

Perception of Environment among the School Students in Dindigul District

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Abstract

The past and present situation creates the awareness and urge that environmental education is more needed for young minds to have future perspectives for sustainable development in the nation. But in recent years, the citizens of the country have seen an increase in environmental issues particularly climate change with pollution and biodiversity loss. Therefore, it is urgent to create knowledge of the environment among the students and positive behavioral change in the young minds, children. Hence, the children must be taught the importance of maintaining ecological balance and protecting natural resources not only as a supplement subject but also by prioritizing it as life science because they will be the planet's future. Educators and institutions must have an understanding and be clear about how children view environmental issues. Hence this paper concentrates on the perception of the environment among the school students with the following objectives. The research study collected data from 810 schoolchildren. Multistage sampling method is used to find out the determinants of knowledge, attitude and applications of environmental aspects, binary logistic regression analysis was used.

Introduction

The past 25 years, research in environmental education has grown and researchers and practitioners find it increasingly challenging to remain aware of current findings and implications for on-the-ground activities. As a result, practices may not reflect recent findings and, at the same time, research may become distanced from practice, hampering innovation in both directions. In today's era of globalization, we are faced with a lot of societal upheavals including dilemmas pertaining to the environment. The earth is now suffering from innumerable afflictions at present caused by egregious human activities that are relentlessly denuding the environment. The challenge for everybody is to take the wheel of action and move towards a common cause in preserving life on earth. The growing concern with environmental issues and their impact on general awareness is one of the most noticeable phenomena of the last two decades. The rapid depletion of the earth's natural resources and the fast-degrading environment are the realities that can no longer be denied. These are the grave scenarios that threaten the existence of both man and the earth (Marpa & Juele, 2016). Environmental education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems and that has the knowledge, attitudes, commitments and skills to work individually and collectively towards the development.

Human actions are fundamentally and to a significant level, irreversibly changing the biodiversity of life on earth and most of these changes represent a loss of biodiversity. The distribution of species on earth is becoming more homogenous; that is, the difference between the set of species found at one location and the set of species found at another location is on average diminishing due to high invasion of new species in a new range as a result of reduction in the capacity of the ecosystem to function for adjustment to changing environments in terms of stability, resilience, resistance and biological insurance, which is calling for urgency in decisions making and actions taken at all levels of knowledge to the public in order to prevent future challenges. Humans continue to engage in environmentally unfriendly behaviors at the individual, corporate, governmental, and societal levels.

Greater interest in environmental education (EE) has emerged as even short educational

programs that involved ecocentric values development proved to stimulate environmental awareness in children and college students. Environmental intentions to environmental behaviors, commitment, normative influence and incentives. Critics have emphasized that promoting economic development is not likely to address the root causes of poverty, namely the transnational politics of competition in global markets and industrial capital. Simultaneously, sustainable development rhetoric tends to privilege human welfare over concerns with the environment. This prioritizing of economic objectives negates the very chance of other species' evolutionary unfolding and ecological justice. The studies of environmental values indicate that respondents that are more eco-centric are more prone to environmentally friendly and sustainable action, including commitment. Since humans depend completely on Earth's ecosystems and their services, such as "clean air, food, water, climate regulation, spiritual fulfilment and aesthetic enjoyment," Human behavior is a fundamental cause of current environmental problems. Thus, understanding the factors and processes shaping people's environmentally friendly attitudes (EA) and behaviors (EB) is important in order to achieve a more sustainable future. EA is understood as "concern for the environment or caring about environmental issues." An interesting but often overlooked research issue is how children's EA and EB are developed and regulated in social interaction. Socialization has been defined as a lifelong process by which individuals acquire the necessary skills, values and behavioral patterns to function effectively in a certain group and culture through the filters represented by key socializers such as parents, teachers and friends. The effect of significant others is especially important for young people whose attitudes are less stable than those of adults (Hess, 1994) and thus are subject to social influences as they emerge during development.

Acosta, Queiruga, & Mariño (2024) explored the addition of Environmental Education (EE) and Education for Sustainable Development (ESD) in engineering academics. There is a huge disparity in the use of ESD concepts in higher education engineering programs despite the global need and focus on sustainability. Akash M (2024) perceptions of environmental safety were the dimensions explored. An immense disconnect between their knowledge and practical actions is found. When it came to assessing student's involvement in sustainable practices, dimensions like perceived behavioral control and consumer effectiveness were critical. Educational institutions are responsible for carrying out concentrated efforts that not merely improve students understanding of the environment but also provide them the tools they need to turn that awareness into practical, long-lasting actions. Baierl, Johnson, and Bogner (2022) Environmental attitude assessments are flexible and can be conducted using both behavioral self-reports and evaluative remarks. The absence of a control group and social desirability bias are recognized as limitations or downsides despite prior studies having continuously shown the program's fruitfulness. Long-term eco- friendly participation was actively encouraged by Earthkeepers, proving that improving attitudes can improve the results of environmental education. Students from diverse socioeconomic and educational backgrounds attend government, government-aided and private schools. All of these variations in attributes could all have an impact on how children perceive and approach environmental education.

The Objectives of the study were to assess

- ✓ Socio-economic and demographic characteristics of students in the schools
- ✓ The perception of the environment among the students in the study area
- ✓ The determinant of perception on the environment among the school students

Area and Methodology

Dindigul district is the center of the state and it is located near Coimbatore. It is well-economically developed district. Dindigul is a developing district near Tiruchirappalli and Karur district and just 60 km from Madurai. Therefore, it may be considered as the center of the state and this will be better to analyze and the results may be applicable for the other districts.

The study is conducted with Multi-Stage Proportionate Random Sampling (MSPRS) method used to collect the data. In the first stage the data is collected the school details from the district educational office, followed by one-third of the schools located in the district in indifferent direction (East, West, North and South) in geographical locations. In second stage from the total number of schools in the district, 2 governmental, 2 aided and 6 private schools were identified. One-third of the students in each class were selected, both boys and girls equally and same way, one-third of the students were selected randomly from each section on (including boys and girls from each class in the school in 7th, 8th and 9th grades).

TABLE-1 DISTRIBUTION OF RESPONDENTS BY SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS AND PLACE OF BIRTH

| SOCIO- ECONOMIC AND DEMOGRAPHIC CHARAECTRISTICS | PLACE OF THE RESIDENCE | | TOTAL N=810 |
|---|------------------------|---------------|-------------|
| | RURAL N=499 | URBAN N=311 | |
| Gender | | | |
| Female | 264 (62.1) | 161 (37.9) | 425 |
| Male | 235 (61) | 150 (39) | 385 |
| Religion | | | |
| Hindus | 416 (63.3) | 241 (36.7) | 657 |
| Christians | 66 (58.4) | 47 (41.6) | 113 |
| Muslim | 17 (42.5) | 23 (57.5) | 40 |
| Caste | | | |
| Unknown | 90 (63.4) | 52 (36.6) | 142 |
| SCs | 119 (77.3) | 35 (22.7) | 154 |
| STs | 9 (60) | 6 (40) | 15 |
| OBCs | 108 (61) | 69 (39) | 177 |
| FC | 8 (72.7) | 3 (27.3) | 11 |
| Others | 165 (61.6) | 146 (38.4) | 311 |
| Mother's Education | | | |
| 10 th | 215 (69.4) | 95 (30.6) | 310 |
| 12 th | 134 (59.6) | 91 (40.4) | 225 |

| | | | |
|---------------------------|---------------|---------------|-----|
| UG | 90 (58.1) | 65 (41.9) | 155 |
| PG | 48 (50) | 48 (50) | 96 |
| Ph.D | 12 (50) | 12 (50) | 24 |
| Father's education | | | |
| 10 th | 258 (67.4) | 125 (32.6) | 383 |
| 12 th | 117 (56.8) | 89 (43.2) | 206 |
| UG | 70 (53.4) | 61 (46.6) | 131 |
| PG | 49 (64.5) | 27 (35.5) | 76 |
| Ph.D | 5 (35.7) | 9 (64.3) | 14 |
| Mother's Status | | | |
| Unemployed | 226 (61.4) | 142 (38.6) | 368 |
| Employed | 273 (61.8) | 169 (38.2) | 442 |
| Father's Status | | | |
| Unemployed | 25 (69.4) | 11 (30.6) | 36 |
| Employed | 474 (61.2) | 300 (38.8) | 774 |

Source: Primary Data (The figures in the parenthesis are percentages)

Table 1 infers that the majority of respondents N=810 were from rural areas 499 rural vs. 311 urban. Both females 62.1% and males 61% were highly from rural. Hindus were the largest group and mainly rural 63.3% while Muslims were more urban 57.5%. Among castes, SCs 77.3% and FCs 72.7% had higher rural background. OBCs and others were more evenly distributed. We had 142 respondents did not know their caste with 63.4% of them from rural areas, indicating greater caste unawareness in rural area. Most parents had education up to 12th grade. Among mothers, 10th grade was most common 69.4% rural at PG and Ph.D. levels distribution was equal between rural and urban. For fathers, most had a 10th-grade education 67.4% rural but urban representation increased with higher education. 64.3% of Ph.D.-educated fathers were urban showing a rural-urban gap at higher levels. Parental education was notably lower in rural areas with higher education more common in urban fathers. Both employed 61.8% and unemployed 61.4% mothers were mostly from rural. Among fathers, unemployment was rare 36 total but when present it was mostly rural 69.4% suggesting reflecting better job access or social expectations in those regions.

TABLE-2 DISTRIBUTION OF RESPONDENTS BY EDUCATION SUPPORTING SYSTEMS AND PLACE OF RESIDENCE

| EDUCATION SYSTEMS | PLACE OF THE RESIDENCE | | TOTAL N=810 |
|-----------------------------------|------------------------|-------------|-------------|
| | RURAL N=499 | URBAN N=311 | |
| Mother's work sector | | | |
| House wife | 226 (61.4) | 142 (38.6) | 368 |
| Private | 162 (64) | 91 (36) | 253 |
| Government | 40 (48.2) | 43 (51.8) | 83 |
| Own business | 71 (67.0) | 35 (33.0) | 106 |
| Father's work sector | | | |
| Agriculture | 25 (69.4) | 11 (30.6) | 36 |
| Private | 254 (64.1) | 142 (35.9) | 396 |
| Government | 54 (52.4) | 49 (47.6) | 103 |
| Own business | 166 (60.4) | 109 (39.6) | 275 |
| Help in homework | | | |
| No help | 26 (42.6) | 35 (57.4) | 61 |
| Mother | 230 (59.1) | 159 (40.9) | 389 |
| Father | 45 (73.8) | 16 (26.2) | 61 |
| Sibling | 112 (63.3) | 65 (36.7) | 177 |
| Mother & father | 54 (71.1) | 22 (28.9) | 76 |
| Mother & sibling | 16 (69.6) | 7 (30.4) | 23 |
| Father & sibling | 3 (60) | 2 (40) | 5 |
| All | 13 (72.2) | 5 (27.8) | 18 |
| Going to tuition | | | |
| No | 365 (64.4) | 202 (35.6) | 567 |
| Yes | 134 (55.1) | 109 (44.9) | 243 |
| Exposed Exhibition | | | |
| No | 262 (59.0) | 182 (41.0) | 444 |
| Yes | 237 (64.8) | 129 (35.2) | 366 |
| Visited Exhibition | | | |
| No | 292 (59.8) | 196 (40.2) | 488 |
| Yes | 207 (64.3) | 115 (35.7) | 322 |
| Participated in Exhibition | | | |
| No | 313 (61.0) | 200 (39.0) | 513 |
| Yes | 186 (62.6) | 111 (37.4) | 297 |
| Motivational classes | | | |
| No | 338 (61.8) | 209 (31.2) | 547 |
| Yes | 161 (61.2) | 102 (31.8) | 263 |

Source: Primary Data (The figures in the parenthesis are percentages)

Table 2 infers that most mothers were housewives with 61.4% from rural. Mothers in private and own business sectors were also mostly rural 64% and 67% respectively. Mothers working in government jobs were slightly more from urban 51.8%. Fathers working in agriculture 69.4%, private sector 64.1%, and own business 60.4% were largely rural while government-employed fathers had a more even split with 47.6% from urban areas. For homework support mothers helped most often 59.1% rural, followed by siblings 63.3% rural help from fathers 73.8% and both parents 71.1% was higher in rural areas. Students receiving no help were more urban 57.4%. Regarding tuition those not attending were mainly rural 64.4% and attending percentages are 55.1% were rural and 44.9% urban. Students who know about exhibitions were 64.8% rural those who visited exhibitions were 64.3% rural and participated were 62.6% rural. Attendance in motivational classes showed similar trends with 61.8% of non-participants and 61.2% of participants from rural areas. Parental working hours and shift patterns impact their involvement in children's education and environmental awareness. 42.1% of fathers and 27.4% of mothers work more than 8 hours daily reducing time for academic supervision and eco-related discussions. Among them 36.4% of fathers and 14.4% of mothers work over 12 hours further narrowing direct engagement. Shift patterns also influence availability 81.9% of fathers and 84.2% of mothers work morning shifts which align with school timings and allow some interaction. What should be noted is 4.4% of fathers and 3.5% of mothers work night shifts while 13.7% of fathers and 12.3% of mothers work both morning and night shifts. These irregular hours could possibly reduce quality time with children affecting support in both academics and environmental learning. To sum up, rural respondents dominated in all educational support systems with urban presence slightly higher in areas like government-employed mothers and students receiving no help in homework.

TABLE-3 PERCEPTIONS OF CLIMATE CHANGE BY AGE, GENDER, RESIDENCE AND SCHOOL TYPE

| DEMOGRAPHIC VARIABLE | BELIEF IN CLIMATE CHANGE AS A GLOBAL ISSUE | | | | TOTAL N=810 |
|-----------------------|--|------------|---------------|----------------|-------------|
| | No | Yes | What is that? | Doesn't matter | |
| Age | | | | | |
| 10 | 2 (28.6) | 1 (14.3) | 4 (57.1) | 0 (0.0) | 7 |
| 11 | 7 (8.3) | 40 (47.6) | 22 (26.2) | 15 (17.9) | 84 |
| 12 | 40 (16.0) | 133 (53.2) | 35 (14.0) | 42 (16.8) | 250 |
| 13 | 36 (12.7) | 156 (54.9) | 44 (15.5) | 48 (16.9) | 284 |
| 14 | 16 (9.2) | 112 (64.7) | 18 (10.4) | 27 (15.6) | 173 |
| 15 | 0 (0.0) | 7 (58.3) | 2 (16.7) | 3 (25.0) | 12 |
| Gender | | | | | |
| Female | 57 (13.4) | 239 (56.2) | 70 (16.5) | 59 (13.9) | 425 |
| Male | 44 (11.4) | 210 (54.5) | 55 (14.3) | 76 (19.7) | 385 |
| Residence Type | | | | | |
| Rural | 70 (14.0) | 278 (55.7) | 67 (13.4) | 84 (16.8) | 499 |
| Urban | 31 (10.0) | 171 (55.0) | 58 (18.6) | 51 (16.4) | 311 |
| Type of School | | | | | |
| Government | 28 (19.2) | 69 (47.3) | 22 (15.1) | 27 (18.5) | 146 |
| Government-Aided | 5 (4.0) | 80 (64.0) | 17 (13.6) | 23 (18.4) | 125 |
| Private | 68 (12.6) | 300 (55.7) | 86 (16.0) | 85 (15.8) | 539 |

Source: Primary Data

(The figures in the parenthesis are percentages)

Out of 810 children the maximum believed climate change is a global issue. Belief was highest among age 14 (64.7%) and lowest among age 10 (14.3%). Awareness increased with age peaking at age 14 with most uncertainty ("What is that?") reported at age 10 (57.1%). By gender, 56.2% of females and 54.5% of males believed in climate change as a global issue. Males had slightly higher percentages in the "Doesn't matter" (19.7%) and "What is that?" (14.3%) categories compared to females. Rural students formed a larger group with 55.7% believing in climate change, while urban students had a little lower belief percentage at 55.0%. In particular urban students had higher unawareness at 18.6% compared to rural students at 13.4%. By school type, students from Government-Aided schools had the highest belief in climate change (64.0%) followed by Private (55.7%) and Government schools (47.3%). Government school students had the highest percentage of disbelief (19.2%). On the whole, belief in climate change increased with age and was fairly consistent across gender and residence. Government-Aided school students showed the highest awareness.

TABLE-4 RELATIONSHIP BETWEEN SCHOOL TYPE AND ENVIRONMENTAL DISCUSSIONS BY TEACHERS

| TYPE OF SCHOOL | TEACHERS DISCUSSIONS ON ENVIRONMENTAL PROTECTION | | | | TOTAL N=810 |
|------------------|--|-----------|-----------|-------------------|----------------|
| | Never | Rarely | Sometimes | Yes, all the time | |
| Government | 16 (11.0) | 37 (25.3) | 45 (30.8) | 48 (32.9) | 146 |
| Government-Aided | 11 (8.8) | 25 (20.0) | 31 (24.8) | 58 (46.4) | 125 |
| Private | 79 (14.7) | 86 (16.0) | 24 (44.7) | 133 (24.7) | 539 |

Source: Primary Data (The figures in the parenthesis are percentages)

Table 4 shows how often teachers discuss environmental protection across different school types. Government-aided schools have a consistent engagement with as good as half of students 46.4% saying teachers talk about environmental issues "all the time" and only 8.8% reporting "never." Government schools have average consistency with 32.9% of students hearing or having opportunities to such discussions regularly and 11% saying they never do. In private schools the majority 44.7% said discussions happen "sometimes," while only 24.7% reported regular conversations. Strikingly private schools also had the highest share of students 14.7% who said environmental topics are "never" discussed. The data surely lies down that government-aided schools provide the most consistent teacher-led environmental education while private schools rely more on occasional engagement with a notable portion lacking exposure altogether.

TABLE-5 PERCEIVED IMPORTANCE OF ENVIRONMENTAL STUDIES BY TYPE OF SCHOOL

| TYPE OF SCHOOL | IMPORTANCE OF ENVIRONMENTAL STUDIES IN SCHOOL | | | | TOTAL N=810 |
|------------------|--|---|--|---|----------------|
| | Yes, I think we still have more to learn about the environment | Yes, but I think we are learning enough about the environment | No, I think we are learning enough about the environment | No, but I think there's still more to learn about the environment | |
| Government | 34 (23.3) | 37 (25.3) | 65 (44.5) | 10 (6.8) | 146 |
| Government-Aided | 61 (48.8) | 45 (36.0) | 14 (11.2) | 5 (4.0) | 125 |
| Private | 225(41.7) | 172(31.9) | 118(21.9) | 24(4.5) | 539 |

Source: Primary Data (The figures in the parenthesis are percentages)

Students across all school types are aware and fairly acknowledge the importance of environmental studies but their views on how much more they need to learn vary widely. In government schools, nearly half 44.5% believe they are already learning enough and do not see the need for more possible underexposure to deeper environmental issues. Government-aided schools show the highest curiosity with almost half 48.8% expressing a desire to learn more showing their stronger appetite for environmental knowledge. Private school students are more split 41.7% want more learning while 31.9% feel the current education is adequate. Seeing these differences, it is visible that school type indeed influences how students perceive the depth and necessity of environmental education with government-aided students emerging as the most eager for further learning.

TABLE-6 RELATIONSHIP BETWEEN SCHOOL TYPE AND HOW ENVIRONMENTAL STUDIES IS TAUGHT AND LEARNED

| TYPE OF SCHOOL | ENVIRONMENTAL STUDIES TAUGHT AS | | ENVIRONMENTAL STUDIES LEARNED AS | | TOTAL N=810 |
|------------------|---------------------------------|-------------------------------|----------------------------------|-------------------------------|-------------|
| | JUST SUBJECT | TO BECOME MORE AWARE AND HELP | JUST SUBJECT | TO BECOME MORE AWARE AND HELP | |
| Government | 60 (41.1) | 86 (58.9) | 77 (52.7) | 69 (47.3) | 146 |
| Government-Aided | 70 (56.0) | 55 (44.0) | 74 (59.2) | 51 (40.8) | 125 |
| Private | 278 (51.6) | 261 (48.4) | 283 (52.5) | 256 (47.5) | 539 |

Source: Primary Data (The figures in the parenthesis are percentages)

Students perception of environmental studies have different depths noticeably by school type. In government schools while a majority (58.9%) feel it is taught to promote awareness and responsibility over half 52.7% still learn it as just another subject highlighting a disconnect between teaching intent and student takeaway. In government-aided schools both teaching 56% and learning 59.2% are predominantly seen as routine academic content, indicating limited engagement beyond the textbook. Private schools show a near even split 51.6% say it's taught as just a subject, and 52.5% learn it that way through a notable 47.5% perceive a broader awareness-building purpose. Even though environmental education is present across school types its deeper impact especially in fostering meaningful understanding and action is limited and varies by how it is delivered and received.

TABLE-7 INFLUENCE OF RESIDENCE TYPE, SCHOOL TYPE ON ENVIRONMENTAL TEACHING BY PARENTS

| RESIDENT TYPE, SCHOOL TYPE & PARENT | PARENTS TEACHING ABOUT ENVIRONMENT | | TOTAL N=810 |
|-------------------------------------|------------------------------------|------------|-------------|
| | NO | YES | |
| Residence type: Mother | | | |
| Rural | 132 (26.5) | 367 (73.5) | 499 |
| Urban | 93 (29.9) | 218 (70.1) | 311 |
| Residence type: Father | | | |
| Rural | 212 (42.5) | 287 (57.5) | 499 |
| Urban | 125 (40.2) | 186 (59.8) | 311 |
| School Type: Mother | | | |
| Government | 46 (31.5) | 100 (68.5) | 146 |
| Government-Aided | 30 (24.0) | 95 (76.0) | 125 |

| | | | |
|----------------------------|------------|------------|-----|
| Private | 149 (27.6) | 390 (72.4) | 539 |
| School Type: Father | | | |
| Government | 75 (51.4) | 71 (48.6) | 146 |
| Government-Aided | 49 (39.2) | 76 (60.8) | 125 |
| Private | 213 (39.5) | 326 (60.5) | 539 |

Source: Primary Data (The figures in the parenthesis are percentages)

Parental teaching about the environment was higher among mothers than fathers across both rural and urban areas. Among rural mothers, 73.5% taught about the environment compared to 57.5% of rural fathers. In urban areas, 70.1% of mothers and 59.8% of fathers are teaching about the environment. By school type, mothers of students in government-aided schools had the highest rate of environmental teaching 76% then private schools stood second 72.4% and government schools 68.5%. For fathers, teaching was highest among government-aided school parents 60.8 followed by private 60.5%, and lowest in government schools 48.6%. All in all mothers were more active and consistent than fathers in discussing environmental topics regardless of residence or school type.

Conclusion

Our study concludes that rural students from Dindigul with parental education and occupation thoroughly reflecting a clear rural-urban divide. Educational support particularly from mothers and siblings is higher in rural areas though long parental working hours have an impact on nurturing and engagement. Gladly awareness of climate change improves with age with 14-year-olds having the highest understanding. Government-aided schools marks first in our study group for teacher-led environmental discussions and in fostering student interest to learn more. In contrast, government school students often perceive environmental studies as sufficient or just another subject. Private schools show mixed patterns in teaching approach and perception. Mothers across all backgrounds are more active than fathers in environmental teaching. Encompassing all, school type and parental involvement definitely and strongly shape students environmental perception. Government-aided schools appear to perform better from better teacher-student engagement and greater parental interest which together create a more responsive and supportive learning environment.

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