

Can We Teach Environmental Education in English Courses?

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ABSTRACT

The preparation of teaching and learning resources in environment education (EE) is important because it supports the attainment of the goals of RA 9512 and addresses the lack of teaching and learning resources in EE (Kimaryo, 2011). Using mixed methods of research, the study aimed to review the English Education curriculum to identify entry points of EE integration using the Department of Environmental and Natural Resources (DENR) EE materials, and to develop and to validate exemplar session plans with EE integration in different English Education courses. Data were gathered using documentary analysis, assessment of the DENR EE materials, and assessment of the proposed session plans using rubric. Results show that the entry points for EE integration is adequate, and that the DENR EE materials are found to be appropriate, relevant, and highly flexible as instructional materials for EE integration in English courses. EE can be integrated in the different parts of the lesson such as the motivation, lesson proper and assessment. The proposed session plans were rated excellent by the jurors, and therefore serve as acceptable and relevant materials for the mainstreaming of EE in the English Education curriculum. Wide dissemination and pilot-testing of the session plans integrating EE are recommended.

KEYWORDS

curricular review; environmental education; pre-service training; teacher education program.

INTRODUCTION

Environmental Education (EE) aims to develop an environmentally literate citizenry who is a key to resolving the environmental issues (North American Association for Environmental Education, 2004). Therefore, EE is not only learning about the environment but more importantly learning for the environment (Glacking and King, 2020). Evidently, its value to the society and to this generation and future generations is undisputable so all sectors should be proactively involved in it.

Formally or informally, EE can be done in different ways in order to foster skills and habits that people can use throughout their lives to understand and act on environmental issues (North American Association for Environmental Education, 2004). It can be integrated in existing curricula as a “greening of the curriculum” (Emmanue and Ambe, 2014; Ajiboye and Ajitoni, 2008; Ormond, Zandvliet, McClaren, Robertson, Leddy and Metcalfe, 2014; Chimbodza and Ongevelle, 2004; Artun and Ozsevgec, 2016; Cutter-Mackenzie and Edwards, 2010) or can be considered as a transversal theme in the curricula (Conde and Sanchez, 2010). In informal education, EE can be implemented outside a prescribed or mandated curriculum or outside the classroom or school such as in eco-attractions (Dunkley, 2016), school gardens (Bowker and Tearle, 2007), forest conservation

(Dickinson, 2011), botanical gardens (Drissner, Steigmüller and Hille, 2013) and place-based education (Dale, Powell, Stern and Garst, 2020).

In support of the EE, the Teacher Education Institutions (TEIs) need to be proactively involved in EE in collaboration with concerned agencies such as the Department of Environment and Natural Resources (DENR) and other institutions. Since the teacher education programs, and teacher educators considered are recognized as key players in the reorientation of education to address sustainability based on UNESCO Education for Sustainable Development in Action (Hopkins and McKeown, 2005), innovations in the Teacher Education program may be done by “greening the curriculum” or by making EE as one of the transversal themes (Conde and Sanchez, 2010) in the different Teacher Education program, thus making the EE integration beyond the biological perspective (Pasin and Bozelli, 2019).

In the Philippines, Republic Act 9512 – National Awareness and Education Act of 2008 mandates the promotion of EE. According to this law, the Department of Education (DepEd), Commission on Higher Education (CHED) and Technical Education and Skills Development Authority (TESDA), in coordination with the DENR and other relevant agencies, shall undertake capacity-building programs nationwide such as trainings, seminars, workshops on environment education, development and production of environmental education materials, and teacher-education courses and related livelihood programs (Section 6 & 7, RA 9512). In support of this law, the education sector should take necessary action to do its share in strengthening the EE in the country.

In the higher education, the teacher education and the teacher educators are recognized as key players in the reorientation of education to address sustainability (Hopkins and McKeown, 2005). Therefore, it is imperative to review the English Education curriculum under the Teacher Education program and develop exemplar lessons which embed EE in order to determine whether EE can serve as a transversal theme in the curriculum (Conde and Sanchez, 2010), and can go beyond integration from a biological perspective (Pasin and Bozelli, 2019). In particular, it is essential to develop instructional materials in order to promote EE among the Teacher Education Institutions (TEIs).

LITERATURE REVIEW

This study is anchored on the Republic Act 9512 – National Awareness and Education Act of 2008 and from Monroe, Andrews and Biedenweg’s (2007) new framework for EE. Republic Act 9512 mandates the Department of Education (DepEd), Commission on Higher Education (CHED) and Technical Education and Skills Development Authority (TESDA) to “undertake capacity-building programs nationwide such as trainings, seminars, workshops on environmental education, development and production of environmental education materials, and teacher-education courses and related livelihood programs” (Section 7). In the new framework for EE, the purposes of EE include the following: build understanding, improve skills and enable sustainable action (Monroe, Andrews and Biedenweg, 2007). The suggested strategies for EE include active learning, collaborative learning, inquiry-based learning, problem-based learning, contextual learning, project-based learning, and service learning, among others. Briefly, the law specifically stresses the need to develop and produce EE materials while the framework for EE provides the purposes for EE and the suggested strategies which are used in the lesson development.

Conceptual Framework

Guided by both the RA 9512 and on Monroe, Andrews and Biedenweg (2007) new framework for EE, this study aimed to review the English Education Curriculum under the Teacher Education program to identify points of integration for EE. Prior to using the DENR EE materials in the proposed lessons, these are assessed in terms of appropriateness for integration, relevance to the academic program and flexibility for integration. The assessment results indicate whether they may be used in the proposed lessons embedded with environmental concepts and principles. Adhering to the rigors of materials development, the proposed lessons are subjected to juror validation in terms of learning outcomes, contents (EE integration), strategies/procedures, assessment, and conventions. Then, the EE materials in the form of lessons integrated with environmental concepts and principles using DENR EE materials are produced.

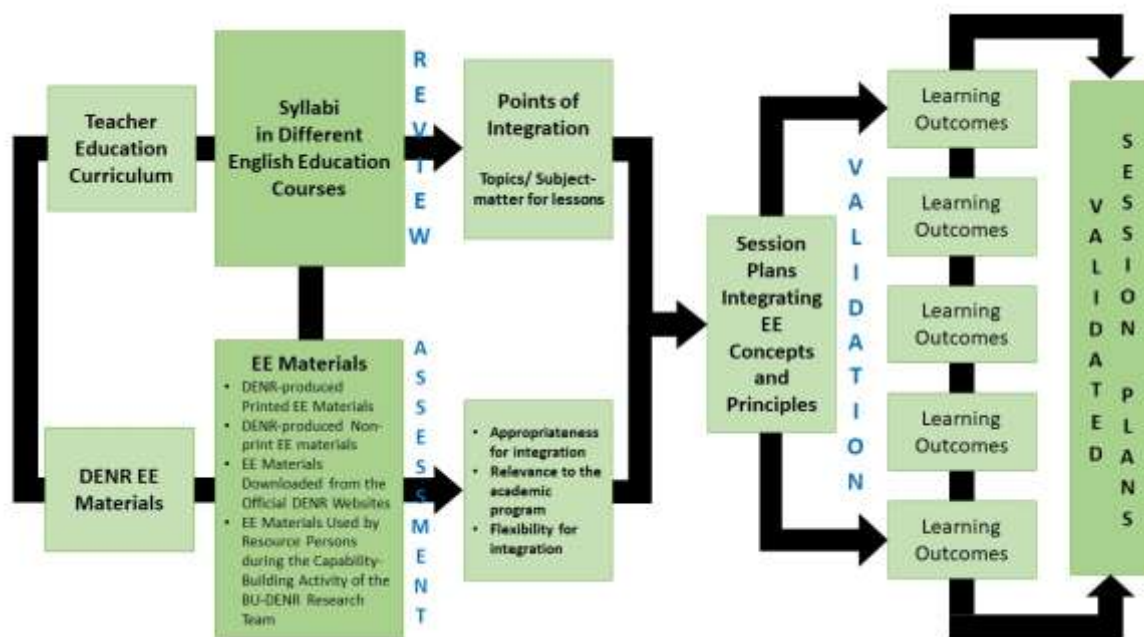


Figure 1. Conceptual Paradigm

This study aimed to review the English Education curriculum under the Teacher Education program to identify entry points of EE integration using the available DENR EE materials, and to develop and validate exemplar session plans with EE integration in selected English Education courses. The specific research objectives are as follows:

1. Identify entry points for EE integration in the different English Education courses;
2. Assess the EE materials developed by DENR in terms of the following criteria: appropriateness for integration, relevance to the academic program, and flexibility for integration;
3. Develop session plans in English Education Courses integrating environmental concepts and principles using DENR EE materials; and
4. Validate the EE-enriched session plans in English Education Courses.

RESEARCH METHODS

Using mixed method of research, this study used developmental-descriptive-evaluative method of research. Specifically, it used documentary analysis of the English Education Curriculum to determine the entry points for the EE integration in the different English

courses. Descriptive and evaluative was used to describe and assess the DENR EE materials while developmental and evaluative methods were used to develop and validate the session plans in English integrating EE.

The DENR EE materials which were used in the proposed session plans were assessed based on the following criteria: appropriateness, relevance, and flexibility. The proposed session plans were assessed based on five criteria: namely, learning objectives, content (EE integration), strategies/procedures, assessment and conventions. Two assessment tools were used; namely, 1) Rubric for assessing the DENR EE materials in terms of appropriateness, relevance and flexibility (NAAEE, 2004), and 2) Rubric for assessing the lesson plan integrated with EE. The interpretation of the results of the assessment of the proposed session plans was guided by the range of ratings 1.00 - 1.74 – Poor; 1.75- 2.49 – Good; 2.50 - 3.24 - Very Good; and 3.25 - 4.00 – Excellent. The assessment results of the DENR EE materials were interpreted guided by the range of ratings provided in Table 1.

Table 1. Interpretation of assessment results of the DENR EE materials

| Range | Appropriateness | Relevance | Flexibility |
|--------------|------------------------|---------------------|---------------------|
| 1.00 - 1.79 | Not appropriate | Not relevant | Not flexible |
| 1.80 - 2.59 | Slightly appropriate | Slightly relevant | Slightly flexible |
| 2.60 - 3.39 | Moderately appropriate | Moderately relevant | Moderately flexible |
| 3.40 - 4.19 | Appropriate | Relevant | Flexible |
| 4.20 - 5.00 | Highly appropriate | Highly relevant | Highly flexible |

Five experts participated in the assessment of the DENR EE materials and five experts were assessed the proposed EE-enriched session plans in English Education. Inclusion criteria were disciplinary expertise, number of years in teaching, experience in instructional materials development and curriculum review.

Descriptive statistics such as frequency count, average and weighted mean were used to interpret the results of the assessment of DENR EE materials and session plans with EE integration. Microsoft EXCEL 2013 was used for the statistical computations.

RESULTS AND DISCUSSION

Entry Points for Environmental Education Integration in the English Education Courses in the Teacher Education Curriculum

The twenty syllabi for the English Education Courses in the Teacher Education Curriculum were analyzed to determine the topics or subject matter in which certain environmental concept and principle may be integrated. The entry points can be in any of the parts of the procedures such as motivation/opener, discussion proper, individual, pair or group tasks, generalization and assessments depending on the strategy to be used. The topics in the different course syllabi do not explicitly mention environmental issues and concerns or environmental concept and principle. Nevertheless, as an enabling course, the various social issues such as environmental issues and concerns may be spontaneously interspersed in the lessons dealing with the English Language, communication, literature and teaching of language and literature.

Table 2. Entry points for environmental integration in the English courses of the Teacher Education Program

| Courses | Entry Points for Environmental Education Integration |
|---|--|
| First Year | |
| Language Curriculum for Secondary Schools | <ul style="list-style-type: none"> ▪ Trends & Issues in Philippine Education and Curriculum (The Advent of Technology in Education) |

| | |
|---|--|
| Second Year | |
| Introduction to Linguistics | <ul style="list-style-type: none"> ▪ Sentences Grammatical categories |
| Structure of English | <ul style="list-style-type: none"> ▪ Demo-teaching |
| Literary Criticism | <ul style="list-style-type: none"> ▪ - |
| Afro-Asian Literature | <ul style="list-style-type: none"> ▪ Chinese Literature (Sample Literary Selections: Chinese Poetry, Buying Flowers (LiPo)) ▪ Japanese Literature (Sample Literary Selections: Sample Tankas and Haikus) ▪ Hindu Literature (Sample Literary Selections: The Rains (R. Tagore), The Tame Bird and the Free Bird) |
| Third Year | |
| English and American Literature | <ul style="list-style-type: none"> ▪ Ode to the West Wind |
| The Teaching of Speaking | <ul style="list-style-type: none"> ▪ Speech Activities (Oration, Declamation, Extemporaneous Speaking, Storytelling, Speech Choir, Chamber Theater, Poetry Reading, Interpretative Reading) |
| The Teaching of Listening and Reading | <ul style="list-style-type: none"> ▪ Art of Questioning (Developing of Reading) ▪ Developing Understanding in Reading (Specific Comprehensive Skills in the Different Dimensional Level; Developing Special Comprehension Skills; Materials for Developing Comprehension) ▪ Demonstration Teaching on Approaches/Methods/Techniques in Developing Skills in Oral/Silent Reading with Comprehension (Literature-Based Lesson; Teaching reading with Storytelling and Writing Connection; Summarizing a story Using Graphic Organizer; Integrated Lesson Learning Literature as Springboard for Content Area/Instruction) |
| Teaching of Literature | <ul style="list-style-type: none"> ▪ Review of Multiple Intelligences ▪ Creative Teaching Styles ▪ Review on the Approaches in Teaching Literature |
| Preparation and Evaluation of Instructional Materials | <ul style="list-style-type: none"> ▪ Types of Visual Aids (Reusable Visual Aids which Carry Information; Visual Aids which Display Information; Visual Aids which Summarize Complex Information; Visual Aids: Visual Aids for Activities) |
| Language and Literature Assessment | <ul style="list-style-type: none"> ▪ Make tests to assess the receptive skills ▪ Make tests to assess the productive skills ▪ Make tests to assess knowledge in literature |
| Language Research | <ul style="list-style-type: none"> ▪ Writing the research paper (Formulating the research problem) |
| Mythology and Folklore | <ul style="list-style-type: none"> ▪ Types of Folklore ▪ Types of Folk Narratives |
| Campus Journalism | <ul style="list-style-type: none"> ▪ Functions and Sections of the Newspaper/School Paper (Development of Community) ▪ News Writing ▪ Science Writing and Technical Writing ▪ Feature Writing (Choosing a Topic for Feature Stories) ▪ Editorial Writing (Kinds and Purposes of Editorial Columns) ▪ Editorial Cartooning (Suggestion/Tips for Cartoons) ▪ Photojournalism ▪ The Broadcast Media |
| Remedial Instruction in English | <ul style="list-style-type: none"> ▪ Listening, Speaking, Reading and Writing Exercises and Curriculum Materials in the Corrective/Remedial in Four Macro Skills |

| Fourth Year | |
|------------------------------------|---|
| Creative Writing | <ul style="list-style-type: none"> ▪ Gnomic Verses ▪ Mesostic Poetry ▪ Anaphora ▪ Communion with Nature ▪ Poetry for Children ▪ Simple Things ▪ Story for Children of All Ages |
| English for specific Purpose (ESP) | <ul style="list-style-type: none"> ▪ Language Uses: Speech Acts ▪ Language Uses: Genre |
| Speech and Stage Arts | <ul style="list-style-type: none"> ▪ The Arts of Conversation (Interview) ▪ Public Speaking and Other Speech Situations (Conducting a Lecture; Speeches for Special Occasions) ▪ The Theater Arts (Script Writing) |
| Introduction to Stylistics | <ul style="list-style-type: none"> ▪ Stylistics Application (Poetry, Prose) |
| Translation and Editing of Text | <ul style="list-style-type: none"> ▪ Translation Methods ▪ Translation Procedures ▪ Principles of Editing |

Results show that Campus Journalism and Creative Writing were found to have the greatest number of entry points for EE. It should be noted that these topics in Campus Journalism may include examples which deal directly on environmental issues and concerns, concepts, principles and skills. In other words, the topics can serve as a context for the discussion of environment-related concerns, and therefore serve as a means for environmental education. In brief, journalism in varied media or platform such as print, broadcast, online or social media may serve as a tool for environmental education especially because the target clients (who are college students) are mainstreamed in the mass media and digital communities. In Creative Writing, the activities which generally deal on writing poems and narratives/story may serve as a context for introducing environmental issues and concerns, concepts, principles and skills. Literary pieces such as poems and stories may deal directly or indirectly with environmental concerns, and therefore may serve as a vehicle for communicating lessons about protecting and conserving the environment, and other related topics.

Six courses (Afro-Asian Literature, The Teaching of Listening and Speaking, Teaching of Literature, Language and Literature Assessment) were noted to include three entry points for environmental education. Ten courses have either one or two entry points while only one course, Literary Criticism was found to not to have an entry point for environmental education. Findings reveal that the specialization courses in English can serve as relevant context and adequate integration for environmental education among pre-service teachers.

Over-all the review of the course syllabi for the English Education under the Bachelor in Secondary Education reveals that these courses can aptly serve as vehicle for environmental education of the future teachers. The integration of EE in the English Education courses will address the basic purposes of building understanding of various environmental concepts, principles and issues; improving skills related to environmental protection and conservation on a personal level, family, school or community level; clarifying and strengthening values needed to assist in promoting, supporting and sustaining environmentally appropriate behaviours and practices, and enabling sustainable action towards the protection and conservation of the environment and natural resources. It should be underscored however that after identifying the entry points for EE, developing lessons and classroom activities using DENR materials should ensue, and be made among the priority academic innovation of the school.

Assessment of the DENR EE materials

A total of 24 DENR EE materials used in the proposed EE-enriched English lessons. These were composed of the following: (1) DENR-produced Printed EE Materials; (2) DENR-produced Non-Print EE Materials; (3) EE Materials Downloaded from the Official DENR Website; and (4) EE Materials Used by Resource Persons during the Capability-Building Activity of the Research Team.

Table 4. DENR EE material used in the proposed session plans in English education

| Title of Material on Environmental Education | Type of Material |
|--|---|
| 1. Environmental Compliance Assistance Center for Local Government Units | Printed material |
| 2. Environmental Education in the Philippines: Towards a Sustainable Future | Printed material |
| 3. Ecological Solid Waste Management (ESWM for Markets) | Printed material |
| 4. Ecological Solid Waste Management (ESWM for Households) | Printed material |
| 5. Stop! Think! Act! - What you need to know about Earthquake Preparedness in the Country | Printed material |
| 6. Solid Management Made Easy: A DIY Guide to a Community-Based Ecological Solid Waste Management Programme | Printed material |
| 7. The Philippine Clean Water Act of 2004 (RA 9275) Implications to LGUs, Small Business Establishments, and Women | Printed material |
| 8. Integrated Water Quality Management Framework | Printed material |
| 9. Idol ko si Kap! Makakalikasang Pamamaraan ng Pamamahala sa Basura | Printed material |
| 10. The Ecological Solid Waste Management Act of 2000 (RA 9003) Implications to LGUs, Women, and Small Business Establishments | Printed material |
| 11. The 2015 National Search for Sustainable and Eco-friendly Schools | Printed material |
| 12. Ang Mga Dapat Malaman tungkol sa Clean Water Act | Printed material |
| 13. 20 Frequently Asked Questions on the Protection of the Ozone Layer | Printed material |
| 14. Basura Monster Coloring Book | Printed material |
| 15. Kuwentong Kabit-kabit A Chain of Stories | Printed material |
| 16. Fantastik 4 - And Kasangga at Solusyon sa Pagsasaayos ng Basura!!! | Printed material |
| 17. DENR holds video contest in celebration of World Water Day http://www.denr.gov.ph/news-and-features/latest-news/2477-denr-holds-video-contest-in-celebration-of-world-water-day.html | Online Article/ Downloaded Material |
| 18. PH committed to good forest governance – Paje http://www.denr.gov.ph/news-and-features/latest-news/2480-ph-committed-to-good-forest-governance-paje.html | Online Article/ Downloaded Material |
| 19. DENR unveils elephant monument at World Wildlife Day rites http://denr.gov.ph/news-and-features/latest-news/2481-denr-unveils-elephant-monument-at-world-wildlife-day-rites.html | Online Article/ Downloaded Material |
| 20. Processing, Issuance of DENR Emission Permits for New Vehicles Now Available Online http://www.denr.gov.ph/newsandfeatures/latestnews/2113processingis-suanceofdenremissionpermitsfornewvehiclesnowavailableonline.html?tmpl | Online Article/ Downloaded Material |
| 21. DENR expands ‘safe haven’ for endangered marine turtles http://www.denr.gov.ph/news-and-features/latest-news/2475-denr-expands-safe-haven-for-endangered-marine-turtles.html | Online Article/ Downloaded Material |

| | |
|--|--|
| 22.Seven Environmental Principles & Genesis in Reverse | Presentation/ Material used by Resource Person |
| 23.Nagmamahal...Inang Kalikasan (Music Video) | Non-print Material |
| 24.Ang Kaingin (Music Video) | Non-print Material |

Appropriateness for Integration. The DENR EE materials were assessed as highly appropriate in terms of depth (4.43) and moderately appropriate in terms of emphasis (3.07). Over-all, these materials were rated 3.75 or appropriate. Of these 24 materials, 14 were assessed as highly appropriate with weighted mean ranging from 3.51 to 4.17, while 10 were assessed as appropriate with ratings ranging from 4.22 to 4.80.

Relevance to the Academic Program. The DENR EE materials were assessed as highly relevant with a weighted mean of 4.25 in terms of action orientation, and relevant with a weighted mean of 4.04 in terms of instructional soundness. Over-all, these are rated as relevant (4.14). 13 materials were assessed as relevant and 11 materials as highly relevant.

Flexibility for Integration. The DENR EE materials are assessed as highly flexible with an over-all weighted mean of 4.23. Specifically, the materials are rated as highly flexible in terms of clarity and logic, ease of use, making substantiated claims and fitness with national, state and local standards. In addition, the materials are rated flexible in terms of long-live use, adaptability, and accompaniment of instruction and support. Of the 24 materials, 9 materials are assessed as flexible, while 14 are assessed as highly flexible.

Table 5. Assessment of the DENR material used in the proposed session plans in English courses

| DENR EE Materials | Criteria | | | Over-all Results |
|----------------------|-----------------|-----------|-------------|---------------------|
| | Appropriateness | Relevance | Flexibility | |
| 1 | 3.51 | 3.40 | 3.51 | 3.47 |
| 2 | 3.66 | 3.49 | 3.29 | 3.48 |
| 3 | 4.38 | 4.34 | 4.45 | 4.39 |
| 4 | 4.22 | 4.15 | 4.35 | 4.24 |
| 5 | 4.28 | 4.38 | 4.33 | 4.33 |
| 6 | 4.75 | 4.63 | 4.43 | 4.60 |
| 7 | 4.69 | 4.13 | 4.0 | 4.27 |
| 8 | 4.17 | 4.06 | 4.57 | 4.27 |
| 9 | 4.15 | 4.41 | 4.26 | 4.27 |
| 10 | 4.24 | 4.15 | 4.43 | 4.27 |
| 11 | 3.91 | 3.74 | 3.52 | 3.72 |
| 12 | 4.36 | 4.02 | 4.14 | 4.17 |
| 13 | 4.55 | 4.28 | 4.18 | 4.34 |
| 14 | 4.56 | 4.38 | 4.14 | 4.36 |
| 15 | 4.42 | 4.28 | 4.57 | 4.42 |
| 16 | 4.07 | 4.29 | 4.76 | 4.37 |
| 17 | 4.32 | 4.14 | 4.10 | 4.19 |
| 18 | 4.15 | 3.82 | 4.22 | 4.06 |
| 19 | 4.14 | 3.81 | 4.02 | 3.99 |
| 20 | 3.88 | 3.88 | 4.02 | 3.93 |
| 21 | 3.99 | 4.15 | 4.31 | 4.15 |
| 22 | 4.8 | 4.59 | 4.71 | 4.70 |
| 23 | 4.4 | 4.52 | 4.43 | 4.45 |
| 24 | 4.71 | 4.44 | 4.52 | 4.56 |
| Over-all | 4.26 | 4.15 | 4.23 | 4.21 |

These DENR EE materials are useful in facilitating the teaching-learning process. According to UW-Madison Continuing Studies (2021), instructional materials provide the core information that students will experience, learn, and apply during a course so these will help both the teachers and the students. It should be noted that the students taught with instructional materials perform better and higher than those taught without instructional materials (Adalikwu and Iorkpilgh, 2013). Relatedly, these DENR EE materials partly address the lack of teaching and learning resources related to EE (Kimaryo, 2011) because these provide the “what to teach” that the environmental educators need to possess (Eames and Birdsall, 2019).

Proposed Session Plans in English Education Mainstreaming Environmental Education

The integrative approach is deemed practical in the mainstreaming of EE in the English Education courses. In this manner, the environmental concepts and principles blend in with topics from various disciplines thus show the interconnectedness of many human affairs to the environment. The curriculum is therefore enriched with EE which undeniably is highly crucial and relevant at the present times. In this way, the pre-service teachers are provided with learning experiences in a formal setting which will provide impetus for their environmental responsible attitudes and behaviors. While this environmental integration may not yield immediately visible or perceptible concrete outcomes, it is supposed that the process can be a rewarding and meaningful experience to both the teacher and the students. Also, there can also be perceptible results of the integration provided that students will be given apt opportunities to demonstrate what and how much they have learned about the environmental concepts and principles infused in the lessons.

To facilitate the integration of environmental concepts and principles in the different lessons, learner-centered approaches were utilized. Founded on sound pedagogical principles, 4A’s approach, PERC model of learning and an eclectic approach were used in the proposed lessons. The 4A’s Approach is an approach composed of four phases: namely Activity, Analysis, Abstraction and Application. Under the Activity Phase, the learner is guided through the activity that s/he should accomplish where s/he is given the opportunity to have experiential and active learning. Thereafter, the result of the Activity is analyzed. Under the Analysis Phase, the learner undergoes the process of inquiring deeply into the results of the activity. Following the Analysis is the Abstraction Phase where students derive generalizations from the Activity and Analysis. In this portion, theory input/s, lecturettes or other activities may be included to explain further or recapitulate the various concepts covered in the learning episode. Lastly, under the Application Phase, the new learning or concept is applied to another activity or situation. These may include action plans, assignments, or evaluation activities.

The PERC learning model which is an innovation developed by the researcher is anchored on constructivist approach to learning and active learning. The learning model consists of the following phases: Present, Engage, Explore, Recall, Relate, Reflect and Create/Collaborate. **Present** is the phase that includes preparation for learning. This serves as the opener, motivation or presentation of the overview of the subject-matter. **Engage** is the phase when the students become mentally engaged in the concept, process or skill to be learned. **Explore** is the phase when the students identify and develop concepts, processes, and skills. The tasks under this phase allow the students to actively explore their environment or manipulate materials. **Recall** is the phase that allows the students to synthesis what they have learned from the previous learning tasks. During the phase, the students are provided tasks which will allow them to recall the highlights or salient points. **Relate** is the phase when students present and discuss the connections or implications of the concepts, process

or skills learned to personal experiences or real-life situations or issues. This phase includes tasks which will allow the student to have deep and principled understanding and appreciation of the relevance of what is learned in the lesson to personal and social realities. **Reflect** is a phase when metacognitive learning takes place. This includes learning tasks which allow students to have introspection on what is learned, its relevance, significance, and implication to present or future behaviours, decisions, undertakings, or concerns. Lastly, **Create and/or Collaborate** is the last but crucial phase in the lesson. During this phase, the students are given tasks which allow them to create meaningful outputs, either alone or in collaboration with other learners. The students therefore have hands-on activities and are able to produce authentic outputs which reveal meaningful learning. The tasks may be done in the classroom or may be taken home as homework or project. In the PERC model of learning, the evaluation is integrated under the different phases since this model considers assessment as learning, for learning and of learning.

In other instances when no specific approach is used in a lesson, an eclectic approach which derives good points from different approaches is used. In this case, the lesson may have the motivation, lecture-discussion, or presentation-discussion, individual or pair work and/or group work, recapitulation/generalization, and assessment. Although, the lesson is structured or designed in a general way, the learning tasks embedded in the different parts of the lesson are chosen to ensure active engagement of the learners.

Table 6. Subject-matter, environmental concepts and principles and point of integration in the sample English lessons

| No. | Course Title | Subject-matter | EE Concepts/ Principles | EE Integration |
|-----|---------------------------------------|---|--|---|
| 1 | Structure of English | Descriptive and Limiting Adjectives | Awareness of the Clean Air Act of 1999 (RA 8749) | Assessment Task – Students work by dyad identifying adjectives from paragraphs in RA 8749 |
| 2 | Afro-Asian Literature | Japanese Literature, Sample Tankas and Haiku | Environmental Principle 2 – All forms of life are important. | Relate Task - After watching a video on protected areas in the Philippines and discussing its status, students discuss how man has contributed to such status. Create/Collaborate Task – Writing Tanka and Haiku using PowerPoint presentation on protected areas in the Philippines as inspiration, and presenting them to the class |
| 3 | Afro-Asian Literature | Hindu Literature: The Rains, The Tame Bird and the Free Bird by R. Tagore | Environmental Principle 1 – Nature knows best. | Relate Task – Students relate the message of the poem “The Tame Bird Was in a Cage” to the plight of Philippine eagle and watch a brief video on the status of endangered bird species. Students reflect on the environmental principle 1 – Nature knows best; and reflect on the role of literature as an artistic means of reflecting realities. |
| 4 | The Teaching of Listening and Reading | CLIL – Content and Language Integrated Learning | Environmental Principle 6 - Ours is a finite earth. | Explore Task – Triad activity discussing DENR articles on various environmental issues. |
| 5 | The Teaching of Listening and Reading | Literature-based Lesson | Environmental Principle 3 – Everything is | Relate Task – Reacting to the message of Genesis in Reverse and relating it to real-life situations and the environmental principle that “everything is connected to everything else. |

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|----|---------------------------------------|--|--|---|
| | | | connected to everything else. | |
| 6 | The Teaching of Listening and Reading | Art of Conversation: Interview | Awareness on Environmental Compliance | Explore Task – Using DENR IEC material, students formulate possible questions for an interview and present outputs to the class. Create/Collaborate Task – Students conduct simulated interview of environmental experts or advocates. |
| 7 | Campus Journalism | News Writing | Environmental Education for Sustainable Development | Application/Assessment – Students read a DENR material as a springboard for writing a sample news article related to the environment. |
| 8 | Campus Journalism | Feature Writing | Earthquake Preparedness, Solid Waste Management, Clean Air | Application/Assessment – Students brainstorm by group on a DENR material (booklets/pamphlets) as a preparation for choosing a topic for a feature article. |
| 9 | Campus Journalism | Editorial Writing and Cartooning | Earthquake Preparedness, Solid Waste Management, Environmental Compliance Clean Air | Application Task - Students brainstorm by group on a DENR material (booklets/pamphlets) as a preparation for choosing a topic for an editorial article or editorial cartoon. |
| 10 | Campus Journalism | The Broadcast Media | Protection of the Ozone Layer | Explore Task – Students discuss global warming and ozone layer depletion and the role of media in influencing viewers after viewing a documentary. Relate Task – Student will relate the discussion on broadcast media and documentary on environment to local broadcasting industry Reflect Task – Students will reflect on the exercise of freedom of expression and accountability of broadcasting as agents of change and development along environment. Create/Collaborate Task – Differentiated Group Activity such as preparing radio commentary on a local environmental issue, simulated talk show featuring environmental issue like global warming, and making a brief documentary on the effect of global warming in the locality. |
| 11 | Remedial Instruction in English | Remedial Instruction | Environmental Principle 3 – Everything is connected to everything else. | Application Task - Students brainstorm by group on a DENR material (booklets/pamphlets) as a preparation for writing grammatically correct sentences. |
| 12 | Creative Writing | Poems about Nature | Environmental Principle 7: Nature is beautiful and we are stewards of God’s creations. | Explore Task - Students view PPT presentation on environmental principle that man is the steward of the environment and a DENR music video and write sample figures of speech about the environment. Reflect Task – Students make a word cloud on the following: Man is the steward of the environment; and Man is responsible for protecting the environment. |
| 13 | Creative Writing | Writing Story for Children of All Ages | Proper Waste Management | Relate Task – Students relate chosen character, setting and plot to the theme “cleanliness” or love and respect for the environment. |

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|----|---------------------------------|--|---|---|
| | | | | Reflect Task – Students will reflect on the stories they wrote, and how it will be used as vehicle for teaching values such as cleanliness and love and respect for the environment. |
| 14 | Speech and Theater Arts | Public Speaking and other Speech Situation: Speeches for Different Occasions | Environmental Principle 7: Nature is beautiful, and we are stewards of God’s creations. | Explore Task – Students use DENR materials on environment and man’s relation to it as inputs for writing draft speeches. Relate Task – Students relate the significance of public speaking in promoting the environmental principle that man is the steward of the environment. Create/Collaborate Task – Revision of draft speeches related to the environment and Delivery of speeches. |
| 15 | Translation and Editing of Text | Translation Methods | Proper Waste Management | Explore and Reflect Tasks – Students read the story “ <i>Kabit-kabit na Kwento</i> ” and reflect on its message. Create/Collaborate – Students study DENR materials on waste management, translate them and present outputs to the class. Students will be asked to share their realizations about proper waste management after presentation of outputs. |

The integration of environmental concepts and principles is done primarily using the DENR materials. Although other materials related to the environmental concept or principle are included, the DENR materials represent the majority of the materials intended to be used in the proposed lessons. These materials are found to be appropriate, relevant and highly flexible to be used in formal instruction in the Teacher Education program. These lessons show that EE can be taught in different disciplines such as English courses and goes beyond integration from biological perspective (Pasin and Bozelli, 2019), after all teachers of different specializations other than environmental science or EE may effectively teach environmental lessons as integration in their classes (Emmanue and Ambe, 2014). Over-all, these proposed lessons is a response to RA 9512 so that locally the issue on lack of teaching and learning resource on EE is partly addressed (Kimaryo, 2011). The specific topics in English Education courses, environmental concepts and principles integrated, and the EE integration are summarized in Table 6. These topics served as a guide in choosing and designing lessons which integrate environmental concepts and principles.

The assessment of the 15 session plans in English integrated with EE concepts or principles are all rated excellent with ratings ranging from 4.25 to 4.84. In terms of the five criteria, the 15 session plans as a whole are rated excellent with rating ranging from 3.42 to 3.93 with highest rating for content of the EE integration. In terms of the formulation of the learning outcomes, 13 out of the 15 session plans have a rating of 4.0 or excellent which means that the outcomes were formulated observing the characteristics of good learning objectives such as specific, measurable, attainable, resource-bound, and time-oriented. The session plans with ratings lower than 4.0 were those which did not explicitly capture the learning outcomes pertaining to environmental education. These outcomes are considered appropriate and correct for the subject-matter.

In terms of the content specifically the integration of environmental concepts or principles, 13 out of the 15 session plans have a rating of 4.0 which means that the integration is explicit and clear. Three session plans have a rating of 3.67 or excellent which means that the EE integration is explicit, but it may not be as clear and spontaneous as the other session plans. Over-all, the session plans are rated 3.93 or excellent, the highest rating among the five criteria. These results mean that the mainstreaming of environmental education in

selected topics in the specialization courses are deemed logical, coherent, cogent and acceptable. Thus, from experts' perspective, these innovative lessons in English Education courses are ready for implementation.

Table 7. Assessment of EE- enriched session plans in English Education

| Session Plan No. | Assessment Results by Criterion | | | | | Over-all Ratings | Interpretation |
|------------------|---------------------------------|-----------|-----------|-----------|-----------|------------------|----------------|
| | 1 | 2 | 3 | 4 | 5 | | |
| 1 | 3.33 | 4.00 | 3.33 | 3.00 | 3.33 | 3.40 | Excellent |
| 2 | 3.67 | 4.00 | 3.33 | 3.33 | 3.67 | 3.60 | Excellent |
| 3 | 4.00 | 4.00 | 3.67 | 3.33 | 3.67 | 3.73 | Excellent |
| 4 | 4.00 | 4.00 | 3.67 | 3.67 | 3.67 | 3.80 | Excellent |
| 5 | 4.00 | 4.00 | 3.67 | 3.67 | 3.67 | 3.80 | Excellent |
| 6 | 4.00 | 4.00 | 3.67 | 3.33 | 3.67 | 3.73 | Excellent |
| 7 | 4.00 | 4.00 | 3.33 | 3.33 | 3.67 | 3.67 | Excellent |
| 8 | 4.00 | 3.67 | 3.33 | 3.33 | 3.67 | 3.60 | Excellent |
| 9 | 4.00 | 3.67 | 3.33 | 3.67 | 3.67 | 3.67 | Excellent |
| 10 | 4.00 | 4.00 | 3.67 | 3.67 | 4.00 | 3.87 | Excellent |
| 11 | 3.67 | 4.00 | 3.67 | 3.67 | 3.50 | 3.70 | Excellent |
| 12 | 4.00 | 4.00 | 3.67 | 3.33 | 3.33 | 3.67 | Excellent |
| 13 | 4.00 | 4.00 | 3.67 | 3.67 | 3.67 | 3.80 | Excellent |
| 14 | 4.00 | 4.00 | 3.67 | 3.33 | 3.67 | 3.73 | Excellent |
| 15 | 4.00 | 3.67 | 3.33 | 3.00 | 3.33 | 3.47 | Excellent |
| Over-all | 3.91 | 3.93 | 3.53 | 3.42 | 3.61 | 3.68 | Excellent |
| Interpretation | Excellent | Excellent | Excellent | Excellent | Excellent | Excellent | |

Legend: 1- Learning Outcomes, 2- Content (EE Integration), 3- Strategies/Procedure, 4- Assessment, 5- Conventions

In terms of the strategies and procedures, 9 out of the 15 session plans have a rating of 3.67 while six session plans are rated 3.33 or excellent. The session plans are rated 3.53 or excellent. In this section, the different learning tasks are spelled out from beginning until the end of the lesson. Generally, the PERC learning model and the 4As approaches are used in these session plans. The assessment of the jurors reveals that the learning tasks, their sequence as well as the details provided are highly acceptable and can serve well as a guide to a teacher-implementer.

In terms of assessment, six session plans are rated 3.67, 7 are rated 3.33 which mean excellent, and two are rated 3.0 or very good. Over-all, the session plans are rated 3.42 or excellent. The results imply that the assessment techniques used in the session plans are designed to attain the learning outcomes. The lower ratings in assessment compared to other criteria such as learning outcomes and EE integration may be explained by the absence of rubric attached to the session plans when assessed by the jurors. It is important to note that generally, the comments of the jurors pertain to attaching or including the rubric to be used in assessing the performances or outputs of the students.

Lastly, in terms of convention such as correct usage, spelling and mechanics, one session plan is rated 4.0, ten are rated 3.67, one is rated 3.5 and three are rated 3.33 or excellent. The minor errors noted by the jurors such as in subject-verb agreement (like missing s or es, d or ed in verb), spelling and mechanics are due to the encoding errors since the writers of the

session plans were generally not the encoders of the documents, and the unedited version of the documents were the ones submitted to the jurors for assessment. To address the observations of the jurors, the errors were rectified, and the documents underwent editing and proofreading to ensure that conventions are fully observed.

The comments and suggestions of the jurors may be classified in terms of the criteria for assessment such as those pertaining to learning objectives, content (including the EE integration), strategies/procedure, assessment, conventions, and materials to be used. In terms of the learning objectives, suggestions generally pertain to the inclusion of EE in the learning outcomes or explicitly mentioning the environmental concept or principle to integration. There also comments which commend the inclusion of EE in the learning outcomes such as in session plan on the Broadcast Media which states: “The Learning Outcomes explicitly states the role of media to change and development especially those related to environment. This is a strong indication of integration of the EE concept in the lesson.”

In terms of the content specifically the integration of the environmental concepts and principles, the jurors noted that these are explicitly mentioned. A few clarificatory questions/comments were raised such as “...what of this would you want to focus - the writing of feature stories to explain environmental projects and programs as placed in the Learning Outcomes - state it also in the part "Key Concepts."

In terms of the strategies and procedures, the suggestions commend the different learning tasks as appropriate or relevant in the attainment of key concepts or learning outcomes. For instance, one juror who assessed the session plan on Writing Nature Poems mentioned that “Activities in the Session Plan from start to end are very good – they will all assure the attainment of the Learning Outcomes and even the development of values relative to appreciation of nature as well as love and care for the environment.” Another salient comment on the session plan in Art of Conversation: Interview made by one juror is: “The conduct of Interview is a good means to develop one's skills in formulating questions, appropriate feedback, and observing proper decorum as you have so stated in the Learning Outcomes. Continue such type of activities to develop listening and speaking skills of learners.” However, a few comments on deepening the discussion of the EE concepts or principles throughout the lesson was given. For instance, one juror referring to the session plan in Feature Writing mentioned “Discussion of the EE concepts/skill may be included in other parts of the steps/session task not only in the application part.”

In terms of Assessment, the comments generally mention the appropriateness of the assessment techniques and tools to be used, however, these emphasize the inclusion of the rubric which will be used to assess either outputs or performances of the students. Some comments for the session plans on Translation and on Writing Nature Poems say: “Combine Assessment with Create/Collaborate. Include the rubric's criteria in assessing the translated text from English to Filipino and Bikol or vice-versa, and the corresponding rating scale” and “Assessment must be combined with the steps Create/Collaborate. Include under the session tasks the criteria in assessing the nature poem written by the student.”

In terms of convention, the jurors noted corrections or errors in usage, mechanics or spelling which are generally due to encoding errors. Sample comments on conventions are: “There are corrections on mechanics and correct usage and spelling” and “There is minimal correction or correct usage and mechanics.”

Lastly, in terms of the materials, the jurors generally suggested to include or attach the materials whether they are print materials or non-print materials such as PowerPoint presentations or video clips. The suggestions cover both the materials dealing on the topic of the lesson or on the environmental concept or principle to be integrated. However, there

are also comments which acknowledge the inclusion of the materials to be used. This is supported by some of the comments like “Only video on CLIL as a teaching approach is provided. All the EE materials needed like: (D008), (D003), (D004), (D005) were not found”; “There are available materials (PPT) for the development of the EE concepts and skills;” and “All the six PPT materials available are on editorial cartooning and writing together with HINDU Literature, but none is found for the development of EE concepts /skills as stated in the learning outcomes of the session plan.”

Generally, the 15 session plans in English are rated excellent and are therefore acceptable and ready for use. Incorporating the observations, comments and suggestions of the jurors, these instructional resources which integration EE can be considered as laudable addition to the existing literature on environmental education for teacher education in the Philippines and even beyond. Similarly, these instructional resources are worthy innovation in terms of curricular enhancement and curricular development for teacher education, and can be considered as “greening the curriculum” (Emmanue and Ambe, 2014; Ajiboye and Ajitoni, 2008; Ormond, Zandvliet, McClaren, Robertson, Leddy and Metcalfe, 2014; Chimbodza and Ongevelle, 2004; Artun and Ozsevgec, 2016; Cutter-Mackenzie and Edwards, 2010) which use effective EE strategies such as explicit provoking of student reflection, linking of EE to students’ home lives, student-centered learning, active and experiential engagement in real-world environmental problems, and cooperative group work (Stern, Powell and Hill, 2013). Likewise, these can aptly serve as appropriate materials in combination with other relevant EE materials from DENR and other sources for nurturing future eco-mentors specializing in English because relevant instructional materials help students perform better and higher than those taught without instructional materials (Adalikwu and Iorkpilgh, 2013).

CONCLUSION

The mainstreaming EE in the English Education curriculum is a significant curricular innovation. Evidently, it supports the attainment of the goals of RA 9512 and addresses the lack of teaching and learning resources in EE (Kimaryo, 2011). Based on the review of the English Education curriculum, the entry points for EE integration is adequate. The DENR EE materials used as instructional materials for EE integration in the proposed lessons are found to be appropriate, relevant, highly flexible, and useful. The EE integration can be done in the different parts of the lesson such as the motivation, lesson proper, assessments whether individual or group in nature, and homework. The proposed session plans which were all rated excellent are highly acceptable and highly relevant materials for the mainstreaming of EE in the English Education curriculum. These materials support the transversality of EE in the school curricula (Conde and Sanchez, 2010) specifically in English Education. Based on these conclusions, it is recommended to pursue the crafting of policy on the transversality of EE in the Teacher Education curriculum, and to further validate the session plans through pilot-testing. It is also recommended to develop a toolkit consisting of the proposed lessons and the DENR EE materials and other EE materials used which can be disseminated to Teacher Education Institutions (TEIs) nationwide. Future research for consideration include addressing gender issues related to the EE integration in the lessons, materials and assessment tools, and development of other lessons using other strategies, and capturing place as a dimension for contextualization of EE (Condeza-Marmentini, 2020), environmental philosophies (Haydock, and Srivastava, 2019), time spent on the program as positive effects increase with time (Lindemann-matthies, 2010), promotion of collective responsibility in EE (Aarnio-Linnanvuori, 2019), and examination of EE practice innovations at the group rather than individual level (Li and Kransy, 2019).

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