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RESEARCH ARTICLE 

Environmental Media and Its Role in Promoting Environmental Awareness from the Perspective of High School Students in Bejaia Province (A Field Study on a Sample of Students from El-Hammadiya High School in Bejaia Province)

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Keywords

Environmental Media; Environmental Awareness; Secondary School Students.

Abstract

The present study aimed to measure the role of environmental media in promoting environmental culture among secondary school students in the Wilaya of Bejaia. This research comes within the context of increasing environmental challenges in Algeria and around the world, as well as the growing importance of media as a source of awareness and education on environmental issues. The descriptive-analytical approach was adopted for its suitability to the nature of the research, and the researcher used a self-developed questionnaire entitled "The Role of Environmental Media in Disseminating Environmental Culture among Secondary School Students." The study was conducted on a purposive sample of (83) male and female students, selected through simple random sampling from El-Hammadiyah Secondary School in Bejaia. The results showed that the level of contribution of environmental media in promoting environmental culture, from the students' point of view, was moderate, with a mean score of 2.07 and a percentage of 69%. The findings also revealed no statistically significant differences in students' perceptions of the role of environmental media according to gender and place of residence. However, there were statistically significant differences according to age, in favor of older students, and according to educational level, in favor of third-year secondary students. The study concluded that it is essential to strengthen environmental media targeting school students by producing simplified and appealing local environmental content, and by integrating environmental media within educational activities inside schools. It also recommended activating partnerships between educational institutions and local media outlets to expand the scope of positive environmental influence.

Citation

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1- Research Problem and Questions: Environmental issues represent one of the most critical challenges facing contemporary societies, as they manifest in various forms such as environmental pollution, depletion of natural resources, and climate change—all of which negatively impact the quality of life. In this context, environmental media is considered an effective tool for promoting environmental awareness, particularly among secondary school students, as this group plays a pivotal role in shaping the future societal consciousness.

Studies indicate that environmental media in Algeria still faces challenges in effectively reaching its target audience, Khedir (2014) noted that environmental media in Algeria lacks coordination among different media outlets, which reduces its effectiveness in disseminating environmental awareness. Similarly, Twazi and Wiassa (2020) stated that “environmental programs presented through traditional media do not align with young people’s interests, leading to weak influence.

On the other hand, a study by Bouzidi El-Houari and Ghamida (2023) revealed that digital media, such as social networking platforms, have become the primary source of environmental information for youth, but they lack credibility and reliability, which calls for supervision and guidance.

Based on the foregoing, this study seeks to answer the following main question: To what extent does environmental media contribute to enhancing environmental culture among secondary school students in the Wilaya of Bejaia?

Accordingly, the researcher’s interest in conducting this study stems from the need to answer the following sub-questions:

Research

Questions

The study attempts to answer the following questions:

1. To what extent do various forms of environmental media (print, audio, visual, and digital) contribute to spreading environmental culture and enhancing environmental awareness among secondary school students in Bejaia?
2. Does the level of awareness among secondary school students in Bejaia regarding the role of environmental media in disseminating environmental culture differ according to gender?
3. Does the level of awareness among secondary school students in Bejaia regarding the role of environmental media in disseminating environmental culture differ according to age?
4. Does the level of awareness among secondary school students in Bejaia regarding the role of environmental media in disseminating environmental culture differ according to academic level?
5. Does the level of awareness among secondary school students in Bejaia regarding the role of environmental media in disseminating environmental culture differ according to place of residence?

2.1 Research Objectives. The present study aimed to:

- Measure the level of awareness among secondary school students in the Wilaya of Bejaia regarding the role of environmental media in disseminating environmental culture.
- Examine the differences in awareness levels among secondary school students in Bejaia concerning the role of environmental media in promoting environmental culture, according to variables such as gender, age, academic level, and place of residence.

3.1 Significance of the Study. The importance of the present study lies in its focus on the role of environmental media as a vital tool for enhancing and disseminating environmental culture among a key demographic—secondary school

students in the Wilaya of Bejaia, specifically at El-Hammadiyah High School. Students at this educational stage represent the foundation for building a generation that is environmentally aware and capable of addressing the environmental challenges facing Algerian society. Enhancing environmental awareness at this level not only strengthens theoretical knowledge but also fosters the adoption of environmentally friendly behaviors that contribute to conserving natural resources and reducing pollution.

Furthermore, this study helps bridge the knowledge gap regarding the effectiveness of local environmental media, particularly in urban and semi-urban areas, where media sources and student engagement differ from those in major cities. By focusing on demographic variables such as age, academic level, and place of residence, the research provides an in-depth understanding of how these factors influence students' responses to environmental media content. This insight can guide the design of more tailored and effective educational and media programs. Additionally, the study plays an important role in supporting decision makers in the media and education sectors by providing accurate field data that can inform the development of integrated policies and programs to embed environmental media into the educational process. This integration strengthens the capacity of schools and universities to contribute effectively to building a sustainable society through their students. Finally, the study gains practical and real-world significance amid current environmental challenges that require broad social cooperation and deep awareness especially among youth of the importance of protecting the environment. Therefore, the findings of this study are expected to foster community participation and encourage positive behavioral change among students, thus laying a solid foundation for environmental awareness in the Wilaya of Bejaia and Algeria as a whole.

4.1 Delimitations of the Study

1. **Spatial and Human Delimitations:** The study was conducted in the Wilaya of Bejaia, one of Algeria's northern coastal provinces located along the Mediterranean Sea. Bejaia is classified as both a touristic and environmental region, characterized by its mountainous terrain, vast forests, and the globally recognized Gouraya National Park. The study sample consisted of 83 male and female students from El-Hammadiyah Secondary School.
2. **Temporal Delimitation:** The study was carried out during the second half of the year 2025.
3. **Conceptual Delimitation:** The key concepts addressed in this study include environmental media, environmental culture, and secondary school students.

5.1 Study Terms

Environmental Media: Environmental media is a composite concept derived from two main notions: *media* and *environment*. Media refers to the objective, truthful, and accurate transmission of news, topics, and facts, providing people with information that helps them form a sound understanding of reality (Masoudan, 2015). The environment, on the other hand, is the surrounding system in which humans coexist, consisting of land, air, and water, as well as the interactions among the elements that affect human life (Talhati & Al-Salhi, 2011). According to the Aarhus Convention (Article 2) environmental information is defined as "any information in written, visual, oral, electronic, or any other form concerning the state of environmental elements such as air and its components, water, land, landscape, and natural areas, as well as the interaction between these elements, biodiversity and its components—particularly genetically modified organisms—along with information related to energy, materials, noise, radiation, administrative procedures, environmental agreements, policies, laws, programs, and plans that have or may have a significant impact on the environment, and decisions likely to affect human health, safety, living conditions, cultural sites, and structures that may be influenced by environmental factors or activities affecting the ecosystem" (Mohamed & Ben Daoud, 2019).

Environmental Culture: Environmental culture is defined as the complex whole that encompasses environmental knowledge, values, and attitudes—everything related to the environment. It represents the acquisition of cognitive, emotional, and behavioral components through continuous interaction with one's surroundings, which contributes to shaping positive behavior and enables the individual to interact properly with the environment. This awareness helps in developing a deep understanding of environmental risks that may threaten the ecosystem in the present and future (Bourfis & Ghebouli, 2021). It is also defined as a form of non-formal and informal education aimed at

spreading environmental awareness, building public consciousness regarding environmental issues, and encouraging sustainable attitudes through organizing environmental events such as exhibitions, environmental forums, and tree-planting campaigns, as well as publishing bulletins and producing environmental programs on radio, television, and in print media. Thus, environmental culture serves as a continuous learning process that instills the values of environmental preservation by raising individuals' and communities' awareness of the importance of the environment as an inseparable part of human life and culture (Graid, 2006).

Secondary School Students: Secondary school students are those who have completed basic education and entered a critical stage of learning that lasts for three years, bridging the gap between primary and higher education. During this period, students acquire scientific, educational, and social experiences that prepare them to contribute to community development and the labor market according to their skills and interests before advancing to university or vocational training institutions.

2 - Methodology and Tools:

2.1 Research Method: To achieve the objectives of the present study, the researcher employed the descriptive-analytical method, which is suitable for the nature of the research. A structured questionnaire was designed to measure the role of environmental media in disseminating environmental culture among secondary school students. The collected data were then analyzed, interpreted, and discussed accordingly.

2.2 Study Population: The study population consisted of secondary school students enrolled at El-Hammadiyah *Secondary School* in the Wilaya of Bejaia, with a total of 206 male and female students.

2.3 Study Sample: To achieve the study's objectives, the researcher selected a simple random sample from the overall study population, consisting of 83 students.

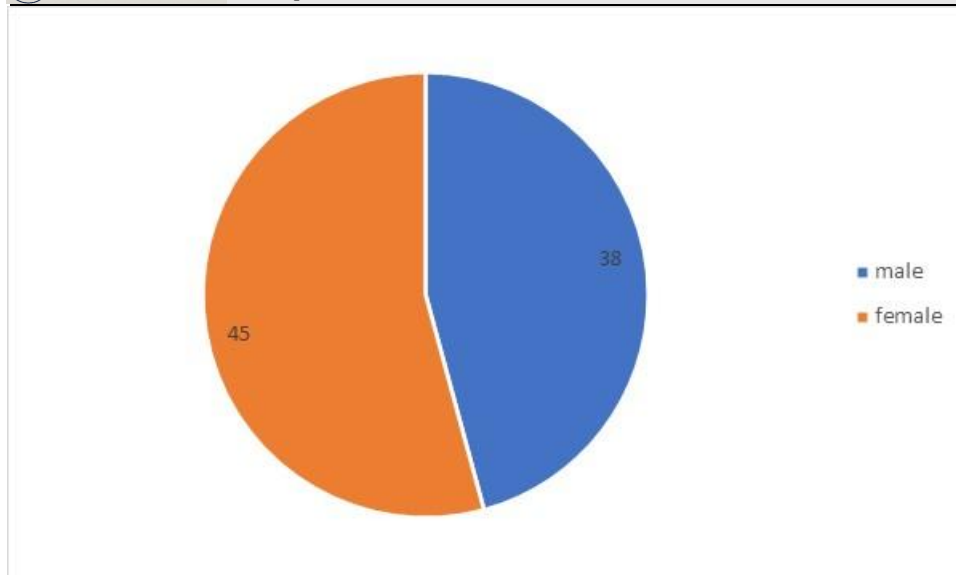
The following table illustrates the distribution of the study sample according to the study variables:

Table 1 Distribution of the Study Sample According to Gender

Gender	Frequency
Male	38
Female	45
Total	83

Source: Researcher

Figure 1 Distribution of the Study Sample According to Gender



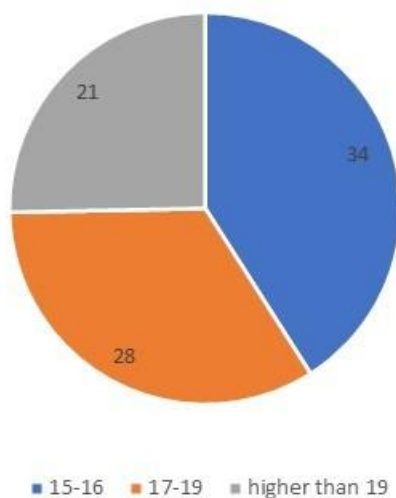
Source: Researcher

Table 2 Distribution of the Study Sample According to Age

Age Range	Frequency
15-16	34
17-19	28
Above 19	21
Total	83

Source: Researcher

Figure 2 Distribution of the Study Sample According to Age



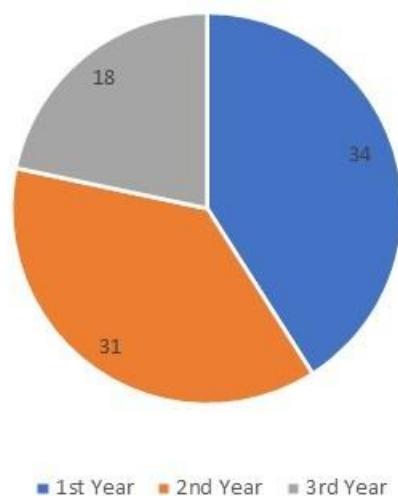
Source: Researcher

Table 3 *Distribution of the Study Sample by Educational Level*

Educational Level	Number
First Year	34
Second Year	31
Third Year	18
Total	83

Source: Researcher

Figure 3 *Distribution of the Study Sample by Educational Level*



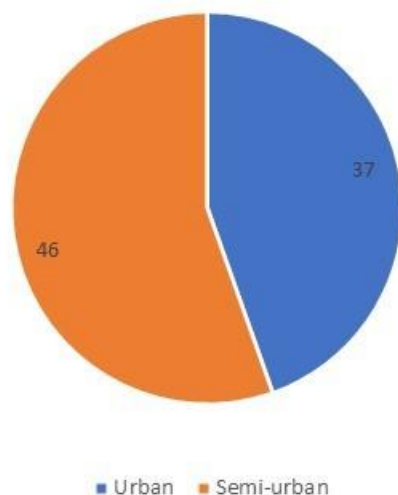
Source: Researcher

Table 4 Distribution of the Study Sample by Place of Residence

Place of Residence	Number
Urban	37
Semi-urban	46
Total	83

Source: Researcher

Figure 4 Distribution of the Study Sample by Place of Residence



Source: Researcher

4.2 Study Instrument. To achieve the objectives of the present study and answer its research questions, and after reviewing the relevant previous studies, the researcher developed a scale designed to measure the extent to which various forms of environmental media (print, audio, visual, and digital) contribute to disseminating environmental culture and shaping environmental awareness among secondary school students. The final version of the questionnaire included a cover letter introducing the instrument and its title, as well as items representing the study variables—gender, age, educational level, and place of residence. The scale itself consisted of 24 items, each requiring responses on a three-point scale: *Yes*, *Not sure*, *No*. In data analysis, the responses were assigned numerical weights of (3, 2, 1) for positive items and (1, 2, 3) for negative items.

5.2 Validity and Reliability of the Instrument. To verify the validity of the instrument, it was reviewed by a panel of experts with academic and professional experience in media, environmental, and educational fields. Their feedback was used to evaluate the linguistic and scientific accuracy of the items and their suitability for achieving the study's objectives. In addition, the construct validity of the instrument was tested by calculating the Pearson correlation coefficients for the scale items. The results showed statistically significant correlations across all items, indicating a high degree of internal consistency among them. Table (5) presents these findings.

Table (5) Results of Pearson Correlation Coefficients for the Scale Items

Item No.	R Value	Significance Level
1	0.513	0.001
2	0.321	0.002
3	0.687	0.001
4	0.763	0.001
5	0.722	0.002
6	0.811	0.002
7	0.393	0.002
8	0.583	0.001
9	0.802	0.001
10	0.292	0.001
11	0.461	0.001
12	0.773	0.002
13	0.367	0.002
14	0.342	0.001
15	0.431	0.002
16	0.316	0.001
17	0.662	0.002
18	0.320	0.001
19	0.812	0.001
20	0.712	0.001
21	0.538	0.001
22	0.632	0.002
23	0.418	0.002
24	0.531	0.001

Source: Researcher

It is evident from Table (5) that the correlation coefficient values range between 0.292 and 0.812, all of which are statistically significant. This indicates the validity of the scale items. To verify the reliability of the scale, Cronbach's Alpha coefficient was calculated, yielding a value of (0.81), which confirms the reliability and internal consistency of the instrument.

6.2 Statistical Analysis. The collected questionnaires were reviewed for accuracy and completeness, coded, and entered into a computer for statistical processing. The data were analyzed according to the study's questions and variables using appropriate statistical methods. The analysis included calculating arithmetic means, standard deviations, the *t*-test, one-way ANOVA, Cronbach's Alpha for testing reliability, and Pearson's correlation coefficient. All analyses were conducted using the Statistical Package for the Social Sciences (*SPSS*).

3- Results and Discussion

3.1 Results Related to the First Question: *To what extent do various forms of environmental media (print, audio, visual, and digital) contribute to disseminating environmental culture and enhancing environmental awareness among secondary school students in the Wilaya of Bejaia?* To answer this question, the arithmetic means and percentages for the items of the environmental media scale were calculated from the perspectives of secondary school students. Table (6) presents these results:

Table (6) Means and Percentages of the Environmental Media Scale Items from the Perspectives of Secondary School Students

No.	Item No.	Statement	Mean	Percentage %	Level
1	17	I follow media programs that provide information about the environment.	2.79	93.00	Very High
2	3	Media has not helped me understand pollution problems and their causes.	2.78	92.76	Very High
3	12	I learn from media how to preserve natural resources.	2.73	91.00	Very High
4	21	Media provides accurate information about climate change.	2.71	90.33	Very High
5	5	Through media, I have learned about the concept of sustainable development.	2.37	79.00	High
6	9	Media has helped me learn about environmental laws in my country.	2.34	78.00	High
7	1	I feel the importance of protecting the environment after watching environmental programs.	2.31	77.00	High
8	23	I believe that media plays a positive role in changing people's attitudes toward the environment.	2.25	75.00	High
9	14	Media content increases my interest in environmental issues.	2.25	75.00	High
10	6	Media campaigns make me more committed to proper environmental practices.	2.01	67.00	Moderate
11	19	Environmental messages contribute to building positive attitudes among youth.	1.99	66.33	Moderate
12	4	I feel responsible after following environmental content in the media.	1.99	66.33	Moderate
13	16	I have not applied any behaviors learned from media, such as conserving water and electricity.	1.99	66.33	Moderate

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14	7	I encourage my peers to protect the environment because of what I see in the media.	1.98	66.00	Moderate
15	24	I participate in environmental activities after watching media reports about them.	1.91	63.67	Moderate
16	11	Media has not influenced my decisions regarding waste management.	1.89	63.00	Moderate
17	2	Media has made me more committed to public cleanliness.	1.79	59.67	Low
18	20	I tend to buy eco-friendly products after learning about them through the media.	1.79	59.67	Low
19	10	Media encourages me to take part in environmental awareness campaigns.	1.79	59.67	Low
20	8	I feel that media portrays environmental protection as a national duty.	1.77	59.00	Low
21	18	My desire to volunteer for environmental causes has increased due to media exposure.	1.77	59.00	Low
22	15	I believe media promotes cooperation among individuals to solve environmental problems.	1.75	58.33	Low
23	13	I think media highlights individual responsibility toward the environment.	1.42	47.33	Very Low
24	22	I feel proud when I see environmental initiatives presented in the media.	1.37	45.67	Very Low
Overall Mean			2.07	69	Moderate

Source: Researcher

It is evident from Table (6) that the overall score of the scale measuring the contribution of environmental media to enhancing environmental culture among secondary school students was moderate, with an arithmetic mean of (2.07) and a percentage of (69%). This result indicates that while environmental media does play a role in promoting environmental culture among secondary school students, its impact remains moderate and not yet profound or comprehensive enough to establish a strong and lasting environmental awareness among them.

The researcher attributes this finding to the fact that students are moderately exposed to environmental media content, which allows them to gain basic knowledge and general concepts about various environmental issues. However, this exposure may be limited in depth, frequency, or presentation style, and such knowledge may not always translate into concrete environmental attitudes and behaviors in daily life. This could also be explained by the fact that environmental media programs are often broadcast at times unsuitable for students, presented in a technical or scientific language that does not align with their age group, or lack interactive elements that could reinforce environmental values and behavior.

This finding is consistent with the results of the study by Napitupulu et al. (2025) in Indonesia, which showed that the level of environmental literacy among middle school students was moderate despite the widespread implementation of school-based environmental activities. Similarly, Gheith (2023) in Jordan found that students' environmental literacy was relatively low (50.7%), while their environmental attitudes and behaviors were at a moderate level—reflecting a similar situation in Arab contexts regarding the limited role of environmental media in fostering and strengthening environmental culture.

Furthermore, the study by Hafez et al (2022) highlighted that media education can serve as an effective tool for promoting positive environmental skills; however, the lack of integration between media initiatives and educational activities reduces its overall effectiveness in building a comprehensive environmental culture.

Based on these findings, it can be concluded that environmental media represents an important awareness raising tool, yet it remains underutilized within the Algerian educational context. This calls for stronger collaboration between media institutions and educational bodies, as well as the redesign of environmental media campaigns to be more interactive and closely related to students' daily lives. It is also recommended to intensify media efforts in the field of environmental education through digital and social media platforms to enhance environmental awareness and foster positive attitudes and behaviors among youth.

2.3 Results Related to the Second Question: *Does the level of environmental media awareness among secondary school students in the Wilaya of Bejaia differ according to gender?*

To answer this question, the researcher used the Independent Samples *t*-test to examine the significance of differences between the mean scores of male and female respondents. The results are presented in Table (8):

Table (8) Results of the Independent Samples *t*-test for the Level of Environmental Media Awareness among Secondary School Students in the Wilaya of Bejaia by Gender

Sample	N	Mean	Standard Deviation	df	t-value	Sig.
Male	38	2.09	0.131	81	1.380	0.172
Female	45	2.05	0.132			

Source: SPSS Statistical Analysis Program

It is evident from Table (8) that the mean score for male students was (2.09) with a standard deviation of (0.131), while the mean score for female students was (2.05) with a standard deviation of (0.132). The calculated *t*-value was (1.380) at (*df* = 81) and a significance level of (*Sig* = 0.172), which is greater than (0.05). This indicates that there are no statistically significant differences between male and female respondents in their awareness of the role of environmental media in promoting environmental culture.

Accordingly, it can be concluded that both male and female students have a similar level of understanding regarding the role of environmental media in enhancing environmental culture, with an overall mean score of (2.07). This reflects a moderate level of awareness among secondary school students regardless of gender.

The researcher attributes this result to the fact that both genders are similarly exposed to environmental media content, and that environmental media is generally not directed in a gender-specific manner. Instead, it provides balanced and inclusive awareness messages that equally target both males and females. In addition, school curricula and media-related educational activities in Algeria are presented using unified language and content, resulting in similar levels of environmental awareness and understanding between genders. The comparable influence may also reflect that both males and females consume traditional and digital media through similar channels, leading to the formation of a collective environmental consciousness rather than one divided by gender.

This finding aligns with several international and Arab studies. Kubiato (2014), in a study conducted in the Czech Republic, found that gender was not a significant factor influencing the level of environmental literacy among students at different educational stages, as both genders exhibited similar levels of environmental knowledge and behavior. Similarly, Gheith (2023) in Jordan reported no statistically significant differences between males and females in environmental knowledge and attitudes, emphasizing that environmental awareness is more strongly shaped by educational and social factors than by demographic characteristics. In the same vein, Napitupulu (2025) in Indonesia concluded that school-related factors and the nature of environmental activities have a greater impact on the formation of environmental culture than gender differences. These findings are consistent with the present study, confirming that environmental media influences both genders to a similar extent.

This result can also be interpreted in light of Social Learning Theory, which posits that environmental knowledge and behavior are developed primarily through observation, modeling, and social interaction rather than through biological or gender-based differences. Consequently, environmental media—as one of the main sources of observational learning affects both males and females similarly, as they are exposed to the same media sources and share the same social environment. It can therefore be concluded that gender is not a determining factor in the level of environmental culture among secondary school students, and that environmental media contributes to shaping this awareness in a comprehensive and inclusive manner.

Overall, the findings suggest that in the Algerian and broader Arab context, environmental media exerts a comparable influence on both male and female students. However, the general level of awareness remains moderate, which underscores the need to develop more interactive and in-depth media strategies to enhance environmental culture among youth of both genders.

3.3 Results Related to the Third Question: *Does the level of environmental media awareness among secondary school students in the Wilaya of Bejaia differ according to age?*⁹

To answer the third research question, a one-way ANOVA test was conducted. The results are presented in Table (8):

Table (8) Results of the One-Way ANOVA Test for the Level of Environmental Media Awareness among Secondary School Students in the Wilaya of Bejaia by Age

Source of Variation	Sum of Squares	df	Mean Square	F-Value	Sig.
Between Groups	42.86	2	21.43	6.27	0.003
Within Groups	258.47	80	3.23		
Total	301.33	82			

Source: SPSS Statistical Analysis Program

It is evident from Table (8) that the calculated significance level (Sig = 0.003) is smaller than the alpha level ($\alpha \leq 0.05$), indicating the presence of statistically significant differences in the level of environmental media awareness among secondary school students in the Wilaya of Bejaia according to the age variable.

To determine the source of these differences, the researcher conducted a post hoc comparison using the HSD (Honestly Significant Difference) test, as shown in Table (9)

Table (9) Results of the HSD Post Hoc Test

Comparison Between Age Groups	Mean Difference	Sig.	Significance	Direction
15–16 vs. 17–19	-0.19	0.214	Not significant	-
15–16 vs. Above 19	-0.46	0.002	Significant	In favor of “Above 19”
17–19 vs. Above 19	-0.27	0.041	Significant	In favor of “Above 19”

Source: SPSS Statistical Analysis Program

It is clear from Table (9) that students aged above 19 years demonstrated a higher level of environmental media awareness compared to the two younger groups (15–16 years and 17–19 years). The researcher attributes this variation to a set of psychological, cognitive, and social factors associated with the development of environmental awareness among individuals.

Environmental awareness does not emerge suddenly; rather, it develops gradually alongside mental, social, and experiential maturity, and through the accumulation of educational and media exposure over the years. Djeghri Zarouta (2024) indicated that environmental media in Algeria plays a vital role in enhancing public awareness; however, the extent to which individuals benefit from environmental messages depends on their cognitive level and analytical capacity. Thus, older individuals possess greater intellectual tools and interpretive skills that allow them to comprehend and internalize environmental media messages more deeply. Similarly, Bensoula (2024), in her study on environmental media in the Algerian press, found that journalistic treatment of environmental issues has become more specialized and analytical in recent years—requiring a certain degree of cognitive maturity to process and translate information into positive environmental attitudes and behaviors.

Moreover, educational studies confirm that older students are generally more capable of connecting theoretical knowledge with real-life application, which reflects in their higher levels of environmental awareness. Students over the age of 19 are typically more open to public environmental discussions and more responsive to media campaigns addressing issues such as climate change, waste management, and other environmental concerns.

This result is also supported by Khadraoui and Benzerouk (2025), whose research on “The Contribution of Modern Media to Environmental Education” in Algeria showed that digital platforms particularly Facebook have become major sources of environmental knowledge, though the degree of benefit depends largely on users’ digital literacy, age, and cultural background. These findings are consistent with the UNICEF (2024) report on youth and climate action in Europe and the Middle East, which emphasized that cognitive and social maturity plays a decisive role in transforming media exposure into effective awareness and responsible environmental participation.

Additionally, the higher level of awareness among older students can be explained through the concept of “cumulative media experience.” Repeated exposure to environmental messages over many years leads to the consolidation of concepts in cognitive memory and enhances critical thinking when engaging with media content. Older individuals are less likely to be passive consumers; instead, they tend to analyze, compare, and discuss information, which strengthens their understanding of the media’s role in shaping environmental culture (Bensoula, 2024).

Furthermore, the report “Environmental Behavior of Youth and Sustainable Development” (MDPI, 2022) notes that as adolescents transition into early adulthood, their level of environmental awareness tends to rise due to accumulated experiences and increased concern for the planet’s future.

In light of the above, it becomes evident that the differences favoring the age group above 19 are not merely quantitative variations in awareness levels but reflect a qualitative shift in how individuals receive and interpret environmental media content and perceive its importance in fostering sustainable behavior. These findings underscore the need to redesign environmental media programs to be more interactive and engaging for younger age groups, employing educational and media strategies suited to their cognitive development. Younger audiences tend to consume information rapidly through digital platforms and thus require more experiential and interactive content that connects environmental concepts to their daily lives. Therefore, investing in pedagogically oriented environmental media represents one of the most effective ways to reduce the age gap in environmental awareness within Algerian educational institutions.

4.3 Results Related to the Fourth Question: *Does the level of environmental media awareness among secondary school students in the Wilaya of Bejaia differ according to the educational level variable?*

To answer this research question, a one-way ANOVA test was conducted. The results are presented in Table (10):

Table (10) Results of the One-Way ANOVA Test for the Level of Environmental Media Awareness among Secondary School Students in the Wilaya of Bejaia by Educational Level

Source of Variation	Sum of Squares	df	Mean Square	F-Value	Sig.
Between Groups	2.634	2	1.317	5.218	0.007
Within Groups	19.732	80	0.247		

Source: SPSS Statistical Analysis Program

It is clear from Table (10) that the calculated significance value (Sig = 0.007) is smaller than the alpha level ($\alpha \leq 0.05$), which indicates the presence of statistically significant differences in the level of environmental media awareness among secondary school students in the Wilaya of Bejaia according to the educational level variable.

To determine the source of these differences, the researcher conducted a post hoc comparison using the HSD (Honestly Significant Difference) test, as shown in Table (11)

Table (11) Results of the HSD Post Hoc Test by Educational Level

Comparison Between Groups	Mean Difference	Sig.	Significance	Direction
First Year	-0.18	0.312	Not significant	-
Second Year	-0.42	0.005	Significant	In favor of "Third Year"
Third Year	-0.24	0.041	Significant	In favor of "Third Year"

Source: SPSS Statistical Analysis Program

The results of the one-way ANOVA test indicate statistically significant differences in the level of environmental media awareness among secondary school students according to educational level. Specifically, third-year secondary students demonstrated a higher level of awareness compared to those in the first and second years.

This finding can be explained by the fact that environmental awareness develops progressively with age and educational advancement. Students in higher academic levels tend to have greater ability to understand environmental issues and to engage with environmental media content in a more critical and analytical manner. Djeghri Zarouta (2024) noted that environmental media in Algeria plays a pivotal role in raising awareness about forest-related risks; however, the effectiveness of this role depends largely on the maturity and cognitive awareness of the audience and their ability to interpret environmental messages and translate them into positive behavior.

Similarly, the results of Bensoula (2024) support this interpretation, showing that Algerian print media has increasingly addressed environmental issues with depth and analytical rigor—requiring readers to possess a certain level of cognitive and intellectual maturity to comprehend and internalize such content. Furthermore, Guidoum (2024) emphasized that enhancing environmental awareness within educational institutions necessitates linking curricular programs with targeted media activities, as older and more advanced students show greater readiness to engage with environmental media and understand its implications.

The researcher therefore attributes the higher awareness levels among third-year secondary students to their greater intellectual maturity and deeper involvement with public environmental issues. Their proximity to graduation may also increase their awareness of the connection between scientific knowledge and environmental practice. This finding highlights the need to design environmental media content that considers the cognitive and developmental characteristics of younger students in both style and substance, to ensure balanced cognitive and behavioral impact across all educational levels.

2.3 Results Related to the Fifth Question: *Does the level of environmental media awareness among secondary school students in the Wilaya of Bejaia differ according to place of residence?*

To answer this question, the researcher used the Independent Samples t-test to examine the significance of differences between the mean scores of students from urban and semi-urban areas. The results are presented in Table (12):

Table (12) Results of the Independent Samples t-test for the Level of Environmental Media Awareness among Secondary School Students in the Wilaya of Bejaia by Place of Residence

Place of Residence	N	Mean	Standard Deviation	df	t-value	Sig.
Urban	37	1.98	0.46	81	-1.78	0.079
Semi-urban	46	2.14	0.48			

Source: SPSS Statistical Analysis Program

The results of the Independent Samples t-test show that the level of environmental media awareness among secondary school students does not differ significantly according to place of residence (urban or semi-urban). The significance value (Sig = 0.079) is greater than (0.05), indicating that there are no statistically significant differences between the two groups. Although the mean score of students from semi-urban areas (2.14) was slightly higher than that of students from urban areas (1.98), this difference was not statistically significant. This suggests that place of residence is not a determining factor influencing students' level of environmental awareness.

The researcher attributes this result to the impact of modern media technologies and the widespread accessibility of digital and social media platforms in Algeria, which have minimized traditional geographical disparities in access to environmental information. As a result, environmental media messages are now reaching various population groups almost equally, regardless of location.

This finding is consistent with the study of Djeghri Zarouta (2024), which indicated that environmental media in Algeria operates within a national communication framework aimed at raising awareness of forest-related risks across all regions of the country, without prioritizing urban populations. Similarly, Bensoula (2024) found that Algerian print journalism increasingly addresses environmental issues from a comprehensive national perspective, ensuring equal reach to all social segments regardless of geographical location. Moreover, Guidoum (2024) emphasized that educational institutions play a central role in promoting environmental culture through curricula and extracurricular activities that reach students in both urban and semi-urban areas, thereby reducing location-based awareness disparities.

Accordingly, the researcher concludes that the absence of statistically significant differences between students in urban and semi-urban areas reflects the success of media and educational communication efforts in achieving a relative degree of knowledge equity in environmental awareness. This finding further suggests that place of residence is not a major determinant of environmental awareness among secondary school students in the Wilaya of Bejaia.

4- Conclusion: This study aimed to assess the role of environmental media in enhancing environmental culture among secondary school students in the Wilaya of Bejaia. The descriptive-analytical method was employed as it aligns with the nature of the research. The researcher designed and utilized a specific instrument—a questionnaire measuring the role of environmental media in disseminating environmental culture among secondary school students. The study was conducted on a purposive sample of 83 male and female students, selected randomly from *El-Hanmadiyah Secondary School* in the Wilaya of Bejaia.

The results revealed that the overall contribution of environmental media to promoting environmental culture among secondary school students was moderate, with an arithmetic mean of (2.07) and a percentage of (69%). Moreover, the findings indicated no statistically significant differences in students' perceptions of the role of environmental media in enhancing environmental culture according to the variables of gender and place of residence. However, statistically significant differences were found according to age (in favor of older students) and educational level (in favor of third-year secondary students).

Based on these findings, the study recommends the following:

1. Strengthening cooperation between the Ministry of National Education and Algerian media institutions to expand environmental programs targeting secondary school students.
2. Producing localized environmental media content in the Wilaya of Bejaia that addresses real environmental issues such as waste management, forest preservation, and coastal protection.
3. Integrating environmental education concepts into Algerian school curricula in a practical way that reflects local contexts and needs.
4. Activating environmental media literacy within educational institutions through clubs or dedicated sessions for analyzing environmental media messages.
5. Encouraging Algerian television channels and newspapers to allocate regular segments focused on environmental education and school-based awareness.
6. Supporting Algerian academic research in the field of environmental media and assessing its impact on students' environmental behavior.
7. Engaging local environmental associations in Bejaia in joint campaigns with schools and media outlets to promote environmental awareness.
8. Utilizing local media platforms to reinforce positive environmental behavior, particularly in semi-urban and rural areas.

Ethical Considerations

This study was conducted in accordance with internationally recognized ethical standards for research involving human participants. Prior to data collection, informed consent was obtained from all participating students, and permission was secured from the school administration. Participation was entirely voluntary, and respondents were informed of their right to withdraw at any stage without any consequences. The anonymity and confidentiality of all participants were strictly maintained, and the collected data were used exclusively for scientific research purposes. No personal identifiers were recorded, and all procedures respected the principles of respect, beneficence, and integrity in social science research.

Author Contributions

- **Toufik Benkhelif:** Conceptualization of the study, research design, data collection, statistical analysis, interpretation of results, and drafting of the original manuscript.
- **Nadia Meftah:** Supervision of the research process, methodological guidance, critical revision of the manuscript, and validation of the final version.

All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work.

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Conflict of Interest

The authors declare that there is **no conflict of interest** regarding the publication of this article. The research was conducted independently and without any financial or personal relationships that could have influenced the outcomes or interpretations of the study.

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