Profile of Environmental Worldview in 10th-Grade Students of State Senior High School 1 Turen of Malang Regency

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ABSTRACT

Environmental worldview is a human paradigm towards the environment that describes how humans view and behave towards the environment. The research is to determine and analyze the environmental worldview of students at State Senior High School 1 Turen. This research was designed using a survey method involving 10th-grade students of State Senior High School 1 Turen, Malang Regency, using the New Ecological Paradigm (NEP) instrument. NEP is a concept in environmental sociology that describes a new perspective on the relationship between humans and nature. It has demonstrated validity (r count > r table = 0.219) and reliability (Cronbach's alpha > 0.60). Size number is 80 students. Data were analyzed using Pearson correlation, t-tests, and Analysis of Variance (ANOVA), with descriptive analysis following. The results show that most 10th-grade students at state senior high school 1 Turen have relatively low NEP scores, with an average score of 36.26, the lowest score of 27.00, and the highest score of 46.00. Demographic data also did not show significant differences, such as differences in class, gender, age, and blood type. The cause of the low environmental worldview among students is claimed to be the lack of learning that incorporates environmental worldview indicators at state senior high school 1 Turen.

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1. INTRODUCTION

Environmental worldview refers to the way individuals perceive and understand the environment. This perspective is believed to reflect collective values that shape society's understanding of how the world works, their role within it, and the distinction between environmentally responsible and irresponsible behavior (Miller & Spoolman, 2010). According to Gillaspy (2015), environmental worldview determines how humans interact with nature and utilize its resources. Wibowo et al. (2023) further explains that environmental worldview encompasses basic knowledge and personal commitment to actions that support environmental protection.

In practice, human activities play a significant role in environmental degradation, making individuals the primary target for environmental improvement efforts. In Indonesia, environmental issues remain a prominent topic of public discourse. However, a considerable portion of society still lacks a comprehensive understanding of environmental worldview, which contributes to widespread apathy toward environmental concerns.

Education serves as a strategic tool to foster environmental consciousness. It aims to enhance individuals' awareness, knowledge, attitudes, and even personality traits related to environmental stewardship (Putrawan, 2015). Dasgupta (2022) emphasizes that education should act as a medium for introducing environmental paradigms, particularly to younger generations. Otto & Pensini (2017) assert that education has the power to influence long-term behavioral change through the development of ecological attitudes and values.

In the context of behavioral transformation, Covey (2008) argues that effective change must begin with paradigm shifts rather than focusing solely on attitudes, skills, or behaviors. Quantum improvement occurs when individuals engage with the right paradigm. One such paradigm is the New Ecological Paradigm (NEP), introduced by Dunlap et al. (2000), which highlights beliefs about human capacity to disrupt ecological balance, the limits of population growth, and the ethical considerations of human dominance over nature. The NEP scale has been widely adopted across various countries and is considered a valid instrument for measuring environmental perspectives (Harraway et al., 2012; Rideout, 2013; Sookram & Augustine, 2013). In Indonesia,

Wibowo et al. (2023) revalidated the NEP scale and confirmed its validity (r-value > r-table = 0.312) and reliability (Cronbach's alpha > 0.60).

Although the NEP scale has been utilized in several Indonesian studies, such as those by Sueb (2015) and Wibowo et al. (2023), these efforts have yet to establish a comprehensive blueprint for profiling students' environmental worldview nationwide. Previous studies have not yet examined the profile of environmental worldview based on students' demographic data, particularly in the Malang Regency area. The author contends that further analysis is needed to examine students' environmental worldview across diverse regions and educational levels. Observations at SMAN 1 Turen indicate that environmental education has begun to be introduced, but its implementation remains ineffective. This research is expected to provide an initial overview for the development of environmental education based on an ecological paradigm at the secondary school level. Therefore, this study aims to analyze the environmental worldview of students at SMAN 1 Turen as part of a broader effort to map ecological attitudes among Indonesian youth.

2. RESEARCH METHOD

The researcher employed a survey method utilizing a descriptive quantitative approach. The participants consisted of 10th-grade students from State Senior High School 1 Turen, with a sample size of 80 students. Each participant received a self-administered questionnaire and completed it independently, without any external influence. The research was conducted in 4-8 December 2023.

The researcher chose State Senior High School 1 Turen due to its location in a transitional area between urban and rural settings, which contributes to the diverse social backgrounds of the students. The environmental worldview questionnaire was based on the NEP scale, developed by Dunlap et al. (2000) and validated for Indonesian students by Wibowo et al. (2023).The questionnaire includes demographic information such as class, gender, age, and blood type (Table 1). This NEP scale consists of five key indicators: (1) limits to growth; (2) anti-anthropocentrism; (3) balance of nature; (4) anti-exemptionalism; and (5) eco-crisis.

The questionnaire included 15 test items, each with five response options: Strongly Agree (SA), Mildly Agree (MA), Unsure (U), Mildly Disagree (MD), and Strongly Disagree (SD). To reconfirm the validity and reliability of the NEP questionnaire instrument in local context, the researcher conducted a validity test using Pearson correlation and a reliability test using Cronbach's alpha with SPSS 16.0. The validity test results showed that the calculated r-value > r-table, with the r-table value being 0.219 based on a sample of 80 students (Table 2). The Pearson correlation test results indicate that the NEP questionnaire is valid and can be used.

The reliability of the NEP questionnaire is indicated by a Cronbach's alpha value > r-table. Decision-making on reliability follows the Cronbach's alpha coefficient criteria: (1) very high (0.80–1.00), (2) high (0.60–0.79), (3) sufficient (0.40–0.59), (4) low (0.20–0.39), and (5) very low (0.00–0.19) (Arikunto, 2010). The Cronbach's alpha test results show a value > 0.6, as presented in Table 2. This indicates that the NEP questionnaire is reliable and can be used.

The odd-numbered items were scored from 5 to 1, while the even-numbered items were scored from 1 to 5. Data collected from the research were analyzed using Pearson correlation, t-tests, and Analysis of Variance (ANOVA), with descriptive analysis following. Before conducting these analyses, the data were assessed for normality and homogeneity. The normality test results for NEP scores based on class, gender, age, and blood type all show significance values > 0.05, indicating a normal distribution. Meanwhile, the homogeneity test result for NEP scores based on class, gender, age, and blood type also show homogenity.

Table 1. Characteristic of Respondent

Demographic Variables	Total	Percentage
Class		
- XI A	20	25%
- XI B	20	25%
- XI C	20	25%
- XI D	20	25%
Gender		
- Male	21	26.25%
- Female	59	73.75%
Age		
- 15 years	45	56.25%
- 16 years	26	32.5%
- 17 years	9	11.25%
Blood Type		
- A	11	13.75%
- B	8	10%

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Demographic Variables	Total	Percentage
- AB	3	3.75%
- O	58	72.5%

Table 2. Result of Validity and Reliability of Environmental Worldview Using New Ecological Paradigm (NEP) Instrument

Indicator	Statement	P value	r	Cronbach's alpha
Limits to growth	NEP 1: The number of humans that exist today exceeds the earth's carrying capacity.	0,000	0,397	0,764
	NEP 6: Earth has a lot of natural resources if humans are able to figure out how to use them.	0,000	0,563	
	NEP 11: Earth has limited space and natural resources.	0,000	0,598	
Anti-anthropocentrism	NEP 2: Humans have the right to manage the natural environment according to their needs.	0,000	0,482	0,813
	NEP 7: Plants and animals have the same rights as humans to survive.	0,000	0,553	
	NEP 12: Humans have overused natural resources.	0,000	0,739	
Balance of nature	NEP 3: Human actions can sometimes lead to natural disasters.	0,000	0,751	0,869
	NEP 8: The natural environment will not be disturbed by industry activities.	0,000	0,651	
	NEP 13: The environment is very vulnerable and easily disturbed.	0,000	0,664	
Anti-exemptionalism	NEP 4: For individuals who have knowledge about the environment, it can be determined that they can protect it properly.	0,000	0,776	0,764
	NEP 9: Even though humans have special abilities, they will not be separated from the laws of nature.	0,000	0,230	
	NEP 14: By studying environmental science, we can preserve nature.	0,000	0,548	
Eco-crisis	NEP 5: Many humans take harmful actions against the environment.	0,000	0,787	0,902
	NEP 10: The current environmental crisis is exaggerated.	0,040	0,714	
	NEP 15: If this environmental problem continues, we will soon experience a major natural disaster	0,000	0,765	

3. RESULT AND DISCUSSION

Table 3 presents the overall NEP scores of 10th-grade students at State Senior High School 1 Turen, drawn from four classes. Among the 80 respondents, the average NEP score was 36.26, with a standard deviation of 3.49. This average falls within the neutral category, with a minimum value of less than 33 and a maximum value of greater than 40 based on the standard deviation.

The results of the difference test, detailed in Table 4, indicate a p-value of 0.228, which exceeds the 0.05 threshold. This means there is no significant difference between the NEP scores of students from different classes. This is consistent with the reality that no specific treatment was provided to any particular class; all classes received the same lesson materials from the school and were not influenced by the NEP data collection process.

Consequently, the findings suggest that 10th-grade students at State Senior High School 1 Turen have not yet reached the pro-environmental category. This observation aligns with Rideout's (2013) research, which states that the minimum NEP score to classify respondents as pro-environmental is 60.00 (Table 5). The average score of 36.26 for the students at State Senior High School 1 Turen falls significantly short of this threshold. This data indicates that, students are not yet considering environmental perceptions in their actions.

Table 3. Descriptive Statistic of NEP Score of 10th-grade Students at State Senior High School 1 Turen

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
NEP SCORE	80	19.00	27.00	46.00	36.2625	3.49953	12.247
Valid N (listwise)	80						

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The findings align with the research conducted by Boeve-de Pauw *et al.* (2011), which examined four high schools in Belgium and revealed that students had a relatively low level of environmental worldview. Additionally, a study by Syamsussabri et al. (2019) showed that the control class at State Senior High School 1 Lembar in NTB demonstrated a moderate level of environmental worldview, achieving a percentage of 70%.

Table 4. Difference of NEP Scores by Classes

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	53.237	3	17.746	1.475	.228
Within Groups	914.250	76	12.030		
Total	967.488	79			

Table 5. NEP Score Category

Category	Interval
Low	< 45
Neutral	45 - 60
Pro-Environmental	> 60

Source: Rideout (2013)

The low level of environmental worldview among 10th-grade students is thought to be influenced by various factors, one of which is the insufficient educational support aimed at enhancing their environmental worldview. As Taskin (2009) pointed out, this issue is particularly pronounced among elementary and middle school students. High school students often exhibit unstable thinking when determining appropriate actions. Jean Piaget describes adolescents at the "Formal Operations" stage (approximately 12 years and older) as beginning to develop their abilities for abstract, conceptual, and logical thinking. Although they can engage in more complex thought processes, this development is not yet fully mature or stable. During this time, adolescents may also be significantly influenced by their evolving emotions and impulses, resulting in notable emotional fluctuations (Huitt & Hummel, 2003). However, this period represents a prime opportunity to introduce environment-focused learning. A strong foundation in environmental worldview can cultivate a philosophy that encourages the younger generation to adopt a more non-materialistic perspective and a broader understanding of environmental issues (Rideout, 2013).

Student's Environmental Worldview Based on Gender Difference

The study of environmental worldviews analyzed through the lens of gender has garnered considerable attention. The following presents the results of the analysis of NEP scores for 10th grade students at State Senior High School of 1 Turen, based on gender differences (Table 6).

Table 6. NEP Scores by Gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
NEP SCORE	Female	59	36.3898	3.37341	.43918
	Male	21	35.9048	3.89750	.85050

In terms of gender, the NEP scores are detailed in Table 6. The table indicates that the average score for female students is 36.39, whereas the average NEP score for male students is 35.9. The results of the difference test presented in Table 7 demonstrate that gender does not significantly influence students' NEP scores, with a P-value = 0.369 > 0.05. These findings contrast with those of Rideout (2013), who asserted that gender significantly impacts students' NEP scores. Additionally, Dunlap *et al.* (2000) identified gender as a significant predictor of NEP. Stern *et al.* (1993) agrees and argue that an individual's position within the social structure serves as a precursor to their worldview. In societies where substantial differences exist in gender roles, distinct worldviews may emerge between genders. For instance, Zelezny *et al.* (2000) discovered that females are more likely than males to consider the needs of others, exhibit higher levels of socialization, and demonstrate greater social responsibility. This observation supports the notion that females experience different social structures compared to males, reinforcing the idea of significant differences in worldviews between genders (Ling *et al.*, 2020).

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Table 7. Difference of NEP Scores Based on Gender Using Independent T Test

		Levene's Test of Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of The Difference	
									Lower	Upper
NEP SCORE	Equal Variances Assumed	.816	.369	.543	78	.589	.48507	.89323	-1.29322	2.26336
	Equal variances not assumed			.507	31.320	.616	.48507	.95720	-1.46635	2.43649

However, research by Srbinovski (2016) on students in Macedonia indicates no difference in environmental worldview between male and female students. It is worth noting that in this study, the number of male participants was lower than that of female participants, leading to a higher standard error in the data. Consequently, further investigation is needed to identify more specific differentiating factors.

Student's Environmental Worldview Based on Ages

Furthermore, with respect to the students' age, similar results are observed in the correlation between NEP scores and age. Table 8 presents the findings of the Pearson correlation, which registered a value of p = 0.87, exceeding the significance level of α = 0.05. This suggests that there is no significant correlation between the students' age and their NEP scores. This finding is further supported by research conducted by Khan et al. (2013), which indicates that age and gender do not significantly influence an individual's environmental worldview; rather, it is the level of education that impacts how a person engages with their environment. In light of Khan et al. (2013) assertion, the level of secondary education, particularly beginning from grade 10, serves as an excellent opportunity to introduce environmental worldview to students.

Table 8. Correlation of NEP Scores Based on Age

		Age	NEP Score
Age	Pearson Correlation	1	-.019
	Sig. (2-tailed)		.870
	N	80	80
NEP Score	Pearson Correlation	-.019	1
	Sig. (2-tailed)	.870	
	N	80	80

Student's Environmental Worldview Based on Blood Type

The differences in NEP scores based on blood type are presented in Table 9. The results indicate a P-value of 0.294, which exceeds the threshold of 0.05, suggesting there is no significant difference between NEP scores and blood type.

Table 9. Difference NEP Scores Based on Blood Type Using ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	45.825	3	15.275	1.260	.228
Within Groups	921.662	76	12.127		
Total	967.488	79			

Narkhede (2015) study in Japan indicates that each blood type is associated with distinct personality traits, such as responsibility and leadership. However, the belief that blood type influences personality remains a social myth, particularly prevalent in some East Asian countries like Japan and Korea, but it lacks empirical support. According to Rogers & Glendon (2003), there is no rationale for assuming that personality traits in the general population are distributed in a way that correlates with different blood types. Blood type itself is a genetic characteristic determined by the ABO blood group system, which is linked to immune system functionality (Ewald & Sumner, 2016). Environmental worldview is shaped by at least six factors: environmental education and knowledge (Dunlap & Van Liere, 1978), personal experience (Gifford et al., 2013), social beliefs (Schultz, 2001), as well as political and media influences (Mccombs & Shaw, 1972). Environmental education and knowledge serve as crucial elements in fostering a person's understanding of environmental issues. Dunlap & Van Liere (1978) noted that environmental worldview is impacted by how well

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individuals comprehend the interconnectedness of humans and nature, alongside the significance of conservation and sustainability. Education focused on ecology and sustainability can promote a more integrated perspective on the relationship between humanity and the natural world.

The overall research findings assessing the environmental worldview of 10th-grade students at State Senior High School 1 Turen using the NEP instrument indicated that various demographic factors (gender, age, and blood type) had no significant impact on the results. The average NEP score for these students was neutral (36.26), as determined by its standard deviation. This score falls into a low range according to Rideout (2013), which defines a minimum score of 60.00 to qualify as pro-environment.

The low NEP scores among students can be attributed to insufficient educational experiences that promote environmental understanding. Therefore, integrating environmental worldview into the learning process is essential. Research has consistently shown that integrating NEP into educational curricula leads to significant improvements in students' environmental worldview. For instance, Syamsussabri et al. (2019) found that an e-module addressing environmental pollution markedly enhanced students' environmental worldview. Similarly, a study by Ling et al. (2020) highlighted the effectiveness of sustainable environmental education through travel-based study abroad programs in enriching students' environmental understanding.

NEP serves as a fundamental indicator of environmental worldview, which should be incorporated into pedagogical practices, including the development of teaching materials and learning models. This is crucial because environmental worldview acts as a subjective framework, providing a conceptual foundation for the attitudes, beliefs, and behaviors related to environmental issues (Pleasants & Gough, 2021). As (Haraway, 1988) notes, our worldviews are not static but rather situational and embodied, influenced by various conditions. As a result, environmental worldview can shape the processing of knowledge and enhance information sharing across interdisciplinary research (Noblet *et al.,* 2013).

4. CONCLUSION

The findings of this study reveal that the majority of 10th-grade students at State Senior High School 1 Turen exhibit relatively low scores on the New Ecological Paradigm (NEP) scale, with an average score of 36.26, a minimum of 27.00, and a maximum of 46.00. This indicates that there is a need for improvement in students' environmental worldview. Furthermore, the demographic data showed no significant differences based on factors such as class, gender, age, or blood type. It appears that the primary reason for students' limited environmental insight is the insufficient integration of environmental worldview indicators within the curriculum at State Senior High School 1 Turen. Enhancing environmental worldview is essential, as it can foster a philosophy that encourages the new generation to adopt a less materialistic viewpoint and to engage more deeply with environmental issues. Therefore, it is crucial to develop teaching materials and learning models that effectively support the enhancement of students' environmental worldview. This can be achieved by integrating environmental issues into the learning process, with the aim of building a conceptual foundation for attitudes, beliefs, and specific behaviors related to the environment.

5. ACKNOWLEDGEMENT

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