

## Curriculum-based School Picnics: Tool for Enhancing Scientific Temper

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### ABSTRACT

Picnics or excursions are a common practice in almost all schools. The schools take the students on picnics or excursions at least once a year. In Nagpur city alone, an estimated one lakh students go out for school picnics/excursions. So, school students going for picnics constitute a very important tourist segment. If this segment is concentrated upon and directed towards curriculum-based picnics/excursions, scientific temper can be developed in these students in a very interesting and much more effective manner.

The present study seeks to understand the motivation of schools in their choice of travel destinations and also to test the effectiveness of curriculum-based school picnics/excursions as a tool to enhance the scientific temper of school students.

It was found that curriculum-based school picnic/excursion was not one of the motivations behind designing school picnics. The study also found that the students who were taken to the curriculum-designed picnics before the onset of the teaching session were more inquisitive and participative during the teaching sessions. It is also seen that there is very less research on creating and testing simple and effective tools to increase scientific temper in students. The findings of this paper would be valuable not only for the school authorities but also for all the segments of the society as it enhances scientific temper in a very interesting and effective manner.

**KEYWORDS:** Scientific temper, School, Curriculum based picnics, Education

### Introduction

‘Scientific temper’ is a widely used term. If considered as a

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noun, it is the ability to think rationally and question everything in the right manner so that scientifically sound decisions can be taken. This does not relate only to academics but also to daily life. If this ability has to be an integral part of one's personality, it needs to be developed at an early age. The school is the place where the individual's personality is carved most neatly. It is here that a child questions without fear of being right or wrong.

Today, there are a number of ways in which the schools are aiding in the development of scientific temper in their students by way of simple experiments, storytelling sessions, role-plays, situational analysis, etc. Students are also allowed to discuss and debate over certain issues of importance such as water scarcity, environmental pollution, global warming and the like. All these methods have now become an integral part of the pedagogy in schools and have also been imbibed in the curriculum to a certain extent. This research work aims to explore one more way by which the scientific temper of the students can be enhanced – through school picnics/excursions.

Picnics or excursions are a common practice in almost all schools. The schools take the students on picnics or excursions at least once a year. Generally each school has 13 classes (pre-primary, primary, middle and high school) with minimum two sections for each class. Each section has a minimum of 40 students making a total of minimum 1000 students per school. If Nagpur alone is considered with a minimum of 1000 (one-third of total number) schools (Table 1), there will be a minimum of 1 lakh students who go for picnics every year. If the entire country is considered, the number will indeed be very huge.

Thus, school students going for picnics constitute a very important tourist segment of our country. If this segment is concentrated upon and turned towards curriculum based picnics /excursions, scientific temper can be developed in these students in a very interesting and effective manner.

Table 1 — Number of schools (2017)

Pre-Primary Schools	1029
Higher Primary Schools	1739
Secondary Schools	177
Source: <a href="http://nagpur.gov.in/htmldocs/glance.htm">http://nagpur.gov.in/htmldocs/glance.htm</a>	

Orion (1993) discussed the importance of field trips in improving the teaching of school curriculum to students. He presented the gaps between the potential of the field trips in enhancing students' learning experience and its realization by teachers. To be able to realize the potential of field trips for students, he suggested a model. Some of the key points in the model were:

- The teachers should keep the curriculum in mind and try to give hands-on experience about those activities that cannot be conducted in classrooms.
- The students should be taught observing, identifying, measuring and comparing skills by way of some activities. Conclusions should be drawn and discussed in the classroom later.
- Before taking the students for the field trip, they should be trained about what they are going to learn and how. They should be informed about the activities also.
- The field trip should be used as an addition to classroom teaching of a particular lesson or unit so that the learning of the student is complete and he becomes more enthusiastic towards learning.

Griffin and Symington (1997) found that most schools do not structure their school trips to museums and fail to connect the visit with the school curriculum. The study was undertaken for 12 school groups with a sample of 29 teachers and 735 students. They proposed a framework for designing school trips based on the curriculum that the student has to read during his school year. The research questions gave a clear insight into the failure of the teachers in planning the trip properly. The set of questions that the researcher tried to find the answers to included the following questions:

- What were the teachers' stated purposes for the excursion?
- What preparation did the teacher report?
- What were the teachers' interactions with the students, and the exhibits during the excursion?
- What were the teachers' plans for follow-up at school?
- What actual follow-up did the teacher report?

- Was there a link between the topic of the excursion and the current classroom topic?

It was found that out of the 12 schools under study only four had taken care of linking the visit to the curriculum. In the framework proposed by the researchers, the emphasis was laid on connecting the school trip with the school curriculum.

Dillon *et al.* (2003) talk about teaching students regarding farming methods and agricultural concerns by organizing school trips to the farms. According to the researchers, the students should learn about the difficulties and processes of farming in their early age so that they are sensitive towards the issue. They stressed the need that the school trips should be so organized that they enhance the learning capabilities of the students.

According to Ritchie and Coughlan (2004) school excursion tourism is a relatively under researched and poorly understood segment of the tourism industry. They studied the travel motivations of the schools and found that enhancing scientific temper by way of curriculum based picnics was not one of the motives.

Dillon *et al.* (2006) presented in their research on school trips that the fieldwork/trips should be properly conceived, planned, taught nicely and continued by a proper follow-up in the classrooms by teachers. This would enhance the learning experience of the students. They pointed out that at present the field work or the school trips lack this well-structured format and are being carried out either as a fun activity or as recreation.

In a study conducted by Dale (2013) on school tourists factors such as safety, cost effective accommodation, relevance to studies, access to destination, historic and cultural attractions, learning in a new environment, recreational opportunities, changing school routine and attractions with scientific merit were considered to arrive at tourist destination decisions. Enhancing scientific temper by way of curriculum based picnics was not considered a factor for travel decisions.

Amaral *et al.* (2014) presented the benefit of guided school trips in the study of Geography in general and coral reefs in particular. The empirical test was carried out to ascertain the difference between the knowledge of the students before and

after the school trip activity to the coral reefs. It was found that the students were more enthusiastic in their attitude towards learning after the field trip.

Similar research studies conducted by around 200 researchers were compiled by Wilson and Richards (2004) as a bibliography of Research and Publications which dealt with student tourism none of which considered enhancing scientific temper by way of curriculum based picnics as a prime factor.

It is said that educated students make an educated country. It is necessary to challenge the students' minds and enhance scientific temper in them so that the habit of scientific enquiry and its resolution develops them into able citizens of tomorrow. School picnics can aid in the development of scientific temper in an interesting way. It is therefore necessary to make 'curriculum based picnics/excursions' a motive to plan school picnics /excursions. There is a need to create awareness in schools so that they can in turn design their picnics/excursions in the right manner and help in the scientific enquiry of students.

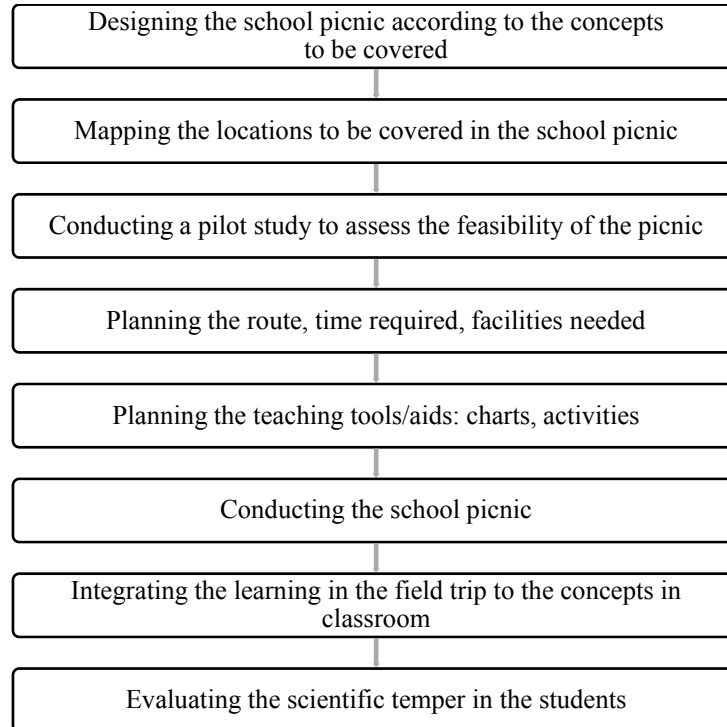
The objectives of the present study were therefore to understand the motivation of schools in their choice of travel destinations and also to test the effectiveness of 'Curriculum based School picnics' as a tool to enhance the scientific temper of school students.

### **Methodology**

Interviews were conducted to understand the motivation of the schools in their choice of travel destinations. Teachers were asked to design the school picnics/excursions for the academic session based on the curriculum of that particular class.

Further, the students were divided into two sections: Section A and B. Section A students were taken to the pre-decided destinations before the onset of the teaching sessions. Section B students were not taken for the picnic/excursion. Later, students of both sections were merged together in the teaching sessions and the class participation of the students was recorded and evaluated.

The effectiveness of the experimental method was tested by independent sample t-test.



### **Model Implemented in the Study**

#### ***Research Methodology***

Any decision regarding school picnics or excursions is impelled by motivation and the current research is built on the basic premise that the motives driving the decision of choosing travel destination create a definite impact on the learning output of the picnic or excursion. For the students, every step taken by the school authorities, be it in classroom activity or outdoor activity, needs to be in line with their learning outcomes.

To be able to translate travel into an enriching experience and thereby enhancing scientific temper of the students, it is necessary to understand the present motivation of schools behind designing the travel via picnics/excursions. Students being an integral and most important part of this exercise, it is necessary to test the utility of the method proposed.

***Population and Sample***

The population of the study is students studying in the schools of Nagpur and their teachers. Five schools (L,M,N,O,P) having their premises in the city of Nagpur in the state of Maharashtra were selected by purposive sampling method. The names of the schools are not being disclosed. One sample of 50 teachers (10 from each school) was selected by Random Sampling method. Five samples of 50 students each – one sample from each school – under study were taken. Schools L, M, N, O and P were requested to select Class V, VI, VII, VIII and IX respectively (one class per school).

As the first step, permission to conduct research was sought from the school authorities. Secondly, a letter requesting the participation of the teachers in the study with a brief description of the research was sent to them. Being a school related study, all the respondents agreed to participate in the study. The research was conducted in three phases.

***Phase I: Pre-experiment phase***

*Understanding school picnic/excursion motivation:* To be able to understand the motivations behind designing school picnics/excursions, personal interviews of the teachers involved in the process were conducted. After a careful review of the responses gathered from the interviews, 5 dominant motivational factors were identified.

***Phase II: Experiment design phase***

*Design and execution of the curriculum based picnic:* The teachers were requested to design their school picnic/excursion based on the curriculum to be covered in the academic session. They were then asked to divide the class of students into two sections and take only one section for the designed picnic/excursion. The experiment was designed for class V, VI, VII, VIII and IX, one class per selected school respectively. Each class of 50 students was divided into two sections A and B. The assignment to the sections was selective. Section A comprised of roll numbers 1 to 25 whereas the remaining students formed part of Section B. Section A was exposed to the experimental condition whereas Section B was taken as the control group.

***Phase III: Post-experiment phase***

*Evaluation of effectiveness of the experiment:* The students of section A and B were merged together in the classroom. The teachers were asked to record the class participation of the students during the teaching session based on a scale of 1 to 5, 5 being highly scientific enquiry and 1 being no participation. Each school recorded the results for their respective classes roll number wise.

**Observations*****Phase I: Pre-experiment phase***

*Understanding School picnic/excursion motivation:* It was found that the schools select the tourist destination based on the following criteria:

1. Nearness to the school (distance)
2. Easy availability of transport
3. Safety of students
4. Age wise: primary school – entertainment; middle school – culture/heritage sites; high school – education
5. Cost effectiveness

It was noted that ‘curriculum based picnics/excursions’ was not considered while selecting the tourist destinations by the schools.

***Phase II: Experiment design phase***

*Design and execution of the curriculum based picnic:* The teachers took keen interest in designing school curriculum based picnics/excursions. The students were divided into sections based on the roll numbers. As the teachers were well aware of the importance of the topics to be covered in the classroom, they explained everything in detail during the picnic/excursion to the students. The students enjoyed the learning experience.

***Phase III: Post-experiment phase***

*Evaluation of effectiveness of the experiment:* The students of both sections A and B were merged back in the classroom. The



teachers recorded their classroom participation during the teaching session. It was observed that some of the students were very enthusiastic, inquisitive and participative in the class. At the same time some students did not reflect much scientific temper.

### Analysis & Discussions

The data collected through the evaluation of the students in Phase 3 was analyzed using Independent sample *t* test for comparison of means (Table 2). This is a statistical technique used to compare the means of two groups taken in the study. Here, these comprised of Section A (Experimental Group) and Section B (Control Group) for each class respectively.

On application of the Independent sample *t*-test, assuming  $\alpha=0.05$ , it was found that there is a significant impact of the curriculum based picnic/excursion in enhancing the scientific temper of students. The p-values for all the classes V-IX was found to be 0.000 ( $p<\alpha$ ). This means that the experiment of taking students to curriculum designed picnics proved to be effective in enhancing the scientific temper of students.

Table 2 — Independent sample t-test

School	Class	Section	N	Mean	Std. Deviation	t	df	p-value
L	V	A	25	4.12	0.833	10.457	48	0.000
		B	25	1.96	0.611			
M	VI	A	25	4.12	0.781	8.539	48	0.000
		B	25	2.04	0.935			
N	VII	A	25	4.08	1.115	8.629	48	0.000
		B	25	1.72	0.792			
O	VIII	A	25	4.40	0.764	14.153	48	0.000
		B	25	1.56	0.651			
P	IX	A	25	4.72	0.458	15.810	48	0.000
		B	25	2.56	0.507			

The notations used in the table are as follows:

N= size of sample

t = t value

p-value = probability of error (calculated)

$\alpha$  = probability of error (assumed error=0.05)

df = degree of freedom

The scientific temper of students taken to the curriculum designed picnics (Section A) as compared to those who were not taken (Section B) was found to be higher (Class V: Section A Mean 4.12> Section B mean 1.96; Class VI: Section A Mean 4.12> Section B mean 2.04; Class VII: Section A Mean 4.08> Section B mean 1.72; Class VIII: Section A Mean 4.40> Section B mean 1.56; Class IX: Section A Mean 4.72> Section B mean 2.56).

### Conclusions

From the data collected it can be inferred that ‘curriculum based picnics/excursions’ was not one of the motivations to design school picnics. It was also found that the students who were taken to the curriculum designed picnics before the onset of the teaching session were more inquisitive and participative during the teaching sessions.

Hence, it can be concluded that the scientific temper in the students can be enhanced by way of curriculum based picnics/excursions. If the schools take up the responsibility of designing their travel destinations based on the school curriculum, students would be able to develop a keen sense of observation and inquiry thus leading to enhanced learning.

### Acknowledgement

The author acknowledges the support of all the five schools of Nagpur without whose cooperation the research work would not have been possible.

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