



## IMPACT OF BIRD WATCHING ON LEARNING ENVIRONMENT

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### ABSTRACT:

Bird watching is one activity where students learn our environment. The various activities of bird watching contribute to improving the biological knowledge on birds. A number of environmental concerns can be easily learned by students through such activities. The contribution level of bird watching activities on student knowledge is investigated in this study. Batches of students during a period of three years consisting of 477 students of B.Sc. B.Ed, B.A. B.Ed and M.Sc. Ed of RIE, Mysuru were divided to almost equally three groups. Group I received only classroom discourse; group II joined only bird watching under the guidance of an expert and group III received classroom course along with bird watching activities. The various environmental concerns were explained with examples in both the discourses. The students took a test related to 10 environmental concerns before and after discourses. The test was evaluated for 10 points; each carrying one point. The students of group III who joined both the discourses have highest achievement (73.52%) while the average test scores of the other two groups were 42.52% and 45.00% respectively.

The present study shows that bird watching activities have positive impact on learning our environment. Moreover, only bird watching activities show more effective result than only classroom discourses according to the study results. In conclusion, the outdoor educational activities such as bird watching can be effective way of learning about the environment.

### KEYWORDS:

**BIRDWATCHING, OUTDOOR LEARNING, ENVIRONMENT, RIE CAMPUS.**

### INTRODUCTION

Bird watching is an increasingly popular leisure activity (Wilkinson, *et al.*, 2014). Bird watching or birding is a recreational as well as an educational activity. It involves observation of birds, with the naked eye, or through a visual enhancement device like binoculars, or by listening for bird sounds (Barker, *et al.*, 2002) or by watching public webcams. Identification of birds is important in diagnosis of the environment and their conservation status. Birds can be identified by their size, colour, beak, tail, calls they make, niches they occupy and time of sighting (Tangpu and Gopal, 2014). Bird watching is often pursued by non-academic non biologists, rather by people from different field of professions. Most birdwatchers pursue this activity for recreational or social reasons, unlike ornithologists, who engage in the study of birds using formal scientific methods.

The informal outdoor education and activities can be effective way to advance learning in science (Knapp and Barrie, 2001). Outdoor learning in biology most often take place at specific places away from ordinary school surroundings, as field trips or visits to outdoor/environmental education centers (Fägerstam and Blom, 2013). Biology has traditionally had strong connections with fieldwork and outdoor education activities dating back to early naturalists (Cotton, 2009).

The impact of bird watching on learning of biological

terms was studied in the previous study (Tangpu, 2021). Fieldwork can improve student's better retention of acquired knowledge (Nundy, 1999); enhanced motivation and higher-order learning and development of practical skills (Kent *et al.*, 1997). Bird watching is a form of wildlife observation in which the observation of birds is a recreational activity. It can be done with the naked eye, through a visual enhancement device like binoculars and telescopes, by listening for bird sounds. Birding activities may be designed to address several goals of the science curriculum: adaptation, comparing and contrasting animals and animal life cycles, to name a few.

The objective of the present study is to investigate the effect of bird watching activities on the learning environmental education. The present study is also intended to investigate whether outdoor activities like bird watching enhance the learning environmental education and whether bird watching activities are better than classical classroom course study.

### MATERIALS AND METHODS

This study was conducted at RIE, Mysuru for 3 consecutive years from 2017 to 2019. Data were gathered from the all I year students of B.Sc. B.Ed (CBZ & PCM), M.Sc. Ed and B.A. B.Ed of Regional Institute of Education, Mysuru. To evaluate the impact of the study on students' knowledge toward the environment, an experimental design was implemented using an

evaluation instrument that included 10 open ended questions. The students of all courses participated in this study as they were mandatory to take up Environmental Education as a mandatory paper. 159

students in each year were selected and split to three groups which are almost equal in terms of numbers of student; each group consists of 53 students, as shown in Tables 1, 2 and 3.

**TABLE 1: CHARACTERISTICS OF EACH GROUP (2017)**

Group	Number of Students (N)	Age
I	53	19-21
II	53	19-21
III	53	19-21

**TABLE 2: CHARACTERISTICS OF EACH GROUP (2018)**

Group	Number of Students (N)	Age
I	53	19-21
II	53	19-21
III	53	19-21

**TABLE 3: CHARACTERISTICS OF EACH GROUP (2019)**

Group	Number of Students (N)	Age
I	53	19-21
II	53	19-21
III	53	19-21

Each group took a same test (pre-test) which consists of 10 open ended questions about Environment, prior to attending the bird watching activities. After the pre-test, the first and third groups attended a presentation class (lectures/ chalk & talk) together in related to Environmental Education. Within one month time, the second and third groups joined to bird watching activities together. All 3 groups took the same test (post-test) again next to the end of the course program. At the end of the program it was expected that students would be able to describe the diagnostic features of birds, feathered friends, avian characters, scientific name, common name, vernacular name, nocturnal, migratory bird, resident bird, and ecosystem. To easily evaluate the test results, each question carries 1 mark, the total marks of the test was 10.

The questions were:

- a) Write 10 common birds observed in RIE campus.
- b) How do birds help in maintaining ecological balance?

- c) Which is one diagnostic feature of birds?
- d) How can one easily identify a bird?
- e) Cite an example of sexual dimorphism in avian population.
- f) How is common name different from scientific name?
- g) Cite one example of a nocturnal bird.
- h) Cite one example for a migratory bird to RIE Campus.
- i) Which is a resident bird of RIE Campus?
- j) Show the inverted pyramid, taking an example of a tree ecosystem.

Different statistical tests were used to investigate each group performances: pre- and post-tests. To compare and evaluate the gathered data, following tests were used; scores and percentage of the scores, determining for distributions of mean value; independent sample t - test for differences between the three groups.

**TABLE 4: THE STEPS OF STUDY DESIGN; THERE ARE 8 WEEKS GAP BETWEEN FIRST AND LAST STEPS.**

Step	Group I	Group II	Group III
1	Pre - test	Pre - test	Pre - Test
2	Classroom Course	-	Classroom Course
3	-	Bird watching	Bird watching

4	Post – Test	Post – Test	Post – Test
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**RESULTS**

The results of the present study are shown in Tables 5, 6 and Figure 1. The number of birds observed in RIE Mysuru campus during 2017 – 2019 (Table 5), total scores of the students (Table 6), percentage scores (Figure 1) and percentage scores of the students in groups I, II & III (Fig.1) are explicitly shown in the results.

**TABLE 5: TOTAL NUMBER OF BIRD SPECIES OBSERVED (NOBO) BY GROUPS**

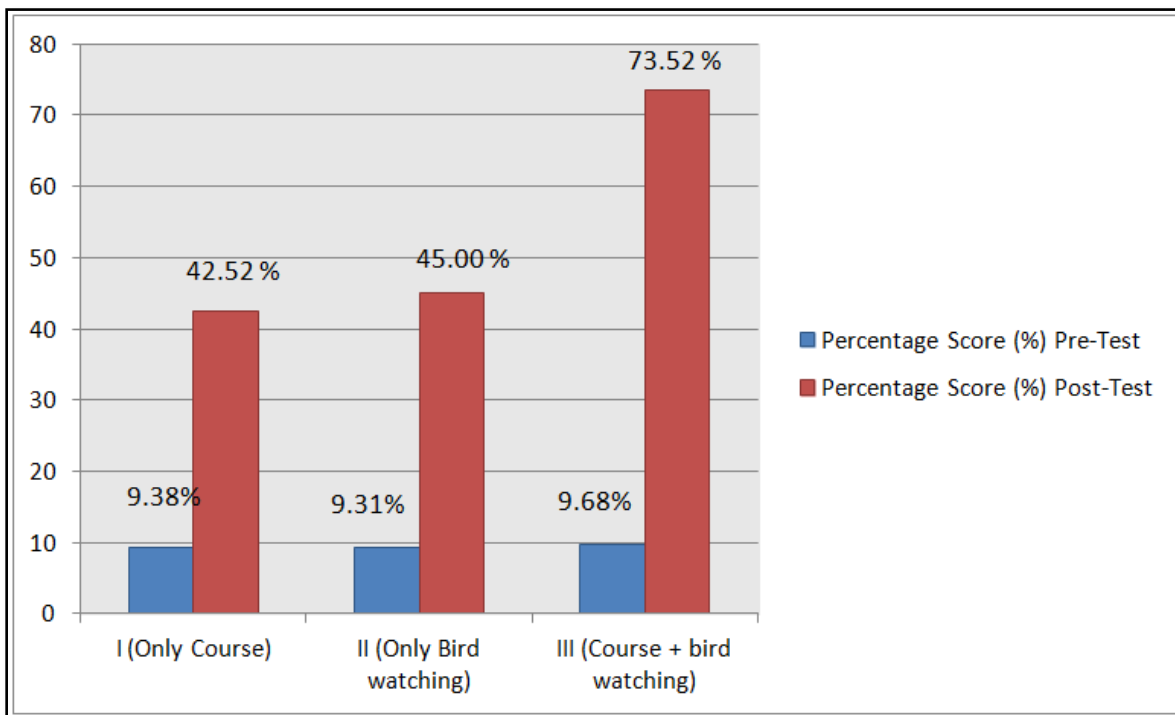
Year	No. of days of Bird watching	Average No. of Bird species Observed in RIE Campus	Average No. of Birds Observed in RIE Campus
2017	3	12*	52*
2018	3	13*	55*
2019	3	10*	48*

\*Total count of birds / bird species in 3 different days of bird watching

**TABLE 6: TOTAL SCORES OF THE STUDENTS (2017 – 2019 BATCHES) ON THE 10 POINT SCALE**

Group	Total Scores		Percentage (%)	
	Pre-Test	Post-Test	Pre-Test	Post-Test
I	14.90±2.38	67.60±11.56 <sup>a</sup>	9.37	42.51
II	14.80±3.21*	71.60±12.39 <sup>a</sup>	9.31	45.00
III	15.40±4.31*	116.90±11.22 <sup>a,b,c</sup>	9.69	73.5

Student’s *t*-test: \*No significant difference among pre-test scores; <sup>a</sup>Significant difference from respective pre-test scores at  $p < 0.05$ , <sup>b</sup> Significant difference from group I (Only Course) at  $p < 0.05$ , <sup>c</sup> Significant difference from group II (Only bird watching) at  $p < 0.05$



**FIG.1: PERCENTAGE SCORES (%) OF THE STUDENTS IN GROUPS I, II AND III**

**RESULTS**

According to the pre-test results shown in Tables 5 and 6, the average scores of the groups and batches are close

to each other. In terms of group scores, all the questions were in normal distribution and there was no

statistically difference between the students according to their average scores ( $p > 0.05$ ). The average scores of the groups I, II and III are  $14.90 \pm 2.38$  (9.38%),  $14.80 \pm 3.21$  (9.31%) and  $15.40 \pm 4.31$  (9.68%) respectively. There was no statistically significant difference between the groups in terms of the results of the pre-test, though the third group was more successful than the other two groups.

The difference between the lowest and highest mean-scores of groups is 0.6. This low score difference is another proof that students do not differ from each other in terms of preliminary information. According to the test results, the average scores from the questions are not dependent on the gender and the batches of the students.

The second and third group participated in bird watching activities. The number of species observed by the days in which the groups participated is shown in Table 5. During the bird watching activities, the importance of birds in our environment was explained with appropriate examples. In terms of these results, it can be said that the groups who participated in bird watching observed enough bird species.

After bird watching activities, all groups took to the same test again. As expected here, the students were highly successful compared to the pre-test (Table 6). Similarly, the post-test shows normal distribution of the scores from the questions, and gender is not a statistically significant factor on the scores ( $p < 0.05$ ). According to the results of the post-test, the average score of the third group participating in both courses and bird watching activities is statistically different from the others ( $p < 0.05$ ). Although, the first group increased the percentage score from 9.38% to 42.52%, there is a significant increase in success of the second group from 9.31% to 45.00%. However, the change in success of the third group is found to be the highest from 9.68% to 73.52%. Therefore, there is a significant difference in groups I and II, and the results of group III (course + bird watching) show significant change comparing to both group I (only course) and group II (only bird watching).

## DISCUSSION

The results show that students participating in both the classroom and the outdoor bird watching activities are most successful than the students who participate either only in the open field or only in the classroom course study. The findings of a study (Lock, 2010) suggest that fieldwork provision in biology is declining and concludes by identifying the implications for researchers,

policy formers and those responsible for pre-service teacher training. The students involved in this study are also the teachers in the preparation. The teachers can become the guides who motivate the children to take up field studies and nature watch such as bird watching.

Similar studies also suggest that outdoor learning activities such as bird watching activities enhance the success of the learning biological terms (Tangpu, 2021; Arikan & Turan, 2017).

It can be concluded that bird watching activities enhance the learning among undergraduate students on environmental education, as field activities not only motivate the interest of the learners, but also retain the learning and enhancing their performances in the examinations.

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