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Creative Drama in the Teaching of Education for Sustainable Development: Sample Activity about Sustainability and Sustainable Production

Cover Page Footnote

Özgül Keleş is an Associate Professor at the Faculty of Education at the Aksaray University in Turkey. Dr. Keleş's research areas include increasing sustainability literacy among pre-service teachers, education for sustainable development, teaching strategies/methods about sustainability and science teaching and ecological footprint.

Creative Drama in the Teaching of Education for Sustainable Development: Sample Activity about Sustainability and Sustainable Production

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ABSTRACT: Creative drama can be adapted to the education for sustainable development and it can be used as an effective instructional strategy. The use of creative drama can be an effective teaching method for students to acquire new information and raise their awareness of the education for sustainable development. Though the number and severity of the local, national and global problems are rapidly increasing, the number of materials to be used to help students to achieve sustainable living gains in the class is limited. Thus, the present study aims to develop sample creative drama activity that can be used by teachers while teaching sustainability issues. The creative drama activity developed within the framework of the present study are believed to be sample for the practitioners who want to teach basic concepts related to sustainable living and sustainable production.

KEYWORDS: Creative drama, education for sustainable development, sustainability, sustainable production

INTRODUCTION

Our interactions with our environment have become increasingly unsustainable. It would seem that in every corner of the planet we can find nature threatened by human consumption. A general human tendency to disregard the needs and limits of the planet has evolved insistently the world over. The scale of the damage we do is beyond the comprehension of most, yet the immediacy of our wants, the vastness of our planet, and the deep, intransigent nature of our habits meld together to inhibit change (Fernandes, 2012).

Education is essential to both the production and consumption aspects of globalization. We are reminded that the educational systems the world over have re-oriented their priorities towards productivity and competitiveness (Lindhal, 2006). We are not told that the consumer way of life will have to be rethought and redesigned to exist within the limits of natural systems and better fitted to our human limitations (Orr, 2007).

It would be unwise to underestimate the power of consumption in our schools and in society at large. Edu-

cation forms a clear correlation with consumption. Numerous statistical indicators show that the richer, more educated (as against global norms) minority of the world consume and waste the overwhelming majority of the Earth's resources. In sober terms: "The most educated nations leave the deepest ecological footprints, meaning they have the highest per-capita rates of consumption" (UNESCO, 2006). Nowadays, people who are the most educated are the ones who are harming the planet because of their unsustainable lifestyles (Gadotti, 2008; Fernandes, 2012).

Educating the next generation on pathways toward a more sustainable way of life is of paramount importance. In order to accomplish this goal, teachers are a vital population with whom to work, and sustainability topics must be woven into teacher education and preparation programs (Nolet, 2009; Warren, Archambault & Foley, 2014).

Stephen Sterling clearly states: "Time is short and, it must be said, the caliber and extent of current debate on the interface between environmental survival and the role of education is disappointing. Whether education as a whole can be bold enough to develop an adequate response, on a scale commensurate with the issues that have to be addressed over the next decade, remains a crucial question" (Sterling 1992; Layton, 2013).

Our Common Future, the Report of the World Commission on Environment and Development (1987) states that, "The world's teachers have a crucial role to play" in helping to bring about "the changes in attitudes, in social values, and in aspirations" related to and required for the longevity of our planet (p.8). Furthermore, Our Common Future highlights that these changes will play out in the public sector through deliberate education and public engagement. Teacher preparation programs must answer

this call and work toward a grander vision of preparing educators both as citizens and future leaders to enter a changing world and civic space where problems and solutions related to sustainability are seen as essential (United Nations Education, Scientific, and Cultural Organization, 2004; Warren, Archambault & Foley, 2014).

Backed with the results above, it can be said that, as far as the suitable conditions are provided, creative drama is an effective instructional method which can be used in courses at all levels of formal education (San, 1990). Creative drama is an instructional method that makes individuals learn both by living in the process and having fun. So we suggest teachers to use creative drama as an active instructional means. The best way to facilitate this task is to introduce drama both to teachers and teacher candidates on short notice (San 1991; Adıgüzel & Timuçin, 2010).

Creative drama requires the participation of the group members. Members of the group should be open to create ideas, to share, to interrogate, to criticize and to judge. One of the most critical skills gained in drama is to establish empathy for understanding others' feelings, ideas and behaviors while recognizing both themselves and other members of the group. Another aim of creative drama is to create individuals who interrogate, express themselves well physically and linguistically. All these experiences serve to a natural learning (Anderson-Poston, 2008).

Creative drama is a type of creative plays consisting of acting many types of plays, a universal art and an improvisation required for human being (Cottrell, 1987; McCaslin, 1990; Taşkın-Can, 2013). From the perspective of education, it can be described as a method of teaching and learning that involves students in spontaneous and unscripted learning sustain-

able living. Students are active learners in creative drama based learning environments so the students have to get a chance to construct their knowledge in their minds through meaningful learning activities. Fundamentally, the value of drama comes from simulating real life situations and experiences so that students can think that the learning atmosphere is familiar. The classroom environment of creative drama provides a framework that actually engages students in the learning process. Students are active participants in the learning environment in creative drama based instruction (Courtney, 1990; Heinig, 1988; Wilhelm, 1998; Taşkın-Can, 2013).

Creative drama is one of the most successful group working methods providing to learn by interaction and living (San 1996), it can be said that individuals' experiencing these positive contributions of creative drama could only be possible by correct guiding of this process by effective leaders (Taşkın-Can, 2013). Creative drama method contains cognitive, effective and psycho-motor behavioral objectives together and in this way it appeals to different characteristics and abilities of students. It also covers various learning types such as learning through experience, learning by acting, learning through interaction and collaboration, learning by discovery and discussion, active learning and finally emotional, social and conceptual learning (Alibeyoğlu et al, 2008; Çetingöz & Cantürk Günhan, 2010).

The framework for implementation of the UN-DESD (UNESCO, 2005) includes recommendations that focus on all levels of education, including the preparation of teachers. The document specifies that education for sustainable development will aim to demonstrate the following features: interdisciplinary and holistic approach, critical thinking and problem solving, using multi-methods (word, art, drama, debate, experience, different pedagogies which model the processes), participa-

tory decision-making. All of those highlighted here directly coincides with that equip students with the creative drama method. For this reason, teachers should use the method of creative drama to teach sustainability.

PURPOSE OF THE STUDY

For students who will be our future to be individuals who can find solutions to the sustainable development and discuss the possible outcomes of sustainable living, teachers need sample materials to be used to help their students to achieve the target sustainable living gains. Though the number and severity of the local, national and global problems are rapidly increasing, the number of materials to be used to help students to achieve sustainable living gains in the class is limited. The use of creative drama in the classroom is a powerful tool to help combat the inertia that has crept into our classrooms. Creative drama in the classroom can help to develop divergent thinking skills, inventive creativity, cognitive thinking skills (Annarella, 1992).

The purpose of the present study is to develop a course plan that will enable undergraduate students to learn sustainable life and sustainable production by doing and experiencing. Teachers play an important role in teaching sustainable life. Teachers need instructional materials that will facilitate the task of teaching during learning-teaching processes. Therefore, the purpose of the current study was set to be to develop a course plan to teach sustainability on the basis of creative drama. Such materials are believed to make both teachers and students more hopeful about the possibility of sustainable life. In the current study, by using creative drama method, it is aimed to discuss the reasons making our world not sustainable, give some information about sustainable production and help students to develop their opinions about the life-cycle analysis.

Thus, the present study aims to develop sample creative drama activity that can be used by teachers while teaching sustainability issues. The creative drama activity developed within the framework of the present study are believed to be sample for the practitioners who want to teach basic concepts related to sustainable living and sustainable production.

METHODOLOGY

Creative drama based instruction should follow three stages: Introduction, Development, and Evaluation (Heining, 1988). In Turkey, the stages were determined on the basis of obtained creative drama experiences as: Warming-up, Improvisation and Evaluation-Discussion.

In the warming up part, participants are adopted to the process. Warming up activities are preparation activities that are used to adjust students for working together and encourage their concentration to the subject. Warm-up activities are the basic activities by which getting familiar with the group members (Adıgüzel, 1994). These activities can contain basic movement patterns to settle the group down and make them feeling relaxed. Also, some activities provide participants opportunities to trust each other and construct a group dynamic. In this part, participants are more directed by leader compared to other part of the lesson. The aim of this process is not only to make participants enjoy from the process but also prepare participants to the rest of the lesson (Adıgüzel, 2007; Randal, 1967).

Improvisation is a part that constructs a subject through process. In this process, some drama techniques such as improvisation and role playing are used according to the subject and objectives. Role playing stage composed of pantomime and role playing is based on freely play set up and progress under determined rules and creativity and imaginary plays role in here. According to Blatner (2002) role

play is a method for exploring the issues involved in complex social situations. McCaslin (1990) concurs with this viewpoint by contending that the focus is on the value that the assumption of the role has for the participant rather than for the development of an art. In role play the participants are assigned roles which they act out in a given scenario. Role playing provides students to accept and understand different characters, different identities and functions of others through improvisation of a different character or identity (Adıgüzel, 2010; Debreli, 2011). And this encourages students and gives enhance to them for reflecting and creating their truths about real life in different perspectives (Öztürk, 2007).

Improvisation works have less certain determinations; you start with a determined subject, separate or group creativeness stand in the forefront. Improvisations constitute the most significant part of creative drama activities. This stage must include relations with the aims of the study and be relevant with the warm-up and the other stages of creative drama. Landy (1982) defines improvisation as an unscripted, unrehearsed, spontaneous set of actions in response to minimal directions from a leader, usually including statements of whom one is, where one is and what one is doing there. It is in effect the creation of a situation where the players first achieve a sense of security in movement before they are ready to add dialogue. The dialogue that emerges from the situation is created spontaneously by the participants as the various scenes unfold and develop. According to McCaslin (1990) the focus of improvisation is on helping learners to discover their own resources from which their most imaginative ideas and strongest feelings flow. The facilitator merely provides the context and then the participants act out their roles spontaneously without any planning (Athimoolam, 2004; Arieli, 2007).

In the evaluation part, all of the activities are expected to be discussed in this stage. The evaluation is about self assessment of the drama leader and participants within the group (Adigüzel, 1994). The evaluation-discussion part is a synthesis of objectives and acquisitions. Feelings, ideas about activities are shared and key points of the activities are summarized in this part.

In creative drama, group work is the major component for all of the stages. The teacher role is facilitator for developing the ideas for students, encouraging students in creative drama activities and leading them to effective interactions within the group and the students' role is active participant at the each stage of creative drama.

In the current study, the instruction was planned on the basis of three main stages of creative drama, warm-up, games and improvisations and evaluation. In this study, the lessons began with warm-up activities to make students adapted to the process. Played games in the warm up part related to the objectives of the lesson introduced the subject matter to students. Secondly, improvisation phase continued with improvisations and role playing. Students provided opportunities to make connections between daily life and sustainability and sustainable production topics by taking roles. Finally, activities in the evaluation phase provided feedback and review of what they learned. During the process, the teacher act as a guide.

RESEARCH DESIGN

Below, one can see the each stage of the course plan designed on the basis of creative drama to teach undergraduate students sustainable life and sustainable production;

Suggestions for the practitioner:

- During the Improvisations part the music to be listened by students should be selected. While selecting the music, you need to find the music to be enjoyed by your students and that will make them active.
- Before the onset of the Improviations, the terms “Ignorance, advertisements, injustice to women, rapid population growth, use and throw, unequal and unfair distribution of natural resources and indifference to future” are written on colorful cardboards. Depending on the number of students in class, some other terms can be added or some of the existing ones can be discarded.

Table 1. Sample Drama Course Plan about Sustainable Living and Sustainable Production

Group	Undergraduate 3 grade
Name of the study	Sustainable Living and Sustainable Production
Material	<ul style="list-style-type: none"> • Magnifier • White Tissues • Rope • Music CD • Coloured cartons • Crayons • T-Shirts
Age Group	20-...
Teaching Aims	<ul style="list-style-type: none"> • To increase the student's awareness of the social, economic and environmental impact of unsustainable lifestyles, • To develop the student's skills for necessary for education for sustainable development, • The specific objectives of the research are to: <ol style="list-style-type: none"> a) develop an creative drama activity for the teaching of sustainable production and sustainability concepts.
Learning Outcomes	In this activity; <ol style="list-style-type: none"> 1. To discuss the reasons why the world is not sustainable, 2. To have knowledge about the concept of sustainable production, 3. Aims to provide the students to develop ideas about the life cycle analysis.

Stages of Implementation:

The following stages are followed to conduct the activity;

Warming up Part

This activity can be done for students to create a group dynamic, warm-up, adjust students for working together and encourage their concentration to the subject. A big circle inside the class is formed by using a long rope. This circle specifies the borders of the game. A volunteer is selected from among the students. He/she is told that he/she is an environmental detective now. He is given a magnifying glass. The goal of the environment detective is to identify the elements causing environmental pollution, to catch and eliminate them from nature. The task of the detective is to grasp the tissues in the hands of destructors. He/she moves slowly around pretending to be a detective. The other students pretend to be environmental destructors (like unplanned urbanization, destruction of green areas, air pollution, water and solid pollution, illegal hunting, pesticides, the use of fossil fuels, over-consumption, deforestation and so forth). They act as agents that damage the environment. The destructors move fast and join their hands at their back. They hold a white tissue between their hands. Tissues are used to represent one of the elements destroying environment. On each tissue, the environmental destruction it represents will be written with colorful pens. The game starts with the placement of the environment detective in the center of the circle and of the environmental destructors in the periphery of the circle. Environmental destructors start to move forward and backward freely towards the environment detective. The environment detective tries to catch the tissues hidden by the environmental destructors in their hands on the back. In this way, the environment detective destroys the destructors of environment. When the tissue of each environment destructor is caught by the environment detective, the destructor becomes an environment detective and thus the number of environment destructors protecting environment will continuously increase. The student whose tissue is caught by the detective becomes the new detective,

and the first detective leaves the game. When all the destructors are converted into detectives, the game is over. Following this warm-up activity, students are directed to the improvisation activity through which they can raise awareness of what the factors affecting sustainable life are.

Improvisations

The improvisation part students were separated as a group of four-five. Each group chooses one of the terms written in the cardboards. Improvisation cards were given to students. Improvisation part began with a music. All the students start to move freely in the middle of the classroom along with the music. Suddenly music stops. When the music stops, the teacher tells the name of a group and the group members are asked to act out the term and how it negatively affects the sustainability of the word. Five minutes were given to their acting. After they have completed their acting, the music starts again and stops. Then another group is selected and asked to enact their term and how it affects sustainability.

Ignorance: “Between the walls of the school, education is given in isolation from the nature and such education is not very conducive to the protection of the environment.

There are no educated people; there are people everywhere insensitive and disrespectful to the environment.....”

Advertisements: “It is a wonderful perfume; it is such wonderful fragrance that you will be mistaken for a top model. It is an incredible watch, when I wear it, all girls look at me. Why do not we buy more? I must.....”

Injustice to women: “Nearly 70% of 1.3 billion people living in developing countries trying to have access to natural resources to meet the needs of their

families are women. The negative effects of environmental problems such as water shortage and arid lands are more severely felt by women than men. So, why don't you improve the educational and professional conditions for us?

Social justice.....”

Rapid population growth: “Human population is rapidly increasing. Millions of people do not have access to clean water and live in poverty.”

Use and throw: “Hurray! Today is “use and throw day”. I love this day. I feel relaxed while shopping. I want all the goods I have bought to be put into packages or boxes with wonderful decorations. I do not need but I want, no problem, I wear it once and throw away.....”

Unequal and unjustified distribution of natural resources: “Only 22% of all the world population consume 70% all the energy produced in the world, 85% of all the trees fallen and 60% of all the foods produced.

Giant corporations hold the richness of the world....”

Indifference to future: “Our ancestors left this world to us, so Why should be responsible for future generations. Why should I care about the next generation? Plants, animals and resources are all for us. I do not care about future.....”

The students are made to use the words written in the improvisation cards as group names. The groups desiring to give different names to their groups are allowed to do so. Following the improvisation performances of the groups, the teacher informs them about the importance of education, rapid population growth, equality, equality of gender, the role of advertisements in the determination of consumption





*Photo 1. The terms written on colorful cardboards
Role-playing and Improvisations*

patterns, the role of leaders, bad politics, unconscious consumption and unequal and unjust distribution of natural resources for sustainable life. The students are asked what other factors, besides the above-mentioned ones, can affect the sustainability of our world; thus, a question mark is created in their minds. This may result in the students' changing their viewpoints. Through this activity, students' attention is drawn to the fact that there is not only one factor preventing our world from being sustainable; yet, among these factors, the factors having the greatest influence on sustainability are: unequal and

unjustified distribution of the world resources; and our negative attitudes towards the nature.

Role-playing and Improvisations

The students are given the following information about the concept of life-cycle approach for them to internalize the importance of the concept of sustainable production in sustainable life.

A system, or life cycle can begin with extracting raw materials from the ground and generating energy. Materials and energy are then part of manufacturing, transportation, use (wearing and washing the t-shirt, for instance), and eventually recycling, reuse, or disposal. A life cycle approach means we recognize how our choices influence what happens at each of these points so we can balance trade-offs and positively impact the economy, the environment, and society. A life cycle approach is a way of thinking which helps us recognize how our selections – such as buying electricity or a new t-shirt – are one part of a whole system of events. A life cycle approach identifies both opportunities and risks of a product or technology, all the way from raw materials to disposal. To do this there is a continuum of life cycle approaches from qualitative (life cycle thinking) to comprehensive quantitative approaches (life cycle assessment studies). People, companies and governments use these various life cycle approaches in anything from day to day shopping, selecting office supplies for the workplace, engineering a new product design, or developing a new government policy (UNEP, 2004). A Life Cycle Approach Promotes;

- **Awareness that our selections are not isolated,** but influence a larger system. Buying office paper is a good example. If you knew that it takes 24 trees to create 50,000 sheets of office paper and 2.3 cubic meters of landfill space to dispose of it, you might choose paper made

from recycled material and elect to support paper producers that source from sustainably managed forests(UNEP, 2004)..

- **Making choices for the longer term** and considering all environmental and social issues associated with those. Life cycle thinking helps us avoid short term decisions that lead to environmental degradation – such as over-fishing or polluting our air with mercury (UNEP, 2004).
- **Improving entire systems**, not single parts of systems, by avoiding decisions that fix one environmental problem but cause another unexpected or costly environmental problem (like mitigating air pollution yet increasing water pollution, highlight b). Life cycle thinking helps avoid shifting problems from one life cycle stage to another, from one geographic region to another and from one environmental medium (air, water or soil) to another (UNEP, 2004).
- **Informed selections**, but not necessarily ‘right’ or ‘wrong’ ones. Life cycle thinking simply helps us put our decisions in context with facts from all parts of the system or life cycle. It means we look for unintentional impacts of our actions (such as damaging a natural eco-system or inadvertently supporting unfair labour conditions and wages) and take some action to prevent those impacts (such as purchasing office paper from sustainably managed forests or coffee certified “fair trade”). For instance, if the shop around the block from your office sells coffee grown by workers who receive a fair wage on the world market, cultivated without pesticides that harm people planting or harvesting the beans and from a plantation that did not cause an endangered forests to be chopped down, you might choose to purchase your daily cup from that shop (UNEP, 2004).

Overall, life cycle thinking can promote a more sustainable rate of production and consumption and help us use our limited financial and natural resources more effectively (UNEP, 2004). For sustainable production, not from cradle to grave but from cradle to cradle perception should be adopted. McDonough and Braungart (2002) and Braungart et al. (2007) describe the “Cradle to Cradle” approach as “the next industrial revolution” and suggest that industry needs a new paradigm that effectively and seamlessly addresses issues associated with over-consumption and waste. Central to Cradle to Cradle is the critique of the use of “eco-efficiency” as a driver for developing environmentally benign products and systems. They argue the ultimate goal of eco-efficiency, zero emission, which aims for maximum economic output with zero environmental impacts, is the ultimate endpoint of such an approach and represents a breakdown of the economic and ecological relationship. The eco-effective approach starts with a vision that industry is 100 percent good, the concept of waste does not exist (as all outputs from one process become inputs for another), supports and regenerates ecological systems and enables long-term prosperity and is the basis for “triple top line” objectives (Braungart et al. 2007; Reay, McCool, Withell, 2011).

After the presentation of the above information, the students are divided into groups. The teacher shows his/her t-shirt. Each group is provided with cardboard and colorful pens. The students are asked to design a poster illustrating the life-cycle of the t-shirt on the teacher (cotton in the field, thread from cotton and all the process it goes through until it becomes a t-shirt) and the negative effects it causes during its life-cycle (energy and water consumption, wastes, penetration of chemical substance into soil). After the completion of the posters, the posters are hung on the board in the class and the groups are asked to introduce their posters.

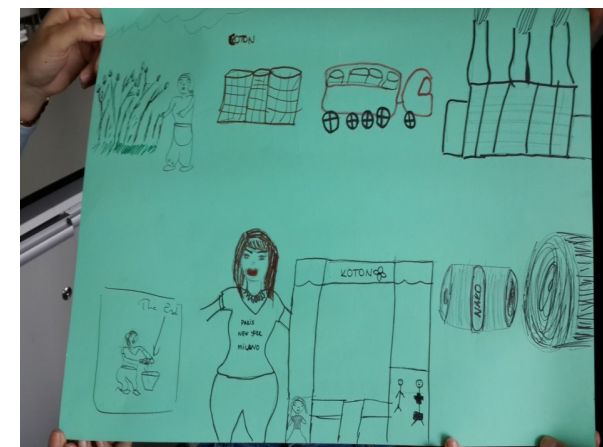


Photo 2. Posters illustrating the life-cycle of the t-shirt

The students explain that this process is not sustainable based on the conception of from cradle to grave. It is explained that t-shirts will be wastes for the environment after they have been used for a while.

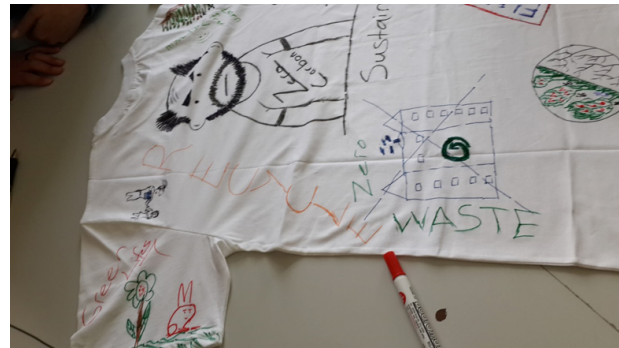


Photo 3. The t-shirts based on the conception of from cradle to cradle

Then, the students are asked to go on working in their groups. The students are told that they are now designers who can produce these t-shirts based on the conception of from cradle to cradle so that they can minimize the harmful effects on environment. Then they are asked to redesign this product. They are asked to improve all the stages of their productions ranging from field to the consumer.

Then, the students are reminded that the idea of sustainable development started to be disputed in 1970 as a result of the realization that there should be a balance between the formation period of natural resources and consumption speed of these resources. It is pointed out that scientists started to focus on the issue because of the fast depletion of resources resulting from industrial production increase. As consumers, we can look for life cycle information about the products and services we buy – do they entail the use of energy, the production of hazardous waste, the destruction of an endangered ecosystem, or the pollution of air and water? We can also look for information that tells us how we should use, care for, recycle or discard products effectively. All of this information is becoming increasingly available for products, and services ranging from foods such as fish and other meats to washing powder, hotels, cars, paper products and computers, among many others. Sometimes a simple label can tell us whether the mobile telephone we are buying has fewer environmental impacts than certain alternatives. Overall, life cycle thinking can promote a more sustainable rate of production and consumption and help us use our limited financial and natural resources more effectively.

In light of the above-mentioned procedures in the current study, the students were encouraged to think profoundly about life cycle approach and the concept of sustainable production. Following this activity, the last stage of the creative drama activity, evaluation state is initiated.

EVALUATION

All the students are seated in the shape of a circle. The teacher sits in the center of the circle and then the following questions are asked to them and then the application is completed. The world countries come together and make shared decisions. Assume that you are one of these important decision makers. What would be the first decision you would make

for your country to adopt the principle of sustainable production? Do you think that the world provides us with some examples of sustainable production in its natural life-cycle? Can you give some examples?

After receiving the students' responses to the questions, the teacher gets the students to discuss about these issues and the activity plan designed for the creative drama activity is ended. Through this creative drama activity, it is believed that the students are enabled to learn and understand the role of sustainable living and sustainable production preferences in creating a better world.

DISCUSSION AND CONCLUSION

The Sustainability Education Framework for Teachers (SEFT) articulates teaching strategies for linking pedagogy and learning to the goals of sustainability literacy. SEFT can provide a rich insight into key elements that should be infused into education for sustainability. It can also serve as a guide for meaningful assessment and evaluation of sustainability units, lesson plans, and activities (Warren, Archambault & Foley, 2014).

The Sustainability Education Framework for Teachers embraces four ways of thinking—*futures*, *values*, *systems*, and *strategic*—which are more than just a list of steps or sets of knowledge that must be acquired. These specific four ways of thinking were identified after reviewing the existing literature, and considering how to prepare teachers meaningfully to take on the role of educating for sustainability (Wiek et al., 2011; Stibbe & Luna, 2009; Bollmann-Zuberbuhler et al., 2014). The current research supports The Sustainability Education Framework for Teachers SEFT. At least three of the four stages proposed by SEFT are supported with the creative drama activity presented in the present study. It is clear that the activity developed in the present study is congruent with the teaching methods and techniques recommended in the stages of SEFT.

Sustainability requires future thinking (Wiek, et al., 2011). Futures thinking can be used in the classroom by beginning to engage students with multiple possible outcomes of decisions and actions. Students can journal about the variety consequences associated with the choices they make, and teachers can push students to engage beyond the obvious first choice answers. Another idea is to make use of scenarios in the classroom. Scenarios are a tool that teachers can implement to help students think about how the future might unfold. Scenarios can take many forms beyond a written format such as visual, auditory, embodied, kinesthetic and/or verbal. Students can work in groups developing alternative ends to stories they are currently reading or discuss and map out a range of possible outcomes (Warren, Archambault & Foley, 2014). During the Warm-up task II of the study, the students are provided with an opportunity to enact the reasons for the world not to be sustainable; thus, they were encouraged to ponder about present and future.

To explore values thinking in the classroom, teachers can help students seek different points of view, as well as explore their own feelings and values on various issues. Teachers can also engage students in values thinking through the use of debates and discussions in the classroom. In addition to role-playing and debates, students should be able to ask clarifying questions and explore how values operate in a range of contexts that might not be initially transparent. One of the implementation stages of creative drama method is role-playing. During the game and improvisation section of the present study, the students can find opportunities to discover their own opinions and values about the conception of sustainable production in different fields.

To support systems thinking in the classroom, teachers can help students explore how things might change under different circumstances. Teachers

should encourage students to look at possible associations and connections beyond what is specifically being studied. This is so they can seek possible explanations of these relationships, and realize how these systems often directly impact one another. For example, a classroom project might be unpacking and exploring how food gets to the local grocery store or how specific products relatable to students are produced. Students should actively share findings with their peers and discuss as a class both hidden and visible flows. Teachers should move between local and global examples as a way to highlight the interconnected nature of the world around us. This is also supported by assigning the role of a designer to the students in which they are required to design a t-shirt with minimum harm to the nature. This can be followed by a project work in which they would design a sustainable t-shirt with their friends in a group.

The number of the materials to be used by teachers to encourage their students to adopt sustainable living styles should be increased. Academicians working in the field of instructional methods and techniques can produce materials to support teachers in education for sustainable development.

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