



## Increasing students' environmental attitude through Visual and Performance Arts

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### Abstract

Visual and performance arts are effective media of communicating environmental and ecological issues. The need for effective communication to increase collective action and environmental attitude of students is the most pressing in the context of deteriorating environment. To assess the effectiveness of visual and performance arts as media of increasing environmental attitude of students, this study was conducted. It employed experimental research design. The participants of the study were the randomly sampled college students taking up MAPEH courses in one campus of a state university in region 02, Philippines. Result of the study showed that employing visual and performance arts learning activities are interesting. Ultimately, the used of visual and performance arts learning activities significantly increased the environmental attitude of students along attitude towards nature enjoyment, support for conservation policies, human utilization of nature, and attitude towards personal conservation behavior. Allowing the students to be exposed to the different environmental-based visual and performance arts learning activities where their direct learning experience is involved significantly increased their environmental construct. Further, the results reveal that both visual and performance-based learning activities developed positive environmental attitudes, greater environmental awareness, increased knowledge and understanding of nature, and are more likely to participate in environmental stewardship activities.

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## Introduction

Many environmental issues facing society, such as ecosystem collapse, demand considerable public investment to reverse. However, this investment will only arise if it is supported by the general community, and community support is only likely if the issues are widely understood (Miller *et al.* 2006). The need for effective communication, public outreach, and education to increase support for collective action and behaviour change is perhaps most pressing in the context of anthropogenic climate change (Moser & Dilling, 2007).

The role of the arts is often overlooked in extending scientific information and yet the role of the arts in communicating issues, influencing and educating people, and challenging dominant paradigms has a long tradition in the humanities (Belfiore & Bennett 2006). The use of art as an evaluation tool to determine the effectiveness of environment education is a novel approach to program assessment and provides evidence that helps defend environmental educators' choices of curriculum activities.

Using art as an alternative assessment may reveal distinct understandings of individual learner and allow them to explore their creativity, expressing a personalized representation of their environmental knowledge and perceptions.

In the study of Curtis, Reid & Ballard (2012) they affirmed that visual and performing arts should be harnessed to help extend the increasingly unpalatable and urgent messages of global change. Likewise, Giannachi (2012) reviews ways in which artists have engaged the public in artwork addressing climate change through representation, performance, and actual mitigation. Morris (2014) also noted most that local artists attract the public to collaborate on drawing the high-water lines through their neighborhoods that are at high risk of flood damage due to sea-level rise, and social media helped carry the message to a broader community. Rosenthal (2003) asserts that curriculum for art students seldom include ecology and natural resource

information, yet environmental art-making can address contemporary environmental and social issues, can promote systems thinking by recognizing interconnections and complexity.

Furthermore, Scheffer *et al.* (2015) suggest that a greater alliance with artists and integration with art education could help catalyze scientific innovation by enhancing associative and divergent thinking in students to complement systematic reasoning processes. Only recently have courses begun incorporating concepts from the social sciences (Kareiva and Marvier 2012), and few integrate practices or paradigms from the arts and humanities to help students understand the broader context of individual and collective actions regarding the environment (Jacobson *et al.*, 2007).

At the university level, Jacobson, Seavey & Miller (2016) affirmed that few classes include art and biology to explore complex environmental problems. It can be synthesized from previously conducted researches that environmental attitude proves that knowledge and awareness about environment predict the pro-environment behaviour of people across gender, education level, and cultures but there were few studies have been empirically conducted to assess learning strategies particularly along visual and performance arts which can increase environmental attitudes. In the Philippine setting, there were limited studies conducted regarding the environment attitudinal effects of visual and performance arts learning activities. This study aims to provide pedagogical model in MAPEH courses which can help facilitate the better learning experience for students to enhance their environmental attitude. Hence, this study investigated the effectiveness of environmental-based performance and visual arts learning activities in enhancing college students' environmental attitude.

## Materials and method

### *Method of Research*

This study employed one-shot-pre-test-post-test experimental research design to determine the effectiveness of visual and performance arts learning

activities on the environmental attitude of university students. It covered the comparison between the environmental pre-attitude and post-attitude mean scores of the participants. The respondents were exposed to the different performance and visual arts activities and their attitudinal scores were gathered before and after the exposure of the students.

#### *Participants*

The research participants of the study were the fifty-six students of one section enrolled in Music, Arts, and Physical education (MAPEH) course of one campus of a state university in region 02, Philippines.

#### *Research Instruments*

Using a standardized environmental attitude scale developed by Milfont & Duckitt (2010) with three selected dimensions namely: (1) enjoyment of nature; (2) support for conservation policies; (3) human utilization of nature. The instrument was rated with 1 as the lowest and 5 as the highest consisting of thirty items.

In like manner, a questionnaire checklist made by the researcher was also used to assess the level of interest of the respondents on the use of the different performance and visual arts learning activities. The instrument-checklist consisted of the seven strategies used by the researcher in teaching. Likert Scale with 1 as to lowest and 5 as the highest was also used as the response indicator of the checklist.

#### *Data Collection Procedure*

The experimental procedure of the study lasted for three weeks. Upon seeking approval through formal communication letter from the authorities concerned to float the questionnaire started the data gathering stage. Upon informed consent, the researcher ensured proper consultation for the schedule of the administration of the questionnaire. Distribution and retrieval were personally executed by the researcher. As agreed upon by the concerned authorities and the researcher, data gathered was properly kept to ensure it's confidentially and were strictly used for research purposes only.

The pre-experimental phase of the study consisted of learning orientation of the activity and presentation of guidelines. The participants were requested answer the environmental attitude questionnaire. Planning and scheduling were also conducted. For the experimental phase, the researcher employed the different performance and visual arts learning activities in which the students participated very well. Finally, the post-experimental phase, just after the exposure of participants with the different learning activities for their post attitude assessment.

#### *Data Analysis*

The study utilized mean and weighted mean to measure their level of interest before and after participating the different learning activities. Consequently, dependent sample t-test was used to identify the significant difference on the pre-attitude and post-attitude of the participants.

Perception of the respondents was measured using a five-point Likert scale with its numerical scale, statistical limits and verbal description: 4.20 – 5.00: very high/ highly positive; 3.60 – 4.19: high/ positive; 2.60 – 3.59: moderate/neutral; 1.80-2.59: low/ negative; 1.00-1.79: very low level/highly negative.

### **Results and discussion**

#### *Level of Interest in the different environmental-based performance and visual arts activities*

Guided with the objectives of the study, Table 1 shows the level of interest of the participants on the different environmental-based performance and visual arts learning activities.

The grand mean of 4.05 reveals that all the learning activities were interesting. The finding implies that students manifested greater environmental learning interest through art experience-based approach. Experience-based learning is the acquisition of knowledge, experience, attitude, and skills derived from one's own experience (Matsuo *et al.*, 2008). Subsequently, Magulod (2017) averred that the teaching environmental concepts and awareness become better when it is art and experience-based.

**Table 1.** Performance and Visual Arts Activities.

Activities	Mean	SD	D.I.
Float Procession of Species	4.19	.644	Interesting
Poster Making	4.16	.654	Interesting
Environmental-Themed Gallery Exhibit	4.26	.656	Very interesting
Collage Making	4.17	.716	Interesting
Art Crafts	4.07	.782	Interesting
Making from recycled Wastes			
Miniature Plant Exhibit	4.01	.700	Interesting
Theatre Presentation	3.48	.831	Moderately interesting
Ecological Circus	4.05	.772	Interesting
Grand Mean	4.05		Interesting

Legend: 4.20-5.00 (Very Interesting); 3.40-4.19 (Interesting); 2.60-3.39 (Neutral); 1.8-2.59 (Not interesting); 1.0-1.79 (Very uninteresting).

The assessment of the respondents suggests that the use of the different environmental-based performance and visual arts learning activities allowed the respondents to exhibit a high level of interest and motivation. Hawkes (2003) affirmed that there is a growing recognition among practitioners of the role of the arts in facilitating learning interest, societal transformation to environmental sustainability. Likewise, Williams (2001) noted that performance and visual arts activities are good conduit of communicating important insights into human relationships with the natural environment. Furthermore, Miles (2010) speculated that contemporary art dealing with climate change and environmental issues have the capacity to contribute to a shift in consciousness and likely to be conducive to a more sustainable way of living. Goldie, *et al.* (2005) noted that arts have the potential to communicate scientific information to a lay audience. Despite the range of collaborations between science and the arts internationally, only a tiny minority of scientists is involved and the environmental sustainability literature is largely silent on the role of the arts in environmental science.

It can also be specifically observed that environmental-theme gallery Exhibit (4.26, SD=.656) obtained the highest mean rating described very interesting. Float procession of species (4.19,

SD=.644), poster making (4.16, SD=.654), Collage Making (4.17, SD=.716), art crafts making from recycled materials (4.07, SD=.782), miniature plant exhibit (4.01, SD=.700) were rated by the respondents to have interesting attributes. Likewise, theatre presentation (4.05, SD=.772) was rated moderately interesting.

The visual and performance arts activities were theatrical presentation, local indigenous dances presentation, gallery exhibit, and presentation of indigenous ecological stories. Consequently, the theatrical performances were employed as a medium for communicating environmental concepts and issues. The performances included ecological circus, physical skills, comedy, and dances reflecting the movement of nature, animals and humans adopting to the environment. In like manner, the float procession of species allowed the participants to portray selected common and the endangered animals located in the region. The participants created Figure of the species using wastes materials.

College making activity enhanced the interest of the students through group learning activity to illustrate their role as the youth as vanguards of the environment for sustainability. The students were asked to create an art by sticking various materials depicting their role in the environment. This learning activity promotes interdisciplinary understanding of nature and built environment through humanities and arts. This paves the way to use art as a model of acquiring and interpreting knowledge of the environment enhancing the creativity and artistry of the students. The use of photography and collage is an art form that has particular applicability in communicating ecological information and is rated highly by those involved in extension of scientific information to the public (Curtis 2011).

According to Jacobson *et al.* (2007), there were few integrative practices from the arts and humanities to help students understand the broader context of individual and collective actions regarding the environment.

Likewise, Miniature plants exhibit was rated an interesting learning activity. This allowed the students to create a scene in nature and a miniature of the ecosystem. The activity motivated the students to study the characteristics of plants, the process how the plants perform photosynthesis, and the proper way of taking of plants.

The artistic and aesthetic vision about the environment influences seriously what the students think, feel and do about the environment. Hence, the use of arts is considered an important factor in promoting deeper awareness and attitudes of students towards the environment. Hence, the integration of environment art education plays a prominent role in greening the environment.

Art crafts making from recycled wastes assessed as an interesting activity. The activity allowed the creativity of students to turn recycled wastes materials into decorative articles and recycled dolls. Such learning activity promoted the students to practice and internalize the three R's (reduce, reuse, and recycle) with the appeal of making arts and crafts. According to Rosenthal (2003) environmental art- making can address contemporary environmental and social issues, can promote system thinking by recognizing interconnections and complexity.

Concomitantly, Jacobson *et al.* (2007) also noted that the integration of science and arts is important yet being ignored strategy for effective resource management and communication.

*Changes in Students' Environmental Attitude*

The pre and post-attitude inventory tests were administered in order to determine the significant change in the environmental attitudes of the students after employing the use of different environmental-based visual and performance arts learning activities.

The succeeding tables reveal the comparison of the environmental attitude of the respondents along with the four sub-scales of environmental attitude namely attitude of the students towards nature enjoyment, support for interventions and conservation policies,

personal conservation behaviour, and human utilization of nature.

Findings showed that the participants obtained higher level of environmental awareness after their exposure with the different activities. This confirms by Gurevitz (2000) that learning activities such as music, arts, and poetry offer opportunities to address students' attitudes, beliefs and emotions as well as stimulate innovation. Hence, environmental art activities include range of practices that describe or celebrate nature as well as ecological or politically motivated work that address environmental issues.

**Table 2.** Difference between the pre and post attitude scores towards nature enjoyment.

Variables	Mean	S.D.	Diff	df	t-ratio	p-value
Pre-Attitude	3.08	.668	-1.410	55	-11.122	0.000**
Post-attitude	4.50	.504				

\*\*= significant at 0.01 level (2-tailed).

Table 2 shows the comparison on the nature enjoyment attitude of the respondents exposed to the different visual and performance arts activities before and after the study. The students had a pre-attitude score of 3.08 (moderate) and a post-attitude score of 4.50 (very high) with the (t-ratio=-11.122) and (p value=0.000). Thus, there is a significant difference between the attitude of the students before and after the treatment of the study where the respondents developed a high positive attitude towards nature enjoyment. The increased attitude mean score indicates that the students manifest higher enjoyment in nature and other natural settings.

**Table 3.** Difference between the pre and post attitude scores towards support for conservation policies.

Variables	Mean	S.D.	Diff	df	t-ratio	p-value
Pre-Attitude	2.73	.924	-	55	-	0.000**
Post-attitude	4.42	.628	1.696		14.555	

\*\*= significant at 0.01 level (2-tailed).

Table 3 presents that the students had a pre-attitude score of 2.73 (High) and a post-attitude score of 4.42 (very high) with the (t-ratio=-14.555) and (p

value=0.000) indicating that there is an increased on the attitude of the students before and after the treatment of the study on their support for interventionist conservation policies. The finding suggests that the students showed a higher positive attitude of practicing 3R's, conserve energy, adopt the more conserving lifestyle, and become more oriented on the existing policies and laws governing environmental protection.

**Table 4.** Difference between the pre and post attitude scores towards human utilization of nature.

Variables	Mean	S.D.	Diff	df	t-ratio	p-value
Pre-Attitude	3.03	.873	-1.17	55	-7.396	0.000**
Post-attitude	4.21	.624				

\*\*= significant at 0.01 level (2-tailed).

In like manner, Table 4 presents that the respondents have a pre-attitude score of 3.03 (moderate) and a post-attitude score of 4.21 (very high) with the computed (t ratio= -7.396) and (p value= 0.000) showed significant difference before and after their exposure with the different learning activities. This suggests that students manifested higher attitude on the idea that environmental protection should be given priority rather than economic and development growth.

**Table 5.** Difference between the pre and post attitude scores towards personal conservation behavior.

Variables	Mean	S.D.	Diff	df	t-ratio	p-value
Pre-Attitude	2.32	.66	-	55	-	0.000**
Post-attitude	4.44	.56	2.125		17.365	

\*\*= significant at 0.01 level (2-tailed).

Table 5 clearly presents that the students had a pre-attitude score of 2.32 (moderate) and a post-attitude score of 4.44 (Very High) with the (t ratio= -17.365) and (p-value of 0.000). This suggests that there is a significant difference on the pre-attitude mean and post-attitude mean of the respondents before and after the conduct of the study. The finding implies that the students attained a very high level of attitude towards personal conservation behaviour after their exposure to the different environmental learning activities. This suggests that the students were able to

show a positive attitude towards taking care to conserve resources and protect the environment in their personal everyday behaviour.

One of the attributes of the arts is their ability to evoke emotions. Emotions are physiological responses to particular types of sensory experiences (Atkinson *et al.* 1990). The performances of the participants were designed to be emotive. Emotions are an important influence on environmental behavior in Triandis' Theory of Interpersonal Behaviour (Jackson 2005). Kollmuss and Agyeman (2002) point out that the emotions of fear, sadness, and anger evoked by environmental degradation can encourage pro-environmental behaviors, although in some people, emotional distancing or denial can also enable a degree of comfortable inaction. Thus, through evoking an emotional response, the arts may aid memory and analysis of the subject of the artistic work.

The results of the study support the proposition that performance and visual arts have an important role in enhancing environmental attitude. Such results are consistent with the findings of of the few researchers who have written about the use of the arts in communicating science (Lovett 2004, Nadkarni 2008). The social psychology literature emphasizes the importance of knowledge in shaping beliefs, attitudes, intention to act, and ultimately environmental behavior (Jackson 2005). Knowledge about an issue leads to an awareness of consequences, which is an important factor influencing pro-environmental behavior (Stern 2000). The view that the arts have a role in educating people has a long tradition in the humanities (Belfiore and Bennett 2006). Through communicating scientific and environmental knowledge the arts therefore appear to have a role in encouraging people to adopt pro-environmental behavior.

The capacity of both visual and performing arts to synthesize, simplify, and convey complex ecological or scientific ideas makes the information both more interesting and easier to remember. This feature is exemplified in the capacity of the visual arts to



portray different landscape scenarios (Salt and Lindenmayer 2004). Such features make the arts a valuable tool to raise awareness and attitude of particular environmental issues.

### Conclusion

To assess the effectiveness of visual and performance arts as media of increasing environmental attitude of university students, this study was conducted. It is concluded that employing visual and performance arts learning are interesting to the students. Environmental-theme gallery Exhibit was assessed very interesting while Float procession of species, poster, Collage Making, art crafts making form recycled materials, miniature plant exhibit were rated by the respondents to have interesting attributes. Likewise, theatre presentation was rated moderately interesting. Ultimately, the used of visual and performance arts learning activities significantly increased the environmental attitude of students along attitude towards nature enjoyment, support for conservation policies, human utilization of nature, and attitude towards personal conservation behavior. Allowing the students to be exposed to the different environmental-based visual and performance arts learning activities where their direct learning experience is involved significantly increased learners' environmental construct. The use of the arts to connect with people emotionally may indeed be an effective way to win support for actions to reverse problems like anthropogenic climate change and deserves further research effort.

### Recommendations

In consonance with the above-cited results and implications to the intended community, a council of curriculum developers and administrators may be initiated to conduct curriculum review and development in different TEIs in the country. Integrating environment-related learning activities in MAPEH courses may be considered to better instil ecological concepts among the students. Faculty members are also encouraged to reflect on their practices and methods/approaches in incorporating environmental concepts in teaching to further strengthen students' environmental competencies.

It is hoped that the findings will motivate teachers to become more environment-minded and critical thinkers through attending seminars/trainings relevant to environmental concepts, volunteerism to be exposed to environmental issues, and conducting personal researches relevant to environmental issues and concerns.

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