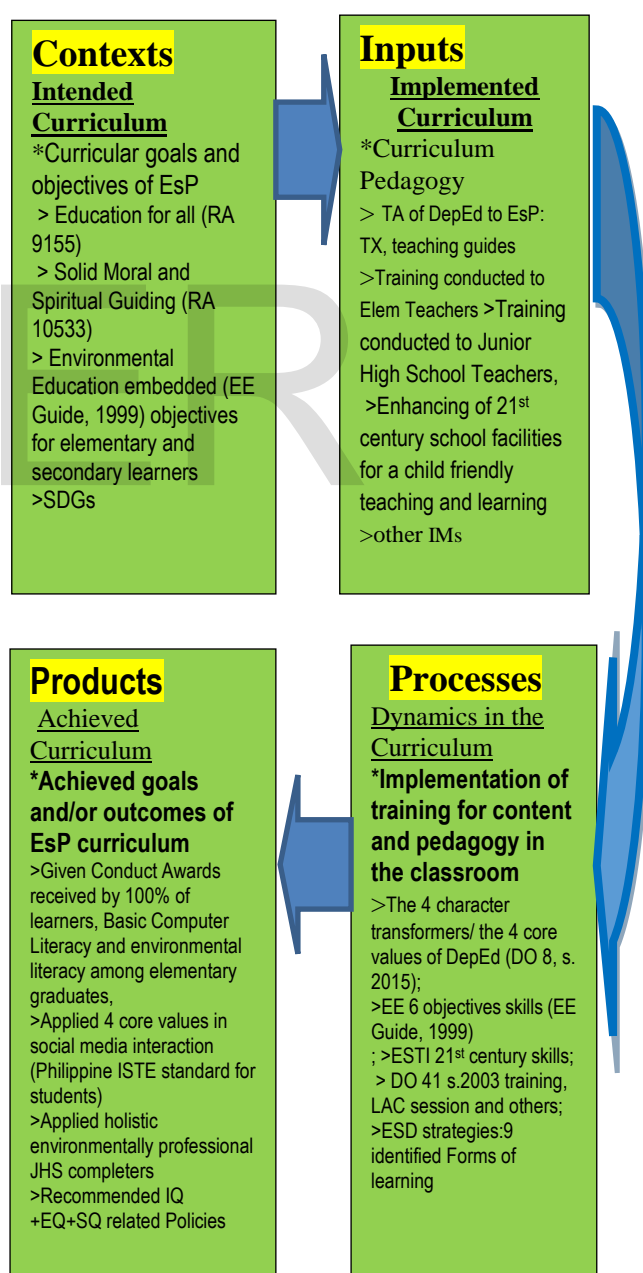


Fig. 1 The Conceptual Paradigm of the Study

The global ESD objectives are to integrate themes across all This study ensures the fact that said k-12 features in the EsP (Edukasyon sa Pagpapakatao) curriculum has embedded the environmental education objective for elementary learners and the environmental education objective for secondary school learners with no one left behind goal of the World contextualized (RA 9155 & SDG 4 2030) such as transforming education and learning processes to increase participation in ESD initiatives (UNESCO, 2005).relevant subjects, programs and courses; contribute to meaningful learning experiences that foster behavior; appropriate training and retraining of teachers; pupils and students to acquire appropriate knowledge of Sustainable Development and become aware of the impact of decisions that do not support the latte In 2017, the concern of the world was to achieve peace with zero suffering, zero hunger, zero poverty, human rights and visible dignity as citizen of the world (SDG 2030). Such had been difficult to attain but the proponent believed that quality education would pave the way to its achievement. The themes to be integrated are poverty, citizenship, peace, democracy, human rights, social and economic development, health, gender equity, cultural diversity; environmental protection; natural resource management, rural and urban development; production and consumption patterns, corporate responsibility, fostering respect for and understanding of different cultures, developing critical and creative thinking of learners, taking account of diverse local, national, regional circumstances and global contexts seeking the balance between global and local interests and providing opportunity for education to overcome isolation to civil society, local community, and authorities. The proponent of this study embraced the benefit of richness in diversity (DO 002, s. 2019) in all sectors in the natural, cultural, and social environment as a basic component for a stable ecosystem and for the safety and resilience of every community. She further subscribed to the World who believed that *it is essential to safeguard diversity by policy options together with regulations, public participation, economic and technological tools* (Scoullos, 2003). The proponent therefore assumed that Philippine K-12 Basic Education Program had embedded that necessary education referred to.

*The inputs* are the technical assistance provided by DepEd (Department of Education) from SGOD (Schools Governance and Operations Division) and DepEd CID-LRMD (Curriculum Implementation Division and Learning Resource Management Development) such as adequacy of the instructional materials particularly textbooks, teaching guides, and reference books. Training conducted to elementary teachers and to high school teachers. Financial assistance to teaching instructional materials development and Information and Communication Technology integration. The emphasis of nurturing learners for implementation of K-12 EsP is for teachers to be trained as environmental persons who are empowered civilized citizens that will transform learners by example to be globally competitive environmentally professionals (EE Guide, 1999).

It is believed that, when schools would be enhanced with 21<sup>st</sup> century facilities for child friendly teaching and learning of the 4 behavior transformer-the 4 core values of DepEd such as Maka-Dios, Maka-Tao, Maka-Kalikasan at Maka-Bansa,

then attaining learners' solid moral and spiritual guiding among 100% of Grade 10 completers would be realized

*The processes* are the embedding of the character transformers, the four core values of DepEd by EsP teachers and integrating the same in at least Maka-Bayan subjects; utilizing of global ESD (Education for Sustainable Development) strategies such as the identified 9 forms of learning used in 2012 global monitoring: discovery learning, transmissive learning, participatory/collaborative learning, problem-based learning, disciplinary learning, interdisciplinary learning, multi-stakeholders social learning, critical thinking based learning, and systems-thinking based learning or the blending of the said 9 types to fit age, knowledge level, interests and abilities of learners, to fit the learning contexts and the available resources; the global objectives skills for Environmental Education implemented to accomplish teaching and learning of core messages that are contextualized in the EsP core competencies.

This study settled with DepEd Order 41, s 2003 Values Education in the Basic Education Curriculum which *ensures that values education teachers should be utilized fully to help the other subject area teachers integrate values development in the subject area they teach to effectively reinforce the role of every teacher as a values education teacher thus developing desirable values among students by integrating values development lessons to every teacher in each subjects to perform functions relevant to their expertise and competence; and to properly evaluate the result of interventions conducted both inside and outside the classroom.*

The proponent agreed to the mandate in DO 41 s 2003 *that values education teachers in providing assistance to the subject area teachers by integrating values development in their lessons does not mean forcing values integration if it is not relevant to the lesson. The subject area teacher should have addressed behavior of students in their class which may not be necessarily related to the lesson on hand. The revised Values Education Framework (2003) is still the basic material resource for the core values that need to be developed. The approved textbooks in the secondary level could still be used as references. The Maka-Bayan learning area should sit in the collaborative planning of teachers. Like other subject teachers, proportionate teacher loading should be taken into consideration.*

This study believed that implementing DO 41 s. 2003 in the classroom is the right process that will help teachers resolve problems relating to learners' behavior in school. The six global EE (Environmental Education) objectives that will process behavior among learners are awareness, knowledge, attitude, skills, wisdom, and participation. EE is a learning process that increases awareness and knowledge about the environment and associated challenges that develop the necessary skills and expertise to address these challenges; and that foster attitudes, motivations, and commitments to make informed decisions and take responsible actions. It includes 3 dimensions: education about the environment, for the environment, and in the environment (EE Guide, 1999). The proponent believed that achieved objectives from awareness to wisdom would define an outcome of environmental literacy, and when participation level been achieved the

outcome would be the environmentally professional learners.

21<sup>st</sup> century skills used by Japan is worth emulating, where learners are empowered to use ICT skills to intend learning the EsP goals and objectives in order to achieve the desired Intelligence Quotient- the critical thinking skills of learners, Ecological Quotient- the environmental literacy among elementary pupils and the environmental professionalism among the secondary learners, and Spiritual Quotient or religious considerations of and among learners, no girl nor boy left behind.

Finally, *the products* are the achieved goals and objectives referred to as the outcomes of EsP curriculum. The concept is centered on the belief that if EsP curriculum content is *green* to mean socially inclusive and environmentally protective, integrates world issues, current trends and people's action to solve critical problems, then the *outcome* of the curriculum would be holistic-environmentally professional transformed learners in every school who perform duties and functions (DO 8, s 2015) for the new generation embracing challenges and benefits of diversity (DO 002, s 2019) that sustain environmental integrity, economic vitality and just societies for all (UNESCO, 2006).

Specific EsP outcomes are the developed solid moral and spiritual guiding bearing the fruit called IQ (intelligence quotient) to mean learners can actively recommend policies as enlightened and unconventional reformist for well-being of people; EQ (emotional quotient) refers to learners transformed inner constitution of character, empowered to lead a life of reason, reflection and deliberation becoming humane (civilized, benevolent and ecological enthusiast); and SQ (Spiritual quotient) connotes learners' personal relationship to a God whom they know and accept as supernatural who transforms behavior from truancy and immorality to a refined character fitted to be called sons and daughters of the living almighty and omnipotent Father who is in Heaven.

It is believed that submerged to K-12 EsP (Edukasyon sa Pagpapakatao) curriculum, learners' behavior must be more than environmentally literate. They must be environmentally professionals (EE guide, 1999). Upon completing junior high school, learners must be responsible, duty bound (DO 8, s. 2015) promote environmental education in the school and in the community (EE Guide, 1999), and anticipate the World Sustainable Development Goals for 2030-2105. Indicators of DepEd core values Maka-Dios, Maka-Tao, Maka-Kalikasan, and Maka-Bansa must then be evident in their behavior, they must make a difference by adding more behavioral indicators in each of the above said values of the Department of education (DO 8, s. 2015; DO 36 s. 2016) and discard unnecessary actions that had been practiced by generations of deviants.

### 1.5 Definition of Terms

*Didactic* is the term intended to teach people a moral lesson especially in a way that is too determined or eager. Webster's Universal English Thesaurus (2007) defines didactic as educational, instructive, pedagogic and perspective.

*Education for Sustainability* is a combination of content, learning methods and outcomes that helps students develop a

knowledge based on the environment, the economy and the society in addition to helping them to learn skills, perspectives, and values that guide and motivate them to seek sustainable livelihood, participate in a democratic society and live in a sustainable manner (Dorn et al, 2014).

*Environmentally professional learners* in this valuation study refers to the K-12 learners who demonstrates awareness, knowledge, attitude, skills, evaluative ability and participation level of affective behavior essential to contribute attainment of the World Transformation Goals for 2030-2105.

*"Glocal"* refers to the combined terms to mean global and local simultaneously.

*Green* refers to sustainable ways such as green growth to mean sustainable economic growth, green economy development to mean quality development of an economy which is socially inclusive and environmentally protective. It is also alternately used as green quotient to mean intended outcomes of EsP such as Ecological quotient for Maka-Kalikasan Intended Outcome, Emotional Quotient to Maka-Tao and Maka-Bayan, Spiritual Quotient to Maka-Dios, and Intelligent Quotient to 21<sup>st</sup> century skills developed based on ISTE (International Standard of Technology for Education 2016).

*Green Education* indicates educating the right way (Apple, M.W. 2006). Content must be legitimate, where knowledge is official worthy of the imprimatur of the state (Apple M.W., 2014) as cited by O'herm, Darren M. and Nosaki, Yoshiko (2014). In this study it refers to a system of education that integrates world issues, current trends, and people's action to solve critical problems. Particularly, it is the instruction that contextualizes the 17 sustainable development goals.

*Green Curriculum* is a didactic scheme that needs to be landscaped in the best interest of a better educated world where programs are congruent to the Environmental Education Framework and anticipating the World Sustainable Development Goals.

*Green Quotients* refer to the intended outcomes of the EsP (Edukasyon sa Pagpapakatao) in K-12 curriculum. EsP translated to English language as used in this study means Education of becoming human. It means learners are expected to be nurtured in this subject to become humane as intended outcome that process mainly the emotional quotient. Other green quotients expected as outcome of EsP are intelligent quotient, ecological quotient, and spiritual quotient. In this study, 21<sup>st</sup> century technological skills are specifically called technological quotients but measured under intelligence quotient.

*Habits of mind* are what intelligent people do when they are confronted with problems. It is persisting, thinking and communicating with clarity and precision, managing impulsively, gathering data through all senses, listening with understanding and empathy, creating, imagining, innovating, thinking flexively, responding with wonderment and awe, thinking about thinking (metacognition) taking responsive risks, striving for accuracy, finding humor, questioning and posing problems, thinking independently, applying past knowledge to new situations, and remaining open to continuous learning (Costa & Kallick as cited by Dorn et al,

2014).

*Holistic – Environmentally Professional Learners* refers to the product of the 4 years junior high school of the K-12 basic education program where learners demonstrated the impact of all-inclusive complete learning content embedded in the framework of quality education. They are the millennial learners that are empowered to participate in the achievement of the World goals through the habits of mind developed in them.

*ICT4D* is an acronym for Information and Communication Technologies for Development. It is an initiative aimed at bridging the digital divide between the technological “have and have not” geographic locations and demographic groups. It is an aid to economic development by ensuring equal access to up-to-date communications technologies (Association for Progressive Communication, 2016)

*Intentional ICT* is a tool to enhance education through a chosen curriculum. As a tool, it means directing and enabling students and teachers in all ethnic and socio- economic group to use technology effectively. To master and perform 21<sup>st</sup> century skills in which, one of technology’s main strength lie in the students and teachers’ effort to achieve in delivering content (Lubin, 2016).

*K-12 Curriculum* means the 13 years of basic education program in the Philippines from kindergarten to six years of primary education to 4 years of Junior High School and finally to two years of Senior High School. This provides sufficient time for mastery of concepts and skills, develop lifelong learners, and prepare graduates for tertiary education, middle-level skills development, employment, and entrepreneurship. To make this relevant to learners, contextualization and enhancement are to be done using examples, activities, songs, poems, stories, and illustrations based on local culture, history and reality. Learners acquire in-depth knowledge, skills, values, and attitudes through continuity and consistency across all levels and across all subjects. Discussions on issues such as Disaster Risk Reduction (DRR), Climate Change Adaptation, and Information and Communication Technology are included in this enhanced curriculum (<http://www.gov.ph/k-12/>).

*Quality Education* is the appropriateness, relevance, and excellence of the education given to meet the needs and aspirations of an individual and society (RA 9155). The contextualized definition of Quality Education, after the document analysis in this study, is the appropriateness, relevance, and excellence of the education given (RA 9155) that ensure knowledge and skills needed (SDG4 Target 7) for sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of cultures contribution (SDG4Target 7), to meet the needs and aspirations of an individual and society (RA 9155) of the present without compromising the ability of the future’s generations to meet their own needs (Brundtland, 1987) and aspirations

*Secret Society* refers to the people with unique religious culture which practices made them guilty of acts against humanity (Zublick, 2018).

*Social Systems* is the system of a society that encompass human interaction, culture and politics (Dorn et al, 2014).

## II. PROCEDURE

### A. Review Stage

Before the evaluation study began, readings to recall relevant literatures were made. Below is information on principles, viewpoints, theories, and outcomes of studies that had been expressed, explained, set and presented by authors that the proponent of this study has been keen on in utilizing data to organize the concepts that pep talk of outcomes of EsP (Edukasyon sa Pagpapakatao) under K-12 Curriculum.

#### 2.A.1 The Tragedy of the Common

Population increase was exponential, as against the linear increase in food production, unless human species keep check on population, nature will use its own check and balance in the form of natural calamities to regain equilibrium (Malthus, according to Filhu et al 2015: 230). The pace of economic development and the leaps in technology brought the environmental problems on the global radar. In 1967-1968, Hardin’s tragedy of the commons’ theory stated that when property rights are not clearly defined, there would be no economic deterrent to use up resources, since every user would be a free rider, and eventually to environmental collapse (Filhu et al, 2015)

Environment currently plays 3 roles in the survival game of human species-as supplier of resources, as “glocal” environmental and ecological services, and as a sink of wastes from production and consumption processes. In connection to the 3rd role, the Law of Thermodynamics states that the more the economy produces using the natural resources, the greater will be the wastes generated (Filhu et al, 2015:231)

Development is what we all do in attempting to improve (Brundtland, 1987). It is synonymous to progress, growth, expansion or advancement that everyone likes to achieve. It is commonly attained by the society through going to school. It was sad to note, however, that after pursuing education from early childhood to finishing a course, knowingly and unknowingly many made steps to destroy the immediate surroundings instead of improving the quality of life up to the next generations in the only place human could live in the solar system. The most educated people particularly those that belong to the highest strata together with the non-elite individuals and groups, all people generally do the reverse.

#### 2.A.2 Reoriented education as the solution

The World 21st Century Global Agenda recognized the Universal Primary Education as the initial solution for knowledge dearth and quality development on earth (MDG, 2005-2014).

Reflecting on the Millennium Development Goals and looking ahead of the next 15 years Ban Ki-moon (2015), the United Nations’ Secretary General, said that we can act together to put an end to poverty, leave no one behind and create a world of dignity for all through quality education. Congress of the Philippines (2000) defined quality education as the appropriateness, relevance and excellence of the

education given to meet the needs and aspirations of an individual and society (RA 9155, 2000). The appropriateness, relevance, and excellence of an education may be called true education. True Education, according to White, Ellen G. (1952) is the harmonious development of all the faculties- a full and adequate preparation for this life and the future eternal life. In writing the book entitled Education, Ellen Gould White (1952) was concerned with great guiding principles as the ardent hope, not with details of the curriculum or the merits of differing educational systems. However, according to Null (2014), the tendency to discuss education without addressing a curriculum is a significant barrier that curriculum specialists, teachers and the general public must overcome if we expect to create a good school. To Null (2014) a curriculum takes an ultimate goal such that the rightness of act is determined by the end. It is an ethical substance of what should be taught. An ethical and/or didactic curriculum framework is a liberated curriculum (Null, 2011)- a high quality curriculum and teaching. Liberated (L) is synonymous to the words enlightened (E), Unconventional (U) and activist (A). Common word to describe these LEU is progressive (P) and the best word to describe an activist is the term futuristic (F) and innovative (I). While in the word progressive, the best term is reformist (R). The best meaning of reformist is reorganizer and again activist. A didactic curriculum then has AFEUR instruction resulting to active, futuristic, enlightened and unconventional reformist learners an aftermath which promotes the balancing of economic growth, environmental conservation and people's well-being, no one left behind. It is a liberating curriculum that transforms the inner constitution of a person's character that empowered him or her to lead a life of reason, reflection and deliberation. It is an ethical curriculum that draws upon all the talents and abilities of learners to make them more humane and compassionate. It is in this kind of curriculum framework that either true education (White, 1952) or quality education (Congress of the Philippines, 2000 and SD Goal 4, 2017) be reached.

This must be the kind of outcome expected in the K-12 curriculum particularly in EsP (Edukasyon sa Pagpapakatao) program because education in its broadest sense contains the elements that allow people to change themselves and their societies (Pigozzi, 2010) into better persons and better societies according to the need of the communities in the planet earth. Transformation process is compared by Maclean and Ordonez (2007) to innovating of vehicles from cars, not improving its design for sales and profit efficiency but improving transport system from land to air. A metamorphosis compared to a butterfly from being a worm. That is, the best education system paradigm that does not only change its design like crab changing its skin yet still walk sideward, but a change of behavior and a change of people's practice towards becoming the best person that march forward and fly swiftly for quality life.

Education specifically refers to a kind of teaching that brings swift relief to some irreversible aspects of the environment that has been bringing unhealthy effects to human beings and all other creatures on earth. It is a transfiguration that pacifies violent ethnic conflict and intolerance. It is a shift that recovers moral bankruptcy and

weighs fairness to economic polarization of rich and poor. It's a kind of change that rehabilitates the illegal drug users and HIV or AIDS endemics faster than its spreading speed. Such kind of education is called Education for Sustainable Development, an education that is indeed, difficult to achieve and still exists as the number one implementation problem in all nations of the world.

In the idea of swift relief to some irreversible aspects of the environment that has been bringing unhealthy effects to human beings and all other creatures on earth, Shaw (2014) believed that preventing new ones from arising will require an understanding and appreciation of the linkages between environment well-being and human well-being. This is the essence of being a literate person as a product of the appropriate ethical education. The goal of environmental education in the Philippines support to Shaw (2014) but is not limited to having environmentally literate persons up to the level of understanding and appreciation skills of the linkages between the tandem of human and environmental well-being, but farther to the level of becoming responsible citizens who will ensure the protection and the improvement of the environment, that bring about sustainability, social equity and economic efficiency in the use of natural resources (Philippine Environmental Education Guide, 1999).

#### *2.A.3 How the Concept Sustainable Development and Education for Sustainable Development Come to be?*

The concept of sustainable development was first capsulized in early 1970s through United Nations' meetings. United Nations Conference on Environmental Development (UNCED) published the book Our Common Future in 1987 introducing Sustainable Development as main idea acknowledged worldwide. The notion was explained by Her Excellency Prime Minister Gro Harlem Brundtland of Norway as an idea describing the development, which satisfies the needs of present generation without compromising the ability of future generations to satisfy their needs too. This was then shortly described by Nakamura, Fujisawa, and Shaw (2014) as environment and development coexisting. Not economy arising while environment diminishing.

#### *2.A.4 History of United Nations Objectives for Environmental Education*

In 1972, The first International Conference of the Human Environment was held at Stockholm, Sweden. UNEP (The United Nations Environment Programme) together with UNESCO (United Nations' Educational, Scientific and Cultural Organizations) established the IEEP (International Environmental Education Programme) in 1975. The IEEP organized the International Environmental Education Workshop which key result was the pressing necessity of environmental education, elaborating six objectives for the field: awareness, knowledge, attitude, skills, wisdom (evaluation ability) and participation (Hafner, A., 1998). Awareness meant individuals and social groups acquire awareness of and sensitivity to the total environment and its allied problems, like for example, people need to be aware of

deteriorating air quality and the dangers it poses. In this case, learners and teachers must know that one time approximately 90 percent of the Philippines was covered by forests. They should also know that this percentage of forest cover has dropped to 10-15 percent in the 20th century.

Knowledge connotes something like people acquire a basic understanding of the total environs, its accompanying problems and individual's responsible presence and role in it. For example, people need to know about the causes of air pollution and possible solutions to the problem. Higher order thinking skills questions raised should be: Do learners understand why are there fewer forests now? Do they understand the reasons and possible solutions? Do they know the causes and the consequences? Illegal logging and growing population are the causes. People cut down trees for farmland and sell lumber. Consequences are floods and loss of habitat for animals.

Attitude on the other hand, refers to individuals and social groups who acquire social values, strong feelings of concern for the environment and the motivation for active participation in its protection and improvement. For example, people should care about the destruction that air pollution causes and do something about it. Sample critical questions are: Do learners care? Do I care that Philippine Eagles is going to be extinct and forests are continually cut down? Environmental ethic must be encouraged in the youth.

Skills mean scientific and technological skills, and language skills are needed. For example, language ability can be utilized to write materials informing people about the risks caused by air pollution. Similarly, oral language skills would be important in convincing people to take action to decrease air pollution. Do learners have the skills necessary to do something to help the environment? Science skills: What kind of trees grow best in certain type of soil? Persuasion skills: convince others to do something to protect the environment. English letter writing skills: write letters to local officials to express concerns and make suggestions regarding environmental problems.

Wisdom (Evaluative Ability) means to help individuals and social groups evaluate environmental measures and education programs in terms of ecological, political, economic, social, aesthetic and educational factors. While everyone agrees that we must do something to protect the environment, there are many disagreements about how to do it. For instance, to decrease air pollution, should car ownership be restricted? Learners must be able to see both sides of issues, evaluate the best side and choose a stance. Can students arrive at an opinion such as: Philippines needs to stop cutting down its forests or there will not be any good farmlands left because of soil erosion?

Participation implies helping individuals and social groups to develop a sense of responsibility and urgency regarding environmental problems, to ensure appropriate action to solve those problems. The other objectives come to nothing if people do not translate their awareness, knowledge, attitudes, skills, and wisdom into action. Sample dire questions: Are learners doing something about the problem? Are they planting trees? Are they protecting Coral Reefs? Are they using the above objectives and applying them?

Achieved objectives from 1 to 5 defines an outcome of

environmental literacy. Number 6 objective if attained determines the outcome level of being an environmentally professional.

#### 2.A.5 The Agenda 21

In 1992, the first Earth Summit was held in Rio de Janeiro where the 21st century agenda called Agenda 21 was born. It is a historical document calling all nations to develop Education for Sustainable Development strategies and frameworks to reorient education programs and systems (UNCED, 1992; UNESCO, 2011). Governments across the world signed to show their commitment to sustainable development because the World participants in the Rio Summit (1992) believed that education is the solution.

According to Michael J. Scoullos, at Rio in 1992, the concept of SD (Sustainable Development) was developed on three pillars: the environment ecology, economy, and society. At Thessaloniki (1997), the consensus was to use EE (Environmental Education) as basis for the module of SD and should be expressed as Education for Environment and Sustainability (EfES) evolving the faces of tetrahedron such as environment, economy, society and education. Nevertheless, the SD pyramid has highlighted governance instead of education as the base because they (the international conference participants of Thessaloniki, 1997) described education as one of the components of the overall governance needed. Hence, governance was well-thought-out as the basis in the appropriate structure for approaching SD where institutions, technology and education was considered the components. The latter has to play as a force for the future because education, according to UNESCO (1997) is the most effective means that society possesses in confronting the challenges of the future. It is believed to shape the world of tomorrow.

Progress increasingly depends upon the products of educated minds: upon research, invention, innovation and adaptation. Educated minds and instincts are needed not only in laboratories and research institutes, but in every walk of life even in winning self against evil thoughts that leads to sin against humanity and environment. Education, however is not the whole answer to every problem but believed to have a vital part of all efforts to imagine and create new relations among people and to foster greater respect for the needs of the environment (UNESCO, 1997).

#### 2.A.6 The Birth of EE (Environmental Education) Guide in the Philippines

In 1999, in response to the Rio challenge to develop ESD strategies, the Department of Education, Culture and Sports in partnership with the Department of Environment and Natural Resources, the Environment Management Bureau, the Asian Development Bank in a consortium with Colombo Plan Staff College for Technician Education and Madecor Environmental Management Systems, Inc. capsulized the Philippines' EE (Environmental Education) Guide for educators, teachers, curriculum developers and school administrators who are responsible for its promotion. The authors believed that in 2009-2019 there would be



responsible Filipinos who will endorse and develop a curriculum that implant the necessary education intended for sustainable development of learners containing strategies that help teachers, educators and administrators in stimulating the needed education for the people's well-being and earth's well-being while thinking of economic prosperity.

#### *2.A.7 Overarching World Development Framework: The MDG in 2000*

The Millennium Development Goals (MDG) was for the well-being of the people for it was a set of time-bound and measurable goals and targets intended to combat poverty, hunger, diseases, and discrimination against women; and for the well-being of the environment for it was a set of measurable time-bound goals against illiteracy towards the environment. It consists of 8 goals, 18 targets and 48 indicators covering the period of 1990 to 2015.

In September 2000, member states of the UN gathered at the Millennium Summit committed to reduce poverty and the worst forms of human deprivation. A total of 189 countries, including the Philippines were steadfast to make the right development a reality for everyone by formulating policies and set up an institutional environment that will ensure efficient and effective use of resources (MDG Eastern Visayas). The attainment of the MDGs was measured through a set of indicators defined by the UN. Such indicators were used to assess progress over the period 1990 to 2015.

In the first goal, that is to end extreme poverty, two achievable targets were set. First, was to reduce the number of people living on less than a dollar a day by half. Second, was to reduce the number of people suffering from hunger by half. Sub-Saharan Africa and Southern Asia had not made progress as to the attainment of said targets. Women of these areas were kept out of the workforce, hence pressure to support their families were entirely on males. The UN set new goals to enhance attainment of Goal #1: increase regional and international cooperation on food security, reduce distortions in trade, ensure social safety nets in case of economic slowdowns worldwide, increase emergency food aid, promote school feeding programs, and assist developing countries in switching from subsistence agriculture to a system that will provide more for the long term that resolve at adapting harmful ways.

The second of the MDGs was to provide all children with access to universal primary education. It was believed that through education, future generations will have the ability to reduce if not put an end to worldwide poverty and help achieve global peace and security. Tanzania in 2002 achieved in providing access to education by giving free education to 1.6 million children who were enrolled in their schools. When all children are in the school, the proponent of this study believed that educating them for SD with no one left behind becomes possible provided that education offered is a REUR ESD (Revolutionarily Enlightened and Unconventional Reformist Education for Sustainable Development).

The third among the eight goals for millennium development was gender equity. Poverty was a larger problem for women than for men simply because in some places women were not allowed to become educated and work for

the home. For this rationale, the 3rd MDG was directed at achieving gender equity around the world. In order to do this, the UN assisted countries in eliminating the gender disparity in primary and secondary education and allowed women to attend all school levels if they choose to do so.

Child health was the fourth goal of the MDG. In nations where poverty was rampant, one out of ten children died before they reached the age of five, that's why UN's fourth Millennium Development Goal was committed to improving children's health care in said areas. Children's health was believed to have direct or indirect relation to unhealthy environment. Treating children's health and spending huge amount for the purpose was not yet treating the cause that is, speaking of the children's situation worldwide.

The fifth Millennium Development Goal was to improve the system of maternal health in poor high fertility countries where women had much greater chance of dying during childbirth. The target to reach this goal was to reduce by three-quarters the maternal mortality ratio. Knowing and treating the cause, the Honduras was on its way to achieving this goal by reducing its maternal mortality rate by half.

Combat HIV/AIDs and other diseases was the 6th of the 8 MDGs. Malaria, HIV/AIDS, and tuberculosis were the three most significant public health challenges in poor developing nations. The UN attempted to halt and reverse the spread of HIV/AIDS, TB, and malaria by providing education and free medication to cure or lessen the effects of the diseases. Providing education through lectures to Grade 10 learners for example and free medication to victims of HIV/AIDS however are not yet treating the cause.

The seventh MDG was environmental sustainability. Climate Change (CC) and the exploitation of forests, land, water, and fisheries significantly harm the poorest populations and wealthier nations who depend on natural resources for their survival. It aimed at promoting environmental sustainability on a worldwide scale. The targets for this goal included integrating SD into country policies, reversing the loss of environmental resources, reducing the number of people without access to clean drinking water by half, and improving the lives of slum dwellers. Affluent emissions were not mentioned in treating the causes of CC (Climate Change). Wastes released by wealthy nations caused more harms to both poor and rich populations. Human illness like tuberculosis and other respiratory diseases including cancer, incapacity to bear child, and becoming mutant were not mentioned being considered though many had been affected already. Hence, there were no targets for treatment of their causes included in the MDG.

Finally, the 8th goal was the development of global partnership. It outlined the responsibility of poorer nations to work toward achieving the first seven MDG by promoting accountability of citizens and an efficient use of resources. Wealthy nations were given the responsibility to support the poorer ones. They provide aid, debt relief, and fair trade rules. This goal served as a capstone for the Millennium Development project. Through this the World attempted to promote global peace, security, human rights, economic and social development. Wealthy nations have not given the responsibility to halt production of emissions that harm planet and people. The MDG has not given emphasis to children's

rights as part of human rights. Poor humans, poor children remain poor and dependent to the rich, to the control of the elite. Lapses in MDGs were the reason for the SDGs (Sustainable Development Goals) existence in 2017.

#### 2.A.8 The Philippine MDG Watch 2015

The probability of achieving the MDG was high (pace of progress was above 90%) to 15 indicators, medium (pace of progress was between 50% and 90%) to 4 indicators, and low (pace of progress was less than 50%) to 12 indicators based on 1990 baseline index. Statistics revealed the target of integrating the principles of SD (Sustainable Development) into Philippine policies, and programs to reverse the loss of environmental resources. Achievement showed indicators such as proportion of land area covered by forest increased from 20.5 in 1990 to 22.8 in 2012, and consumption of ozone depleting CFC's dropped to zero in 2012 from 2981 tons in 1990. In the target of reducing biodiversity loss, the ratio of protected area increased to 13.6 in 2014 from 8.5 in 1990 but the number of species with extinction increased from 183 in 1992 to 207 in 2012 (Philippine MDG Watch 2015). Indicators with pace of progress measured less than 50% were as follows: prevalence and death rate associated with tuberculosis, adolescent birth rate, contraceptive prevalence rate, maternal mortality ratio, share of women in wage employment in the non-agriculture sector, proportion of seats held by women in national parliament, ratio of girls to boys in primary education, proportion of pupils starting grade 1 who reach grade 6 (cohort survival rate), primary completion rate, literacy rate of 15 to 24 years old, and % of household with per capita energy of less than 100% adequacy. Indicators such as number of people died due to typhoons in the Philippines were not mentioned.

#### 2.A.9 The Decade of Education for Sustainable Development (DESD)

In 2002 at Johannesburg World Summit on Sustainable Development, UNESCO recognized the idea of DESD and was then proposed to move towards ESD at national and international level. Via Resolution 57/254 UNDESD (United Nation Decade of Education for Sustainable Development) officially declared to begin in 2005 and end in 2014 with UNESCO (United Nation Educational, Scientific and Cultural Organization) as the official lead agency.

The ultimate goals of DESD were to transform and reorient education and learning process towards sustainable development; to encourage governments to embed sustainable development into all education systems, plans strategies and support public awareness to increase participation in ESD initiatives (UNESCO, 2005; Mula & Tilbury, 2011). As DESD unfolds, four key processes were identified: 1 the process that stimulated innovation within curricula through teaching and learning experiences; 2 the processes of active and participatory learning, 3 the process which engage the whole system; and 4 the processes of collaboration and dialogue with intercultural multi-stakeholder (DESD Abridged Report, 2012).

#### 2.A.10 The Education for Sustainable Development (ESD) Concept

Basic themes of ESD are: poverty, citizenship, peace, democracy, security, human rights, social and economic development, health, gender equity, cultural diversity, environmental protection, natural resource management, rural and urban development, production and consumption patterns, and corporate responsibility; fostering respect for and understanding of different cultures; developing critical and creative thinking of learners; taking account to diverse local, national, and regional circumstances as well as the global context, seeking a balance between global and local interests and providing opportunity for education to overcome its isolation to civil society, local community, and authorities. To this end, the role of educators for facilitating the process is critical. Education for Sustainable Development requires multi-stakeholders' cooperation and partnership among authorities, education and science communities, the private sector, non-governmental organizations, local community, regional, national, international organizations, and so on. In order to be effective, ESD should: 1(a) integrate themes across all relevant subjects, programs, and courses; (b) provide specific subject programs and courses, 2 contribute to meaningful learning experiences that foster sustainable behavior; 3 make learning activities in close relation with society adding to learners' practical experience; 4 have an insight into global, regional, national, and local environmental problems; explaining them by means of a life-cycle approach and focusing not only on the environmental impact, but also on the economic and social implications, addressing both natural environment and that modified by humans; 5 have a wide range of participatory, student-centered and solution-oriented educational methods, including discussions, conceptual and perpetual mapping, philosophical inquiry, value clarification, simulations, scenarios, modeling, role playing, information and communication technology (ICT), surveys, case studies, learning driven projects, good practice analyses, workplace experience, and problem solving; 6 make all pupils and students acquire appropriate knowledge of SD and become aware of the impact of decisions that do not support SD; 7 have appropriate training and retraining of educators; 8 support the non-formal and informal ESD activities as essential complements to formal education (UNECE, 2009). ESD (Education for Sustainable Development) is the sustainability education combining content, learning methods and outcome relevant to the 3 pillars of sustainability such as people, planet and prosperity commonly called the triple bottom line (TBL).

The indicators to ESD and the meaning of the TBL are as follows: Submit your manuscript electronically for review. In terms of *people* or society as the first pillar of ESD, learning was expected to measure quality life by rates of life health expectancy (World Health Statistics, 2017); savvy and university; income quality, less dependency ratio, zero crime, without problem on housing and living cost. Considering *planet* or environment as another pillar to ESD, learners were expected to capture green factors like energy, population and emission by ranking cities' energy consumption and

renewable energy share. There must be green space within cities such as forest, recycling and composting, controlled greenhouse gas emissions, potable water sanitation and negligible air pollution. Hence, people will only take natural catastrophe risks.

Prosperity of economy involved business environment and economic health such as business performance lookout and ease of transport. No traffic congestion in business and tourism through rail and air, and the GDP (Gross Domestic Product) per capita must be high with zero ecological risk. The cities global economic network, mobile connectivity, broadband access, employment rates, and all that capture economic health are there (ecourbanhub.com, 2016).

Curren, Randal (2009)'s version of sustainability education rested in 4 posts. The first post was about the recognition of the challenge; the second post was about the collective responsibility and constructive partnership; the third post was about acting with determination; and the fourth was about the visibility of human dignity. These 4 posts imply scientific understanding of environment, its resource, and climate problems; the scientific, technical and critical thinking tools needed to transform societies to more sustainable societies; and the values, behavior and lifestyle required for a sustainable future.

#### *2.A.11 ESD and DESD in Europe*

ESD and DESD had been taken seriously in UK, Germany and elsewhere in Europe but the general state of progress was not encouraging. Despite of the German Federal parliament resolution demanding education for sustainability to become a reality at all levels of German Education System (Scheunpflug & Absrand, 2006) as cited by Filhu (2011:408) researchers in the UK according to Curren (2009) found out that implementation had been problematic. Curren (2009) believed that critical to success was a required curriculum inspection frameworks and any other accountability schemes. She further believed that teachers should have deep understanding of sustainability challenges and obstacles in order to teach them well.

#### *2.A.12 ESD and DESD in the US*

Among the fifty states of America, California made a leap in the implementation of ESD and environmental studies because of the university admission's standard. The US National Commission for UNESCO had released a set of proposed sustainability learning standards that made sensible reference to product design, ecological systems, resource scarcity, energy economics, population growth, quality of life indicators, and multilateral organizations. But these remained purely advisory because there was no major shift of national policy (Curren 2009).

In 2012 however, the US Climate Change Education became more consistent offering. Effort by state and local governments, universities, schools and NGOs complimented the federal programs to educate industry and public regarding climate change. State environment and energy agencies provided teacher training often in cooperation with universities and local utility companies. Local school systems

adopted CC curricula and activities to high school. Universities joined forces with NGOs to educate staffs and students about the importance of energy efficiency and instituted sustainable practices on campuses across the country (GMES, USA according to DESD Abridged Report 2012). Partnership then was evident in United States of America.

#### *2.A.13 ESD in Kingston Jamaica*

Education for Sustainable Development was the main goal of Short-Wood Teachers' College in Kingston, Jamaica. To achieve the goal, Environmental Education (EE) was taught of as a course in undergraduate level. It was also a mandate to the Short-Wood Teachers' College to train teachers for Jamaican global market viewing EE as a multi-disciplinary approach to learning thereby equipping teachers with the skills to infuse environmental education to all subjects in the curriculum. However, based on global goal of the UN, sustainability was almost never an overt emphasis on sustainable development in Jamaica (Filhu, 2011).

Seven indicators such as 1 indications of values, opinions and feelings about nature and environment; 2 identification of knowledge contributing to a sensible use of nature; 3 Statements about welfare and public health; 4 Indicators of democracy, participation and action competence; 5 recognitions of equality and multi-cultural issues; 6 indicators of awareness and understanding of global issues, 7 references to economic development and future prospects were tested to Jamaican learners. These principles were reflected in the tool called "key" by the Johannesson's team (2010). One hundred curriculum guides from 3 curriculum levels were analyzed based on it. The result shows that only very few among the curriculum levels have direct stipulations about sustainability and education for sustainable development. Specifically, the concept about SD rarely appeared.

#### *2.A.14 ESD in Canada*

A study revealed that only awareness of ESD was evident in Canada (Michalos, et al (2010). Two exploratory examinations on knowledge, attitudes and behaviors concerning Education for Sustainable Development were conducted to the students and to the adults in Canada. The results showed that both students and adults like the ESD program or the concept of SD. However, relationship between age, level of education and level of knowledge against the context of the said program didn't show sufficiency to equal to the World's level of interest to provide a legitimate education. The Decade of Education for Sustainable Development had not infiltrated the goal of relevant education towards sustainable development. For five years, Canada only sensed the existence of ESD.

The proponent of this study agreed to Pigozzi, Mary Joy (2010) in saying that from global perspective DESD needs to be better positioned in the education landscape and be conceived as a global social movement that must be fostered and nurtured for the well-being of human kind. In the light of changing times, acceleration seemed critical to DESD if it is to have the impact that it should.

### 2.A.15 ESD in ASEAN countries

In ASEAN (Association of Southeast Asian Nations) countries, intentional ICT were employed. ICT ecosystem concept applied in developing countries was called “The rise of the South” (Diga & May, 2016).

#### 2.A.15.1 DESD in Japan

It was the government of Japan who proposed DESD at Johannesburg South Africa in 2002 and was adopted by the UN General Assembly. The Japanese government established inter-ministerial meeting on UNDESD in 2005 and implemented the scheme in Japan. Google Search (March 29, 2005) revealed the emergence of 89,000 websites; (January 29, 2009) 215,000; (January 28, 2012) 1,550,000 websites for ESD. The increase use of the internet created knowledge networks and peer review content suited for wide distribution at affordable rate (UNIR, UNESCO Field Office Doha according to DESD Abridged report 2012).

Two global networks took prominent roles in promoting ESD at formal and informal sectors-the RCE and the ASPNet. RCE (Regional Center of Expertise) was launched by the UN University. while ASPNet (UNESCO Associated Schools Project network) was promoted by UNESCO (1953) and had functioned as school centered ESD along with the community.

The role of ASPNet (UNESCO Associated Schools Project Network) for DESD was to develop the contents and the methods of new education enabling young people to tackle global issues. The goal of ASPNet was to promote quality education for all in pursue of justice, liberty, peace and human development. With such goal 5 objectives were formulated such as to invigorate a global network of school committed to over-all quality improvement in support of EFA (Education for All); to focus on and promote quality education as a right of all learners; to reinforce, disseminate, and mainstream good practices; to promote local expression as beacon of UNESCO ideas; and to contribute to sustainable socio-economic and cultural development.

The plan of action at international level was to strengthen international coordination, reinforce ICT, develop flagship projects, provide resource materials, mainstream good practices and increase visibility. At national level, appoint national coordinators, mainstream ASPNet innovations into national education system, plan activities, elaborate fund raising strategy and involve national media. At regional level, develop training/capacity building and partnership, and at school level, involve teaching staff to draw up annual school plan, establish participatory democratic approaches and display ASPNet logo at school. ASPNet refined 4 themes such as World concerns and the role of UN System, ESD, Peace and human rights, and intercultural learning.

There were 33 Associated Schools in 1953 in 15 countries. In 2013 census, associated schools increased to 9,700 primary and secondary schools in 180 countries. On the other hand, RCE was the key project of the ESD program of the UNU-IAS (United Nation University Institute of Advance Studies) funded by Japanese government with UNESCO as

lead agency. RCE was a network of individuals, organizations and experts committed to use education to build a sustainable future (UNU-IAS, 2005) as cited by Shaw and Oikawa (2014). The goals of RCE were to overcome many challenges facing ESD and to promote interdisciplinary and multicultural collaboration for ESD at the regional and local level with the hope of achieving locally relevant and culturally appropriate sustainable education. RCE aspired to achieve the goal of DESD too. That is to build an innovative platform for Multi-sectoral and interdisciplinary information sharing, dialogue and collaboration at local and global levels. Collaborative undertakings within and across RCE's were policy work, as well as research and development in the key thematic areas of ESD and SD.

The first batch of RCEs was in Greater Sendai and Okayama Japan, Toronto Canada, Penang Malaysia, Pacific Island Countries, Rhine-Meuse Netherlands, Belgium Germany, and Barcelona Spain. In 2013, its number increased to 120 RCEs worldwide (Oikawa, 2016).

Good practices of RCE Okayama, Japan: provided opportunities for diverse organization and individuals to engage in ESD; promoted ESD proactively to government organizations; supported professional coordinators from secretariat; Kominkans as central hub; universities uncover true merits of ESD in special perspectives to re-evaluate community. Japan RCE was a peaceful network conducting environmental education, recycle-based society, food education, disaster education, education for international understanding in collaboration with elementary schools, junior high school initiated by Kesennuma City Board of Education, sustainable agriculture in Osaki/Tajiri area, environmental education in Kabukiri wetlands, and preservation of Satoyama river source initiated by Shiroishi UNESCO Association (Oikawa, 2016).

United Nations University (June 2005) designated Greater Sendai Region including Kesennuma as its RCE to implement the DESD. In November 2006, Kesennuma Promotion Committee further promoted ESD that made Kesennuma RCE as World regional model. Japan hosted 100 teachers and administrators from China, South Korea and USA in 2008 for Satellite Training Seminar, Science Workshop, and Friendship project such as Korea/China Invitation Program of Asia Pacific Cultural Center and the ESD Japan-US Teacher Exchange Program of the Fulbright. Kesennuma hosted UNESCO Associated Schools International Forum on ESD inviting educational experts from China, South Korea and Japan in February 2009. Despite Great East Japan Earthquake and Tsunami incident and damages in March 2011, still in November of the same year, Kesennuma held the National Research Seminar on Environment Education and in January 2012 held the UNESCO School Regional Exchange Conference to help spread ESD programs (Oikawa, 2016:28).

#### 2.A.15.2 Related Studies Conducted in Japan

The effectivity of sustainability education in Regional Centers of Expertise (RCE) which was also called “place-based education”, “enlightened localism”, “pedagogy of community”, and “a flourishing phenomenon across the continent, adapting to and evolving from the uniqueness of

community where it had been used” (Sobel, 2004) was tested via sustainability assessment in cities piloted by British Columbia, Canada in 2008-2009 by using mixture of workshops and peer review format. Students from the pilot offering were recruited from different interests in the academe (Maclihuenny & Holden 2009). The pilot course tested the impact of an online distance education format as well as the course success in helping students to develop comfort and confidence in online learning expertise. The findings revealed that all of the respondents felt the sense of community and none of them presented contradiction to the content however, none of the respondents too preferred online learning (Filhu, 2011).

### 2.A.15.3 SD concept in India

India’s education policy embedded several principles of Sustainable Development, but the implementation faced challenges due to lack of inter-disciplinary competence among staff. (Filhu et al, 2015). As energy starving nation, India is seriously looking for greener renewable energy to sustain its economic growth for a sustainable future hoping that it can reduce the adverse environmental impacts, and reduce carbon foot print. Two universities were seen. (1.) In 2010, Pondicherry University took a lead in creating a Center for Green Energy Technologies both in academic practice and implementation. It conducted teaching and research in the fields of Green Energy Technologies and made step towards developing the much-needed manpower in renewable energies for sustainable development. Later, the Silver Jubilee campus of Pondicherry University was developed as “solar campus” in 2012. The objectives of developing the Pondicherry University Silver Jubilee Campus into a Solar Campus according to Filhu et al (2015) were to understand and assess the carbon footprint of the university campus; to prepare an action plan to take energy conservation measures; and to implement renewable energy projects to reduce conventional consumption and thereby reduce (GHG) Green-House Gas emission in the campus. (2.) GV (Gujarat Vidyapith) was a University founded by Mahatma Gandhi in 2009. Gandhi’s line of sustainability stated that “the earth has enough to satisfy everybody’s needs but not anyone’s greed”. For years, GV has been trying to tread the path prescribed by Gandhi, which is now known as sustainable development (SD): environmental education in graduate and post graduate courses, water harvesting infrastructures, LED, solar lights, energy parks, and auditorium constructed based on principle of green architecture, steam cooking system and eco-friendly coolers, were made at GV. People working here were more eco-sensitive mind set demonstrated by self-sufficiency in the case of grains and milk, waste management by way of research in bio-gas and composting, environmental learning by “Udyog”, and other efforts with regards to environmental perspective (Filhu et al, 2015).

### 2.A.16 DESD Global Monitoring

The first DESD Global Monitoring and Evaluation at Bonn Germany in 2009, reported that no country has embedded SD into its structures and systems. It further revealed little

evidence investment in the capacity-building of educators, facilitators or curriculum developers, and lack of support for research and development activities. To address these needs, Bonn Declaration (2009) put emphasis on creating ESD strategic context-based documents: framing and coordinating ESD policies and strategies; and to embed such strategies and frameworks in national and government decision making through UNESCO’s initiative. 2012 Global monitoring and evaluation revealed that not everyone grasped the concepts of ESD components in the same way (UNDESD Report, 2012). But they identified Nine (9) forms of learning: the discovery learning-learners are submersed in the rich content and allowed to explore; “transmissive” learning-using didactic skills like presenting, lecturing, story-telling with supporting materials like workbooks, instruction forms, visuals to transfer code of conduct, set of rules, a body of knowledge; participatory/collaborative learning-working together with others in resolving an issue; problem-based learning-solving real or stimulated problems; disciplinary learning-questions of disciplinary nature is to be tackled by learners; interdisciplinary learning-disciplinary angles of issues and problems are to be analyzed to arrive at an integrative perspective to find solutions or improvements; Multi-stakeholder social learning-gathering people of different backgrounds, values, perspective, knowledge and experience to discuss and finally solve problems; critical thinking-based learning exposing the assumptions, values of people, organizations/communities, challenging their merits in a normative point of view like animal well-being, eco-centrism, human dignity, sustainability in order to encourage debate, reflection/rethinking; and systems-thinking based learning- looking for connection, relationships and interdependencies to see the whole system and recognize it as more than the sum of its parts, and to understand that an intervention in one part affected other parts as well as the entire system. Among these 9 methods, the mode of 140 out of 213 countries used the participatory/collaborative learning. Many countries, however, commended blending of the 9 types to fit the age, knowledge level, interests and abilities of learners; and to fit the learning context and the available resources-teaching materials, teaching competence, ICT and finance (DESD Abridged Report, 2012).

### 2.A.17 Washington State K-12 Curriculum (1990-2014)

The State board of Education in Washington created a rule defining environmental education as a part of the basic education and mandating its instruction in public school at all grade levels in all subject matters (WAC 392-419-115 as cited by Randy I. Dorn, Superintendent of Public Instruction, 2014). Conservation, natural resources, and the environment instruction was provided at all grade levels in an interdisciplinary manner through science, social studies, humanities and other appropriate areas with emphasis on solving problems of human adaptation to the environment (RCW 281-230-020, Dorn, 2014 cited). In response to this legislation the OSPI (Office of the Superintendent of Public Instruction) created the Environmental Education Guidelines for Washington schools. In 1993, Washington State developed the GLE (Grade Level Expectations). 15 years

later, (in 2008), Washington State adopted the Social Studies Standards, the Health and Fitness Standard, and Educational Technology Standards. In 2011, Washington State adopted the CCSS (Common Core State Standards) ELA (English Language Arts) and MLS (Mathematics Learning Standards). In 2013, Washington State adopted another standard called the NGSS (Next Generation Science Standards) Dorn (2014).

Way back in 2004, NAAEE (the North American Association for Environmental Education) updated the guidelines for excellence K-12 student learning standards. USPED (United States Partnership for Education for Sustainable Development) in 2008 developed the Education for Sustainability K-12 student learning standards. In 2009, the OSPI (Office of the Superintendent for Public Instruction) convened a committee of teachers, administrators and community educators to develop the Washington State K-12 Integrated Environmental Sustainability Education learning standards. In 2014, WA K-12 was updated to address 3 defined standards: A. the ecological, social and economic system; B. the natural and built environment; and C. the Sustainability and civic responsibility. Students in standard A will develop knowledge of the interconnectedness and interdependency of ecological, social and economic system. Students will demonstrate how the health of this system determines the sustainability of the natural and human communities at local, regional, national and global levels. In standard B, students will engage in inquiry teams' thinking, use information gathered through learning experiences in the environment, about the environment and for the environment to understand the structure, components and processes of natural and human-built environment. Lastly in standard C, students will develop and apply the knowledge, perspective, vision, skills and habits of mind necessary to make personal and collective decisions and take actions that promote sustainability (Dorn, 2014:4-6).

Dorn (2014) subscribed to Arthur L. Costa and Bena Kallick's 16 descriptions of "habit of mind" that intelligent people do when they are confronted with problems: persisting; thinking and communicating with clarity and precision; managing impulsivity; gathering data through all senses; listening with understanding and empathy; creating, imagining, innovating; thinking flexibly; responding with wonderment and awe; thinking about thinking taking responsive risks, striving for accuracy; finding humor, questioning and posing problems; thinking interdependently; applying past knowledge to new situations; remaining open to continuous learning (Dorn, 2014).

Washington K-12 Integrated Environmental and Sustainability Education learning standards reveal the students' development in critical thinking skills. Updating to this standard was done to connect core subjects' standards. Teachers and educators were encouraged to review the entire core content standards for potential connections with the integrated environmental and sustainability education learning standards of WA State K-12 (Dorn, 2014).

#### *2.A.18 Philippine K-12 Basic Education Curriculum*

The K-12 Curriculum Philippines (2012) covers Kindergarten and 12 years of basic education-six years for

primary, 4 years junior high school and 2 years senior high school in order to provide sufficient time for mastery of concepts and skills, develop lifelong learners, prepare graduates for tertiary education, middle-level skills development, employment, and entrepreneurship. To make this relevant to learners, contextualization and enhancement are to be done using examples, activities, songs, poems, stories and illustrations based on local culture, history, and reality. Students acquire an in-depth knowledge, skills, values, and attitudes through continuity and consistency across all levels and subjects. Discussions on issues such as Disaster Risk Reduction (DRR), Climate Change (CC) adaptation, and Information and Communication Technology (ICT) are included in this said enhanced curriculum.

K-12 Basic Education program implements DepEd Order No. 8 series 2015 and DepEd Order No. 36 series 2016 to assess learners. The said orders are the revised guidelines on how learners from day care to elementary are gaged every grading period to be reported to parents during parents' day scheduled 2 weeks after the periodic examination. Learners who achieve the grade of 90 and above will receive an academic award of at least with honor. Learners' behavior are considered for learners to receive conduct award, perfect attendance award and outstanding award for active club participation.

Integration of DepEd core values such as Maka-Dios, Maka-Tao, Maka-Kalikasan at Maka-Bansa is mandated to be reflected by learners as assessment for sustainability. DO 8, s. 2015 and DO 36, s. 2016 obligate learners to reflect the core values in their behavior as a duty because the goal of the curriculum is to holistically develop Filipino learners with 21st century skills complemented with their behaviors anchored on the DepEd vision, mission, and core values (DO 36, s.2016).

The core value Maka-Dios is divided into 2 behavioral statements such as 1 Express one's spiritual beliefs while respecting the spiritual beliefs of others, 2 shows adherence to ethical principles by upholding truth. The first behavioral statement of said core value has 4 indicators to observe into: 1.1 engages oneself in worthwhile spiritual activities, 1.2 respects sacred places, 1.3 respects religious beliefs of others and 1.4 demonstrates curiosity and willingness to learn about other ways to express spiritual life. While the second behavioral statement has 7 indicators: 2.1 tell the truth, 2.2 return borrowed things in good condition, 2.3 demonstrate intellectual honesty, 2.4 expects honesty from others, 2.5 aspires to be fair and kind to all, 2.6 identify personal biases, and 2.7 recognize and respect ones feeling and those of others. There are 2 behavioral statements of the 2nd core value Maka-Tao: 1 is sensitive to individual, social, and cultural differences, and 2 demonstrate contributions toward solidarity. Indicators are 1.1 show respect for all, 1.2 wait for ones turn, 1.3 take good care of borrowed things, 1.4 view mistakes as learning opportunities, 1.5 uphold and respect the dignity and equality of all including those with special needs, 1.6 volunteer to assist others in times of need, and 1.7 recognize and respect people from different social, economic and cultural backgrounds; 2.1 cooperate during activities, 2.2 recognize and accept the contribution of others toward a goal, 2.3 consider diverse views, 2.4 communicate respectfully, 2.5

accept defeat and celebrate others success, 2.6 enable others to succeed, 2.7 speak out against and prevent bullying.

In the third core value Maka-Kalikasan, there is only one behavioral statement that is, to care for environment and utilizes resources wisely, judiciously and economically. Under this statement are the 6 indicators of values to be observed: 1 show a caring attitude toward the environment, 2 practice waste management, 3 conserve energy and resources, 4 take care of school materials, facilities and equipment, 5 keeps work area in order during and after work, and 6 keeps ones work neat and orderly.

Lastly the fourth of the DepEd core values the Maka-Bansa has 2 behavioral statements. One is to demonstrate pride of being a Filipino, and the other is to exercise the rights and responsibilities of a Filipino citizen. Indicators showing demonstration of pride of being a Filipino are 1.1 identifying oneself as a Filipino, 1.2 respecting the flag and national anthem, 1.3 taking pride in diverse Filipino cultural expressions, practices and traditions, 1.4 promoting the appreciation and enhancement of the Filipino languages, 1.5 abiding school rules, community rules and the nation's rules, and 1.6 enabling others to develop interest and pride of being a Filipino. While indicators of exercising the rights and responsibilities of a Filipino citizen are: 2.1 managing time and personal resources efficiently and effectively 2.2 persevering to achieve goals despite difficult circumstances, and 2.3 conducting one-self appropriately in various situations.

Further, DO 8, s. 2015 stipulated that schools may craft additional indicators for the behavior statements. Schools must ensure that such addendum are child-centered, gender-fair and age-and-culture appropriate. To support the development of these core values schools must make sure that their homeroom guidance program promotes them to be integrated into class discussions in all learning areas. Integrating these to class discussion is an indicator of teachers' compliance to DO 8, s.2015.

### 2.19 Twenty first Century Standards for Learners

This study tested how empowered are the EsP learners in high school using the ISTE (International Standards for Technology in Education) by summarizing the following into a Green Quotient Test patterned after Hafner (2019):

*Take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by their learning sciences students articulate and set personal goals, develop strategies leveraging technology to achieve them and reflect in the learning process itself to improve learning outcomes such as recognizing and evaluating steps taken to meet learning goals. It answers questions such as what worked? Why did things unfold as they did? What could be approached differently? What will you do differently in the future.*

*Students build networks to enrich learning by making online connections with other learners and experts for personal or academic interests. For example, via social media, connecting through email, video conferencing, digital pen pals, etc. and customize accessibility, for example, by using audio, video, dynamic glossaries, highlighting, note*

*tagging, voice command, text to speech, social bookmarking of their learning environments in ways that support the learning process.*

*Students use technology -to seek feedback for example, via spell-check and grammar check tools, online search, learning analytics program that measure how time is spent on a problem or identify specific challenge areas, collaborate spaces that allow others to give feedback reaching out to experts for input; to seek feedback that informs and improves their practice and demonstrate their learning on a variety of ways for example digital posters, blogs, digital stories, assessments, e-portfolios, project showcase, research paper and works of arts*

*Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies. Become digital citizen such that learners recognized the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world and they act and model in ways that are safe, legal and ethical. Students cultivate and manage their digital identity and reputation and are aware of the permanence of their action in the digital world. Students engage in positive, legal and ethical behavior when using technology including social interactions online or when using networked devices. Safe behaviors refer to interactions that keep someone out of harm's way. Like knowing the identity of whom one shall interact with, how much and what kind of information to release online, protecting oneself from scam, phishing schemes and poor purchasing practices (e commerce theft). Legal behaviors are interactions that are mindful of the law, example: abiding by copyright and fare use, respecting network protections by not backing them and not using another's identity. Ethical behaviors are those interactions that align with one's moral code. Example: preventing or not engaging in cyberbullying, plagiarism, supporting others' positive digital identity. Online or networked devices are those internet-connected computers or tablets, multiplayer gaming systems and cellphones.*

*Students demonstrate an understanding of and respect for the rights and obligations using and sharing intellectual property. Rights and obligations of using and sharing abiding by copyright and fair use, citing research, gaining or giving permission to use the content avoiding plagiarism, understanding and using creative commons. Intellectual property are content and ideas created by an individual or entity. Example music, photos, narrations, text and designs. On the other hand, students manage their personal data to maintain digital privacy and security and are aware of data collection technology used to track their navigation on line. Managing personal data for example is creating effective passwords, authenticating sources before providing personal information, sharing personal data consciously not posting address or phone number visibly. Digital privacy and security; example active privacy settings on social media accounts and search engines, recognize sites that use encryptions, secure log in and password information on shared devices, read and be conscientious about accepting privacy policies and access requests from apps and websites.*

They become knowledge constructor where students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. students plan and employ affective research strategies to locate information and other resources for their intellectual or creative pursuits. Examples of research strategies are using multiple sources (digital online, print etc.), using library data bases and catalogues, as well as using advanced tools and criteria for online searches.

Students evaluate the accuracy, perspective, credibility and relevance of information media, data or other resources. Accuracy is acquired when resource last updated and copyrighted is current. Perspective answers the who in the resource trying to reach? What in the resource trying to reach? What is its tone and mission? Does it show indicators of problematic bias? Credibility answers who wrote/published the source and what are their credentials? How objective is the author and how reliable is the publication source? Relevance answers the question How does the source meet researchers' needs? Does it have the information he/she needs?

2.A.20 The GQT-Green Quotient Test by Hafner (1998)

There are many people who feel that environmental problems are someone else's apprehension. Growing environmental mindfulness changes this mistaken belief into a conviction that preserving the environment is everyone's responsibility. If each person makes a small effort to act, then together, a movement to pursue a difference could not be ignored. Environmental advocates in the Philippines, stressed that participation by the people is an important part of a healthy developmental process of environmental protection and of struggle for social justice. For prosperity of all Filipinos, government, businessmen and other sectors of society must religiously join in the preservation and protection of the environment. Such positive action is what Hafner (1998) meant for in using the term "green quotient".

This evaluation study, utilized Hafner (1998) GQT to check the outcome of learners' environmental literacy as shown:

How Green Am I?	Al ways	Some times	Never
1. I walk instead of taking a jeepney or tricycle wherever possible			
2. When I finish eating a bag of chips, I hold on to the bag until I find a trash can			
3. When filling a container with water, I am careful not to leave the water running unattended			
4.I save plastic shopping bags to reuse as many times as possible			
5.When I play music, I keep the volume at a level that will not disturb other people.			

After the learners answered the quests above, they will award themselves according to the following points: 2 points for each answer of always, 1 point for each answer of sometimes and 0 point for each answer of never.

The learners will know their shade of green color using the Hafner (1998) key: *Light Green (0-4) Learners are light shade of green, like slippery algae. They need to become environmentally aware or they may be washed ashore. It is time for them to start to start reading and learning about the environmental issues that surrounded them. Their current actions impact the local and global community's future. They should find out what else they can do to make the difference. Medium Green (5-7) Learners in this shade, are compared to the medium green color of the rice fields before harvest to mean that they have some basic understanding of the environment and seem to be concerned about protecting it. But their environmental awareness still need to grow. Perhaps they have not clearly realized what an environmental role they should play. Now is the right time for them to act and make a difference. Whatever good works they have, they should continuously improve to become better. Dark Green (8-10) Here learners are likened into a rare tropical jungles of the Philippines. Like the forests, their knowledge is precious. They can be an environmental leader by educating those around them and by considering an environmental career. They should continuously do what they can to help because they are making a difference.*

Hafner (1998) in the book *Hand in Hand Linking Environmental Education with Language Learning in the Philippines*, suggested EE contextualization in enhancing Values Education competencies: teaching the environmental principles or the core messages of EE (EE Guide Philippines, 1999); peace of mind famous quotes on environment, picture perfect visualization of better environment, price of overpopulation versus diminishing resources, pondering on pesticide use, recalling environmental glossary, and parallel changes in views on environment and education. Andrew Hafner (1998) said: Filipino learners can become active in environmentally sustainable development by learning how to write persuasive letters to officials in DENR (Department of Environment and Natural Resources), local politicians, business executives, newspaper editors, and of other institutions about balancing of economic prosperity while maintaining environmental quality to improve standard of life like conserving the aquatic resources, restoring distorted forests saving endangered species, dealing with noise pollution, and inventing to prevent environment friendly technology.

Such competencies and skills development will pave the way of learners to understand and anticipate the World SDGs.

2.A.21 The 17 Sustainable Development Goals

The post-2015 Development Agenda, known as the World Transformation Goals for 2030-2105 is the universal call to halt poverty, protect planet for the future generations and ensure that people enjoy peace, prosperity and living a life of dignity for all. World Health Statistics (2016) said that the World General Assembly on Sustainable Development



Agenda (2015) approved the SDG for years 2030-2105 as Plan of Action for people, planet and prosperity, as well as peace and partnership. This collective journey has at its heart a promise to leave no one behind. The 2030 Agenda is deliberately ambitious and transformational, with a set of 17 integrated and indivisible SDG (Sustainable Development Goals) targets and indicators fulfilling the gap in the MDGs (Millennium Development Goals). The United in Diversity Creative Campus at Kurakura Bali (2016) considered Goal 1 to 10 as for people, 11 to 15 for planet (Ecological Quotient), 16-17 for spirit (Spiritual Quotient).

#### 2.A.21.1 The Goals for People

Goal #1 NO POVERTY. End poverty in its forms everywhere. Target is to raise the poverty line figure to as high as 5 US dollars per day allowing people to thrive. In line with this goal, Philippines through the Department of Social Welfare and Development helped indigent people and targeted 4 million Pantawid Pangpamilyang Pilipino Program (4P's) scholars to become independent and self-reliant after they have graduated. The government imposed moratorium on accepting new applicants after checking on the current status (Duterte, SONA 2017). In March 2017, beneficiaries who will follow the conditions of the program on education and health will receive the rice subsidy as promised by President Duterte.

Goal #2 ZERO HUNGER. End hunger, achieve food security, improved nutrition and promote sustainable agriculture. The vast majority of people who lived in developing countries are under nourished. Agriculture was the single largest employer and the largest source of income for poor rural households. By 2030 hunger should end including all forms of malnutrition. This will be accomplished by progressively improving land and soil quality. Other targets are maintaining seeds' genetic diversity, trade restriction and distortions prevention in world agriculture markets, limit extreme food price unpredictability, and eliminating waste with help from the International Food Waste Coalition.

A report by the International Food Policy Research Institute (IFPRI, 2013) said that based on an analysis of in China, Vietnam, Brazil and Thailand there are 3 pathways to achieve ending poverty even in 5 years before 2030: 1 agriculture-led, 2 social protection-and nutrition intervention led; or 3 combinations of these 2 approaches.

Goal #3 GOOD HEALTH AND WELL-BEING TO PEOPLE. Ensure healthy life and promote well-being for all at all ages. Significant steps were done to increase life expectancy and reduce common killers associated with child and maternal deaths. Access to clean water and sanitation, reducing malaria, tuberculosis, polio and the spread of HIV/AIDS was increased. Goal 3 aimed at achieving universal health coverage to include access to essential medicines and vaccines and end preventable death of newborns and children under 5 and end epidemics such as AIDS, tuberculosis, malaria and water-borne diseases in 2030. Attention to health and well-being also included targets related to prevention and treatment of substance abuse, deaths and injuries from traffic incidents and from hazardous

chemicals in air, water and soil contamination.

SDG target 3.1 is to reduce the number of deaths before the age 70 by 40% in 2030 globally and in every country. To monitor progress 3 indicators were mentioned by WHO (World Health Organization): life expectancy, healthy life expectancy, and number of deaths before the age of 70 (WHS, 2016) Life expectancy is the summary measure of mortality rates at all ages and all health related problems. Health life expectancy (HLE) indicates the average equivalent number of years of full health that a new born could expect to live for a given period. It is measured reliably in YLD-years lost due to disability (WHS, 2016)

SDG Target 3.8 Achieve Universal Health Coverage (UHC) including financial risk protection, access to quality essential health care services, access to safe effective, quality and affordable essential medicines and vaccines for all is relevant to all countries and offers opportunity to increase coherence in health related actions and initiatives (WHS, 2016:15). AIDS related deaths had not decreased among adolescents aged 10 to 19. AIDS. ART (Antiretroviral Therapy) coverage in high income countries (World Health Statistics, 2016).

In connection, Philippine government continue to provide universal health insurance for all Filipinos. As stated in the Philippine Facility Development Plan 2017-2022 government will upgrade and construct new health facilities throughout the country. 9,604 more barangay health stations; 2,289 rural health units and urban health centers; and 750 polyclinics-mega hospitals. President Duterte signed Executive Order no. 12 ordering government to meet all the family-planning needs of Filipino households.

Goal # 4 QUALITY EDUCATION. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Target 1 of World Goal 4 is to ensure that, by 2030, all girls and boys complete free equitable and quality primary and secondary education.

In the Philippines, target to improve education is to increase spending on basic education and incorporate mandatory education about the evils of drugs, and to intensify and expand Alternative Learning System (ALS) programs. 600M Php was allotted for ALS to attract 4M young people to ALS program. Random drug testing of teachers was set to take place in School Year 2017-2018. (SONA, 2017).

Goal#5 GENDER EQUALITY. Achieve gender equality and empower all women and girls. It is a stand-alone goal yet achievements to other goals is assured when women and girls are given access to education, health care, decent work and representation in political and economic decision making process. Address issues on women like sex trafficking, sexual exploitation, and traditional practices against all women and girls such as forced marriage and female genital mutilation. Achieving equality requires legislation that upholds acquiescence of all women and girls to secondary education. The targets call for an end to gender discrimination and empowering women and girls instead through technology.

Goal #6 CLEAN WATER AND SANITATION. Ensure availability and sustainable management of water and sanitation for all. The current statistics in the 2017 baseline estimate by the JMP (Joint Monitoring Program) is that 4.5 billion people do not have safely manage sanitation. The main

indicator for sanitation target is the proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water.

Goal 7 AFFORDABLE AND CLEAN ENERGY. Ensure access to affordable, sustainable and modern energy for all. Targets for 2030 include access to affordable and reliable energy while increasing the share of renewable energy in the global energy amalgam. Plans call for particular attention to infrastructure support for the least developed countries, small islands and developing countries.

Goal 8 DECENT WORK AND ECONOMIC GROWTH. Promote sustained, inclusive and sustainable economic growth full and productive employment and decent work for all. Focused group discussion of World Pensions Council (WPC) development economist were on twin considerations of long-term economic growth and infrastructure investment. The target by 2020 is to reduce youth unemployment and operationalize a global strategy for youth employment by implement the Global Job Pact of the International Labor Organization. By 2030, the target is to establish policies for sustainable tourism that will create jobs. Strengthening domestic financial institutions and increasing aid for trade support for developing countries are considered essential to economic growth. The Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries was mentioned as a method for achieving sustainable economic growth.

Contextualized Targets in the Philippines in response to World Goal 8, President Duterte imposed cutting red tape in processing business permits by reducing the processing time to 2 days and renewal of same permit in one day (SONA, 2017). Effectiveness of driver's license is extended to 5 years. President Duterte's signature is all that will be needed to extend the validity of 5 year drivers' license. Passports validity is also extended for ten (10) years.

Goal #9 INDUSTRY, INNOVATION AND INFRASTRUCTURE. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. The major source of employment all around the globe is through manufacturing. Mobile-cellular signal coverage has improved a great deal. Planet-wide, 95% of the population is covered.

Duterte government was also planning to spend billions on an ambitious infrastructure program. Philippines set a target to provide accessible and fast internet. The President directed the newly created DICT (Department of Information and Communication Technology) to develop a National Broadband Plan to accelerate the deployment of fiber optic cables and wireless technologies to improve internet speed. Wi-Fi access shall be provided at no charge in selected public places. Duterte approved the National Broadband Plan last March. In the plan, the government was expected to provide at least 10-Mbps connection to all households by 2020 at a much lower cost than today's average of 1, 299 Php per month. The government signed a deal with Smart for free Wi-Fi in 21 transportation hubs including NAIA (Ninoy Aquino International Airport) terminals, airports in Davao, Iloilo, Bacolod, Dumaguete, Kalibo, Laguindingan, General Santos, Clark, Laoag, Cebu, Aklan, and Zamboanga. Last June 12, the government also launched free Wi-Fi along EDSA (SONA,

2017).

DICT office is felt in Butuan but promised free Wi-Fi in schools not. Indeed. this is a problem to tackle on in relation to achieving holistic 21<sup>st</sup> century skills development of learners particularly with regards to ISTE standards of current millennial learners connecting to EsP outcome.

Goal # 10 REDUCED INEQUALITIES. Reduce inequality within and among countries. This goal seeks to expand duty free treatment to reduce costs of exporting goods. Remittances target of establishing 3% as the cost of international migrant workers would pay to send money home was achieved by prepaid cards while mobile money companies charge 2-4%. But those services were not widely available as of 2017 in typical remittance corridors. Post offices and money transfer companies charge 6% of the amount remitted while commercial banks charge 11%.

#### 2.A.21.2 Goals for Planet

Goal # 11 SUSTAINABLE CITIES AND COMMUNITIES. Make cities and human settlements inclusive, safe, resilient and sustainable. This goal ensured access to safe and affordable housing. 880 million people, who were estimated to be living in slum-like conditions in the developing world's cities (MDG Report, 2015) is targeted to fall 39% by moving and giving better housing alternatives in rural areas.

Philippines action to this goal was to pursue rail projects in Metro Manila and the major key-points in the country including the Mindanao Rail Project. Php 35.3 billion first phase, will connect Tagum City in Davao del Norte and Digos, Davao del Sur in 2018 (SONA, 2017). 2018 passed, target has not yet begun.

Goal #12 CLIMATE CHANGE. Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy. This was referred to financing for development process called Addis Ababa in July 2015 and COP 21 Climate Change conference in Paris December 2015. It was a very ambitious deal of 70% reduction in carbon emissions. UN encouraged the public sector to take initiative in minimizing the negative impacts to environment through this renewed emphasis on CC mitigation by the partial Sino-American convergence developed in 2015-2016 notably by UN COP21 Summit (Paris) and ensuring G20 conference.

Goal #14 LIFE BELOW WATER. Conserve and sustainably use the oceans, seas and marine resources for sustainable development. The targets in goal 14 include preventing and reducing marine pollution and acidification, protecting marine and coastal ecosystems, and regulating fishing activities that calls for an increase in ocean scientific knowledge.

Goal #15 LIFE ON LAND. Protect, restore, promote sustainable use of terrestrial ecosystems, sustainably managed forests, combat desertification and halt and reverse land degradation and halt biodiversity loss. The mountain green cover index monitors progress toward target 15.4 which focuses on preserving mountain ecosystem. The red Index or Red List Index (RLI) will fill the inventory function for biodiversity goals by documenting the trajectory of

endangered species.

### 2.A.21.3 Goals for spirit

Goal #16 PEACE, JUSTICE AND STRONG INSTITUTIONS. Promote peaceful and inclusive societies for sustainable development and provide access to justice for all and build effective, accountable and inclusive institutions at all levels. The target is to end sex trafficking, forced labor and all forms of violence and torture of children. More women and girls than men and boys were victimized. Sexual exploitation declined but forced labor increased (UN Report, 2017).

Relentless campaign against illegal drugs is the number one action that Philippines did and has been doing to achieve world goal 16. Duterte has been accused of human rights abuse by militant group but he said “your concern is human rights, but my concern is human lives” (SONA, 2018). The full force of the Armed Forces of the Philippines will be applied to crush criminals who operate under the guise of religious favor. Those who engaged in this rogue and lawless elements were searched and will be investigated. AFP’s capability was enhanced and will further be enhanced (SONA, 2017). Philippines strongly affirm and respect the outcome of the case before the Permanent Court of Arbitration as an important contribution to the on-going efforts to pursue the peaceful resolution and management of disputes like (SONA, 2017).

The proponent of this study acknowledge the right spirit of excellent leaders for peace, justice and strong institutions. In connection, learners need to understand this for them to exercise action to support.

Goal #17 PARTNERSHIP FOR THE GOALS. Swelling international cooperation is vital to achieving the above 16 goal line. Partnership is included to make it sure that countries and organizations cooperate instead of compete. Develop multi-stakeholders to share knowledge, expertise, technology and financial support. The MDG monitoring experience had clearly demonstrated that effective use of data can help galvanize development efforts, implement successful targeted interventions, track performance and improve accountability. Thus, for good sustainable development spirit, a data revolution is demanded to improve the availability, quality, timeliness and disaggregation of data to support the implementation of the new development agenda at all levels. MDG reporters believed that what gets measured gets done (MDG Report, 2015). Partnership for the goals seemed so self-explanatory, nevertheless, needs to be known by learners in their level of understanding.

### 2.A.22 Egalitarian governance demonstrated for continuous action of planet riders

Many believed that Federalism is more effective governance to promote eco-environmental sustainability. Nevertheless, if we think of an example of a practice related to policy decision making the story of Christian believers even resolved to tyranny before the principle stands like a rock in the mountains. The God-man incarnate Jesus Christ, whom professed Christians kept an eye onto, had never shown

tyranny instead democracy. He (Jesus Christ) demonstrated a classless life, where fairness and equality was motivated by a heart to serve for peace. He was noted as king of kings and a prince of peace. He restored rights of every human being giving emphasis to care of children and the sick. In terms of financial stability, Jesus and his apostles pool finances for character integrity building. Natural and moral laws were conserved by saying: “Do not think that I came to destroy the law and the prophets, I did not come to destroy but to fulfill. Assuredly, He said: I say to you till heaven and earth pass away, one jot or one tittle will by no means pass from the law till all is fulfilled”.

Why make other laws and policies, when this God-man who claimed ownership of the universe that includes planet earth has His own laws to be fulfilled? Not with tyrant practice but of egalitarian. However, this God mentioned in the Bible put emphasis on everlasting punishment to all those who don’t stop doing things unpleasant to His eyes particularly on behavior against His moral laws and against natural laws (Revelations 11:18). Economy was established before human was created. Adam the biblical father of all generations was made when all things he needed were already done for life on earth. His instruction was to seek first the kingdom of God and His righteousness and all things we need will just be added to us (Mathew 6:33). He gave to human the dominion over the things on earth that he made as a steward of His creation. Being a steward is a task to do- a duty obligated, a job appropriated for each human earth’s rider to sustain life. Development was done by Him already in the beginning for generations to come. All we have to do is to sustain or else in the end we will be guilty of destroying the earth (Revelations 11:18) that He made for us. This is the true triple bottom line principle - People, Planet, and Profit or 3 E’s of sustainable development - Equity, Ecology and Economy.

### 2.A.22 Syntheses

Section 6.2 numbers 3 and 6 of RA 9155 states that the school heads shall have authority, accountability and responsibility to assess the school curriculum, develop the school education program, and introduce new and innovative modes of instruction to achieve higher outcomes.

In connection, this study seeks gap to programs and implementations in order to find a point of entry to help as a global and a local citizen. The proponent defined existing divides and determined fitted objectives to address the identified intent.

The most pressing problem such as invisibility of human dignity (Curren 2009) in the world (Ban Ki-moon 2015) was accounted for as fruit of oblivion (Guzman and Guzman 2000) about the human and environment’s well-being (Shaw 2014). Millennium Development Goals revealed the needs to combat global poverty, hunger, diseases and the worst forms of human deprivation-the discrimination against women; global distorted peace; and illiteracy towards the environment (MDG Abridged Report, 2012). Food security, distortions in trade, and worldwide economic slowdowns caused suffering from hunger by number of people. In developing countries farmers resolved at adapting harmful ways by switching to subsistence agriculture.

Gender equity among women was considered the larger problem than among men because in some places of the world, women were not allowed to become educated and work for the home. In Sub-Saharan Africa and Southern Asia, women were kept out of the workforce.

Where poverty was rampant many children died before they reached the age of five. Children's health was believed to have direct and indirect relation to unhealthy environment. In high fertility countries maternal mortality is also high. Women had greater chances of dying during child birth. HIV/AIDS, malaria and tuberculosis were the three most significant public health challenges in poor developing nations. Poor and wealthier nations depend on natural resources for survival. Climate change (CC) and the exploitation of forests, land, water and fisheries significantly harm the poorest populations. Human activities degraded resources and do irreversible damage. Philippine MDG Watch (2015) revealed problem of reversing the loss of environmental resources. Integrating the Sustainable Development principles to national policies and programs were agreed as solution.

On the other hand, MDG's main alternative was partnership outlining the responsibility of the poor nations to achieve changes by promoting accountability of citizens and an efficient use of resources. Wealthy nations were given the opportunity to support the poorer ones by giving aid, debt relief and fair trade rules. Partnership was the UN's way to attempt achieving global peace, security, human rights, economic and social improvement. In the Department of Education Philippines, partnership is highlighted in the program called SBM (School Based Management) purposely to enhance learners' performance measured by the National Achievement Test. Schools that passed Level 3 were expected to achieve high participation level and cohort survival. However, problems in DepEd do not excuse survival (PSA 2015) of both pupils from day care to grade 6, and students from grade 7 to Grade 10 in addition to low National Achievement Test results particularly in critical thinking skills and values formation. In the field, some teachers said that learners' behavior is in a dilemma from moral standard of expectations.

UNESCO (2000) as well as Mula & Tilbury (2011) said that education must be reoriented so that SD (Sustainable Development) must be embedded into all education systems. Shaw (2014) also said that to turn SD into reality DRR (Disaster Risk Reduction) must be integrated in formal education. In order to be effective, learners must acquire appropriate knowledge of SD and must become aware of the impact of decisions that do not support SD (Johannesburg World Summit on SD, 2002).

Fostering respect for and understanding of different cultures and providing opportunity for education to overcome its isolation to civil society, local community and authorities were included in the basic themes of ESD. Curren (2009) emphasized recognition of the challenge for visibility of human dignity.

Education for Sustainable Development in Europe were taken seriously but progress was not encouraging (Sceunpflug & Abstrand 2006 as cited by Filhu, 2011:408). Researches in the UK found out that throughout the United Kingdom of

Europe, implementation had been problematic. In most schools in UK, ESD was of marginal use (Curren 2009).

In the United States, there was a leap in implementation but remains purely an advisory because there was no major shift of national policy, Curren (2009) further said. But in 2012 there was an attempt to make change according to DESD Abridged Report (2012) where efforts were made in federal programs that educate industry and public on Climate change. The latter was adopted in schools as curricula of the middle high school while universities were educating staff and students.

Kingston Jamaica like Philippines (Johannesson et al, 2010) made a goal on equipping teachers with skills to infuse EE (Environmental Education) in all subjects (Filhu, 2011). In Canada knowledge, attitude and behavior concerning ESD were accepted by both students and adults. Nevertheless, ESD program didn't show sufficiency to equal the World's expected legitimate education (Michalos et al 2010). Pigozzi (2010) said that acceleration seem critical to DESD if it is to have the impact that it should.

In ASEAN countries ESD was led by Japan through intentional ICT. While India boast of its origin of SD concept via Mahatma Gandhi's words. Philippines as one of the ASEAN countries, made a leap to reorient education through K-12 pattern demonstrated by WA (Washington) State K-12. Prior to these years of Philippine K-12, Hafner (1998) made sample steps to evaluate learners' environmental literacy via Green Quotient Tests. He also had edited the book Hand in Hand for effective use in integrating EE in high school English subject but the proponent of this study consider the content of the book to be more useful in Values education programming.

WA K-12 believed that learners immersed in this curriculum will be environmentally educated with ecological, social and economic system; the natural and built environment; and with sustainability and civic responsibility (WA K-12 2014). While Philippines moved to the belief that environmental literacy is not sufficient, learners should be transformed from being environmental literate to environmental professionals (EE Guide Philippines, 1999). K-12 Philippines hoped for an authentic education for learners' through intentional ICT in ESTI students' standards with the help of DICT (Department of Information and Communication Technology) Philippines soon.

Global monitoring and evaluation (2012) revealed that among nations not everyone grasped the concepts of ESD components in the same way (UNDESD Report 2012). Technology innovation for sustainability was motivated by numerous concerns and calls to make right the multiple wrongs made by humans in pursue of development. DESD global monitoring boast of its nine (9) forms of learning as basis in evaluating 109 nations education context and pedagogy.

It is the purpose of this study to measure the authentic pedagogy of the K-12 EsP (Edukasyon sa Pagpapakatao) curriculum as an outcome of embedding the 10 Sustainable Development Goals number 4 in 2030 using egalitarian governance.

### B. Final Stage

This tells about the evaluation study design, the setting, the research instrument used, the sampling design, the clear picture of the nature of the data gathered, the method used to collect data, and the problems encountered when the data were gathered. This articulates how the data were analyzed and interpreted in order to arrive at a verifiable outcome of the K-12 EsP (Edukasyon sa Pagpapakatao) curriculum.

#### 2.B.1 Research Design

This study used the descriptive research method since this described the evaluation of the ESP curriculum outcomes. It defined the integral component of the learning process, the means to closely meet what would be needed by the respondents. It spoke of the success stories of the balance between what would be ideal and what would the future hold on, and it conveyed how the goals and objectives, the content, and the learning experiences were checked using a system of evaluation that would meet the learners' need in relation to the world expectation of education (EE Guide, 1999).

There are two types of evaluation: One is the so-called formative evaluation. It is an information used in improving the instruction, project and process, and it ensures that all aspects of program and project are likely to produce success (Ebel & Frisbie, 1991) as cited by Shamsa Aziz, Munazza Mahmood, and Zahra Rehman (2018). The other one is the summative evaluation. Summative evaluation ensures that necessary processes have been carried out and objectives have been met.

This study is a summative type, in which, it uses the aftermath information to improve the EsP instruction, project, and process, and somehow assures that the curriculum aspects likely produce best of the expected success. This uses the Stufflebeam (1983) CIPP (Content, Input, Process, and Product) model in order to describe the concept of the study better. Context evaluation of goals, input evaluation to plans, process evaluation to actions taken, and product evaluation to outcomes of implementation are demonstrated.

CIPP (Content, Input, Process and Product) model assess the quality of the K-12 EsP curriculum. *Contents* comprise the goals, objectives, history, and background of its framework. *Inputs* contain the material, time, physical and human resources needed for effective working to the direct client in the school. *Processes* include all the teaching and learning progressions in the classroom. And *Products* consist of the outcomes of the quality teaching and learning practices and their usefulness that benefits society (Stufflebeam, 2003 as cited by Aziz et al (2018). To Aziz et al (2018), process refers to the implementation of school practices and product refers to quality of students learning and its usefulness to the individual and to the society.

Further, descriptive method is used because this evaluation study is concerned with the connections that exist between two or more information considered into.

#### 2.B.2 Research Setting

The locale of the study is in the schools of DepEd

(Department of Education) in Caraga Region 13. The edifice is shown below for easy access in verifying information.

**Fig. 2.B.2.1.** The Edifice of DepEd Caraga Region 13



**Fig. 2.B.2.2** Strategic DepEd Caraga Schools Division Map

DepEd Caraga Region is located at the heart of Butuan City. It is situated between LTCO (Land Transportation Commission Office) and the office of the Schools Division of Agusan del Norte left side of the Capitol Avenue heading towards the edifice of the Provincial Capital of Agusan del Norte.

DepEd Caraga Administrative Region has 12 Schools Divisions: 1Schools Division of Butuan City located at Rosal Street; 2Division of Agusan del Norte at Capitol Drive, Butuan City; 3Division of Cabadbaran City, in the east of Agusan del Norte; 4Division of Bayugan City, in Bayugan 1; 5Division of Agusan del Sur at Bahbah Prosperidad; 6Division of Tandag City; 7Division of Surigao del Sur which office is in Tandag City, 8Division of Surigao City at Rizal Street; 9Division of Surigao del Norte in Surigao City; 10Division of Bislig City; 11Division of Siargao at Dapa; and 12Division of Dinagat Islands (please see Figure 3.2).

#### 2.B.2.1 History of Region 13 Caraga

In the 15<sup>th</sup> century explorers revealed that the people in the 3 districts of Mindanao were called “Kalagans” to mean people of the land. The word “Kalagans” came from the visayan root word “Kalag” which means soul, while the suffix “an” connotes land in English word. Chroniclers called the people of this land fearless. The Spaniards on the other hand pronounced this “Kalagans” of the 3 districts of Mindanao as “Caragans”, hence the region is called Caraga (this history was originally heard by the proponent from Charito B. Plaza the known mother of Caragans, the congresswoman of the legislative 1<sup>st</sup> District Butuan City and Las Nieves,1995).

The three districts in Mindanao where the Caragans dwell were the province of Surigao, the northern part of Davao, and the Eastern Misamis Oriental. In 1914, Agusan province was separated from Surigao. In 1950, the charter city of Butuan by virtue of the Republic Act 523 was established from Agusan province. In 1960, Surigao was divided into 2 provinces. Seven years later Agusan became Agusan del Norte and Agusan del Sur.

### 2.B.2.2 The Geographic Site

Caraga the newest region in the Philippines was established via Republic Act No. 7901 on February 25, 1995 situated northeast of the southern islands of the archipelago called Mindanao (Please see attached map of Caraga Region Philippines above). It is composed of five provinces, six cities, sixty-seven municipalities, and 1308 barangays. Such 5 provinces are Agusan del Norte, Agusan del Sur, Dinagat Island, Surigao del Norte, and Surigao del Sur. Currently there are two cities in Agusan del Norte: Butuan City and Cabadbaran City; one city in Agusan del Sur: Bayugan City; one City in Surigao del Norte: Surigao City; and one city in Surigao del Sur: Tandag City and Bislig City. Total of six cities. Among these six existing cities, Butuan City is the regional center of Caraga Administrative Region.

Region 13, known as the Caraga Administrative Region has land area of 18, 847 square kilometers surrounded by Butuan Bay and Surigao Strait near Bohol sea in the northern side, the Pacific Ocean and the Philippine Sea in the east, Davao provinces in the south, and Misamis Oriental & Bukidnon in the west. It occupies 18.5 percent of the island of Mindanao and 6.3 percent of the country's total surface area. [tps://www.reference.com/geography/caraga-region-dce1b086703f45fc](https://www.reference.com/geography/caraga-region-dce1b086703f45fc)). Its proximity to other growth areas such as the Cagayan - Iligan corridor and the Davao Gulf Economic Zone is an advantage <http://nnc.gov.ph/index.php/regional-offices/caraga/58-region-caraga-profile/322-caraga-region-history-and-geography.html>)

### 2.B.2.3 The Population

In 2000, its population was 2,076,000 with an increase of 6.42% from its population of 1,942,687. In 1990, there were 947,199 (51%) and 912,982 females.

### 2.B.2.4 The Cultural Groups

Majority of the inhabitants of the region are of Visayan lineage. The ethnic residents include the Manobo, the Mamanwa and other tribes. It is reported that during the early years of the Caraga region, its inhabitants came from mainland Asia, followed by Malaysians, Arabs, Chinese, Japanese, Spanish and Americans. Migrants from the Visayan and Luzon provinces later settled in the area. Most of its inhabitants speak the Cebuano dialect and reside in the rural areas.

### 2.B.2.5 The Climate

The region in general has no definite dry season. Rainfall occurs throughout the year with heavy rains from November to January. Storms might occur on the northern and eastern portions facing the Pacific Ocean. The rest of the region are relatively typhoon-free.

### 2.B.2.6 The Land Use

Forestland in the region accounts for an estimated 71% of its total land area. Forest cover decreased due to violations of laws of the land by invaders and squatters.

### 2.B.2.7 The Natural Resource

Rich in natural resources, the region has large tracts of land available for development. The region is noted for its wood based economy, its extensive water resources and its rich mineral deposits such as iron, gold, silver, nickel, chromite, manganese and copper. Its leading crops are rice, banana and coconut.

It has excellent tourism potentials because of its unspoiled and beautiful beaches, abundant and fresh seafood, ancient and historical landmarks, hot and cold springs, evergreen forests and balmy weather.

### 2.B.2.8 The Facilities

The entire region is connected by roads from and to the major commercial, trading and processing centers of Cagayan de Oro and Davao. Butuan City is being developed as the regional center with modern facilities. There are secondary seaports and airports in the region. Sea ports are in Nasipit, Agusan del Norte and Lipata, Surigao City. Airports are in Butuan City, Surigao City, Tandag City and Siargao Islands. It has an increasing number of telecommunication facilities. (<http://nnc.gov.ph/index.php/regional-offices/caraga/58-region-caraga-profile/322-caraga-region-history-and-geography.html>)

### 2.B.3 Research Instrument

The evaluation study is for the outcome of EsP under the K-12 curriculum. Type of questions that has been created generally however, are awareness type because in the pilot 4to lower result of reliability test using Cronbach's alpha. The proponent could hardly construct outcome related questions to Maka-Dios, Maka-Tao and Maka-Bansa because of knowledge and skills limitations. Question's for outcome of environmental embedding in the said curriculum included a checklist of environmental outcomes because that is really what is intended in this study for the proponent to apply knowledge in DISDS-SEE program and for a check whether embedding of EE objectives for elementary and secondary basic education really happened after 7 years of implementing K-12 basic education curriculum. Outcome for other aspect of Values Education was based only on learners' awareness termed in this study as intelligence quotient in general in the test made for the elementary learners during the pilot study. However, in the final analyses of the Quotients based on the core values embedded in the curriculum, the proponent

defines each of the outcome from awareness questions as intelligence quotient for the learners' sensitivity in the goals and objectives of the Values Education framework and in the ICT skills check-up, Emotional quotient to learners duty bound behavior awareness check in Maka-Tao and Maka-Bayan, Spiritual quotient to awareness check about the indicators of the Maka-Dios that relates to behavior and sustainability issues and finally Ecological quotient to awareness of behavior indicators in Maka-Kalikasan and the EE objectives in environmental literacy and environmental professionalism check as outcome of the EsP under K-12 Philippines. The proponent scientifically assumed based on her preliminary study in 2011, that it is in the latter quotient that K-12 was created and implemented in place of the Values Education under UbD (Understanding by Design basic education) curriculum. Hence in this study's outcome related questions is deepened, limited to ecological quotient.

Finally, the instruments used in this evaluation study were 2 sets of checklist for teachers: one for elementary and the other for junior high school; 2 sets for school heads: one for elementary and the other for junior high school; and 2 sets for learners one for Grade 7 and the other for the Grade 11.

### *2.B.3.1 Test questionnaire for learners in the elementary and secondary*

Elementary learners evaluated for baseline of this study are to answer the instrument with four parts: Part I Personal Data; Part II converses to their knowledge about, goals and objectives of EsP, impact of practicing DepEd core values, their awareness of the appropriate, relevant, and excellent education for sustainable development, and their knowledge about the appropriate, relevant, and excellent materials used to teach the selected topics relevant to EsP contents. Part III is about the learners' greenness test of significant outcomes of environmental literacy among elementary graduates. And Part IV relates to learners' self-evaluation, reflection, comments and suggestions that triangulate information relevance taken from the above said Part II and Part III. While secondary learners, questionnaires are of 6 parts. Part I Personal Data about name, gender, age, grade level, school where the finished grade X, and the school where they are in as Grade 11. Part II is about the truthfulness of the use of instructional materials for EsP. Part III is the test of action taken relevant to the behavior expected of them based on DepEd core values. Part IV is about their greenness of knowledge about EsP benefits to them, to the school and to the community. Part V is about the learners' green quotient relevant to the 21<sup>st</sup> century skills. Part VI is about their reflection, comments and suggestions as proof of significant outcome or insignificant outcome of EsP at their own point of view.

### *3.3.2 The questionnaire for teachers.*

The questionnaire for elementary teachers is not exactly the same as the questionnaire made for junior high school teachers. It differs in Part V where teachers are asked of the greenness of their learners because the content of each greenness test is based on the level of environmental education objectives intended for the level of learners. Part

II reveals the teachers' assessment to the technical assistance given to them to teach or integrate EsP in their respective subjects. Part III Determines the adequacy of the instructional materials used to teach the EsP subjects. Part IV determines the implementation of the curriculum in the classroom which is considered by the proponent as the classroom dynamics. For the elementary teacher participants Part V determines the environmental education effect of the learners or the outcome of embedding the education for sustainable development in the curriculum and Part VI The test of the intended outcome of the curriculum being tested for Grade 6 graduates. For the Junior High School teacher participants, Part V tests the greenness as outcome of learning EsP intended for completers of grade 10. Part VI of Junior High School teachers' questionnaire are the two attachments needed by teacher participants to complete their responses in Part V which is their own assessment to the greenness of their junior high school learners. Part VII Determines the reflection of both elementary and secondary teacher participants to the evaluation study.

### *2.B.3.3 The questionnaire for School Heads*

Similar parts are in the content of the checklist of intended to test the knowledge of school heads both in elementary and junior high school pertaining to the DepEd's technical assistance given to teachers to teach EsP. It also about how they as head of school or head of the department relate themselves to the job of implementing the K-12 framework particularly in EsP.

Part 1 if filled up by participants will provide basic information about their name, gender, age and the station they are assigned. Part II will relate to problem 2 of this problem study that is to assess the capacity building given to support teachers by DepEd in the attainment of the embedded values in EsP subjects considering the curriculum goals and objectives. Part 3 is specific on school-based assistance of school heads to teachers not only teaching EsP as Values Education major but also to all subject teachers who are entrusted to integrate EsP in their subject load when cases of necessary action arises. Part IV relates to the participants to the availability of IMs (Instructional Materials) actually used by teachers as per their observations throughout the school year. Part V relates to the participants' assessment to their own-selves' greenness in giving technical assistance to teachers for the latter to achieve the needed outcome of EsP. Part VI relays to the participants' evaluation to the greenness of their respective teachers and the greenness of their respective learners. Lastly Part VII is the interview guide of the proponent for school heads for them to reflect about their role to enhance EsP teaching and learning process.

### *2.B.3.4 Content and face construct validation*

Content of said questionnaires are mainly limited to the FIRST objective hunts for of this study -the Goals and objectives of DepEd K-12 curriculum for Edukasyon sa Pagpapakatao. Validation of its content was based on the competencies of EsP, to the objectives of Environmental Education Philippines in support to World Education for

Sustainable Development, the goals and targets of Sustainable Development Goal no. 4 for quality education, the goals and targets of DepEd reflected in DepEd Order number 8 series 2015, DepEd Order number 36, s. 2016 and the objectives of Values Education stated in DepEd Order no. 41, s. 2003, to the definition of quality education according to RA 9155 and the anticipated regional target of raising from SBM (School-based management) level 1 to SBM level 3 practice among schools in Caraga.

The School-Based Management (SBM) is a DepEd thrust that decentralizes the decision-making from the Central Office and field offices to individual schools to enable them to better respond to their specific education needs. It is a strategy to improve education by transferring significant decision-making authority from state and district offices to individual schools. One way to empower schools is through the SBM grant. It is a support mechanism that aims to support the learners' participation, school attendance, completion rates and students learning outcomes (DO 45, S. 2015). Such support mentioned in DO 45, s. 2015 as technical assistance would mean helping the world goal of no one left behind (MDG goal 4 % SDG goal 4) which is embedded in the K-12 curriculum. Hence, choosing schools qualified as level 3 means such outcome of quality education for all is achieved, and that determining the outcome of EsP in particular, must be inclusive, widespread, wide-ranging and/or comprehensive.

SBM Level of practice is a policy that gives the details on school leadership and governance outcomes, a network of leadership that provides the vision and direction to the education system making it relevant and responsive to the contexts of diverse communities; Curriculum and Learning outcomes, the learning systems collaboratively developed and continuously improved, anchored on the community and learners' contexts and aspirations; Accountability and Continuous Improvement outcomes- a clear, transparent, inclusive, and responsive accountability system is in place, collaboratively developed by community stakeholders, which monitors expected and actual performance, continually addresses the gaps, and ensures a venue for feedback and redress; and Management of Resources outcomes- resources are collectively and judiciously mobilized and managed with transparency, effectiveness, and efficiency (DO 83, s. 2012)

*Advanced (Accredited Level)* – School-Based Management level of practice -level 3. Ensures the production of intended outputs / outcomes and meeting all standards of a system fully integrated in the local community and is self-renewing and self-sustaining. *Maturing* – School-Based Management level of practice – level 2. Introduces and sustains continuous improvement process that integrates wider community participation and improve significantly performance and learning outcomes. *Developing* – School-Based Management level of practice – level 1. Developing structures and mechanisms with acceptable level and extent of community participation and impact on the learning outcomes. SBM Level 1 – MOVs indicate early or preliminary stages of implementation. SBM Level 2 – MOVs indicate planned practices and procedures are fully Implemented. SBM Level 3 – Means of verifications (MOVs indicate practices and procedure satisfy quality Standards.

Most relevant to this study's goals and objectives is the

accountability of curriculum and learning outcome such that the implemented curriculum is rights-based, inclusive, culturally and developmentally appropriate to the needs and interests of the learners and community, localized for relevance to the community life, consistent to the vision, mission, and goals, and oriented towards individual and community well-being. Having school respondents which are qualified under SBM Level 3 practice means all of the above said indicators are already achieved.

2.B.3.5 The Validators' Criteria

Chosen validators must be tested by experience and expertise. They have at least one of the following criteria: expert in Values Education subject as a retired teacher, retired Values Education department head, retired School Principal, retired assistant schools' division superintendent, retired schools' division superintendent, a professor in statistics and held prominent position as president or vice president for academic affairs research and extension, or a professor in prestigious academe in masteral and doctoral research subjects.

2.B.4 Reliability Testing of the Research Instrument

The statistical tool called Cronbach's Alpha reveals the following reliability test results of the instruments piloted at Butuan City, Caraga Region 13.

Table 1 Grade 7 instrument reliability test results

Core Values of DepEd	Maka -Dios	Maka -Tao	Maka -Kali kasan	Ma ka-B ansa	Lear ners' Awar eness	O ve r all
Cronba ch's Alpha	0.916	0.846	0.923	0.840	0.816	0.962
Cronba ch's Alpha Based on standar dized items	0.921	0.847	0.923	0.839	0.815	0.964
N of items	21	8	14	5	16	64

Table 1 shows that types of tests are all reliable with overall rating of above 96%. Which implies that instrument for Grade 7 respondents are dependable.

Content added in the current Grade 7 questionnaire is the validated checklist GQT (Green Quotient Test) by Hafner (1998) for triangulation purposes (triangulation in this study means looking at three sides and 3 angles of the respondents' responses before declaring the outcome). Face construct is improved for color coding purposes. So that by its highlight of blue color Grade 7 questionnaire is immediately identified.



**Table II Grade 11 instrument reliability test results**

Concerns	Cronbach's Alpha	N of Items	Action taken	Remarks
Ability to solve using special skills	0.627	9	Removed	
Assess measures implemented	0.784	16	Changed	Reduced to 5 questions
Maka-Dios	0.419	10	Revisited	Incorporated as Part III labelled as the test of "sense of responsibility and urgency" where indicators per core value are decreased/increased to 5.
Maka-Taao	0.452	10	Revisited	
Maka-Kalikasan	0.435	10	Revisited	
Maka-Bansa	0.401	4	Revisited	
Sense of Responsibility	0.855	21	Retained	
Care and strong concern related to 4 core values	0.500	5	Deleted	But may be included by respondents in the qualitative verification
Test in sensitivity in EsP	0.755	24		Content retained but construct and face is improved as GQT
Sustainable Development	-0.040	3		Deleted
Overall G-11 instrument reliability rating	0.756	112		Changed

**Table III Reliability test of Grade 11 learners revised questionnaire.**

Cases processing summary			Reliability Statistics	
Cases	N	%	Cronbach's Alpha	N of Items
Valid	20	100	0.889	35
Excluded	0	0	Scale: ALL VARIABLES	
Total	20	100		

**Table IV Reliability results of the teachers' instrument**

Concerns	Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of Items	Action taken
Environmental Benefits	0.948	0.949	8	Combined into Ecological Green quotient test
Economic Benefits	0.923	0.924	9	
Socio-cultural Benefits	0.884	0.887	7	
Adequacy of Materials	0.758	.770	7	Retained
Implementation of K-12	0.954	0.953	22	Retained
Technical assistance given to teachers to implement EsP	0.964	0.964	16	Retained
Overall teachers instrument reliability rating	0.938	0.934	69	No need of retesting its reliability because content is the same only the face construct is validated

Table II reveals low reliability test results via Cronbach's Alpha, hence some parts were deleted and some were revisited. The table also shows the action of the respondents

to each test classification with corresponding remarks which are self-explanatory

**Table V Administrators’ instrument reliability test results**

Concerns	Cronbach’s Alpha	Cronbach’s Alpha Based on Standardized items	N of Items	Proponent’s Action Taken
Technical Assistance Provided by DepEd	0.905	0.905	16	Retained
Technical assistance given by school administrators	0.951	0.950	11	Retained
Adequacy of instructional materials	0.763	0.763	5	Retained
Socio-cultural benefits of EsP	0.829	0.841	7	Combined into one checklist under GQT (Green quotient Test)
Economic benefits of EsP	0.909	0.910	9	
Environmental benefits of EsP	0.914	0.918	8	
Over all Administrators’ reliability	0.904	0.882	56	Same no retesting for reliability was done only face construct validation occurred.

Retesting via Cronbach’s Alpha to the first 35 questions was done which result is shown in Table III. The reliability test using Cronbach’s Alpha after the questionnaire was revised shows a result of 0.889 or 88.9% from 0.756. Questionnaire containing core values of DepEd were changed into checklist. Economic, environmental, socio-cultural benefits are now the content of the proponent’s revised green quotient test in a

form of a checklist. ICT4D test of empowering learners to 21<sup>st</sup> century skills were also added as another checklist of Green quotient test for learners technological or intelligence quotient. Hafner (1998) original GQT was also included in the questionnaire for Grade 11.

Table IV shows reliability test of teachers’ questionnaire revealing consistency with high Cronbach’s Alpha rating except in the adequacy of materials which is seventy-seven percent (77%). It further shows that the questionnaire’s content on socio-cultural, environmental and economic benefits must be incorporated to the revised Green Quotient Test (GQT). For easy identification, the checklists are color coded. Teachers instrument for the elementary is similar to that of the secondary. It differs in Green Quotient Test because Hafner (1998) is originally applied to the elementary instrument.

Table V shows the reliability test results for administrators showing high level of consistency in all concerns except in the adequacy of instructional materials which is 0.763. No changes made because all results are above 71%. However, the “benefits of EsP” were combined into one checklist under the proponent’s Green Quotient Test. Further reliability testing was not done anymore because contents of the whole questionnaire are just alike

*2.B.5 Sampling Design*

The proponent of the study used the Sloven’s formula  $n = N / (1 + N * e^2)$ , where n is the sample, N is the population and e the standard error, in order to determine the number of schools’ division in Caraga where the sample schools are taken. The computation is shown in Fig. 2.B.2. The total population of the Schools Division in Caraga are implied as the sample based on the computation shown. However, Sloven’s Formula was not any more used in choosing the respondent schools because of the intentioned result based on World goal or BESRA Goal of no one left behind.

$$\begin{aligned} \text{Where } e &= 5\%, N = 12 \\ n &= 12 / (1 + 12 * (.05)^2) = 12 / 1 + 12 * (.0025) \\ &= 12 / 1 + .03 = 12 / 1.03 = 11.65 = 12 \end{aligned}$$

**Fig. 2.B.5.3.** The computation of the Sample Schools Division in Caraga where respondent schools are taken

Overall objectives of BESRA (Basic Education Sector Reform Agenda) were: 1 seek to create a basic education sector that is capable of attaining the country’s Education for All Objectives. . . 2. Universal School Participation and Elimination of Drop-outs and Repetition in First Three Grades: All children aged six should enter school ready to learn and prepared to achieve the required competencies from Grade 1 to 3 instruction (BESRA, 2015). The school shall be the heart of the formal education system. It is where children learn. Schools shall have a single aim of providing the best possible basic education for all learners (RA 9155, 2001).

If schools are to deliver better outcomes in a sustainable manner, the key stakeholders, within the school and the community served by the school, must be enabled and empowered to manage their school-level affairs so that they

deliberately and continuously improve the link between their own efforts and their collectively desired educational outcomes. The central insight of this reform thrust is that people most actively and directly involved in and affected by the schools' operations are the best people to improve the quality of these schools (KRA 1 BESRA, 2015)

In junction to the lines stated above from Basic Education Sector Reform Agenda (BESRA) and RA 9155 (2001) the proponent had chosen SBM (School based Management) Level 3 schools as respondent schools. SBM Level 3 schools validated by the Regional Office of DepEd Caraga are considered the highest level of schools that basically attained high participation rate of learners from the community and no drop outs. Hence, these are the schools that achieved the goal of no one left behind (RA 9155, 2001 & BESRA, 2015)

The purposive random sample of learners throughout the region must be equal to at least 30. In cases where the Division has no regionally qualified SBM Level 3, the proponent waited for the next result in 2019, and have SBM Level 2 qualified or level 1 schools to complete the representation of samples per schools' division.

#### *2.B.6 Data: Nature, Collection Method and Problems Encountered*

##### *2.B.6.1 Nature*

This study gathered quantitative information with qualitative support interview mainly from the Grade 7 learners and grade 11 learners in schools identified as SBM Level 3. Other primary sources were from master teachers in Values Education, ICT teachers, faculty presidents, and Department Heads in Values Education and school heads. Secondary data were gathered from Republic Act, DepEd Orders, Environmental Education guide, and downloaded from the internet.

##### *2.B.6.2 Collection Method*

Upon the knowledge of the Regional Director of the intention to float questionnaires in schools of Caraga, permit from Division Superintendents were sought. Then to District supervisors of the SBM Level 3 schools and then to school heads. Upon their permission said schools were visited for the intended interview and/or conduct of the research. A letter with questionnaire attached were given to the respondent schools' Principal with Consent Form (MSU-IIT IERC FORM 13) for them to fill up and sign before the respondent/participant answer the checklist. During the Pilot testing to test the reliability of the revisited questionnaires, the consent form was read aloud before the conduct of the research for them to raise their hands to show that they agree. After the reading and raising of hands, the chosen leader of the group of learners taking the time to answer the instrument were given the opportunity to affix his/her signature as respondent or participant school representative. The rest will show their name and signature anywhere of the consent form formally signed by the leader.

Allotted time for respondents to answer the checklists is 30 minutes to an hour. Then the answered questionnaires are

taken back unless the respondent will change his/her mind to get back the instrument to mean he or she is not going to participate anymore in the research gathering of data.

##### *2.B.6.3 Problems Encountered*

The proponent encountered difficulty in the distribution and collection of the research instruments because of hectic schedule of the proponent and the clients in the month of March. The said problem was resolved by applying extension. Another was the carrying of the research instruments to the respondent schools and the shortness of time. This was resolved by having private vehicle and having research assistants.

Nevertheless, an accident happened and the problem continued. Sometimes the proponent was able to rent a car with free driver, the rest she went on commuting with public utility jeepney. Such problem could affect data collection from far flung areas in Caraga where SBM Level 3 schools should be reached.

##### *2.B.7 Data Analysis*

In validating the content specially in the infusions of environmental education objectives in the EsP program, contents of the information were analyzed using the "Johannesson's team key" for Grade 7 and the "Proponents' collection key" from different references for Grade 11. Statistical tools used were measures of central tendencies, and percentage equivalent. The proponent determined the level of significance by the scale that follows.

For the test of environmental literacy and environmental professionalism significance as outcome of the study these parameters were used: *Exceptionally Excellent* if what is real will match with what is ideal (that is 100% of the indicators is observable), *Excellently Very High* (90-99% of behavior indicators is evident), *Excellently High* (if 80-89% of indicators is observed), *Excellent* (if 70-79% of indicators is detected), *Very High* (if 60-69%), *High* (if 50-59 %), *Low* (if 40-49%), *Very Low* (30-39%), *Poor* (if 20-29% is observed), *Very Poor* (10-19%), and *Very Much Poor* (0-9%). To triangulate, Hafner (1998) Green Quotients was also used. Points were awarded such as 2 points for each answer of *always*, one point for each answer of *sometimes*, and 0 point for each answer of *never*. *Green quotients key upon adding all points are classified as light green (0-4), Medium green (5-7) Dark green (8-10).*

*The outcome is light shade of green, like slippery algae which means learners need to become environmentally aware or they may be washed ashore. It means further that it is time for learners to start reading and learning about the environmental issues around them. Their actions today impact the "glocal" community's future. Let them find out what interests them and choose to make a positive difference. The medium green means learners are the medium green color of the rice fields before the harvest. They have some basic understanding of the environment and seem to be concerned about protecting it, but their environmental awareness still needs to grow. Perhaps they have not clearly*

**Table VI The Instrument, Statistical Tool and Data Source Per Problem, Part 1**

Problem	Instrument Used	Statistical Tool Used	Data Source
1.To determine the goals and objectives of EsP as stipulated in the K-12 Basic Education Curriculum	In determining goals and objectives of EsP, document scanning is used	Two axis grid, tables and Pie chart were used to display relevant content of documents	RA 9155 (2001), BESRA (Basic Education Sector Reform Agenda) 2015, RA 10533 (2012), K-12 EsP Guide (2016), DO 8, s.2015, DO 36 s. 2016, DO 41 s.2003, World SDG 2017, and the Philippine Environmental Education Guide (1999)
5 to examine whether the ESD (Education for Sustainable Development) was embedded in EsP curriculum content	Documents scanning was used highlighting of the 10 SDG 4 Targets in the 17 SDGs and the 10 World Environmental Themes	Document Analysis using axis grid, tables. and charts	2017 SDG, Philippines EE guide, Republic Act 9155 and 10533, and relevant DepEd Orders

*realized what an important role to play. Now is the time to take action. Let them read all they can about protecting the planet and find out what else they can do to make a difference. Let them keep up the good work! If the learners are dark green, they belong to the rare, tropical jungles of the Philippines. Like the forests, their knowledge is precious. Let them be an environmental leader by educating those around them and by considering an environmental career. Let them continue what they can to help because they are making a difference (Hafner, 1998).*

Table VI combines Problem 1 and 5, which procedure in collecting data is simply scanning documents. Statistical tools such as the two axis grids, tables and charts will be used to interface information relevant to EsP in K-12 intended outcomes as well as the embedding of SDG 4 targets in these said outcomes of EsP. Documents such as the RA 9155, for definition of quality education in the Philippines which may

**Table VII The Instrument, Statistical Tool and Data Source Per Problem, Part 2**

Problem	Instrument Used	Statistical Tool Used	Data Source
2. To assess the capacity building given to support teachers in the attainment of the embedded values in ESP subjects	Checklist about how teachers were equipped to teach ESP in order to achieve ESP goals and objectives as stipulated in K-12 curriculum, and DO 41 s. 2003 Letters sent to Regional Director became instrument to be furnished of records of technical assistance given to the field to enhance teaching and learning in EsP	Average and range were counted as significant tool.	Primary: Data were taken from the responses of the School Heads, teachers' respondents to the instrument as well as Data from the Regional office Learning Resource Materials Center
3.To determine the adequacy of the instructional materials used in teaching Values Education	Checklist for Adequacy of materials used by teachers in the classroom was made and floated to elementary and Junior High School EsP teachers, school head/ head of Values Education Department, ICT teachers and learners for the purpose of triangulation. Letters sent to the RD to be furnished of records of IMs distributed to divisions	Measures of Central tendencies and SWOT of the Maxima and Minima of frequencies as perceived by participants	Primary: Data were taken from the responses of the learners, the teachers, ICT teachers, the school EsP heads and school heads to the research instruments

serve as the main goal of EsP for the futures of present and future generations of Filipinos in the planet. RA 10533 for the goals of K-12, and marks of EsP, Philippine Environmental Education Guide written by consortium of Filipinos from DepEd, DENR, and other stakeholders promoting Agenda 21 of the Millennium. The DepEd Orders that supports Values Education Framework, and the four core values of DepEd, and mainly the 2017 Sustainable Development Goals where Goal 4 ten targets and indicators are deeply observed for infusion in EsP goals and objectives.

Table VII reveals the way to attain Problem 2 and 3 of this evaluation study. Problems such as assessing the capacity building given to support teachers in the attainment of the embedded values in ESP subjects and determining of the adequacy of the instructional materials used in teaching Values Education were tackled using checklist for learners to answer. Verification to DepEd regional Office was also done by writing to the regional director asking for necessary records of trainings conducted to EsP teachers as well as the distribution of instructional materials to all Schools Division. School teachers and heads. School Values teachers, ICT teachers and Values Education Head and School Head were given checklists to answer, thereby primary data is taken. Information were treated statistically using measures of central tendencies and the maxima and minima were analyzed using SWOT (Strengths, Weaknesses, Opportunities and Threats) as specified in the table.

Table VIII shows the focused method of attaining objective 4 such as to evaluate ESP curriculum outcomes in terms of implementation on 4.1 goals and objectives, 4.2 classroom dynamics, and 4.3 Administrative Support. Data collected from the result of table 2.B 6 outcomes were turned into checklist to measure implementation of goals and objectives by using perception of learners, verified in teachers and school heads. Outcomes of implementation on classroom dynamics were done by observing classes, and taking collected pictorials from face book, these were verified by actual interview using the instruments of research. Administrative support was concluded from data collected on after the regional office list of instructional materials distributed for EsP and list of capability building done for teachers teaching EsP. Verification was done by the primary data collected from perceptions of teachers and administrators' responses on administration support they give to school-based LAC sessions mandated by DepEd Order number 41 series 2003.

Table IX shows how problem 6 To suggest recommendations in the attainment of the SDG4's targets through the ESP. Each problem is analyzed by generally using measures of central tendencies particularly using the arithmetic mean and weighted mean based on Hafner (1998) weights to the green quotients he made translated into percent equivalent. Table further reveals that recommendations for curriculum implementation in the years to come and for further evaluation study based on the EE objectives for elementary and for secondary education were gathered through an open question in the last part of each set of questionnaires and from the result of the SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analyses and implications revealed in chapters 4, 5, 6, 7 and summarized in

**Table VIII The Instrument, Statistical Tool and Data Source Per Problem, Part 3**

Problem	Instrument Used	Statistical Tool Used	Data Source
4.To evaluate ESP curriculum outcomes in terms of implementation on 4.1A goals and objectives	Green Quotient Checklist for expected outcome of the EsP Curriculum in the elementary and Junior High School-based on identified goals and objectives	The measures of central tendency were used to describe the k-12 EsP curriculum outcomes	Primary: Data mainly from the responses in the Green Quotient Tests by Hafner (1998) and by the GQT (Green Quotient Test) prepared by the proponent.
4.2 classroom dynamics	Checklist were used to enunciate the dynamic forces of teaching and learning in the classroom and actual observation of the proponent with video coverage in classrooms of EsP classes	The mode of the frequency of the responses were used to describe the crescendos or diminuendos that occurred in the class	Responses of both teachers and learners are considered primary data source to show implementations of classroom dynamics indicated in DO 41 s. 2003 and EE Guide 1999, and ESD strategies supported by pictorials and or video clips
4.3 Administrative Support	The school heads and teachers were interviewed about the support that the school leaders gave to teachers using 2 sets of checklists, one for teachers and the other for heads.	Measure s of Central Tendencies were used to describe the administrative support to goals and objectives in EsP.	Primary Data about the administrative support to teachers were from the responses of the school heads and teachers compared to the list of trainings and other DepEd support to schools from DepEd Offices HRDO (Human Resource Development Offices) in the schools division and/or in the Region

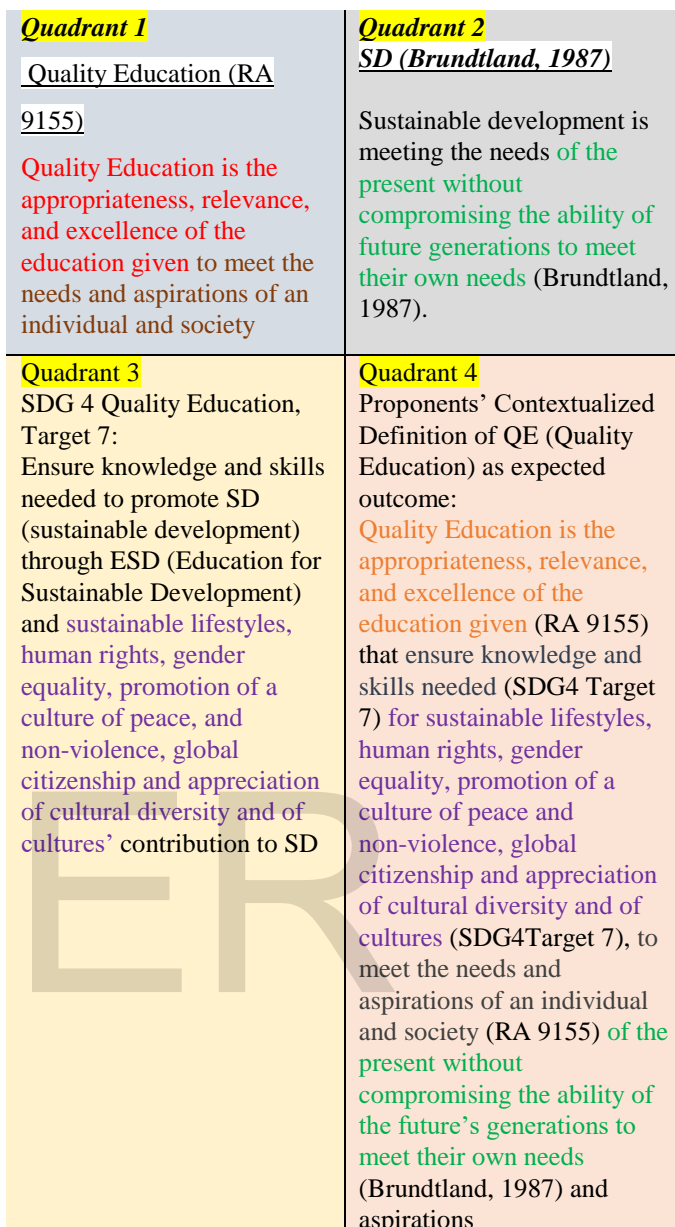
chapter 8 and 9. The mode of frequencies were the basis such as the highest frequency and the lowest frequency of rating given by the proponent to every question asked for in all parts of the research instruments. Some data were from primary source through the last part of every questionnaire. All information presented in Tables 2.B. 6 to 9 simply tell the synopsis of how the objectives be attained

**Table IX The Instrument, Statistical Tool and Data Source Per Problem, Part 4**

Problem	Instrument Used	Statistical Tool Used	Data Source
6. To suggest recommendations in the attainment of the SDG4' targets through the ESP	Recommendations for further curriculum implementation in the years to come and for further evaluation of the study based on the EE objectives for elementary and secondary education were gathered through an open question in the last part of each set of questionnaires and from the result of the SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analyses and implications revealed in chapters 4, 5,6 and 7 summarized in chapters 8 and 9	Mode of frequencies were the basis such as the highest frequency and the lowest frequency of rating given by the proponent to every question asked for in all parts of the research instruments	Primary data were taken from suggestions and recommendations given by the respondents. Secondary data were taken from the proponent's research in the internet written in the review and related literatures.

. Finally, the outcome of learning was generated from the summary of triangulated green tests comparing the ratings of groups of participants. To give recommendations, the SWOT analysis of the maxima and minima from mode of frequencies of results presented were deliberated as bases. In relation to the stated problem of this evaluation study, table 2.B.6-9 show the summarized description of the instruments used, statistical tools and the source of data.

*C. Figures for Document Analysis of ESD Embedding in EsP under K-12 Curriculum*



**Fig. 2.C.1** Mainstreaming content of quality education delineation

Fig. displays national description of Quality Education written in RA 9155 which is being synthesized as shown in quadrant 4 to have more substantial content in relation to SD in quadrant 2 and 3. Quadrant 4 shows how contextualization is done combining key phrases highlighted in quadrant 1, quadrant 2, and quadrant 3. Said contextualization is considered the expected outcome of infusing SDG Goal 4 Target 7 and Brundtland's definition of quality Education to Philippine Republic Act No. 9155 definition of Quality Education. Quality Education which is defined as the appropriateness, relevance, and excellence of the education given to meet the needs and aspirations of an individual and society (RA 9155) is well thought-out as the main goal of K-12 Philippines. Whether it is aligned with Sustainable development and particularly to SDG 4 is what the figure above is interfacing about by document analysis. Outcome

displayed in quadrant 4 becomes the definition of Quality Education in this study, which is the appropriateness, relevance, and excellence of the education given (RA 9155)

<p><b>Quadrant 1</b></p> <p><u>ESD, the 10 unifying themes of EE</u></p> <p>1. Interdependence/interconnectedness.</p> <p>Everything on earth is connected to everything else. What one does, affects another directly or indirectly</p> <p>2. Diversity and stability. All life forms are important. Diversity increases resilience and stability of systems</p> <p>3. Change. Everything changes. Some changes improve the quality of the environment. Others degrade it. Changes that negatively affect environmental quality have to be controlled or avoided.</p> <p>4. Balance of nature. Nature knows best. It has its own laws and processes to maintain itself.</p> <p>5. Finiteness of resources. Most resources are non-renewable. They have to be used prudently and wisely</p> <p>6. Material Cycle-Materials in the environment are not lost. They are only transformed from one form to another. Everything goes somewhere. When there is too much of everything in one place, the usefulness of the place is reduced</p> <p>7. Population growth and carrying capacity. An ecosystem can support only a given number of individuals at a given time.</p> <p>8. Cooperation. Improvement and management of the environment at all levels involve the concerted effort of many people and groups.</p> <p>9. Stewardship. Humans are part of nature. They are not masters but stewards of earth and its resources. Nature has its own value regardless of its value to humans.</p>	<p><b>Quadrant 2</b></p> <p><u>Maka-Kalikasan of DepEd core Value</u></p> <p>Behavior Statement</p> <p>1 Cares for Environment and utilizes resources wisely</p> <p>Indicators:</p> <p>1.1 Shows a caring attitude towards the environment</p> <p>1.3 conserves energy and resources</p> <p>1.2 practices waste management</p> <p>1.4 takes care of school materials, facilities and equipment</p> <p>1.5 keeps work area in order during and after work.</p> <p><u>EsP Marks #4</u></p> <p><u>Edukasyon sa Pagpapakatao expected result #4</u></p> <p><u>Has wide point of view of the world</u></p>	<p>10. Sustainable Development-economic development may be pursued but not at the expense of a degraded environment</p> <hr/> <p><b>Quadrant 3</b></p> <p>Three out of ten themes in EE in Quadrant 1 is observed not infused to EsP in Quadrant 2:</p> <p>2. Diversity and stability. All life forms are important. Diversity increases resilience and stability of systems</p> <p>4. Balance of nature. Nature knows best. It has its own laws and processes to maintain itself.</p> <p>7. Population growth and carrying capacity. An ecosystem can support only a given number of individuals at a given time</p>	<p><b>Quadrant 4</b></p> <p>Expected outcome</p> <p><u>Hafner (1998) identified 5 indicators called green Quotients or ecological quotients</u></p> <p>1, walking instead of taking a jeepney or tricycle whenever possible</p> <p>2 holding on to the bag of chips after eating until trash can is found</p> <p>3 caring, in filling water in a contained, not to leave the water running unattended.</p> <p>4 saving plastic shopping bags to reuse as many times as possible</p> <p>5 keeping the volume of music played at a level that will not disturb others.</p>
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**Fig. 2.C.2a** Mainstreaming ESD in ESP K-12 curriculum and in the marks of EsP

that ensure knowledge and skills needed (SDG4 Target 7) for sustainable lifestyles inclusive of human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of cultures' contribution (SDG4Target 7) to meet the needs and aspirations of an individual and society (RA 9155) of the present without compromising the ability of the future's generations to meet their own needs (Brundtland, 1987) and aspirations.

The two axis grids shown above interfaced mainstreaming of embedded ESD aims to DepEd EsP in K-12 Curriculum Philippines. The deduction method begun from local description of quality education to the 4<sup>th</sup> SD goal, which is also called quality education, and then to the famous 1987 description of SD by the Prime Minister of Norway, Gro Harlem Brundtland. It was analyzed text for text resulting to the sample contextualized alignment of a quality education description that might be presented to Philippines to make a little change. Known as a solution to the world problem, SD Goal 4 must be described in such a way that when presented to learners as a goal to achieve, it must be specific so that intended outcome will also be specific. If description of quality education is meant a goal to be achieved, then it must be inclusive. When the goal is clearly understood, its intended outcome will also be clearly understood by learners who are the expected performers.

ESD mainstreamed in EsP Goals and objectives in K-12 Curriculum is continued in Figure 4.2a where each grid that contains ESD aims are scrutinized if infused in EsP goals and objectives. Words highlighted with same color shows aligning and the intended outcome. Is determined. The targets and indicators from ESD grid that has no color highlighted were considered not yet seen infused in EsP K-12 Curriculum

Comparing Quadrant 1 to quadrant 2, Figure 4.2a displays excellent infusion to seven unifying environmental core messages: #1 says that *everything on earth is connected to everything else. What one does, affects another directly or indirectly* is aligned to EsP Mark #4 *has wide point of view of the world*. Other objectives revealed in Quadrant 3 and 4, such that, ESD themes #3: *“Change. Everything changes. Some changes improve the quality of the environment. Others degrade it. Changes that negatively affect environmental quality have to be controlled or avoided,* and theme #5: *“Finiteness of resources. Most resources are non-renewable. They have to be used prudently and wisely”* are compared and found aligned with Maka-Kalikasan of DepEd core value indicator 1.3 *“conserves energy and resources”* Also those highlighted with red such as *“Material Cycle”* in ESD theme 6, is aligned with Maka-kalikasan behavior statement 1 indicator 1. 2, as shown in Figure 4.2 Quadrant 1 and 2. While in Quadrant 1 and 4, same color code red shows aligning of ESD theme 6 description *When there is too much of everything in one place, the usefulness of the place is reduced to Hafner 1998 green indicator 1, walking instead of taking a jeepney or tricycle whenever possible, 2 holding on to the bag of chips after eating until trash can is found, 4 saving plastic shopping bags to reuse as many times as possible and 5 keeping the volume of music played at a level that will not disturb others. ESD themes 8, 9 and 10 (8Cooperation. Improvement and management of the environment at all levels involve the concerted effort of many people and groups; 9. Stewardship- humans are part of nature, they are not masters but stewards of earth and its resources, nature has its own value regardless of its value to humans; and 10 Sustainable Development-economic developments may be pursued but not at the expense of a degraded environment) displayed in quadrant 1 are good substance to Maka-Bayan indicator 1.1 *Shows a caring attitude towards the environment, 1.4 takes care of school materials, facilities and equipment, and 1.5 keeps work area in order during and after work.**

Figure 4.2a further shows none to compare or contrast the ESD theme numbers 2. *Diversity and stability. All life forms are important. Diversity increases resilience and stability of systems,* 4. *Balance of nature. Nature knows best. It has its own laws and processes to maintain itself.* and 7. *Population growth and carrying capacity. An ecosystem can support only a given number of individuals at a given time* in the EsP side

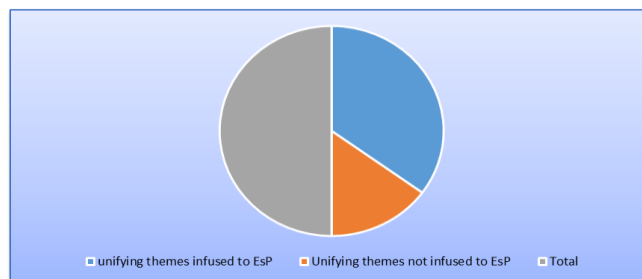


Fig. 2.C.2b Percentage distribution of ESD themes embedded in EsP

<p><b>Quadrant 1</b> <u>Target4 Indicator of SDG#4 Quality Education</u></p> <p>Portion of youths and adults with <b>ICT skills</b>, by type or skill, develop <b>high level cognitive and non-cognitive transferable skills</b> such as <b>problem solving, critical thinking,</b> creativity, teamwork, <b>communication skills</b> and <b>conflict resolution</b></p>	<p><b>Quadrant 2</b> <u>EsP in K-12 Curriculum Goal 1 and 4 (RA 10533)</u></p> <p>1. <b>To deepen knowledge, skills, values and attitude toward solid moral and ritual guiding;</b> 4. <b>To apply 21st century skills</b></p>
<p><b>Quadrant 3</b> <u>Five marks of EsP (K-12 EsP Curriculum Guide 2016)</u></p> <p>1 <b>communication potential of self-worth</b></p> <p>2 <b>critical thinking skills and capability to address problems.</b> 3. <b>Productive in improving harmonious relationship with co humans.</b></p> <p>5 <b>Continuous improvement using the 21<sup>st</sup> century skills</b></p>	<p><b>Quadrant 4</b> <u>Expected Outcome</u></p> <p>The knowledge and skills infused to EsP in Quadrant 2 and 3 from SDG 4 Target 4 in quadrant 1 is considered the intelligence quotient level of learners. Intelligence quotient is deepened by ISTE* (International Standard of Technology for Education)*.</p>

Figure 2.C.2 Mainstreaming of SDG 4 Target 4 in EsP Goals and Marks

Thus they are placed separately in Quadrant 3 to be seen at once that out of ten themes, as displayed in Quadrant 1, three are not aligned. Which means seven out of ten are aligned or



30% of ESD are found not infused to EsP under K-12 Philippines. This percent of infusion or embedding of ESD to EsP is illustrated in a pie chart shown in Figure 4.2b

Fig. 2.C.2 shows the Interface of indicators in each of the three quadrants of the 2 axis comparison grid. Comparison is done in Quadrant 1 (SDG4 target 4 Indicator) and Quadrant 2 (RA10533, EsP in K-12 Curriculum). High substance of infusion was found when target 4 of the World Quality Education mentioned of “high level cognitive and non-cognitive transferable skills”, and ESP in K-12 Curriculum aligned it with “to deepen knowledge, skills, values and attitude toward solid moral and spiritual guiding”.

Comparing Quadrant 1 and 3, it is observed substantial alignment in the SD Goal 4 target 4 about ICT skills, because the marks of EsP 4 and 5 mentioned “4Has wide point of view of the world” and “5Continuous improvement using the 21<sup>st</sup> century skills\*. Sustainable Development Goal No. 4 (Quality Education) target no. 4, that is, to “develop high level cognitive and non-cognitive transferable skills such as 2problem solving, critical thinking, creativity, teamwork, communication skills and conflict resolution” are supported with the first three EsP marks- 1 communication potential of self-worth, 2 critical thinking skills and capability to address problems, and 3. Productive in improving harmonious relationship with co humans.

Quadrant 4 displays the expected outcome of the mainstreamed embedding of SDG 4 target number 4 to EsP in K-12 goals and marks. All interfaced in Quadrant 1, 2 and 3 are termed in this study as intelligence quotient. Twenty first century technological skills is deepened by ISTE\* with the following expected outcome to all learners: 1. Teachers/learners are global collaborator, 2. Teachers/learners are creative communicator, 3. Teachers/learners are knowledge constructor, 4. Teachers/learners are digital citizen, 5. Teachers/learners are Empowered

Fig. 2.C.3 shows aligning of SDG 4 targets 5 and 7 to K-12 curriculum objectives and DepEd Core values. (DepEd Order no 8 series 2015) Maka-Tao, Maka-Bansa and Maka-Bayan and Maka Dios. Aligning of the information interfaced in the quadrants are explained such that in quadrant 1, Fig. 2.C.3 displays discussion lines: \*Color coded shows aligning also with the underlined in quadrant 2. Those underlined is aligned with those underlined also in Target 5 at quadrant 1, Thus in it lines of discussions which are self-explanatory

The outcome used in the research instruments are those DepEd core values that has been seen aligned with Sustainable Development goal number 4, particularly to Target 5 and 7 as shown. To wit: 1. . . . national values developing in the Filipino learners love of country and pride in its rich heritage (BESRA): 1.1 Demonstrate pride of being a Filipino, 1.1.1 identifying oneself as a Filipino, 1.1.2 respecting the flag and national anthem, 1.1.3 taking pride in diverse Filipino cultural expressions, practices and traditions, 1.1.4 promoting the appreciation and enhancement of the Filipino languages, 1.1.5 abiding school rules, community rules and the nation’s rules, and 1.1.6 enabling others to develop interest and pride of being a Filipino. 1.2 Exercise the rights and responsibilities of a Filipino citizen. 1.2.1 managing time and personal resources efficiently and effectively 1.2.2 persevering to achieve goals

<p><b>Quadrant 1</b> <b>SDG 4 targets and 7</b></p> <p>SDG4Target 5 Gender equity and inclusion.. SDG 4Target 5 Indicator 5 parity indices (male /female, rural/urban, bottom/top wealth quintile and others such as <u>disability status, indigenous peoples and conflictaffected.</u> <u>Inclusion and equity</u> means all people irrespective of sex, age, race, color, <u>ethnicity</u>, language, <u>religion</u>, political or other opinion, <u>national or social origin</u>, property or birth as well as persons with disability, <u>migrants, indigenous people, youth and children especially those in vulnerable conditions</u> to enjoy high quality education and lifelong learning opportunities.</p> <p>SDG4 target 7 Ensure knowledge and skills needed to promote SD (Sustainable Development) through ESD and sustainable lifestyles, human rights, gender equality, <u>promotion of a culture of peace and non-violence.</u> <u>global citizenship</u> and appreciation of cultural diversity and of cultures contribution to SD.</p> <p>(World quality education target does not specify a particular practice of religion should be emphasized)</p>	<p><b>Quadrant 2</b> <b>K-12 objectives 2 and 3</b></p> <p>K-12 curriculum objective 3. care for humanity (visibility of human dignity) and DepEd Core Value B. “Maka-Tao e. <u>Upholds and respects the dignity and equality of all including those with special needs,</u> f. Volunteers to assist others in times of need, g. <u>Recognizes and respect people from different social, economic and cultural backgrounds</u></p> <p>K-12 curriculum objective #2 holistically develop learners to possess healthy mind and healthy body (self-worth) DepEd Core Value B. “Maka-Tao #2 Demonstrate contribution towards solidarity a. Cooperates during activities, b <u>Recognizes and accepts the contribution of others toward a goal,</u> c. Considers diverse views, d. Communicates respectfully, e. Accepts defeat and celebrate others success, f. Enables others to succeed, g. Speaks out against and prevent bullying. <u>ones feeling and those of others .</u></p> <p>*(Color coded shows aligning also with the underlined in quadrant 2. (Those underlined is aligned with those underlined also in Target 5 at quadrant 1)</p>
<p><b>Quadrant 3</b></p> <p>The fourth of the DepEd core values the Maka-Bansa has 2 behavioral statements. 1 Demonstrate pride of being a Filipino, 2 Exercise the rights and responsibilities of a Filipino citizen.</p> <p>(These 2 behavior statements has no direct alignment to either target 5 or 7)</p>	<p><b>Quadrant 4</b></p> <p>K-12 curriculum objective #1. <u>solid moral and spiritual guiding</u> DepEd (DO 8 s. 2015) core value “Maka-Dios”1. <u>Express one’s spiritual beliefs while respecting the spiritual beliefs of others,</u> 2. <u>Adhere to ethical principles by upholding truth.</u></p> <p>(These are helpful to achieve peace worldwide hence aligned with the underlined in Target 5 and colored blue in Target)</p>

Fig. 2.C.3 Display of EsP intended outcomes mainstreaming ESD in SDG Target 5 and 7

despite difficult circumstances, and 1.2.3 conducting one-self appropriately in various situations. (DO 8, s 2015 Maka-Bayan)

The indicators of EsP outcomes may not hit to align target by the underlined *global citizenship* but of a good ground work towards becoming the planet’s citizen.

DepEd Core Value Maka-Tao behavior statement #1. Sensitive to individual, social, and cultural differences indicator e. *Upholds and respects the dignity and equality of all including those with special needs* is an intended outcome aligned with SDG 4 target 5, indicator 5, parity indices (male /female, rural/urban, bottom/top wealth quintile and others such as *disability status, indigenous peoples and conflict affected. . . disability, migrants, indigenous people, youth and children especially those in vulnerable conditions to enjoy high quality education and lifelong learning opportunities.*

K-12 curriculum objective 1. *solid moral and spiritual guiding and DepEd (DO 8 s. 2015) core value Maka-Dios with behavior statements*

1. *Express one’s spiritual beliefs while respecting the spiritual beliefs of others, and indicators a. Engages oneself in worthwhile spiritual activities, b. Respects sacred places, c. Respects religious beliefs of others, d. Demonstrates curiosity and willingness to learn about other ways to express spiritual life;*

2. *Adhere to ethical principles by upholding truth and indicators a. Tells the truth, b. Returns borrowed things in good condition, c. Demonstrates intellectual honesty, d. Expects honesty from others, e. Aspires to be fair and kind to all, f. Identify personal biases, g. Recognize and respect ones feeling and those of others* are statements and indicators that mainstreamed the line of SDG 4 target 7. . . *promotion of a culture of peace and non-violence.*

This is supported by K-12 curriculum objective #3. *care for humanity* (visibility of human dignity) and DepEd Core Value Maka-Tao behavior statements and indicators: #1. *Sensitive to individual, social, and cultural differences d. Views mistakes as learning opportunities #2 Demonstrate contribution towards solidarity b Recognizes and accepts the contribution of others toward a goal, c. Considers diverse views, d. Communicates respectfully, e. Accepts defeat and celebrate others success, f. Enables others to succeed, g. Speaks out against and prevent bullying.*

Specifically, DepEd Core Value B. “Maka-Tao:1 *Sensitive to individual, social, and cultural differences, a. Shows respect to all, b. Waits for one’s turn, c. Takes good care of borrowed things, and g. Recognizes and respect people from Fig. displays aligning of Sustainable Development Goal 4 target 7 indicator on Gender equality and human rights mainstreamed at all levels in national education policies to Department of Education vision to realize their full potential and contribute meaningfully to building the nation and different social, economic and cultural backgrounds; K-12 curriculum objective #2 holistically develop learners to possess healthy mind and healthy body (self-worth);*

DepEd Core Value Maka-Tao 2 *Demonstrate contribution towards solidarity, a. Cooperates during activities; DepEd Core Value Maka-Tao: 1 Sensitive to individual, social, and cultural differences f. Volunteers to assist others in times of need* are the intended outcomes that fit to the last part of SDG 4 target 7 *Ensure knowledge and skills needed to*

Quadrant 1	Quadrant 2
<p style="background-color: #00ff00; color: black; padding: 2px;">ESD indicators such as*</p> <p>(SDG 4 target 7)</p> <p style="color: red;">Gender equality and human rights mainstreamed at all levels in <u>national education policies</u></p> <p><b>A. Aims of ESD</b></p> <p>a1 Balance economic, environmental and social needs for present and future prosperity</p> <p><b>B. indicators: right to a healthy, clean and safe environment</b></p> <p>b.1 eco-efficiency-reduced pollution, the materials from goods and services must be recycled, goods must be durable; poverty and poor housing-reduced dispersion of toxic substances</p> <p>b2 <span style="color: red;">global vision for humanity-making real is every one’s responsibility with emphasized local role to identify hindering factors and local role to play contributing glocal effect.</span></p> <p>b3 <i>action of peace building and stabilization to fragile state - low governance score: 3.2 CPIA (country policy and institutional assessment) index of the World Bank.</i></p> <p>b4 <span style="color: red;">sustainable agriculture promoted in relation to world goals to end hunger, achieve food security and improve nutrition. . . .</span></p>	<p style="background-color: #00ff00; color: black; padding: 2px;"><b>DepEd VISION:</b></p> <p>We dream of Filipinos who passionately love their country and whose values and competencies enable them <u>to realize their full potential and contribute meaningfully to building the nation</u> As a learner-centered public institution, the Department of Education continuously improves itself to better serve its stakeholders</p> <p style="background-color: #00ff00; color: black; padding: 2px;"><b>DepEd MISSION</b></p> <p style="color: red;"><i>To protect the right of every Filipino to quality, equitable, culture-based and complete basic education where;</i></p> <p><i>Students learn in a child-friendly,</i></p> <p style="color: red;"><i>gender-sensitive, safe and motivating environment</i></p> <p><i>Teachers facilitate learning and constantly nurture every learner</i></p> <p><i>Administrators and staff, as stewards of institution, ensure an enabling and supportive environment for effective learning to happen</i></p> <p><b>Family, community and other stakeholders are actively engage and share responsibility for developing life-long learners.</b></p>

**Fig. 2.C.4** Mainstreaming ESD in ESP K-12 Curriculum Vision, and Mission

*promote SD (Sustainable Development) through ESD (Education for Sustainable Development) and sustainable*

*lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of cultures contribution to SD.*

DepEd Mission to protect the right of every Filipino to quality, equitable, culture-based and complete basic education where students learn in a child-friendly, gender-sensitive, safe and motivating environment to b2 global vision for humanity-making real is every one's responsibility with emphasized local role to identify hindering factors and local role to play contributing global effect.

It further displays aligning of the aims of Education for Sustainable Development B. indicators: right to a healthy, clean and safe environment such as b.1 eco-efficiency-reduced pollution, the materials from goods and services must be recycled, goods must be durable; poverty and poor housing-reduced dispersion of toxic substances, b3 action of peace building and stabilization to fragile state and b4 sustainable agriculture promoted in relation to world goals to end hunger, achieve food security and improve nutrition. . . to DepEd Mission for Administrators and staff, as stewards of institution, ensure an enabling and supportive environment for effective learning to happen; family, community and other stakeholders are actively engage and share responsibility for developing life-long learners.

Display interfacing alignment of the aims of ESD to DepEd vision and mission implies substantial infusion of the former to the subject EsP. Fig. 2.C.4. therefore, shows an exceptionally excellent ESD embedding significance to EsP under K-12.

Fig. 2.C.5 shows the interface of SDG targets 8, 9 and 10 together with DepEd basic reform agenda relevant to classroom implementation in EsP. Quadrant 1 reveals ESD expectations to school physical environment while quadrant 2 reveals expectations for green content of teaching and learning localized. Quadrant 3 displays target of deployment of teachers to schools through scholarships and trainings, while Quadrant 4 displays alternative to what is available in the teaching force to achieve the desired green learning outcomes through social mobilization as mentioned in the Key Reform Thrust (KRT) #3 of the DepEd Basic Education Sector Reform Agenda.

It is inferred that Philippines K-12 schools and classrooms facilities to be equal to World standard need partnership that donate funds. As deduced from Fig. 2.C.5, available teachers for K-12 curriculum were not yet ready nor qualified to teach EsP at the level of what ESD expects, and that Filipinos must avail offers of scholarships by the World partners for Quality Education

*SDG 4 target 8: Build and upgrade education facilities that are child and gender sensitive and people safe, non-violent, inclusive and effective learning environment for all; target 9 states that by 2020, sustainability expands globally the number of scholarships available to developing countries, in particular least developed countries, small island developing states and African countries for enrolment in higher education including vocational training and ICT, technical engineering and scientific programs in developed countries and other developing countries; and target 10: proportion of teachers in primary education, primary education, lower secondary education, upper secondary*

**Quadrant 1 SDG4 Target8 School environment:**

Build and upgrade education facilities that are child and gender sensitive and people safe, non-violent, inclusive and effective learning environment for all.

*Indicator 8 Schools with access to electricity, internet for pedagogical purposes, computers for pedagogical purposes, adapted infrastructure and materials for students with disabilities, basic drinking water, single sex basic sanitation facilities, and basic hand washing facilities.*

**Quadrant 2 DepEd Basic Education Sector Reform Agenda (BESRA)**

BESRA:

c) To make schools and learning centers the most important vehicle for the teaching and learning of national values and for developing in the Filipino learners love of country and pride in its rich heritage;

d) To ensure that schools and learning centers receive the kind of focused attention they deserve and that educational programs, projects and services take into account the interests of all members of the community

*KRT 3: Increase social support to attainment of desired learning*

**Quadrant 3 SDG 4 (Quality Education)**

*Target 9: By 2020, sustainability expands globally the number of scholarships available to developing countries, in particular least developed countries, small island developing states and African countries for enrolment in higher education including vocational training and ICT, technical engineering and scientific programs in developed countries and other developing countries*

*10 Proportion of teachers in primary education, primary education, lower secondary education, upper secondary education who have received at least minimum organized teacher training –pedagogical training, pre-service training, or in-service training-required for teaching at the relevant level at the given country by sex.*

**Quadrant 4 The intended outcomes**

DepEd Order Number 41, series 2003 ensure that values education is purposely planned as regular lessons in the subject and not taken as incidental lessons in the process. However, to reinforce the role of teachers to teach values development in their respective subjects, trained EsP teachers or Values Education major may conduct special training to other subjects' teachers.

The intended outcome to this order, therefore, is determined as LAC (Learning Action Cell) Sessions for EsP knowing that, generally, none in the teaching field is a major in Values Education.

**Figure 2.C.5** Mainstreaming ESD to enhance EsP classrooms with skilled teachers

education who have received at least minimum organized teacher training –pedagogical training, pre-service training or in-service training-required for teaching at the relevant level at the given country by sex have expected specific outcome of 1. Increased social support to attainment of desired learning by having access to electricity, internet for pedagogical purposes, computers for pedagogical purposes, adapted infrastructure and materials for students with disabilities, basic drinking water, single sex basic sanitation facilities, and basic hand washing facilities, 2, teaching and learning of national values and for developing in the Filipino learners love of country and pride in its rich heritage with educational programs, projects and services of the interests of all community members, and 3. LAC (Learning Action Cell) Sessions for EsP Values Education major may conduct special training to other subjects’ teachers to teach basically the national values, using social support for convenience and maximum count of desired learning.

Figure 2.C.6 illustrates the percentage distribution of the information presented in Fig. 2.B.1 to Fig. 2.C.5. It shows the summary of the Sustainable Development Goal number 4, the goal for world quality education (QE) targets, which has exceptionally excellent infusion to Edukasyon sa Pagpapakatao under K-12 Basic Education Program. This implies that the two targets of SDG 4, such that target 5 and target 7, that are intended for content in an education for sustainable development has been infused to EsP with substantial significance. Fig. reveals that 20% of the 10 targets has been infused substantially/significantly to EsP as content for expected outcome and 40% found necessary for enhancement to achieve the said 20% infused content; and 40% for assurance that all learners, no one left behind benefit the targeted content.

To wit the summary of the ten targets of SDG4: A. for content, SDG 4 Targets 5 and 7; B. Targets 1, 2, 3 and 4 which are found necessary to enhance attainment of Target 5 and 7; and C. Targets 8, 9 and 10 which assures that all learners, no one left behind benefit the quality education content specified in the indicators of Targets 5 and 7

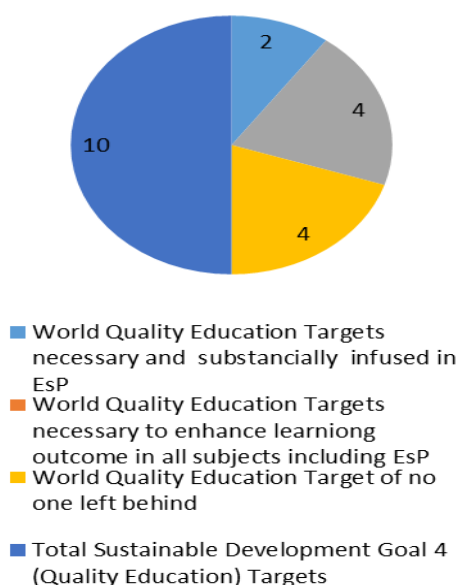


Fig. 2.C.6 Percentage distribution of World SDG 4 targets mainstreamed in EsP

### III. RESULTS AND DISCUSSION 1

Volume of official development assistance flew because World Quality Education targeted pedagogical training, and build and upgrade education facilities that are child and gender sensitive and people safe, non-violent, inclusive and effective learning environment for all (SDG 4, 2017). In connection, this study assessed the capacity built to support teachers in the attainment of the embedded values in EsP subjects and the adequacy of the instructional materials used in teaching. In terms of capability building, list of trainings conducted in the region for EsP under K-12 were asked from the Regional Human Resource Office and verified in the Schools Division. Teachers and administrators’ perception about trainings attended were solicited, while curriculum material adequacy was determined by asking list from the Region’s (Learning Resource Management Development Office and verified in the schools. Philippines aspired social support to attain the desired EsP learning environment from partners, and DepEd Order 41, s. 2003 ensured that values education is purposely planned, reinforced the role to teach values and trained EsP teachers to conduct special trainings to teachers.in other discipline. International, national and regional mass trainings, division echo and school-based Learning Action Cell sessions were facilitated to teachers by DepEd. This reveals substantial list of activities from the Regional Office and substantial Division list of echo activities, but found out that much are for DepEd Core Value Maka-Tao, less for Maka-Kalikasan, and least for Maka-Dios and Maka-Bansa. Adequate curriculum materials are provided to schools, but learners felt rare in the building up of the 21<sup>st</sup> century skills. It implies that capacity building activities and material support should be of equal emphasis to all core values.

### IV. RESULTS AND DISCUSSION 2

Seventeen goals for sustainable development 2030-2105 were defined in series of assemblies of the World leaders. Quality Education targets turned on ESD which unifying messages had been excellently infused to EsP and ten SDG4 objectives were mainstreamed at exceptionally excellent significance (See Chapter 4 document analysis result). Intended outcomes of implementation in EsP under K-12 Curriculum is one of the objects of this study in Caraga scenario. Hungerford et al., (1994) defines EE indicator as environmentally literate, but Philippines EE guide (1999) defined environmental literacy for elementary and environmentally professional for the secondary learners. DepEd mirrored these intended outcomes in four DepEd core values termed in this study as green quotients. Quotients for Maka-Tao and Maka-Bayan are named Emotional Quotients, for Maka-Dios, Spiritual Quotients, Maka-Kalikasan, Ecological Quotients and for pedagogic ICT skills as Intelligence Quotients. At awareness level, this study reveals that schools with

level one SBM practices have excellent environmentally literate and low environmentally professional learners (EsP Curriculum outcomes, pilot testing result in early 2019). Result of evaluation study to Schools achieving Level 3 SBM practices however, showed excellently high literates and professionals environmentally using Hafner (1998) tests. This implies that achieving exceptionally excellent EsP outcomes necessitates action towards the hindering factors in emotional, in ecological and in technological quotients among secondary learners, and in ecological and in emotional quotients among elementary learners. 21<sup>st</sup> century skills deficiency of secondary learners entails its basic foundation.

## V. RESULTS AND DISCUSSION 3

### A. The dynamics of EsP classrooms in Caraga

World indicator for standard classroom environment is stated in SDG 4 Target 8. Pedagogic classroom instruction based on the World Quality Education standard is the quota to show. The underlying Values Education schoolrooms' intricacies were transcribed based on observations with pictorial evidences. The Principal, the Head of the Values Education Department or the school Master Teachers are known to have been paid to work together with classroom EsP teacher to achieve the goal of making learners become humane. Dynamic classroom forces as perceived by teachers, revealed excellently high participation. However, ISTE's standard in 21<sup>st</sup> century skills development is not evident. Enhancement of pedagogic strategies, that use: interdisciplinary learning, multi-stakeholders social learning, critical thinking based and discovery learning, were not been always utilized and not been observed by the proponent. Training on integrating of ESD themes\* in the subject's taught by teachers was not always experienced by teachers. LAC session on EsP quarterly lesson planning were not always done. Research activities about learners' behavior outcomes transforming them from environmentally literate to holistic environmentally professionals were not always done. It was then concluded, that learners who submerged to EsP under k-12 were not taught or trained in evaluating and investigating issues of environmental concerns, implying that outcome is generally limited on awareness of environmental issues only.

### B. The Lessons Learned 1

The first moral lesson gathered by way of knowing the 17 sustainable development goals, is the message that there is no plan B made and accepted by 193 countries because there is no planet B. And that everyone should be aware of the outcome if everyone will not play his role, that is the probability of losing the humans' home. With respect to the mainstreamed goals and objectives adopted by Philippines that should be taught and be practiced by Caragans, the lesson learned is that 70 % of the ESD unifying themes in target 7 of

SDG4 is embedded in EsP, nevertheless, mainstreaming of the SDG 4 objectives in EsP is one hundred per cent (100%). Thus, it is acknowledged that embedding of SDG 4 in EsP is exceptionally excellent. As a result, Philippines should not be dismayed because Caragans got excellently high significance in EsP curriculum outcomes as evaluated in this study. The challenge of achieving excellently very high to exceptionally excellent outcome of learning is an opportunity to make a difference in the following aspects: 1 clarifying learners role as Pagkamaka-Bayan, Pagkamaka-Dios, at Pagkamaka-Kalikasan, like defining the personal roles of Pagkamaka-Tao as components of VE-4-PPPP (Values Education for people, planet, peace, and prosperity; 2. In a moment that clarification to each aspects of VE is not done, current EsP teachers be given capability to teach the concept of ESD, the secret of eco-efficiency, and the role of ICT4D at the standard level of ISTE (the International Society of Technology in Education). Then, the rest of the unlearned lessons will slowly be erudite.

### C. The Strengths, Weaknesses, Opportunities and Threats

The goal for sustainable development is securing economic development, social equity and justice, and environmental protection. Society has grown to realize that we cannot live in a healthy society or economy with so much poverty and environmental degradation. Economic growth will remain the basis for human development, but it must change and become less environmentally destructive.

The troublesome observations about what was going on with educational process that cause general oblivion of world learners brought harms and risks to all. The world elucidation is to raise high the level of content and pedagogies called Quality Education. Literatures tell that the World hoped that in the 21<sup>st</sup> century there would be paradigm swift shift of difference made worldwide through Green Education Curriculum outcome grounded locally.

Summary of findings revealed the imbalanced weight of one aspect to another, such that World SD goal for people is substantial in terms of embedding to Edukasyon sa Pagpapakatao under DepEd Core Value Maka-Tao than the goal for planet, and for spirit of peace. Dictionary defines humane as caring, kind, gentle, humanitarian, compassionate, kindly, benevolent and civilized. This implies disparity in terms of ESD embedding to other DepEd Core Values: Maka-Dios, Maka-Bayan, and Maka-Kalikasan.

Pagkamakabayan indicators of behavior in EsP under K-12 Curriculum has not been associated with Pagkamaka-Mundo (World citizenship). Pagkamaka-Dios, on the other hand, which outcome to learners is termed as Spiritual Quotient, is limited to respect and curiosity to learn of one's way of spiritual guiding. No specific indicator of action to lead learners in the correct way of enriching ones' spirit based on the right standard of the one who created this planet as every one's gift of home. This quotient has no precise list of goals, targets, and indicators on record in the United Nation's Sustainable Development Goals.

D Facts and Figures

VI. SOME COMMON MISTAKES



Fig 5.D.1 Values Education Framework Under K-12

The curriculum Edukasyon sa Pagpapahalaga under UbD (Understanding by Design) Curriculum of DepEd before K-12 basic education program showed inclination to peoples Pagpapakatao among all the four core values of DepEd. Thus, under K-12, Edukasyon sa Pagpapahalaga is changed, focused to Edukasyon sa Pagpapakatao values clarification. It is also observed in this study that despite focusing to Pagpapakatao, still the problem exists.

Table X Analysis from varied Perceptions for EsP Ecological Outcome of Grade 7

Summary of EQ2 (Ecological Quotient Tests)	Outcome	Shades of Green
EQ2 using Maka-Kalikasan indicators	9.4	Dark Green
EQ2 using Hafner (1998) indicators* trial 1	7.1 *	Medium Green
EQ2 using knowledge of the “common future”	9.6	Dark Green
EQ2 rating by Master Teacher respondents	9.0	Dark Green
EQ2 rating by Master Teacher non-respondents	5.0*	Medium Green
EQ2 rating by School Head	10	Dark Green
Average Rating: Ecological Quotient	8.35	Dark Green

Table XI Green Quotient Test to Grade 7 of SBM Level 3 Schools

Quotient Description	Level of Significance (Hafner 1998 weighted mean)
EQ (Emotional Quotient tested by DepEd Maka-Tao indicators of behavior)	7.8
EQ (Emotional Quotient) tested by DepEd Maka-Bansa indicators of behavior	9.1
Average Rating: Emotional Quotient	8.5
IQ (Intelligence quotient of learners regarding K-12 EsP goals/objectives)	8.1
SQ (Spiritual Quotient of learners with respect to DepEd Value Maka-Dios indicators of Behavior)	8.2
Ecological Quotient* (Table X first 2 minimal frequencies)	6.1
Ecological Quotient** (Table X EQ2 average)	8.4
Average rating: Ecological quotient	7.3
Weighted average outcome of elementary K-12 EsP*	8.1125

Table X shows two significant hindering factors to achieving excellently higher outcomes in EsP. From the lowest: ecological quotient rated by the non-respondent master teachers, implying that at level one schools, ecological quotients are very low; and as rated using Hafner GQ test is excellent which connotes that learners are of medium green in terms eco-efficiency. Hence, an average of 73% environmental literacy (Table XI). However, Table further shows that ecological quotient rating from master teacher respondents (Table X) reveals excellently very high outcome. It connotes that environmental literacy in SBM Level 3 schools in the elementary is significantly very high particularly in the knowledge of the common future.

Table XI shows further that ranks second among the least learned quotients of EsP under K-12 is the emotional quotient measured by the Maka-Tao core value behavior indicators. This implies that despite of the Pagpapakatao focus in values

education clarification, the effect to elementary learners is only 78% excellence.

Among secondary schools' learners, Table XII reveals that the hindering factors to achieving exceptional excellence level of significance are from lowest, technological quotient followed emotional quotient (Maka-*tao*) and ecological quotient. At an average, the outcome of EsP is excellently high. Implying that Caragans achieve 80% Professional Literacy (EE Guide, 1999) at awareness of issues level according to the vocabulary of Hungerford et al., (1994). Maka-kalikasan test 1 are learners' perception on participation type queries: *does action in favor of natural or ecological laws, eats non-processed foods from organic farms, supports environmental policies considering aesthetic, ethical and economic balance, conserves and sustainably use the oceans, seas and marine resources for quality development, ensures access to clean water and sanitation including affordable and clean energy for all men and women.* While Maka-kalikasan Test 2 are learners' perception on the qualitative evaluation type queries such as *sees that EsP influences community to follow DepEd orders, feels that EsP revitalizes income generating projects of school through Gulayan sa Paaralan, canteen and solid waste management, Sees that EsP contributes to increase enrolment of indigenous people in all grade levels, realizes that EsP promotes cooperation in the school and in the community despite of tribe, gender and religious groups, realizes that EsP leads in informing learners the benefits of organic horticulture, use of clean water, and use of clean energy.*

**Table XII Summary of High School respondents' quotients as perceived by Grade 11**

IQ (Intelligence Quotient) Technological	SQ (Spiritual Quotient) Maka-Dios	EQ1 (Emotional Quotient) Maka- <i>tao</i> and Makabayan respectively		EQ2 (Ecological Quotient) Maka-kalikasan test 1 and Maka-Kalikasan Test 2 respectively		Average Quotient (Learners' Outcome in EsP)
71%	88%	75%	91%	79%	77%	80%
71%	88%	83%		78%		80%
Medium Green	Dark Green	Dark Green		Medium Green		Dark Green

**A. Conclusions**

Oblivion results to invisibility of human dignity and irreversible damage to the environment. For such, quality education was thought of as solution and EsP has been added to the Philippine curricula. This study mainly seeks the intended outcome of EsP in K-12 Curriculum and its reality in

Caraga. The intended outcome sought in line with quality education target of the Sustainable Development is mainly no one left behind without the knowledge and practice of the 4 DepEd core values Maka-Dios, Maka-Tao, Maka-Kalikasan and Maka-Bansa, and in the 21st century skills. These 5 outcomes of learning EsP are termed Green Quotients in this study. It is found out that in Caraga, the learners' quotient is dark green, numerically achieving the average of 8.05 points in the secondary, and in the elementary, 8.1125 point. The outcome of EsP in K-12 Curriculum, therefore, is excellently high. If 100 percent of the SDG 4 quality education indicators are infused in EsP then proportionately 80% of it is achieved by learners as perceived. And If 70 percent of the Environmental core messages were embedded in EsP then 80 percent of it is attained by learners as observed.

Hindering factors such as teachers lack of further trainings in ESD/EE contents and pedagogy, more time, effort and money are needed in order to achieve the exceptional excellence level of significance in technological, ecological, emotional, and spiritual quotients of learners. This implies that with deeper capability building of EsP teachers in ESD themes and EE core messages, learners ecological quotient will follow to become exceptionally excellent.

If ecological quotient of learners become too high, then environmental literacy will be developed from knowledge and awareness of ecological issues to environmental evaluation and environmental action level among learners thereby concerted cooperation happened and sustainability targets is achieved.

**B. Recommendations**

It is suggested that the learners should learn about the environmental issues which surround them, they should have found what their interests are and they should have chosen actions that make a difference, since they have excellently high basic understanding of the environment but have not yet clearly realized what an environmental role to play they must take action to learn about world citizenship to protect the planet as a rider and find out what else they can do to make further difference going back to earth's original state if possible.

According to Andrew Hafner (1998), the learners need to be swift in climbing at the level of dark green quotients like the rare tropical jungles of the Philippines before. To enhance spirit of greenness among Junior High School, they must become environmental leaders who will educate the learners around them by considering an environmental career such as environmental lawyers, park rangers, environmental journalists, soil and water conservationists, fishery and wildlife conservationists, air and water control personnel, environmental education teachers and/or environmental activists in order to help save the planet Earth.

Environmental Lawyers are people who try court cases to protect the environment. Park Rangers are those who help protect national parks so everyone can enjoy them. Environmental Journalists are persons who report about environmental issues for the media. Soil and Water Conservationists are those who help protect our land and waterways from pollution. Fishery and wildlife conservationists are those who help prevent fish and wildlife from becoming extinct. Air and Water Quality Control

Personnel are the individuals who ensure that industries are not breaking environmental laws. Environmental Education Teachers are the educators, coaches, trainers, tutors, instructors, and lecturers who focus the curriculum on environmental studies, research and conservation. And Environmental Activists are those *enthusiasts who work for government or nongovernment organizations which help educate the public about environmental issues (Hafner, 1998:37).*

In line with this, the proponent agrees with respondents in recommending an hour addition to EsP curriculum. The proponent endorses that learners, to include teachers must have exposed more to ESD/EE content and pedagogy to help achieve SDG 4 Target 4 that is achieving 21<sup>st</sup> century skills.

It is suggested that aside from ESP (Edukasyon sa Pagpapakatao), EsPPK (Edukasyon sa Pagpapahalaga at Pagpapahalaga ng Kalikasan). EsPPTPM (Edukasyon sa Pagpapahalaga ng Pagkikilala ng Totoong Poong Maykapal) and EsPPMN (Edukasyon sa Pagpapahalaga ng Pagkamamayan ng Mundo Natin) Values Education for Global Citizenship referred to as Globalicity ( Mansilla and Jackson (2011), will be added to enhance further ecological, spiritual, and intelligence quotients to the significance level of exceptionally excellent outcomes

Content will embed sustainable development featured by Environmental Education Guide 1999 of the Philippines for

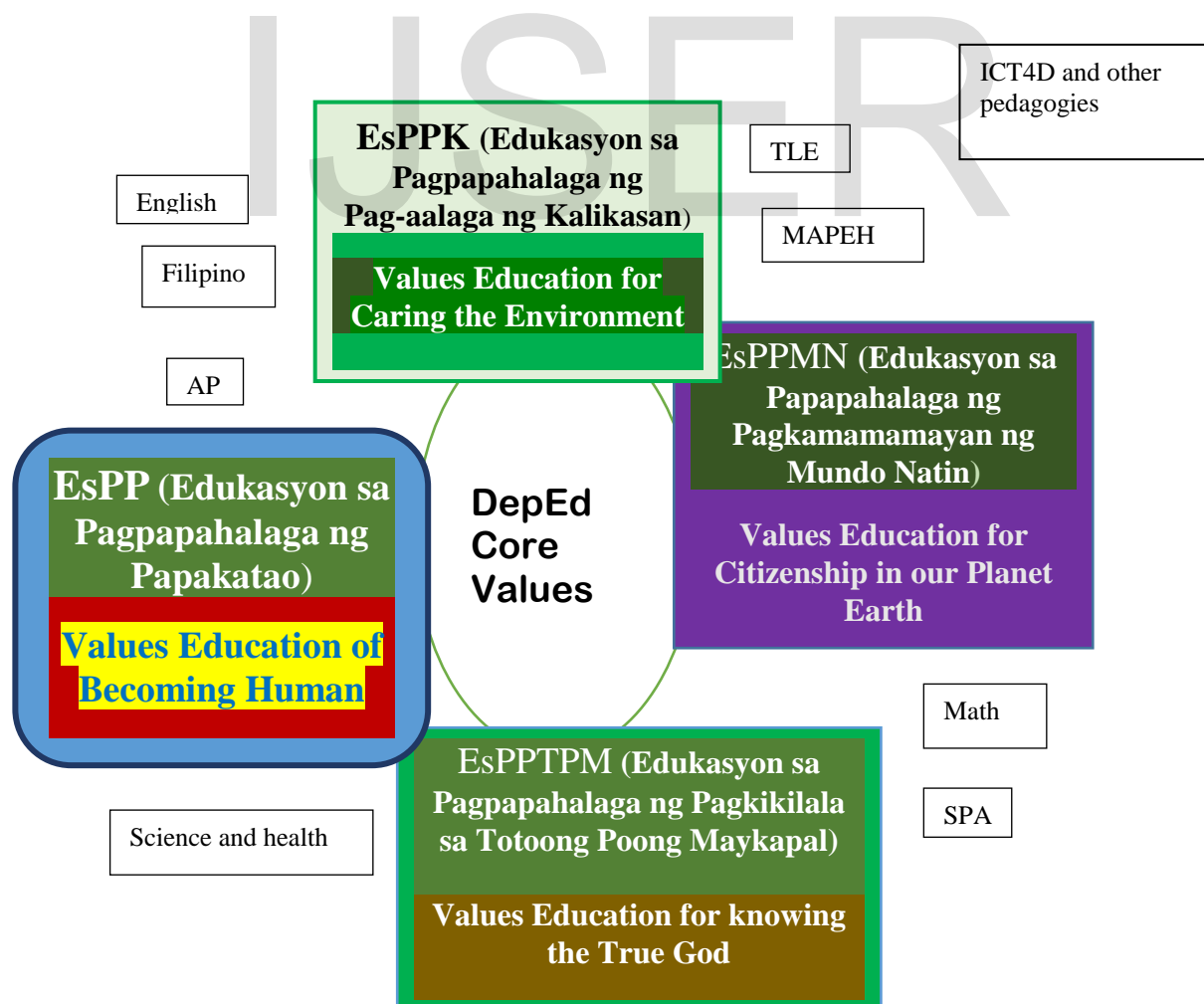
**Fig. 6** The New Values Education Program Paradigm

EsPPK and content for EsPPPM will be Bible/Koran and other religious books sharing particularly in the interpretation of the prophecies revealed in these books. Incitement method and invitation of experts will be used with budget allocation from DBM (Department and Management)’s GA (Government Appropriation).

Two hours is currently allotted per grade level to EsP in a week hence another 1 hour be added and the remaining 2 hours in a week will be spent for empowering learners in Values Education for clean, green and bloom and enhancing spiritual quotient. Total of 5 hours per Values Education subject in every grade level.

Since Araling Panlipunan or Social Studies in High School has 3-hour allotment in a week under K-12 Framework, the proponent recommends further to give another 2 hours for deepening in education for sustainable development topics as main competency in this subject to have a total of 5 hours in a week where National Action Plan for Development in the country and the “Ambition Natin” 2040 will be reflected

To become holistic-environmentally professional learners with exceptional excellency level of outcome, the following paradigm is suggested in the curriculum for Values Education to be completed.





In line with the suggestion for amendments in core content of Values Education Subjects in all Junior High School Grade Levels, budget for training of teachers and budget for additional position items shall follow. The Philippine Government Appropriation Act should specifically include budget for this amendment.

C. The paradigm in Fig. 6 illustrates the completion of Values Education Program adding subject titles that fit the core values for learners to be more aware of the quotients they would exhibit after being done in Junior High School Values Education under the K-12 Model. EsPPP (Edukasyon sa Pagpapahalaga ng Pagkamakatao at Pagpapakatao), Values Education for humanity and for becoming humane, the enhanced EsP (Edukasyon sa Pagpapakatao) the education for becoming humane; EsPPK (Edukasyon sa Pagpapahalaga ng Pagkamaka-Kalikasan), in English language, the Values Education for intensive care to the planet Earth equivalent to the 3 standards of the Integrated Environmental and Sustainability Education Learning Standards of WA K-12 (2014) ; EsPPTPM (Edukasyon sa Pagpapahalaga ng Pagkikilala ng Tunay na Poong Maykapal), that is, Values Education for knowing the egalitarian (<https://www.urbandictionary.com/define.php?term=Egalitarian>) *Prince of Peace*; and EsPPPM (Edukasyon sa Pagpapahalaga ng Pagkamakabayan at Pagpapahalaga ng Mundo), Values Education for Globalcity (Mansilla & Jackson, 2011), will be clarified to learners. By the name of the subjects alone they can tell what they will become as outcome of learning EsP in their mind, in their developed skills, in their heart, and in the spirit that is like a two edged sword that would strike to their soul.

### C. Other Recommendations

For further study, it is believed that when there is motivation to pursue just like an extra sufficient remuneration, people in the society will metamorphose to incline themselves to environmental career, thereby making a swift pace towards environmental career choice after High School that heal the land. Scholarships may be specifically offered to those who will enroll courses relevant to environmental careers.

In the Department of Education, there shall be qualification standards for Environmental Education Teachers, specially salary grade allocation and benefits to be adopted for teachers who have defined their interests to pursue this field of work and continuously perform a difference until they become school heads or any position they regardless of the kind and size of school the teacher is assigned.

To pursue the opportunity of acquiring the knowledge of SD, training and retraining of all (no one left behind) teachers who have the interest to study further will be given the chance to attend to national trainings with special budget allocation from the Department of Budget Management supported by the Government Appropriation Act for continuous training of teachers in Edukasyon sa Pagpapahalaga with dignified venue and accommodation.

Relevant to integrating values in English subjects in Grade 10, and in teaching English language skills in Edukasyon sa Pagpapakatao, it is further recommended that the use of the Hafner, Andrew (1998) *HAND IN HAND Linking*

*Environmental Education with Language Learning in the Philippines as Grade 10 EsPPK supplement and be distributed freely to all schools at one to one ratio with learners.*

The above said recommendations, however, are not limited to SBM level 3 or level 2 practicing schools but precisely a motivation to become level 3. In SBM Level 3 practices, all employees of qualified schools will be reclassified to a step higher position/salary.

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