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Model of Ecological Citizenship Program Through Adiwiyata School to Increase Students' Environmental Awareness and Concern at Madrasah Aliyah Negeri 1 Bandung

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ABSTRACT

Environmental awareness and concern are two things that can be a catalyst for the development of Ecological Citizenship in the school environment. This study aims to determine students' level of awareness and concern through the ecological citizenship model program implemented by Madrasah Aliyah Negeri 1 Bandung as the National Adiwiyata School. This study uses a descriptive quantitative approach with questionnaires and interviews. The results showed that students' awareness of the environment showed a very good predicate with a percentage of 84.99%, and students' concern for the environment determined a good predicate with a percentage of 78.28%. Therefore, Madrasah Aliyah Negeri 1 Bandung implemented the ecological citizenship program model through the National Adiwiyata School program to increase students' awareness and concern for the environment.

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1. INTRODUCTION

In fulfilling their life needs, humans need natural resources such as land, water and air, and other natural resources, including renewable and non-renewable ones (Mina, 2016). Society, in general, lives continuously changing, so every community experiences changes commonly called dynamics, which cannot be avoided (Apriani et al., 2023). The dynamics of human life today affect environmental conditions because various needs must be met. Problems that occur at this time include excessive exploitation of natural resources, waste disposal into rivers, littering, deforestation, and others so that, in the end, these activities result in disaster for humans. From the problem description, the community needs to instill an attitude of ecological citizenship in their lives. Ecological citizenship involves empowering citizens to have the knowledge, skills, and attitudes needed to identify their values and goals concerning the environment and be able to act according to their knowledge of the consequences that will happen (Mariyani, 2017) (Khatimah et al., 2022). To apply for ecological citizenship, it must be started in school so that students are accustomed to and form awareness and concern for the environment.

Awareness and concern for the environment for students in schools are essential because they can help create a good and healthy environment for students learning and development. Environmental

awareness is when a person's soul is actively drawn toward something. This condition can be observed in a person's various actions and behaviors (Neolaka, 2008) (Abbas, 2021). Meanwhile, environmental concern is an attitude and behavior that always aims to restore the surrounding natural environment and take the initiative to restore the damage that has occurred to it (Zuchdi, 2019).

The government, in this case, the Ministry of Environment and Forestry of the Republic of Indonesia, regulates the Adiwiyata Program. In Indonesia, around 434 Adiwiyata schools are spread throughout the country (Humas KLHK, 2019). The Adiwiyata Award is given by the Regent/Mayor as a charter and trophy for Adiwiyata Schools at the Regency/City level, by the Governor for Adiwiyata Schools at the Provincial level, and by the Ministry of Environment and Forestry for Adiwiyata Schools at the National level. The Adiwiyata program aims to educate children to love the environment and be responsible for preserving it (Diyan Nurvika Kusuma Wardani, 2020) (Subiyakto et al., 2020). This program also aims to increase school members' awareness so they can participate in efforts to save the environment.

The Adiwiyata program is one of the catalysts for creating Ecological Citizenship. Ecological Citizenship requires empowering several parties with the attitudes (Kusnadi et al., 2017), skills, and knowledge to identify citizens' values and goals concerning the environment and act according to the best knowledge regarding consequences and choices (Fahlevi et al., 2020). This Adiwiyata program can help build ecological Citizenship (Simanjuntak et al., 2022) (Rusmaniah et al., 2021) , namely individual awareness and concern for the environment as part of social responsibility and Citizenship. In this case, the Adiwiyata School is essential in building ecological Citizenship and creating a good and healthy environment for learning and growing students (Safrizal et al., 2020).

Madrasah Aliyah Negeri 1 Bandung is one of the schools in the Bandung Regency area that adapts the Adiwiyata School Program. The school was designated as a National Adiwiyata School in 2021. In its application in schools, students are introduced to many program models related to environmental management, such as making Ecobrick, Garbage Alms Movement, Healthy Clean Fridays, reducing cellphone use, and establishing Adiwiyata Cadre. In addition, students must carry out some habits, such as reducing plastic waste, bringing personal cutlery, and many other programs.

2. METHODS

The research approach used in this research is qualitative with descriptive type. The research method used is a questionnaire and interviews. The time for conducting the research takes place in March 2023 in the 2022/2023 academic year. The sample in this study amounted to 90 people from a population of students at Madrasah Aliyah Negeri 1 Bandung, totaling 814 students. The sampling technique is simple random sampling with 3 different class classes as the sample. In addition, interviews were conducted with the Principal, Teachers, and Students of MAN 1 Bandung.

Students' environmental awareness and concern are measured using a questionnaire as part of the data collection method: non-test. Assessment of the questionnaire instrument using a Likert scale. Questionnaire result data was processed and analyzed descriptively. The questionnaire is a closed questionnaire with options adjusting to the research variables. For the caring variable, use the choice SS = Very Often (score 5), S = Often (score 4), K = Sometimes (score 3), J = Rarely (score 2), and TP = Never (score 1). Then for choices on the awareness variable SS = Strongly Agree (score 5), S = Agree (score 4), R = Doubt (score 3), TS = Disagree (score 2), and STS = Strongly Disagree (score 1). Researchers used data analysis techniques based on the Miles and Huberman model, which consisted of three activity streams: data reduction, data presentation, and conclusion/verification (Tyas et al., 2022).

3. FINDINGS AND DISCUSSION

Student Awareness of the Environment

This environmental awareness questionnaire was randomly distributed to 90 students at MAN 1 Bandung. With three classes, each class represents its generation starting from grades 10-12. The

student awareness questionnaire for the environment consists of 10 questions that elaborate on the indicator variable for awareness of the environment. These questions are categorized as an instrument grid with a Likert scale rating. Following are the results of the recapitulation for the awareness variable, which can be seen in table.1.

Table 1. Results of Measurement of Student Awareness of the Environment

No.	Question	SS		S		R		TS		STS	
1	Students must maintain the classroom and school environment	70	78%	16	18%	4	4%	0	0%	0	0%
2	Students must maintain plants properly without stepping on or damaging them	66	73%	23	26%	1	1%	0	0%	0	0%
3	Students must support the go green program in the school environment	48	53%	31	34%	11	12%	0	0%	0	0%
4	MAN 1 Bandung has a place to dispose of garbage for organic and non-organic types of waste	52	58%	28	31%	10	11%	0	0%	0	0%
5	MAN 1 Bandung has a bathroom, clean water, and a place to wash hands	48	53%	26	29%	14	16%	2	2%	0	0%
6	All students must have an awareness of environmental sustainability	67	74%	22	24%	1	1%	0	0%	0	0%
7	When they see trash lying around, students must pick it up and throw it in the trash	58	64%	26	29%	5	6%	1	1%	0	0%
8	Every student must invite other students always to be aware of preserving the environment	49	54%	32	36%	9	10%	0	0%	0	0%
9	As students committed to participating in formulating environmental preservation	37	41%	35	39%	18	20%	0	0%	0	0%
10	Students are accustomed to protecting the environment without the need to be given an appeal	32	36%	35	39%	23	26%	0	0%	0	0%

The first question is that most respondents (78%) strongly agree that students must maintain the classroom and school environment. A small number of respondents (18%) agreed that students must maintain the classroom and school environment, and a small number of others (4%) stated doubt that students have to maintain the classroom and school environment. No respondents disagreed (0%) or strongly disagreed (0%). Based on these results, it can be concluded that students of MAN 1 Bandung strongly agree that students must maintain the classroom and school environment.

In the second question, more than half of the respondents (73%) stated that students must take good care of plants without stepping on or damaging them. Few (1%) expressed doubt that students should take good care of plants without stepping on or damaging them, and no respondents stated that they disagreed (0%) or strongly disagreed (0%). Based on these results, students of MAN 1 Bandung must maintain plants properly without stepping on or damaging them.

In the third question, more than half of the respondents (53%) stated that they strongly agreed that students should support the go green program in the school environment, less than half of the respondents (34%) stated that they agreed that students should support the go green program in the school environment, only a small proportion (12%) expressed doubt that students should support the go green program in the school environment. No respondents disagreed (0%) and strongly disagreed (0%). Based on these results, it can be concluded that students of MAN 1 Bandung strongly agree that students must support the go green program (greening) in the school environment.

In the fourth question, more than half of the respondents (58%) stated that they strongly agreed that MAN 1 Bandung had a place to dispose of organic and non-organic types of waste, less than half of the respondents (31%) agreed that MAN 1 Bandung had a place to dispose of organic and non-organic types of waste, a small number of respondents (11%) expressed doubt that MAN 1 Bandung has a place to dispose of organic and non-organic types of waste, and there were no respondents who disagreed (0%) and strongly disagreed (0%). Based on these results, the students of MAN 1 Bandung strongly agree that MAN 1 Bandung has a place to dispose of organic and non-organic types of waste.

In the fifth question, more than half of the respondents (53%) stated that they strongly agreed that MAN 1 Bandung had a bathroom, clean water, and a place to wash their hands; less than half of the respondents (29%) agreed that MAN 1 Bandung had a bathroom, clean water, and a place to wash hands, a small number of respondents (16%) expressed doubt that MAN 1 Bandung had a bathroom, clean water and a place to wash hands, and no respondents stated that they disagreed (0%) and strongly disagreed (0%). Based on these results, it can be concluded that MAN 1 Bandung has a bathroom, clean water, and a place to wash hands.

In the sixth question, less than three-quarters of respondents (74%) stated that they strongly agreed that students should have an awareness of environmental sustainability, less than a quarter of respondents (24%) agreed that students should have an awareness of environmental sustainability, only a few respondents (1%) who expressed doubt that students should have an awareness of environmental sustainability. No respondents stated that they disagreed (0%) and strongly disagreed (0%). Based on these results, it can be concluded that students of MAN 1 Bandung agree that they must be aware of environmental sustainability.

In the seventh question, less than half of the respondents (64%) stated that they strongly agreed that when they saw trash lying down, students had to pick it up and throw it in the trash; more than a quarter of respondents (29%) agreed that when they saw trash lying down students had to pick it up and throw it in the trash. Only a few (5%) expressed doubt that students had to pick it up and throw it in the trash, and only (1%) stated they disagreed that when they saw trash lying down, students had to pick it up and throw it in the trash, and there are no respondents who strongly disagree (0%). So based on these results, it can be concluded that MAN 1 Bandung students strongly agree that when they see trash lying around, students must pick it up and throw it in the trash.

In the eighth question, more than half of the respondents (54%) strongly agreed that every student should invite other students always to be aware of preserving the environment. More than a quarter of

respondents (36%) agreed that every student should invite other students always to be aware of preserving the environment, and less than a quarter of respondents (10%) expressed doubt that every student should invite other students always to be aware of preserving the environment. There were no respondents who disagreed (0%) and strongly disagreed (0%). Based on these results, it can be concluded that MAN 1 Bandung students strongly agree that every student should invite other students always to be aware of preserving the environment.

In the ninth question, less than half of the respondents (41%) stated that they strongly agreed that, as students, they were committed to participating in formulating environmental preservation, more than a quarter of respondents (39%) agreed that as students they were committed to participating in formulating environmental preservation, less out of a quarter of respondents (20%) expressed doubt that as students they were committed to participating in formulating environmental preservation. No respondents stated that they disagreed (0%) and strongly disagreed (0%). Based on these results, the students of MAN 1 Bandung strongly agree as students committed to participating in formulating environmental preservation.

In the tenth question, less than half of the respondents (39%) agreed that students are accustomed to protecting the environment without needing advice. More than a quarter of respondents (36%) stated that they strongly agreed that students were accustomed to protecting the environment without needing to be given advice, more than a quarter of respondents (26%) stated that they doubted that students were used to protecting the environment without needing to be given advice. No respondents disagreed (0%) or strongly disagreed (0%). So based on these results, it can be concluded that MAN 1 Bandung students agree that students are used to protecting the environment without needing an appeal.

Table 2. Overall Recapitulation

Score (S)	Frequency (F)	Value (SxF)
5	527	2635
4	274	1096
3	96	288
2	3	6
1	0	0
Total	900	4025

The table above shows that the total score for the variable Awareness of students towards the environment is 4,025. Categorization is based on the ideal score range where:

1. Maximum total score. 5 multiplied by the question item multiplied by the number of respondents. 5x10x90 = 4,500
2. Minimum total score. 1 times the question item times the number of respondents 1x10x90 = 900
3. Score range = (Maximum score-Minimum score): 5 = 4,500-900 : 5 = 720

Based on the research results of 90 respondents, the variable score of students' concern for the environment is 4,025. If it is a percentage, it is calculated as 4025/4500x100% = 89.44%. Before interpreting, an interval is needed first:

I = 100 / Likert score

I = 100 / 5

I = 20

Based on these intervals, it can be concluded

Table 3. Assesment Category

Interval	Category

0%-19,99%	Very less
20%-39,99%	Not enough
40%-59,99%	Enough
60%-79,99%	Good
80%-100%	Very good

So the research results of 90 respondents, the variable score of students' awareness of the environment are 3,523. If it is a percentage, it is calculated as 3523/4500x100% = 89.44%. So students' awareness of the environment is in the **Very Good** category.

Student Concern of the Environment

The student concern questionnaire for the environment was distributed to 90 students at MAN 1 Bandung randomly. With three classes, each class represents its generation starting from grades 10-12. This questionnaire of students' concern for the environment consists of 10 questions elaborating on the indicator variable of environmental concern. These questions are categorized as an instrument grid with a Likert scale rating. The recapitulation results for the caring variable can be seen in table.4.

Table 4. Results of Measurement of Student Concern of the Environment

No.	Question	SS		S		K		J		TP	
1	I have reduced my use of single-use plastic	10	11%	34	38%	35	39%	11	12%	0	0%
2	I have thrown the trash in its place	56	62%	25	28%	6	7%	3	3%	0	0%
3	I support the policies of MAN 1 Bandung relating to environmental preservation	57	63%	18	20%	15	17%	0	0%	0	0%
4	I like taking care of the garden and cleanliness at school	14	16%	34	38%	29	32%	12	13%	1	1%
5	I do not step on random plants	51	57%	21	23%	7	8%	5	6%	6	7%
6	I have reduced the use of motorized vehicles	13	14%	8	9%	44	49%	19	21%	6	7%
7	I will water the plants when the garden looks wilted	20	22%	31	34%	27	30%	9	10%	3	3%
8	I participated in discussing picket schedules in class	31	34%	16	18%	31	34%	10	11%	2	2%
9	I routinely carry out pickets at school	71	79%	16	18%	2	2%	1	1%	0	0%
10	I am a student who always preserves the environment	27	30%	35	39%	25	28%	3	3%	0	0%

In the first question, less than half of respondents (39%) stated that they sometimes reduce the use of single-use plastic waste, less than half of respondents (38%) stated that they often reduce the use of single-use plastic waste, less than a quarter of respondents (12%) stated that they rarely reduce use single-use plastic waste, another small proportion (11%) stated that they very often reduced the use of single-use plastic waste. None of the respondents (0%) stated that they had never reduced the use of single-use plastic. Based on these results, students at MAN 1 Bandung sometimes reduce the use of plastic waste.

In the second question, more than half of the respondents (62%) stated that they often dispose of garbage in its place. More than a quarter of respondents (28%) stated that they often dispose of garbage in its place, and a small proportion of respondents (7%) stated that they sometimes dispose of garbage in its place. , another small proportion (3%) stated that they rarely dispose of garbage in its place, and no respondents (0%) said they never disposed of garbage in its place. Based on these results, it can be concluded that MAN 1 Bandung students very often throw garbage in its place.

The third question is that more than half of respondents (63%) stated that they often support school policies related to environmental preservation. Less than a quarter of respondents (20%) stated that they often support school policies related to environmental preservation, and less than a quarter of respondents (17%) stated they sometimes support school policies relating to environmental preservation. Furthermore, no respondents stated that they rarely (0%) and never (0%) supported school policies related to environmental preservation. Based on these results, it can be concluded that MAN 1 Bandung students very often support school policies related to environmental preservation.

In the fourth question, less than half of the respondents (38%) stated that they often cared for the plants and kept the school clean, and less than half of the respondents (32%) stated that they sometimes cared for the plants and kept the school clean, less than a quarter of the respondents (16%) stated that they cared for the plants very often. Furthermore, regarding school cleanliness, a small number (13%) stated that it was rare, and only a few (1%) stated that they had never cared for plants and kept the school clean. Based on these results, students at MAN 1 Bandung often care for plants and clean the school.

In the fifth question, more than half of the respondents (57%) stated that they very often did not step on random plants, less than a quarter (23%) stated that they often did not step on random plants, only a few (8%) stated that sometimes they did not step on random plants, only a few (7%) stated that they had never stepped on random plants. Only a few (6%) said they rarely stepped on random plants, so it can be concluded from these results that MAN 1 Bandung students have never stepped on random plants.

In the sixth question, less than half (49%) stated that they sometimes reduce the use of motorized vehicles, less than a quarter (21%) stated that they rarely reduce the use of motorized vehicles, a small number of others (14%) stated that they very often reduce the use of motorized vehicles, only a few respondents (9%) stated that they often reduced the use of motorized vehicles. Few respondents (7%) stated that they had never reduced the use of motorized vehicles. Based on these results, students at MAN 1 Bandung have reduced the use of motorized vehicles.

In the seventh question, less than half (34%) stated that they often water the plants when they look wilted, more than a quarter of respondents (30%) stated that they sometimes water plants that look wilted, less than a quarter of respondents (22%) stated that they often watered plants that look wilted, a small proportion (10%) say they rarely water plants that look wilted, and only a few (3%) say they never water plants that look wilted. So it can be concluded from these results that students of MAN 1 Bandung often water plants that look wilted.

In the eighth question, less than half (34%) stated that they often participate in discussing picket schedules in class, most others (34%) stated that they sometimes participate in discussing picket schedules in class, a small number (18%) stated that they often participate in discussing picket schedules in class. Class, a small number of others (11%) stated that they rarely discussed pickets in class, and only a few (2%) stated that they had never participated in discussing pickets in class, so based

on these results, it could be concluded that MAN 1 Bandung students often participated in discussing picket schedules in the classroom.

In the ninth question, more than three-quarters of respondents (79%) stated that they very often carry out pickets in class, less than a quarter (18%) stated that they often carry out pickets in class, only a few (2%) stated that they rarely carry out pickets in class, the rest are only a few (1%) stated that they rarely carried out pickets in class. No respondents (0%) stated that they had never held pickets in class. Based on these results, it can be concluded that MAN 1 Bandung students often carry pickets in class.

In the tenth question, less than half (39%) stated that they often protect the environment, more than a quarter of respondents (30%) stated that they very often protect the environment, and more than a quarter of respondents (28%) stated that they sometimes protect the environment, only a little (3%) stated that they rarely conserved the environment, and no respondents (0%) stated that they had never conserved the environment. So students of MAN 1 Bandung often maintain environmental sustainability.

Table 5. Overall Recapitulation

Score (S)	Frequency (F)	Value (SxF)
5	350	1750
4	238	952
3	221	663
2	73	146
1	18	12
Total	900	3523

From the table above, it is known that the total score for the variable of students' concern for the environment is 3,523 categories based on the ideal score range where:

1. Maximum total score. 5 multiplied by the question item multiplied by the number of respondents. 5x10x90 = 4,500
2. Minimum total score. 1 times the question item times the number of respondents 1x10x90 = 900
3. Score range = (Maximum score-Minimum score): 5 = 4,500-900 : 5 = 720

Based on the research results of 90 respondents, the variable score of students' concern for the environment was 3,523. If it was a percentage, it was calculated as 3523/4500x100% = 78.28%. Before interpreting, an interval is needed first:

I = 100 / Likert score

I = 100 / 5

I = 20

Based on these intervals, it can be concluded

Table 6. Assesment Category

Interval	Category
0%-19,99%	Very less
20%-39,99%	Not enough
40%-59,99%	Enough
60%-79,99%	Good
80%-100%	Very good

So the research results of 90 respondents, the variable score of students' concern for the environment is 3,523. If it is a percentage, it is calculated as 3523/4500x100% = 78.28%. So students' concern for the environment is in the **Good** category.

Based on the results of this study, MAN 1 Bandung students have an awareness of the environment by 89.44%, which means that students have awareness by having a sense that they have to be responsible for the environment, aware of the environment by knowing the conditions of the school environment, have awareness by agreeing with school policies on the environment. Then the percentage of concern for the environment is 78.28%, meaning that students are already concerned about reducing pollution and are involved in discussions related to the environment.

This can also be achieved with the help of the school's role in providing good educational services to students, where MAN 1 Bandung, which was inaugurated as a national adiwiyata school by the Ministry of Environment in 2021, has fulfilled the components of the Adiwiyata School. Based on the results of interviews that have been conducted, four components have been fulfilled by MAN 1 Bandung in the application of Adiwiyata, including:

1. The first component is having broad insight into the environment by involving teachers to guide students in implementing the Adiwiyata school program, which also requires the teacher to have broad insight into the environment.
2. The second component is the environmental care-based school curriculum, incorporating themes or issues into each subject's Learning Implementation Plan (RPP).
3. The third component is activities that have strong participation by involving all school members in implementing the Adiwiyata school program and then by establishing relationships with agencies, companies, and communities to support the running of Adiwiyata schools in these schools, such as the Ministry of Environment, the Ciparay District Sector Police, Garbage Bank, and Green Generation which is a community of environmentalists.
4. The fourth component is the management of supporting facilities for environmental preservation in the management of supporting facilities for the preservation of the school environment. It involves students in caring for these supporting facilities. Responsible for caring for the garden and plants in front of the class.

While participating in Adiwiyata activities at school, students are very enthusiastic about following school policies related to environmental preservation by implementing this in their daily activities. Students hope to continue consistently being disciplined in protecting the environment and invite the community to protect the environment together.

4. CONCLUSION

Adiwiyata School is a program from the Ministry of Environment that prioritizes environmental and cultural awareness. The Adiwiyata School Program is regulated in the Regulation of the Minister of Environment of the Republic of Indonesia Number 05 of 2013. The Adiwiyata School is an exciting program because it can be a solution to problems. The Adiwiyata school program also reduces the potential for environmental destruction by educating students to protect the environment from school. To carry out the Adiwiyata MAN 1 Bandung School program, it must fulfill the specified components, such as (1) Have broad insight into the environment; (2) Environmental-based curriculum components; (3) Activities have a strong level of participation; (4) Management of supporting facilities for environmental preservation. Based on the research results above, it can be concluded that students' awareness of the environment shows a **Very Good predicate** with a percentage of 84.99%, and students' concern for the environment determines a **Good predicate** with a percentage of 78.28%. Therefore, MAN 1 Bandung implemented the ecological citizenship program model through the Adiwiyata School program to increase students' awareness and concern for the environment.

Based on the results of the research, the advice that can be given is that the Adiwiyata school program can increase students' awareness and concern for the environment. Habituation-based school activities to protect the environment involve students starting from sorting waste, making ecobricks, reducing electricity use, reducing plastic waste, and fostering a sense of obligation for all school members to protect the environment. Environment because to raise awareness and concern for students, it must start from their daily habits.

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