

Original Research Paper

A Design of Environmental-Based Learning to Instill Land Ethics in the Learners

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Article history

Received: 16-08-2016

Revised: 25-12-2016

Accepted: 26-12-2016

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Abstract: Though environment is universal, there are different perspectives under which it can be described. For instance, in learning, an environment is viewed as one of the learning components and aspects which help to actualise learning. An environment in its empirical form has potential characteristics which facilitate transformational learning efforts. This paper is based on the argument that, if a learning environment can help to actualise learning, it can as well promote land ethics. The author also argues that since everybody lives in an environment and on land, environmental ethics should be made one of the teacher competencies, since it is teachers who instill the necessary values, shape attitudes and mold behavior of students. In this regard, the objective of this study is to identify environmental potentials and to recommend an environmental-based learning design for educationists in both schools and in an out of school setting. The study makes use of documented records focusing on ethics, land ethics, the environment and learning design. The authors acted as the main instrument during the data collection and data analysis processes. This has revealed that the environment has two potentials, namely the driving force and the restraining force. The driving force acts as a source for teaching and learning in forms of media for learning and learning tools, while the restraining force acts as an element for promoting tolerance behaviors among learners or students. This proves that an environmental-based learning design is a foundation for actualizing and promoting good values and behavior in the learners.

Keywords: Behavior, Design, Environment, Environmental-Based Learning, Ethics, Land Ethics, Learners or Students

Introduction

Learning and education are two inseparable concepts; both concepts are complementary to each other in generating learned and educated individuals. Learning has been the core of education that is reflected in the educational interaction within the process of learning activities. The educational interaction has two main missions, namely performing the habituating process and performing the developing or the changing process. The habituation process is conservative-role oriented, namely to implant the values, the norms and the ethics as a form of character education. On the other hand, the developing or the changing process refers to the process of transforming the learning participants' potentials into certain competencies so that they will have the intelligence in reasoning, performing attitudes and taking actions (behaving).

The existence of environment for the learning is very important because the environment has the driving force for the success of education and learning. Environment has been one of the learning components (Ningrum, 2009), has been the means of actualizing the learning results (DePorter and Hernancki, 2007) and has been the knowledge formation (constructivism paradigm). Therefore, empowering the environment within the learning should be done in order that the learning process and the learning results will be meaningful both for the learning participants' self-development and the environment itself.

Environment has been one of the learning components in addition to the other components namely: Teachers, learning participants and objectives (Syaodih, 1997). Environment might be viewed from two aspects namely from the learning means and from the learning

source. Environment as the learning means would be defined as the place where the learning process is conducted or the place where the learning results is transferred. Environment as the means of learning process refers to the micro-environment, while environment as the means of learning transfer refers to the macro-environment (Dhority, 1991). Similarly, the constructivistic learning paradigm regards the environment as the knowledge source and the learning environment becomes the place where the social interaction occurs among the learning participants.

For the learning participants, learning by means of empowering the environment has been a process of introducing, knowledge attaining and awareness providing that they are the parts of the environment. Environment as the learning source is to benefit the environment itself as the sources of learning materials, learning tools and learning targets. However, environment has potential characteristics so that it has been important that the teachers have competencies in transforming the environment into the learning source. One of the simplest form in benefiting the environment within the learning process is that the teachers provide examples that have been taken from the environment. Therefore, there should be a requirement that these examples should be familiar to the learning participants so that the examples will provide great contributions in understanding the learning materials.

According to Maister (1997), environment has the driving force and the restraining force. The driving force serves as the environmental benefits and the provider capacity for the learning participants while the restraining force serves as the environmental risks (Soemarwoto, 1989; Soedomo, 1989). In order to address the potential characteristics, the teachers should have the capacity in empowering the environment within the learning since the environment has and conveys certain messages (DePorter, 2007). The environment that has the driving force should be benefited optimally so that the environment will empower the learning effectiveness and effectiveness. On the other hand, the environment that has the restraining force should be manipulated in order that the restraining force will decrease.

Nowadays, the issues of environmental degradation has been the topic of concern for multiple parties including the academicians, the bureaucrats, the practitioners, the experts and even the mass. All parties are aware that the environmental damage will influence the nature balance, the nature, the environmental sustainability and the living creatures including the humankind. Similarly, the driving force of the earth as the living space and as the living source for its inhabitants will be impacted. The environmental damage has been a global phenomenon because the environmental degradation occurs in almost all parts of the world.

The efforts of handling and overcoming the environmental damage have been done by many parties in multiple ways and the efforts of anticipating the environmental damage have been supported preservation and conservation have been conducted as well but these efforts have not been in balance with the existing damages. We have been aware that the factors that cause the environmental damage are not only the errors in the environmental management but also the natural ones. However, the environmental damage that occurs in the local, regional and global settings have been suspected to be cause by the human factors especially the high rate of inhabitant growth.

Why does the inhabitants or the humankind become the biggest contributor to the environmental damage instead of the natural factors? The Anthropocentrism view has provided a detailed answer to that question. Keraf (2006) assumes that in order to restore and to preserve the nature there should be improvement on the human's point of view and interaction toward the nature. The environmental crisis becomes the important base of the land ethics that regards the earth as a moral subject and the humankind as one of members in the earth community (Leopold in Keraf, 2006).

Based on the above reasons, education has an important role in preparing a generation that regards the earth as a moral subject and that understands that earth has the right to develop naturally. Therefore, the learning should be designed in such a way that it will implant the attitudes and the behaviors of land ethics.

Materials and Methods

The authors used a qualitative approach with the aim to find an appropriate theory, concept and discover opinions of the local communities in relation to experts regarding the environment, land ethics and teaching ethics.

This study is a case study which aims to dig deep into the conditions of land ethics and understand its existing models.

Then, the study would serve as a theoretical base in identifying the environmental characteristics and would recommend the environment-based learning design in order to implant the attitudes and the behaviors of the land ethics. In the data and information gathering activities, the researcher would serve as the main instrument.

The study object consisted of three aspects namely: The environment, the land ethics and the learning design. The data and the information that had been gathered would be analyzed in a descriptive-qualitative manner.

The environment-based learning design that would be used for implanting the attitudes and the behaviors of the land ethics and that would be recommended was still hypothetical.

Environment-Based Learning Design for Implanting the Land Ethics

The Nature of Environment in the Learning

Earth has been a living space but not all of the earth surface has been the living space for the humankind. Based on the geographical studies, such phenomenon has been written in the life-layer concept that provides us an illustration that only the potential part of earth surface that might be the living space for the humankind (living-space concept). Contemplating on the two concepts, naturally the environment has characteristics that provide the opportunities and the challenges for the human life.

Similar situation also applies for the environment in the learning. Learning as a system has several components namely: Objectives, materials, methods, learning participants, teachers, learning resources, media, evaluations (Ningrum, 2009) and learning evaluations (Dhority, 1991). These components had functional interactions in the learning process in order to meet the objectives both the academic ones and the accompanying ones. In order to show the meaningfulness of the environmental benefitting, the environmental benefitting should be started from the environment that has been familiar for the learning participants and then the activities might be expanded into the wider environment. This situation would reflect that the learning applied the following principle: Start from the learning participants' prior knowledge then accommodate the learning to attain the new knowledge. The learning activities were the means that would facilitate the learning participants to develop, to attain and to use the knowledge so that the learning participants would attain the knowledge by means of the learning experiences simultaneously and continuously.

Learning has been a complex phenomenon and every single activity in the learning has been meaningful. Every word, thought, action and association as well as how far the teachers would manipulate the environment, the presentation and the teaching plan would describe the learning process (Lozanov, 1978). One of the messages conveyed by the statement was the importance of benefitting the environment in the learning, both the class environment and the wider environment. Empowering the environment in the learning would be a process that demanded the teachers' knowledge and capacity in order to provide the driving force for the learning effectiveness.

The existence of the environment, both the internal and external class environment as well as the virtual environment, has been a potential that might be turned into a meaningful learning component. In other words, turning the environment as a learning component would demand a meaningfulness so that the learning participants would attain learning experiences and learning results that would empower them in performing

adaptation and interaction with their environment. The learning activities involve interactions between the learning participants and their environment; as a result, they would attain the competencies for performing adaptation and interaction with their environment both in the social one and in the natural one.

Empowering the environment as the learning means might support the learning activities and increase the learning participants' memory. The environment was as follows: Classroom, position arrangement of the learning means, learning media and learning tools, classroom cleanliness and music (DePorter and Hernancki, 2007). The teachers' role as the class manager, the capability in providing variation and the mobility (Uzer Usman, 1999) integratively showed the teachers' capability in empowering the class environment. As a class manager, teachers might create new class environments in which they periodically rearranged the position of the learning means. In addition, the teachers should also provide living plants and keep the classroom cleanliness in order to stimulate the comfort in the learning process.

Teachers might also bring the music into the class without affording a set of musical instruments; instead, they might use their capability in providing variation. The presence of music in the classroom might be modified by means of teachers' various voice and intonation appropriately; their voice should be heard throughout the classroom, the sentences that they read should be clear, the teachers should make use of inviting sentences, the teachers should provide the problematic sentences, the teachers should be readily understood, their sight should be directed to all parts in the classroom and to all of the learning participants, the teachers should provide motivating sentences and the teachers should appreciate every learning participants' efforts. These aspects would be able to create the class environment that appreciated the learning participants' presence; as a result, the learning participants would be happy everytime they performed the learning activities.

The teachers' mobility in the classroom might provide new situation to the learning participants. The teachers were the actor whose words, movements and mimic would be observed and watched by the learning participants. The teachers' mobility would like a monitoring system intended toward all of the learning participants who both sat in front of and in back of the classroom. In addition, the interaction and the communication pattern between the learning participants and the teachers might provide fun and challenging learning atmosphere for the learning participants.

The capability of providing variations in the aspect of learning methodology refers to the capability of providing the environment into the classroom (the source) and the classroom exhibition. Providing the source will give learning experiences to the learning participants in exploring the knowledge from the original

source. On the other hand, classroom as the place where the exhibition takes place will be the means for expressing the learning participants' creativity and art product. The most important aspect from both matters would be the fact that the learning participants attained the direct learning experiences.

The optimization of teachers' role as the class manager, the capability of providing variation and the mobility might turn the classroom environment into a comfortable, fun, challenging and satisfying learning medium for the learning participants so that they would have satisfaction in attaining the learning experiences and the learning results. According to Whitherington (1986, p.111), the forms of behaviors were learned and were influenced by the environment. In order that the learning environment would form the normative behaviors, the teachers should turn the classroom into a conducive environment as the means of learning activities for the learning participants.

In empowering the environment as the learning source, teachers sometimes had difficulties in attaining the learning resources. Actually, the teachers abandoned the environment nearby the schools and the wider environment. Using the environment as the learning resources would be facilitating the learning participants in observing and identifying the real objects (realita). Such condition might support the learning participants' reasoning development, the learning-by-doing activities and the direct-learning experiences.

Learning resources referred to anything both objects and people that might support the learning activities in order to attain the learning effectiveness and efficiency. According to Fly (1980), learning resources were those data, people and/or thing, with which person could interact in order to learn. There were four groups of potential learning resources for the learning process namely: Things, human, scientific papers and environment. Environment as the learning resources consisted of physical environment, cultural environment and social environment (Ningrum, 2009).

The existence of environment as learning resources was still potential. Therefore, the teachers should have capability in empowering the environment so that the environment would have practical-educational values for the learning itself. The learning activities had been an interaction between the learning participants and their environment so that the learning participants would attain knowledge and capability to interact with their environment. The environment that might be turned into the learning sources should be the one that had the driving force toward the learning process and the learning results.

Empowering the environment as the learning medium. Learning medium has been one of the components that provides the actual contribution toward the attainment of effectiveness and efficiency in the

learning activities if the media would be appropriate and be optimum in terms of usage. Medium has been an assisting tool for the learning activities as having been proposed by Smith (1970, p.83): Devices refer to the physical requirement used to facilitate the learning process. In addition to serving as the assisting tool, the presence of medium in the learning activities served to draw the attention and to develop the interest so that the learning participants would be able to develop their learning motivation.

The success of learning participants in attaining the learning experiences and the learning results would depend on the learning activities that they performed. According to Bruner (1960), the learning activities might be performed in three ways with different results. The three ways would be as follows: Symbolic learning, iconic learning and inactive learning. The effective learning activities would be the ones that made use of the three learning ways. However, the learning activities that would have the connectivity with the learning medium would be the iconic learning in order that the sight would be functioned (prober Chine: I see I remember). In other words, the learning activities by means of learning medium would provide durable learning results in the mind of the learning participants.

The teachers' role in learning in relation to the learning medium would be the mediator. According to Ningrum (2009, pp.33-34), the competencies that the teachers should have would be as follows: (1) to understand the types and the variations of learning medium; (2) to understand the functions and the benefits of learning medium for the learning activities; (3) to select the learning medium for the learning activities; (4) to provide the learning medium in the learning activities; (5) to use the learning medium optimally; and (6) the provide the necessary learning medium.

The use of learning environment as the learning medium might be conducted by providing the environment into the classroom, the indirect environment observation and the environmental analysis.

Findings and Discussion

Providing the actual environment into the classroom might be done by means of modelling. Films, photos, pictures, miniatures, charts and flowcharts might represent the presence of actual environment in the classroom. The indirect observation would refer to the phenomena observation and the note-taking toward phenomena, events and objects resulted from the environmental modelling. On the other hand, the environmental analysis would refer to the review toward the data, the phenomenon and the events resulted from the environment. In other words, the environment would be presented in the form of data, pictures or photos.

During the learning and the reasoning activities, the learning participants were associated to the visual, auditorial and kinetic modality. The three modalities provided information for the reasoning activities (DePorter, 2007). The presence of pictures, affirmative posters and color uses became the assisting tool for the learning participants in uncovering the knowledge and the experience, in finding the information and in connecting the information to the learning materials so that they would have the convergent-linear reasoning pattern. The use of appropriate learning medium (learning objective and learning materials as well as the learning participants' characteristics) and the optimum empowerment of the learning medium might assist the learning participants in performing the critical-analytical reasoning.

The contextual learning belonged to the group of constructivistic learning that emphasized the importance of learning environment for the formation of learning participants' knowledge. If the teachers did not use the environment as the learning resource or the learning medium, then the teachers might present the imaginative environment and might use the virtual environment (Ningrum, 2009) in which the learning activities were still performed in the classroom. Therefore, the teachers were demanded to have creativity in empowering both environment.

Contextualizing the learning activities by means of imaginative environment would be benefitting the learning participants' knowledge and experience regarding certain places. The contextualization demanded that the learning participants' knowledge and experience should be similar; therefore, the teachers should make use of the surrounding environment. The teachers should invite the learning participants to explore the surrounding environment. For example, the teachers might invite the learning participants to recollect their experiences when they were in the beach and such invitation might be performed specifically for discussing the abrasion, the type of beach, the beach community members' activities or the sea potentials.

In addition, the teachers might also take the examples from the environment both the surrounding one and the wider one. By doing so, the teachers would have contextualized the learning activities by means of the environment. The teachers should provide examples that had been familiar to the learning participants from the environment although the environment might be far away and had not been visited by the learning participants. For instance, figures in advertisements might be taken as the examples of tea plantation, farm or damaged forest. Meanwhile, another example of contextualizing the learning activities by using the virtual environment would be benefitting the Internet. The use of Internet in the learning activities would demand the appropriate learning strategy.

The teachers' competence in benefitting the environment was heavily associated to the mastery of learning approach and learning strategy. Environmental approach referred to the environment as the learning target, the learning resource and the learning medium (Karli, 2002). Thereby, the environmental approach would be one of the learning approaches that might be used in benefitting the environment so that the environment would have empowerment toward the achievement of learning effectiveness.

The Land Ethics

According to Magnis-Suseno (1987, pp.14-16), ethics were heavily associated to the morale that might assist us in being responsible to our life. Ethics had been the systematic reasoning regarding the morality that would generate a critical and more fundamental understanding. Then, there were four reasons why the ethics had been important namely: (1) to understand the pluralistic communal life; (2) to understand the unlimited transformation time for the society; (3) to encounter the ideological challenges critically and objectively; and (4) to improve the religiosity and the solidarity.

The land ethics were heavily associated to the human's morale and behavior toward the earth. Multiple cases of earth damage, such as the global warming that caused the decreasing ozone layer, the contamination of sea by the spilled oil, the melting ice in the both earth poles, the coral damage, the incidents of La Nina and El Nino, had been the indicators of disturbance toward the natural balance. Such condition in the long term would decrease the earth's driving force as a living space for its inhabitants.

The land ethics had been regarded as a guideline in answering the environmental crisis through the human's respect toward the earth and the living creatures inside. Each individual would be responsible toward the earth healthiness by preserving the integrity, the stability and the beauty of the biotic community. The attitudes and the behaviors in the land ethics showed the caring attitude toward the preservation of the earth's driving force toward its inhabitants. Inclusionism had been a definition that regarded that human had been the part of nature (Daldjoeni, 1982) so that human had duties and responsibilities for preserving the harmonious interaction between the nature and the other creatures.

In accordance with the increasing number of inhabitants, the definition had a tendency to move slightly to the exclusionism. Human with the technology was able to exploit the life resources; as a result, the life resources would be in danger. Thereby, most of the environmental crises had been caused by the human behaviors toward the nature. The ethics of anthropocentrism regarded human as the center of the universe and as individual that had values, while the

nature and its inhabitants became the instrument for the fulfillment of human needs (Keraf, 2006).

Keraf (2006, pp.143-157) proposed nine morale principles that would be relevant to the environment namely: (1) respect to the nature; (2) responsibility; (3) cosmic solidarity; (4) care and affection toward the nature; (5) not threatening the existence of living creatures; (6) living the life in simplicity and accordance with the nature; (7) justice; (8) democracy; and (9) morale integrity. The nine principles then would be called as the land ethics.

The land ethics appeared due to the environmental crisis that had been suspected to be caused by the humankind behaviors toward the nature. The earth and its inhabitants were viewed as the moral subjects instead of objects that would be exploited due to the economic importance and the human satisfaction. The principle of the land ethics was as follows: A thing is right when it tends to preserve the integrity, the stability and the beauty of biotic community; it is wrong when it tends the otherwise (Leopold in Keraf, 2006).

The land ethics emphasized the attitudes and the behaviors of individuals, groups, societies and nations based on the morale or the ethics that had orientation toward the earth as the morale subject. The behaviors and the attitudes that preserved the integrity of earth community, the stability of earth's driving force and the life harmony in the earth would be referred as the land ethics. However, the land ethics were not necessarily possessed, expressed and actualized by each individual; instead, the land ethics were possessed, expressed and actualized by means of process. The process of identifying, realizing and admitting the earth nature and the universe life was conducted by means of education and learning. The implanting of attitudes and behaviors in the land ethics should be done by means of habituation in the learning process. therefore, it had been important to design a learning process that would implant the values, the attitudes and the behaviors of the land ethics in order that the earth as the human's living space would be preserved.

Learning Design

Learning design had been the procedures of systematic teaching development (Sagala, 2005), starting from the planning, the implementing and the evaluating. Designing the learning process by benefitting the environment might provide contribution toward the appreciation of the environment, the reasoning capacity, the concept formation, the attitude formation and the skill development (Bloom, 1956). Therefore, it had been important to design the environment-based learning.

Designing the learning by benefitting the environment should pay attention to the three factors namely: Competencies or learning objectives, learning

participants' characteristics and learning materials. If the learning would implant the attitudes and the behaviors of land ethics, then the learning should be turned into the learning objective or the accompanying impact. In addition, the teachers should pay attention to the components of learning design namely: Diagnosis of learning participants' needs, objective formulation, content selection, content organization, learning experience selection, learning experience organization and learning evaluation (Taba, 1962). On the other hand, according to Sanjaya (2010) there were six learning components namely: Learning objectives, learning analysis, learning strategy, learning materials and assessment.

Naturally, learning consisted of context and content which had mutual association and influence (DePorter, 2007). The context included class environment, atmosphere and other learning components that had mutual functional interaction so that the context would provide learning experiences and learning results for the learning participants. On the other hand, the content had been the substance of learning materials that provided new knowledge and competence achievement for the learning participants.

The teacher competencies in empowering the environment were shown in the following sequential activities as follows: (1) identifying the existence of the environment; (2) classifying the environment into two groups namely the driving-force environment and the restraining-force environment; (3) selecting the driving-force environment; and (4) deciding the environment based on the objective, the content (teaching materials) and the learning strategies that would be implemented.

The use of environment as the learning resource should show its function in three domains, namely the learning activities, the learning participants and the teachers (Ningrum, 2009). The function of environment for the learning activities would be to assist the fluent learning process so that the environment would be able to increase the learning efficiency and effectiveness. Then, the function of environment for the learning participants would be to provide learning motivation, to provide learning experiences and to assist the learning participants in understanding the learning materials comprehensively so that the learning participants would be able to attain the optimum learning results. Next, the function of environment for the teachers would be to assist the teachers in explaining the learning materials, to provide the time and effort efficiency and to increase the teachers' skills in empowering the learning resources.

The empowerment of environment in the learning might be done by benefitting the environment as the learning resource. As the learning resource, the environment would serve as the teaching material resource, learning medium resource, learning tools resource, learning target and learning means. Designing the learning by benefitting the environment as the

learning resource should pay attention to the learning participants' needs, by deciding the learning materials that would meet the needs, by deciding the learning experiences for the learning participants and by assessing the achievement of their learning results.

The environment-based learning design that can be used for implanting the attitudes and the behaviors of the land ethics to the learning participants and the environment-based learning design can be developed in two ways: The land ethics that can be developed as learning substance and the land ethics that can be developed as the accompanying impact. There are differences in the two ways and the difference is found in the formulation of learning objectives. If attitudes and behaviors of land are the learning substance (the learning material), then the attitudes and the behaviors should be written into the learning formulation. In other words, the environmental ethics had been the part of basic competence that had been written in the subject topic curriculum or syllabus. However, if the attitudes and the behaviors of the land ethics would be the accompanying impact then the attitudes and the behaviors should be written in the learning activity procedures as a process of habituation.

The learning design that would be developed here was the environment as the learning resource on the aspect of environment as the learning material resource. Therefore, it had been very important to pay attention on several matters as follows: (1) the identification of basic

competencies that were contained in the curriculum or the syllabus; (2) the selection on the competencies that had association to the land ethics; (3) the elaboration from the competencies into the indicators; (4) the formulation of learning objectives (containing the attitudes and the behaviors of the land ethics); (5) the stipulation of learning materials; (6) the identification and the decision on the environment that had the driving force toward the learning materials and the achievement of learning objectives; (7) the development of learning materials; (8) the decision on the learning strategy; and (9) and the development of assessment instrument.

The teaching materials should be designed systematically, if they are to assist the teachers in performing the learning facilitation in order to enhance learning of participants. Teaching and learning material development should pay attention on three functions, namely: function of the teacher, function of the learning participants and the assessment function. The function of teaching materials for the teachers would be to serve as the guideline in performing the learning activities for the learning participants. Then, the function of teaching materials would be to serve as the guideline in the learning activities and in the learning substance. Next, the function of teaching materials for the assessment would be to serve as the guideline in measuring learning participants' level of mastery toward the learning materials.

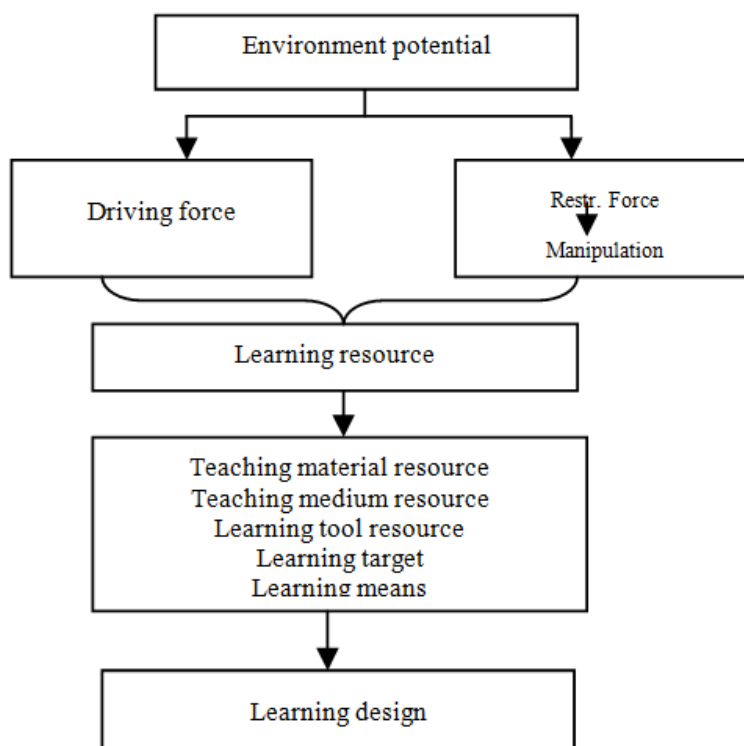


Fig. 1. The empowering of environment in the learning

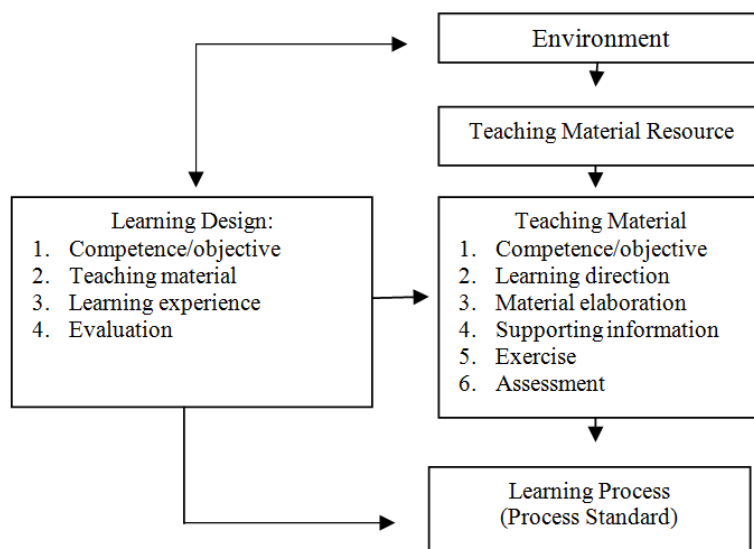


Fig. 2. The design of environment-based learning

The figures above both 1 and 2 have elaborated on the processes of learning and the role of learning environment in promoting land ethics. In Fig. 1 for instance, it is shown that learning potentials are part of learning environment which in turn promotes learning as a driving force and its setting has the potential of manipulating or enhancing learning in a positive direction.

However, successful learning will always depend on learning resources which include teaching materials, medium for teaching and learning, teaching and learning tools, learning targets and means of learning. All these are the things which facilitate successful learning and development.

In Fig. 2, it only differentiates the natural environment from the learning environment. It shows that learning environment is comprised of two things, that is learning design and teaching materials' resources. The learning design involves competences or readiness to learn, objectives of the learner, teaching and learning resources, learning experiences and evaluation, while teaching material resources comprise of teaching materials, well designed teacher objectives, learning and teaching guidelines which as a direction for learners, elaborated learning materials, teaching and learning supporting information and materials, giving and crosschecking students exercises and finally, students assessment and evaluation.

It is this making up the learning and teaching environment, hence making it different from the natural environment which is comprised of land and others. It is only related to this paper when we talk of land ethics.

Thereby, the teaching material development would contain the following components: (1) basic competencies; (2) competence achievement indicators; (3) learning objectives formulation; (4) directions for the

learning participants; (5) systematic material elaboration; (6) supporting information; (7) exercises or assignments; and (8) assessment. The teaching materials became the guideline for the implementation of learning process especially in the core activities. The researcher would like to provide the visualization of environment-based learning design as follows in order to implant the attitudes and the behaviors of the land ethics to the learning participants.

Conclusion

Environment has been one of the learning components both in the learning process and in the learning results transfer. The existence of environment in learning has the potential of serving as a driving force or as a restraining force. Therefore, there should be a transformation of environmental potentials for the sake of achieving effective and efficient learning. Environment has been a learning resource that can be turned into teaching materials resource, learning medium, learning tools, learning target and learning means. The environment-based learning design for implanting attitudes and behaviors of land ethics for the learning participants is recommended as a teaching material resource.

Acknowledgment

We start by thanking the Indonesian Government and Universitas Pendidikan Indonesia for the support provided right from the beginning until the final publication of this manuscript. Without much to say, we wish to exclaim that Success Indonesia and Success Universitas Pendidikan Indonesia! Finally, we thank Science Publications for providing us such a nice platform, I wish you the best regarding publication.

Author's Contributions

Epon Ningrum: In this manuscript, Epon is the corresponding author. She actively worked on this paper until the publication level.

Ahmad Yani: Yani, worked in cooperation making sure this paper reaches where it is today.

Ethics

All the necessary academic procedures have been followed and there is no plagiarism of any kind.

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