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BIRD-WATCHING: A PAVEMENT TO THE CAP (COGNITIVE, AFFECTIVE, AND PSYCHOMOTOR) DOMAIN.

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Abstract: Learning is a lifelong process enriched by experiences, creativity, and applications. Learning is complete when all three learning domains are activated: cognitive, affective, and psychomotor. Any individual devotes eighteen years of life to learning, including elementary learning to the higher secondary stage and learning in higher education. However, for fruitful learning, NEP 2020 focuses on experiential learning integration at all levels. Besides being fun activity and hobby, bird-watching is one of the experiential activities that have positive outcomes for learning. Various studies at the school level report the profound impacts of birding on the learning abilities and performances of the students. However, at the level of higher education, the information lacks behind. Therefore, this study aims to assess the impact of bird watching on the cognitive, affective, and psychomotor domains of the B.Sc. B.Ed. Ist year students of RIE Bhopal. The findings of this study indicate that bird-watching can serve as a multipurpose and multidimensional tool for effective learning for students of higher education.

***Keyword*- Bird-watching, Birding, Cognitive Domain, Affective Domain, Psychomotor Domain.**

I. INTRODUCTION

Learning is a multidimensional process. It is a whole package of involvement of all our senses. The same was framed by Bloom, Krathwohl, Harrow, Simpson, and Dave in the form of the picture of the Cognitive Domain, Affective Domain, and Psychomotor Domain (Hoque., 2017). Learning is a process that ensures the involvement and development of all these three domains. Therefore, learning is neither restricted to any age nor the boundaries of a classroom. Learners can acquire new knowledge in the kitchen, garden, balcony, and immediate surroundings. This is proven by many studies where outdoor learning has improvised the skills and apprehension of the learner to a new level in so many aspects (Arikan and Turan, 2011; Tangpu V, 2022). A comprehensive review by Kuo et al. states that exposure to nature leads to positive learning outcomes such as increased retention of subject matter, better grades, better writing and listening skills, better critical thinking, a strong connection with nature, and so on. Studies have demonstrated the effect of field trips and outdoor activities on the learning abilities of school students. Bird watching is one such field activity that, though not restricted to, fuels and stimulates all three domains of learning.

Birdwatching is an aesthetic, recreational, therapeutic, and educational activity whose roots lie in the late 1800s. Since then, birding is the limelight and has extended across the countries. The development of suitable tools in the passing years, such as binoculars and cameras, has raised the number of birdwatchers across the globe. The activity of bird watching not only has entertaining values, but it has a lot of perks. The benefits of birding are Ecotourism, Awareness about nature, Improved Mental Health, Educational purposes, and many more (Sekercioglu., 2002).

Many studies have proven the positive impact of bird watching on learning biology. Despite all of these, the loopholes remain that this type of experimentation has not involved higher education studies. A limited number of studies focus on the effects of outdoor activity on the learning abilities of higher education students.

Therefore, this study aims to see if birding could touch upon all the domains of learning in the students of B.Sc. B.Ed. This study was more of a qualitative nature rather than a quantitative study. Moreover, the study aims to see if vigilance, sensitivity towards environmental conservation, and the importance of birds in the ecosystem can be manifested in the students through this activity. It was done through two field trips followed by a survey.

II. METHODOLOGY

To sensitize the psychological aspect of the students, the first step was to take the Ist year students of B.Sc.B.Ed., RIE Bhopal, for bird watching outside the campus at Van Vihar National Park, Bhopal, M.P. on a volunteer basis. The objective of this step was to see if the experiences of the first batch of students at the first go could raise curiosity in their classmates. The second step

was to take the students to bird watching on the campus. The second field trip was organized on a request from the same students with some additions. Finally, a survey was done to see the impact of birdwatching on those students through a Google form. The questionnaire was designed to check the different aspects in a pre-test and post-test form. The students had to rate them on a scale of 1 to 5, where one stands for very low and five for very high. The questions designed are listed in Table 1. The list of students in first field visit and second field visit is listed in Table 2 and Table 3, respectively.

Table 1: Survey Questionnaire.

S.NO	QUESTION	RATING				
1.	CURIOSITY LEVEL BEFORE FIELD TRIP					
2.	CURIOSITY LEVEL AFTER FIELD TRIP					
3.	ABILITY TO RECALL CONTENT BEFORE FIELD TRIP					
4.	ABILITY TO RECALL CONTENT AFTER FIELD TRIP					
5.	ABILITY TO LEARN THE PRACTICAL ASPECTS BEFORE FIELD TRIP					
6.	ABILITY TO LEARN THE PRACTICAL ASPECTS AFTER FIELD TRIP					
7.	WILLINGNESS TO ATTEND FIELD TRIPS BEFORE FIELD TRIP					
8.	WILLINGNESS TO ATTEND FIELD TRIPS AFTER FIELD TRIP					
9.	DID BIRDS' CALL GRABBED YOUR ATTENTION BEFORE THE FIELD TRIP?	YES/NO				
10.	DID BIRDS' CALL GRABBED YOUR ATTENTION AFTER THE FIELD TRIP?	YES/NO				
11.	HOW MANY BIRDS CAN YOU RECOGNIZE BEFORE THE FIELD TRIP?					
12.	HOW MANY BIRDS CAN YOU RECOGNIZE AFTER THE FIELD TRIP?					

The responses from the students were statistically analysed by performing paired T-Test, using SPSS Tool to find if some significant changes occurred after the field trips. Additionally, their performance in the classes was observed after the field trips.

Table 2: List of students in the first field trip.

S.No.	Name of student
1	Anubhav
2	Pranati
3	Sanjana Umesh Patil
4	Priya Kumari
5	Kruittika Sharma
6	Sanidhya Sakhare
7	Khushi Nirala
8	Shivani Singh Tomar
9	Krina Halvadiya
10	Snehal Teli
11	Devanshi Pandey
12	Rakhi
13	Divyanshi Urmaliya
14	Sakshi kalbande

Table 3: List of students in the first field trip.

S.No.	Name of student
1	Priti singh
2	Mahak Upadhyay
3	Vaishnavi gaur
4	Shanu Dhole
5	Rudraksh Gowardhan Lanjewar
6	Ritumbhara
7	Uttara Sharma
8	Tejendra Kumar sahu
9	Aman Verma
10	Sneha
11	Ruhanna Harpal
12	Anchal Ghoshi
13	Manmath Rachayya Swami
14	Pruthviraj Andure
15	Prajwal Parchake

III. RESULTS

All the responses were statistically analyzed using Paired T-Test.

3.1 Impact of the first field trip on non-participating students: In the first field trip, 14 students volunteered to go bird-watching based on their interests. After the first field trip to Van Vihar National Park, the students shared their experiences with their classmates formally and informally, leading to curiosity among other students to go out in nature and learn. The result of interaction between the participants and non-participants of the first field trip was an addition of fifteen students on the second field trip (Figure 1). The total strength of the B.Sc. B.Ed. Ist year students (CBZ group) is 52 in number. Twenty-nine students participated in the second field trip conducted within the campus.

3.2 Impact of field trips on the curiosity level: The students were asked to rate their curiosity level on a scale of 1 to 5 before and after the field trip. No significant increase in the curiosity level of students was observed (p value > 0.05) (Figure 2).

3.3 Impact of field trips on ability to recall content: The students were asked to rate their ability to recall content on a scale of 1 to 5 before and after the field trip. Figure 3 shows a significant increase in the ability of the students to recall the content after the field trip (p-value< 0.05).

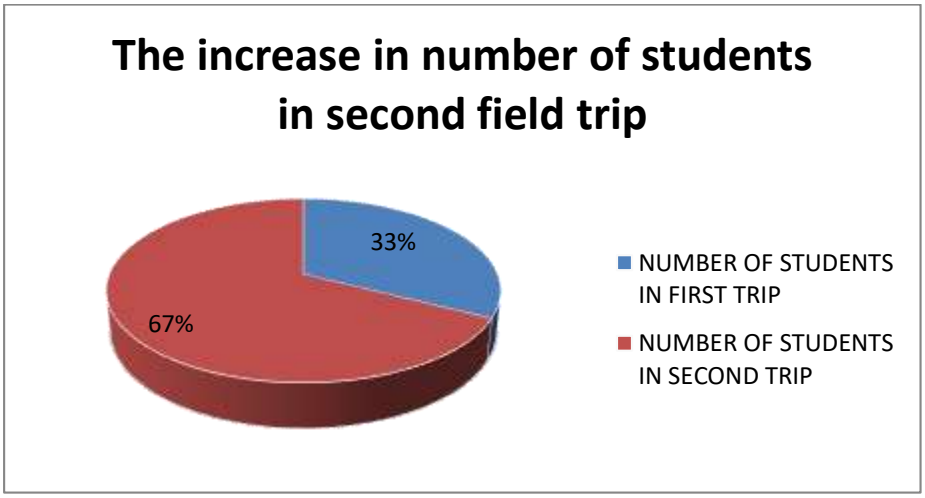

Figure 1: Graphical representation of the increase in number of students in the second field trip.

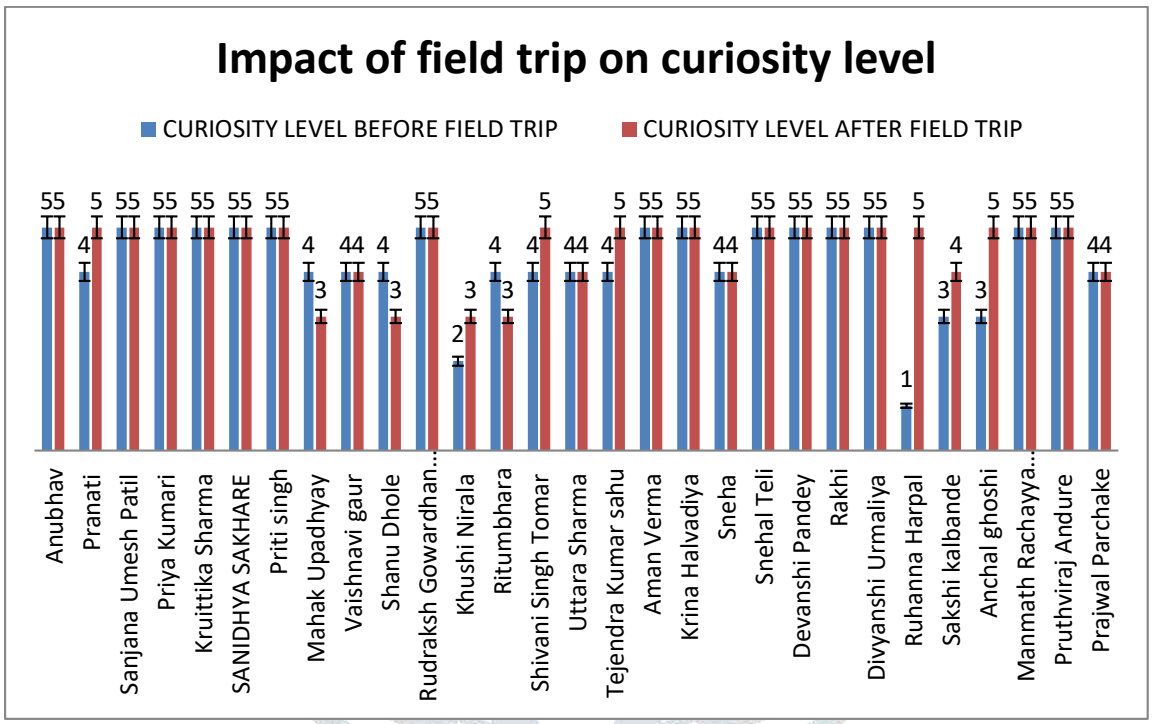

Figure 2: Graphical representation of the impact of field trip on curiosity level of students.

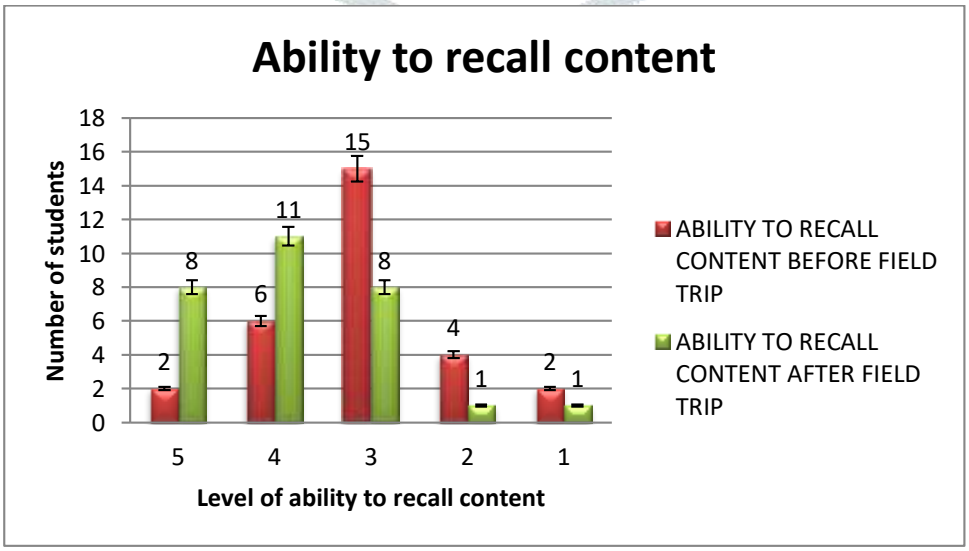

Figure 3: Graphical representation of the impact of field trip on students' ability to recall content.

3.4 Impact of field trips on ability to learn the practical aspects: The students were asked to rate their ability to learn the practical aspects on a scale of 1 to 5 before and after the field trip. The p-value was less than 0.05; therefore, the increase in the ability to learn the practical aspects, shown in figure 4, was significant.

3.5 Impact of field trips on their attention towards birds' call: The students were asked whether the birds' call grabbed their attention before and after the field trip. Their responses were analyzed statistically using Paired T-Test. The students reported that the birds' call snatched their attention more after the field trips. The p-value obtained (less than 0.05) inferred that the results were significant (Figure 5).

3.6 Impact of field trips on the ability to identify birds: The students were asked the number of birds that they could identify before and after the field trip. After the field trips, on average, the students could identify more than ten birds (Figure 6). This indicated a significant increase in the ability to identify birds as p-value obtained from paired T-test was less than 0.05.

3.7 Impact of field trips on the willingness to attend more field trips: The students were asked to rate their willingness to attend more field trips on a scale of 1 to 5 before and after the field trip. The exposure to the field trips, as demonstrated in the figure 7, significantly elicited the willingness of the students to attend more such field trips. The p-value of the Paired T-Test was less than 0.05; therefore, the results were significant.

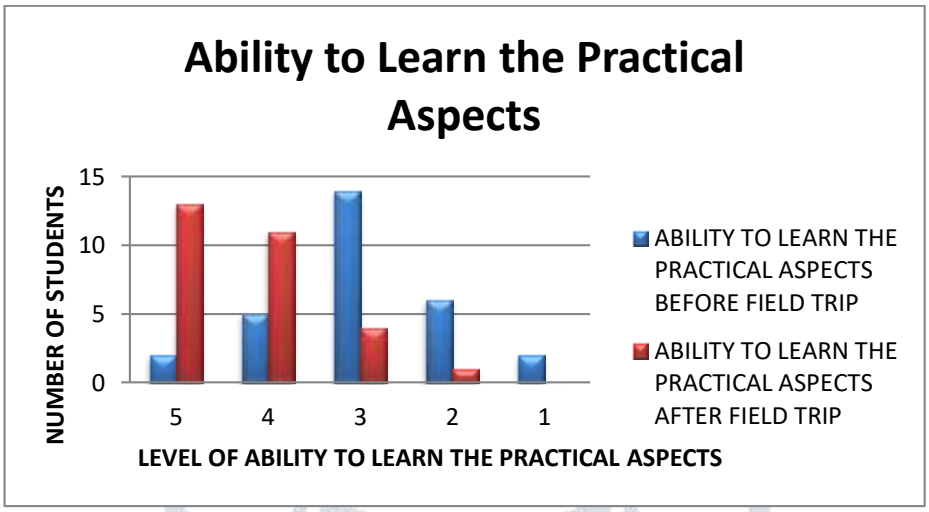

Figure 4: Graphical representation of the impact of field trip on students' ability to learn the practical aspects.

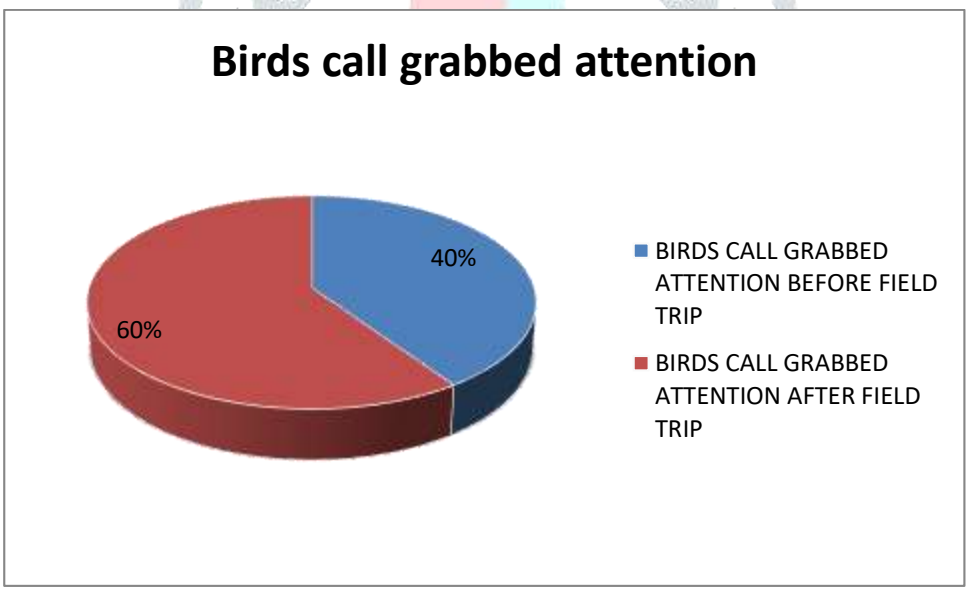

Figure 5: Graphical representation of the impact of field trip on students' attention to birds' call.

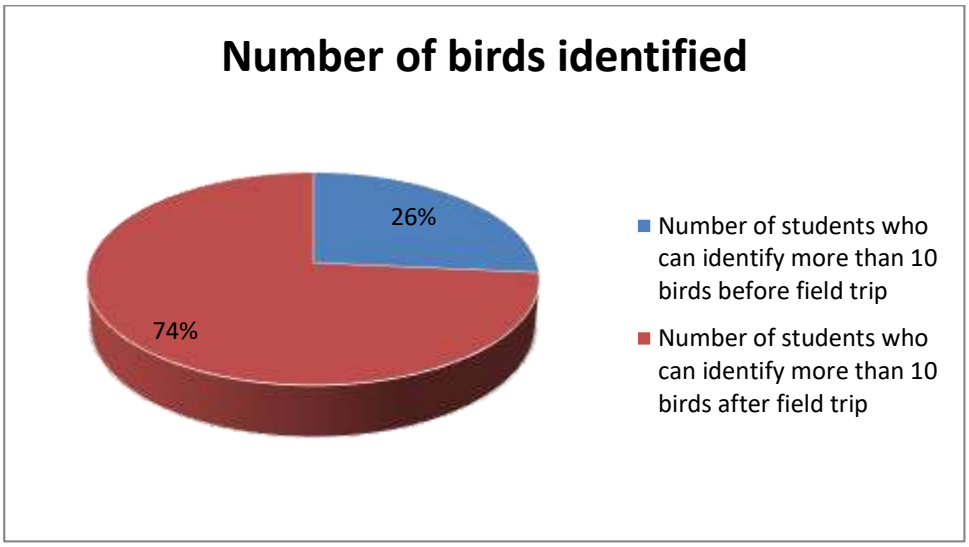

Figure 6: Graphical representation of the number of birds identified by the students before and after the field trips.

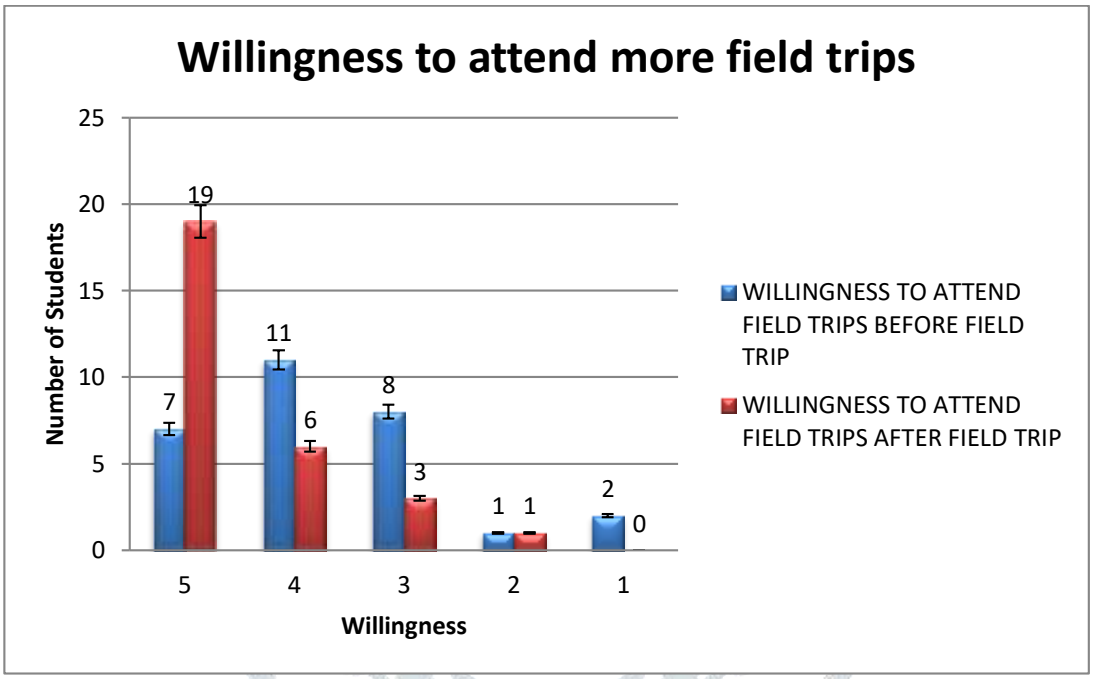

Figure 7: Graphical representation of the impact of field trip on students' willingness to attend more field trips.

3.8 Effect of Bird watching on Cognitive Domain, Affective Domain, and Psychomotor Domain: Hoaque M. clearly explained the three learning domains in his article in 2017. After conducting both trips, keen observation and discussion led us to understand the impact of birding on all these learning domains in the participants v/s the non-participants. It was observed that the participants could remember well the name of the birds, the general properties of the aves, and their evolution, compared to others who relied for this on books, as it is a part of their curriculum in the Vertebrates paper. The participants of field trips could recognise the birds through their physical features and calls. Moreover, they could understand the role of birds in the ecosystem and value their presence. Birding provided the students with information about aves and enabled them to correlate the different birds with their habitats, leading to learning about the nature surrounding them. The bird-watching trips motivated them to participate in nature events and nature trips. Recently, the students actively participated in a nest-making activity held at the institute, reflecting the activation of their psychomotor domain as a result of watching birds. Moreover, they now try to go in and around the campus to listen to the birds' calls and explore their habitat, keeping in mind the ethics of birding. Activities like remembering, understanding, perceiving, receiving, responding, valuing, and engaging in activities related to the environment reflect how birding can effectively set in motion all three learning domains in learners.

3.9 Additional Benefits: Other than the activation of all domains of learning leading to an effective learning, other benefit was the orientation of students towards their career choices. They have known from these trips about the scope of career establishment in the field of wildlife. They came to know about different wildlife institutes such as WII, India, FRI India, ZSI India, WWF India and many more. Therefore, birding could also serve as a platform for the students of higher education where they can get a direction towards their future by exploring their interest.

IV. DISCUSSION

The study aimed to assess the impact of birding on the learning abilities of the students of B.Sc. B.Ed. Ist year. The biology of aves and environmental studies is a part of their curriculum. Therefore, students of B.Sc. B.Ed. were selected. The first objective of this study was to see if the experiences shared by the students of the first group could elicit curiosity and enthusiasm in their classmates to go to the field for experiential learning. Secondly, we decided to conduct the second birding activity on the demand

of the students, which led us to know if the first trip motivated them to participate in a learning session like this. In the second bird-watching activity, a significant increase of fifteen students indicated that the experiences of group I ignited curiosity among others as well. The number could have been more on the second trip if the examination was not nearing.

The second part of the study was aimed to see if bird watching could influence various aspects of students, including curiosity, recalling ability, learning practical aspects, perceiving information about birds, listening to their calls, connecting with nature, and knowing the habitats. There was a significant increase in their ability to recall content, be practical, listen to birds' calls more attentively, and identify more birds based on their habitat, songs, and physical features before and after attending the field trip. However, the level of curiosity was almost the same in the pre and post-test. The results inferred that the bird-watching activity could activate the cognitive domain of the learners.

Furthermore, both groups showed engagement in activities like nest building, a keen observation of their surroundings, valuing the birds in the ecosystem, and sympathizing towards nature. This attitude reflects the activation of the affective and psychomotor domains. Moreover, from the bird-watching activity, the students were oriented about the scope of a career in wildlife.

V. CONCLUSION

The study infers that bird watching is an activity that not only enhances learning in students of the secondary stage but also has the same consequences in students of higher education. Additionally, the study reflects that bird watching is multidisciplinary learning as it incorporates skills such as patience, empathy, and concentration in the students, along with academic knowledge. Bird-watching relieves stress and motivates birdwatchers to learn in nature. Birding does not limit the learner to knowing about birds but is a holistic learning where many academic disciplines, including zoology, botany, and ecology, are learnt along with life-sustaining skills. Therefore, it is concluded that bird-watching is an activity that enriches all three domains of learning. Further, these results can be strengthened with a quantitative study.

VI. ACKNOWLEDGMENT

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