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Effect of Team Teaching on Curiosity of class 6 to 8 students of Jabalpur District

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ABSTRACT:

The objective of the study was to study the effect of Team Teaching on curiosity of class 6 to 8 students of Jabalpur district. For that purpose the investigators used the Pre -test & the Post-test experimental research,2x2 factorial design and made two groups one Experimental Group and another Control Group. Four M.P. Board Middle Schools, Jabalpur district were selected randomly and from these school's 900 students from Class 6th to 8th of M.P. Board were selected as a sample with a purposive sampling method (450 students in each group). First Curiosity test was administered on both the group as a Pre - Test. Then, one month treatment was given by the Investors to both the groups (teaching science- Experimental group & Control group). After that the Investigators again administered Curiosity test on the both groups, as a Post – Test and find out main score (Post test score - Pre - test score = Gain Score). Statistical techniques were used for data interpretation were analyzed with the help of two way ANOVA. Result revealed that there were significant effects found at .01, .01 & .05 level significance for individual (Gender, Teaching Methods) & joint effect of Gender & Teaching Methods on Curiosity. Hence study reveals that there was significant positive effect of gender & team teaching on curiosity of students of class 6th to 8th students in science subject.

Keywords: *Team teaching, Pre-test & Post -test experimental research design, Curiosity.*

1. INTRODUCTION:

With innovative and interesting teaching models emerging day by day team teaching is now being pursued to make the classroom space dynamic and all encompassing. In a liberal education setup, when

students are encouraged to take up courses across disciplines and indulge in an active learning team teaching is one such means to the end. So what steam teaching & what does this mode of education entail?

Team teaching is the division of physical, cognitive and skills between teachers to plan, organize, instruct, develop comprehension and make assessments on the same group of students in a classroom. Team teaching brings to students the ideas and potentials of many thought leaders to word courses that require a holistic perspective. Team teaching is beneficial to the students by enhancing their learning, providing a multi disciplinary focus on the curriculum; it builds connection across disciplines, provides a pave way for a global classroom & develops better teacher student relationship.

2. Need and importance of the study:

Team teaching is a system that aims to bridge gaps in knowledge, transfer and benefit both the teacher and the student. Still we need to know more about how well team-teaching works (Marsh, R. 1961). Researchers tried to explore possibilities of team teaching in various subjects i. e. biology (Anderson and Winkleman 1962), English language and literature (Dieman, F.M. 1964), in English and social studies (Gamsky, N.R.1970), in geometry (Klinkerman & Bridge 1967), in maths (Jang, S. L., 2006) and found it to be an effective way of teaching. Team Teaching has been conducted on various labels of education system i. e. Elementary school, secondary schools (Armstrong, D. C. 1977), special education (Linz et al. 2008). Adult learner (Laughtin, et al., 2011). On the basis of review of literature it is clear that a lot of work has been done on team teaching and achievement, self-concept and creativity showed to some extent a positive effect. Can it have an effect on curiosity also? Since curiosity is a strong determinant of personality and it helps the child in comprehension of the subject, that's why researchers decided to take curiosity as a dependent variable for the study. It is also concluded that for successful implementation of the team teaching a lot of planning is required, especially human resources (teachers). Driven with this view the investigator selected this topic.

3. Statement of the problem:

"Effect of Team Teaching on Curiosity of class 6 to 8 students of Jabalpur district"

4. Objective of the Study:

- To study Gender wise difference among mean scores of curiosity of 11.5 – 12.5 (class 6) year old students when taught by Team Teaching and Traditional Method.
- To study Gender wise difference among mean scores of curiosity of 12.5 – 13.5 (class 7) year old students when taught by Team Teaching and Traditional Method.
- To study Gender wise difference among mean scores of curiosity of 13.5 – 14.5 (class 8) year old students when taught by Team Teaching and Traditional Method.

5. Hypothesis of the Study:

- There is no gender wise difference among mean scores of curiosity of 11.5 – 12.5 (class 6) year old students when taught by Team Teaching and Traditional Method.
- There is no gender wise difference among mean scores of curiosity of 12.5 – 13.5 (class 7) year old students when taught by Team Teaching and Traditional Method.

- There is no gender wise difference among mean scores of curiosity of 12.5 – 13.5 (class 8) year old students when taught by Team Teaching and Traditional Method.

6. Delimitation of the study:

The present study was subjected to the following delimitation:

1. The field of study was confined to Jabalpur district in Madhya Pradesh only.
2. Definitions of the variables as adopted and used.
3. **A)** Independence Variables: Treatment given in the form of instruction using:

   i) Team Teaching and **ii)** Traditional Method

   B) Dependent variable: The use of Curiosity Scores (total Curiosity scores) on Children Curiosity Scale (CCS-KR) - Rajeev Kumar.

   C) Generic Variable: Gender (Male and Female both)

   D) Control Variable: Homogeneity of groups, treatment was given by the same teachers, time factor.
4. **i)** Class: 6 to 8 **ii)** Age: 11.5 to 14.5 year old students

7. Research Methodology:

The investigator used the Pre-Test and the Post-Test experimental research method and 2 x 2 factorial research design for Curiosity.

Sample:

Two M.P. Board middle schools of Jabalpur district were selected randomly (lottery system) from the list of Madhya Pradesh Board middle schools of Jabalpur district. 900 students who were studying in class 6 to 8 selected purposefully, (from each class 75 Male students and 75 Female students) and divided into two groups, 450 in each group (group A- Experimental group and group B- is Control group).

Procedure:

First: Curiosity test was administered on both the groups of classes 6 to 8 as Pre-test.

Second: After that one month treatment was given by the investigator to both the groups of class 6, 7 & 8 (Experiment group was taught science subject by Team Teaching method and Control group was taught Traditional Method).

Third: After completing treatment the investigator again administered the Curiosity scale on both the groups classes 6th, 7th and 8th as a Post-Test and found main sores (Post-Test score - Pre -Test score = Gain score) after scoring.

Statistical Procedure: After tabulation, data were analyzed with the help of two-way ANOVA.

Result, Interpretation and Discussion:

The first objective was the effect of gender wise difference among mean scores of total Curiosity of 11.5 to 14.5 year old students when taught by Team Teaching and Traditional Method. There were two levels of gender namely Male and Female, two levels of methods namely Team Teaching and Traditional Method. Thus the data were analyzed with the help of two into two-way ANOVA and results are given in Table No. 1.1 & 1.2, Graph No. 1.1&1.2

Gender wise Number, Mean & Standard deviation of total Curiosity of 11.5 to 12.5 year old students

Class/ age	Gender	Method	Number	Mean	S.D.
11.5-12.5 Class 6	Male	Team Teaching	75	125	26.119
		Traditional Method	75	80	7.410
	Female	Team Teaching	75	130	27.230
		Traditional Method	75	82	7.561
12.5-13.5 Class 7	Male	Team Teaching	75	126	26.671
		Traditional Method	75	78	6.281
	Female	Team Teaching	75	129	28.326
		Traditional Method	75	93	6.923
13.5-14.5 Class 8	Male	Team Teaching	75	122	26.923
		Traditional Method	75	88	7.968
	Female	Team Teaching	75	130	28.102
		Traditional Method	75	86	7.321

Table No.1.1

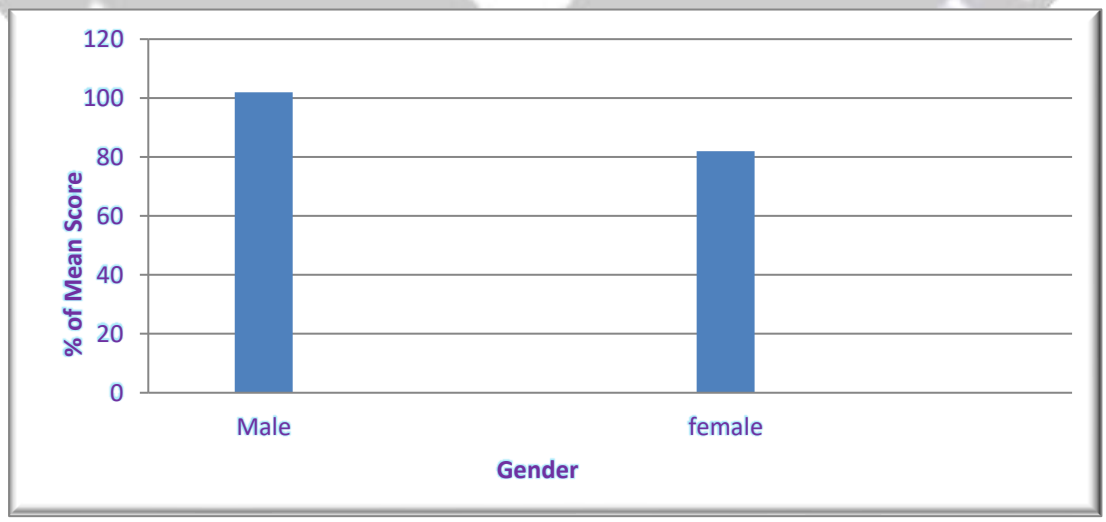
Summary of 2x2 Factorial design ANOVA of Total Curiosity of class 11.5 to 12.5 year old students

Source of Variance	Df	Sum of Square (SS)	Mean Square (MS)	F
Gender	1	923.21	923.21	7.866**
Method	1	7723.92	4865.34	33.982**
Gender x Method	1	823.76	359.12	3.412*
Total	300			

Table No.1.2

**= Significant at 0.01 Level of significance
*= Significant at 0.05 Level of significance

Mean Score of Total Curiosity of 11.5 to 12.5 year old Male and Female students



Graph No.1.

i) Effect of Gender on Total Curiosity of 11.5 to 12.5 old students:

From the Table no. 1.2 it can be seen that F- value for gender was 7.566 which was significant at 0. 01 level of significance with df = 1 /299. It indicates that mean score of total Curiosity of 11.5 - 12.5 year old male and female students differs significantly. Thus the Null hypothesis No. 1.a(i) " There is no significant difference between the mean score of total curiosity of 11.5 - 12.5 year old Male and Female students" is rejected. Further the mean score of total curiosity of 11.5 - 12.5 year old Female student whose means score was 106.5 which was significantly higher than that of 11.5 - 12.5 year old Males whose mean score was 102.5(difference 3.5). It is clearly exhibited in Graph no. 1.1. It may therefore be said that total curiosity of 11.5 - 12.5 year old female students was found to be significantly superior than that of total curiosity of 11.5 to 12.5 year old male students.

ii) Effect of methods on total curiosity of 11.5 – 12.5 year old students:

From table number 1.2 it is observed that the F - ratio for methods was 33.982 which was significant at 0.01 level of significance with DF =1/ 299. It interprets that the mean score of total curiosity of 11.5 – 12.5 year old students who were taught by Team Teaching (experimental group) and Traditional Method (control group) differ significantly.

Thus the Null Hypothesis **No.1 a(ii)** " There is no significant difference between mean score of total curiosity of 11.5 – 12.5 year old students when taught by Team Teaching and Traditional Method" is rejected.

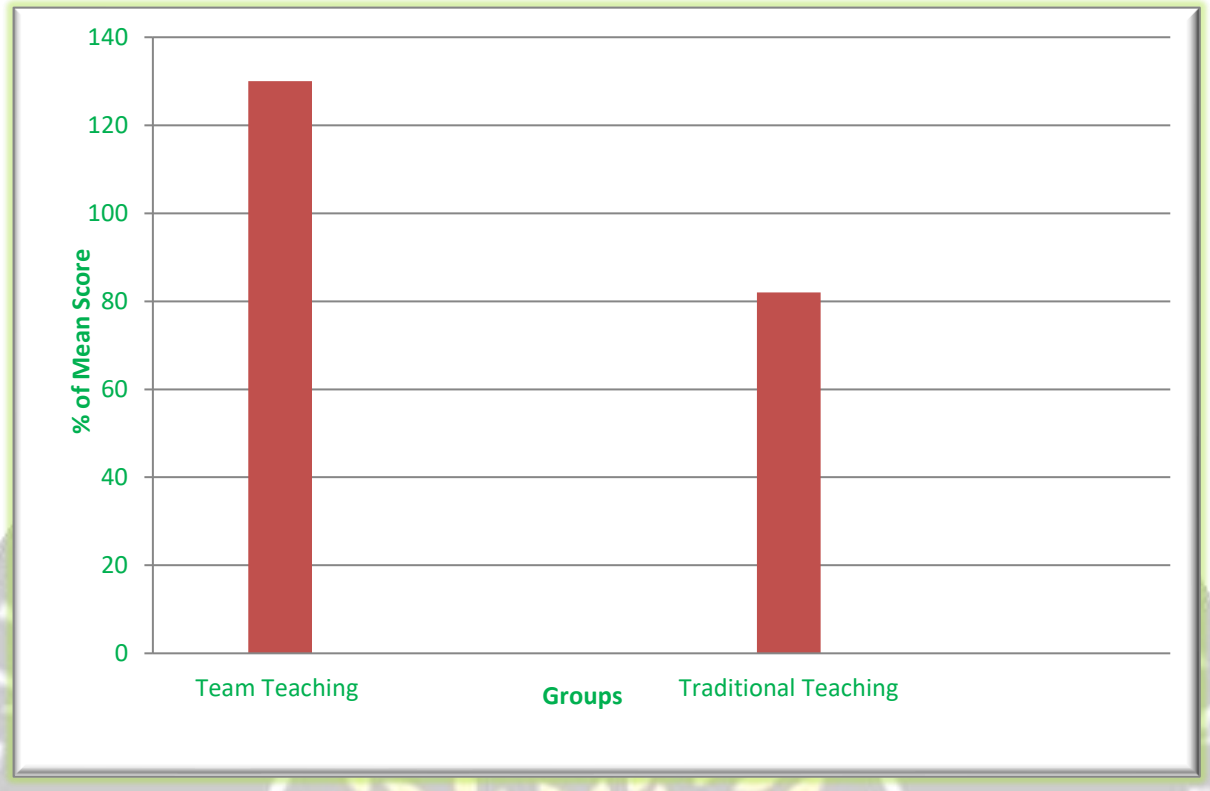
Further mean score of total curiosity of 11.5 to 12.5 years old students when they were taught by Team Teaching was 127.5 and when taught by Traditional Method was 81, difference between team teaching and traditional method was 46.5. It may therefore be said that the total Curiosity of 11.5 to 12.5 year old students who were taught by Team Teaching showed significantly higher than that of Traditional Method.

iii) Effect of gender and method on total curiosity of 11.5 – 12.5 year old students:

From Table number 1.2 it is evident that F-value for the joint effect of Gender and Methods was 4.26 which was significant at 0 .1 level of significance with df = 1/ 299. It means that the mean score of total Curiosity of 11.5 to 12.5 year old Male and Female students who were taught by Team Teaching and Traditional Method differ significantly.

Thus the Null Hypothesis 1.a(iii) that "There is no Gender and Method wise significant joint difference among mean scores of total Curiosity of 11.5 to 12.5 year old students" is rejected. Further the mean scores of total Curiosity of 11.5 to 12.5 year old Male and Female students when taught by Team Teaching was 125 and 130 and when taught by Traditional Method was found to be 80 and 82 as clearly shown in graph number 1.3 therefore it may be set that total curiosity of 11.5 to 60 12.5 year old male and female students who were taught by team teaching showed significantly outward performance.

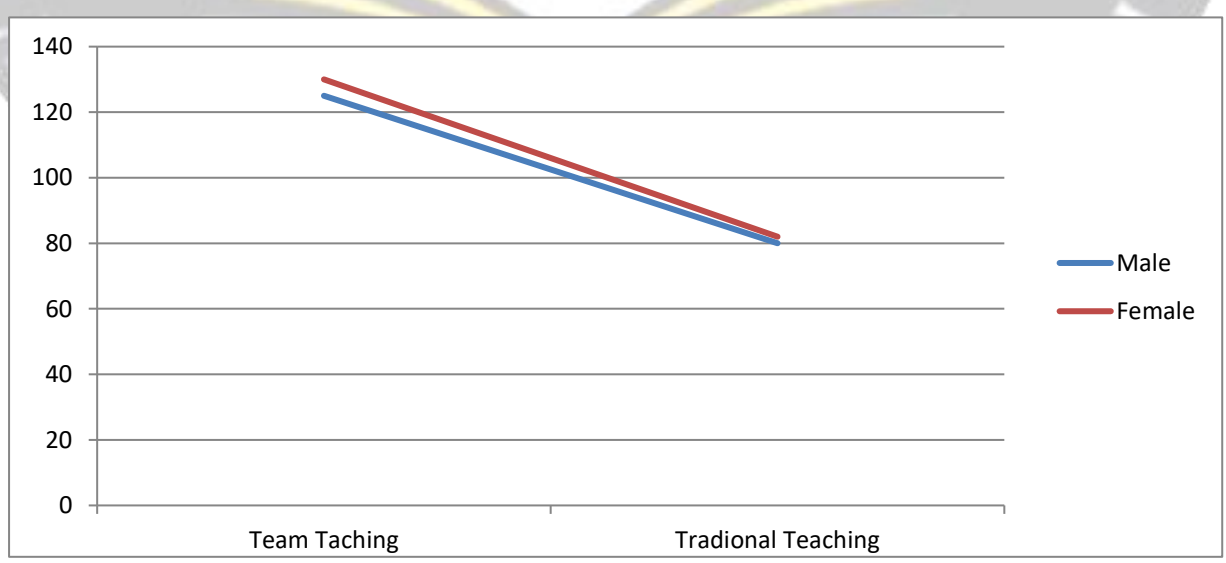
Mean Score of Total Curiosity of 11.5 to 12.5 year old students taught by Team Teaching and Traditional Method



Graph No.1.2

The second objective was to study the effect of gender wise difference among mean scores of total Curiosity of 12.5 to 13.5 year old students when taught by Team Teaching and Traditional Method. There were two levels of gender namely Male and Female, two levels of methods namely Team Teaching and Traditional Method. Thus the data were analyzed with the help of two into two-way ANOVA and results are given in Table No. 1.3 & 1.4, Graph No. 1.4 to 1.6

Mean Score of Total Curiosity of 11.5 to 12.5 year old Male and Female students taught by Team Teaching and Traditional Method



Graph no. 1.3

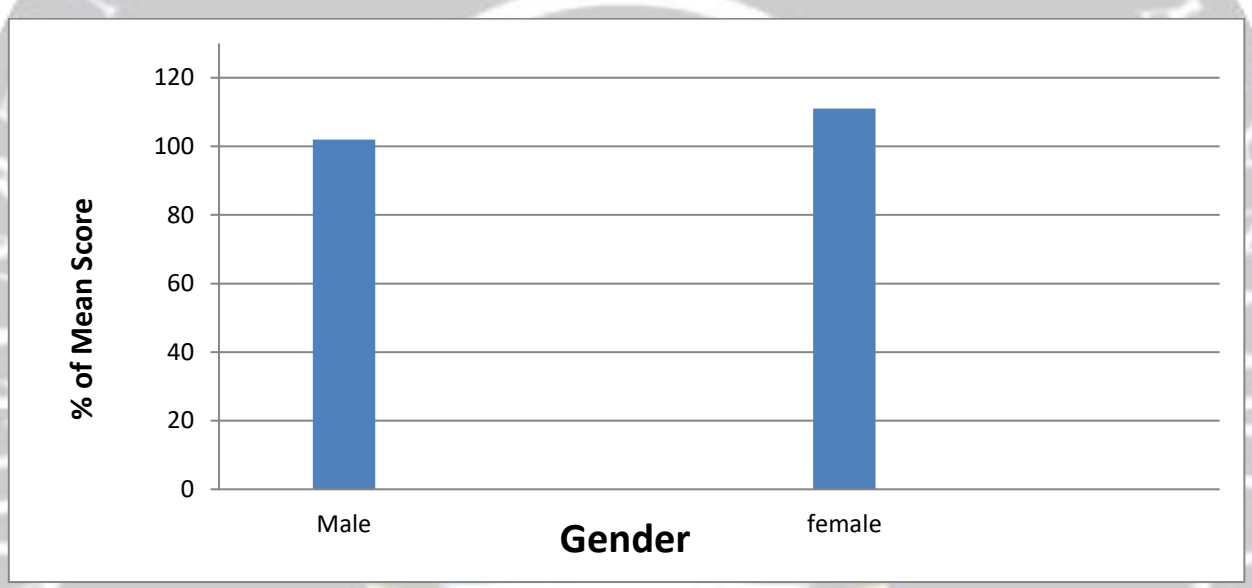
Gender wise Number, Mean & Standard deviation of total Curiosity of 12.5 to 13.5 year old students

Source of Variance	df	Sum of Square (SS)	Mean Square (MS)	F
Gender	1	893.68	893.68	6.162**
Method	1	8423.64	5230.67	35.623**
Gender x Method	1	953.38	623.45	4.183*
Total	300			

Table no. 1.3 **= Significant at 0.01 Level of significance

*= Significant at 0.05 Level of significance

Mean Score of Total Curiosity of 12.5 to 13.5 year old Male and Female students



Graph No.1.4

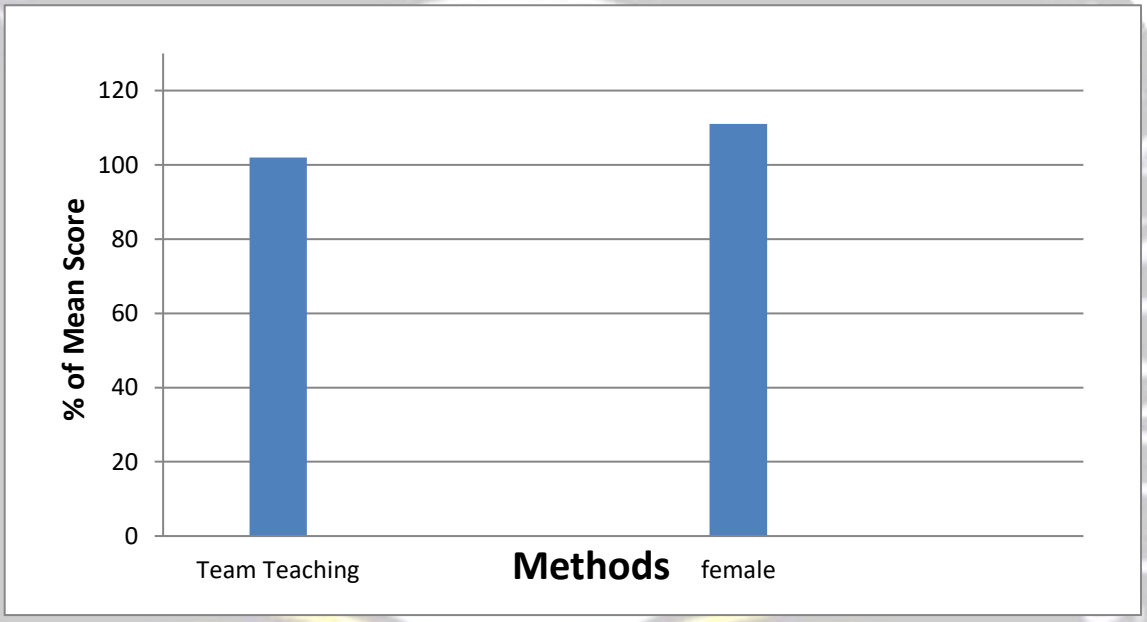
i) Effect of Gender on Total Curiosity of 12.5 to 13.5 old students:

From the Table no. 1.4 it is clearly stated that F- value for gender was 6.162 which was significant at 0. 01 level of significance with df = 1 /299. It indicates the mean score of total Curiosity of 12.5 - 13.5 year old Male and Female students differ significantly. Thus the Null hypothesis No. 2.a(i) " There is no significant difference between the mean score of total Curiosity of 12.5 - 13.5 year old Male and Female students" is rejected. Further the mean score of total curiosity of 12.5 - 13.5 year old Female student was 106.5 which was significantly higher than that of 11.5 - 12.5 year old Males whose mean score was 102 (difference 4.5). It is clearly exhibited in Graph no. 1.4. It may therefore be said that total Curiosity of 12.5 - 13.5 year old Female students was found to be significantly superior than that of total Curiosity of 11.5 to 12.5 year old Male students.

ii) Effect of Methods on total Curiosity of 12.5 – 13.5 year old students:

From table number 1.3 it is observed that the F - ratio for methods was 35.623 which was significant at 0.01 level of significance with DF =1/ 299. It interprets that the mean score of total curiosity of 12.5 – 13.5 year old students who were taught by Team Teaching (experimental group) and Traditional Method (control group) differs significantly. Thus the Null Hypothesis no. 2 a(ii) " There is no significant difference between the mean score of total Curiosity of 12.5 – 13.5 year old students when taught by Team Teaching and Traditional Method" is rejected. Further mean score of total curiosity of 12.5 to 13.5 years old students when they were taught by Team Teaching was 125.5 and when taught by Traditional Method was 85.5, difference between team teaching and traditional method was 40.0. It may therefore be said that the total Curiosity of 12.5 to 13.5 year old students who were taught by Team Teaching showed significantly higher than that of Traditional Method.

Mean Score of Total Curiosity of 12.5 to 13.5 year old students taught by Team Teaching and Traditional Method

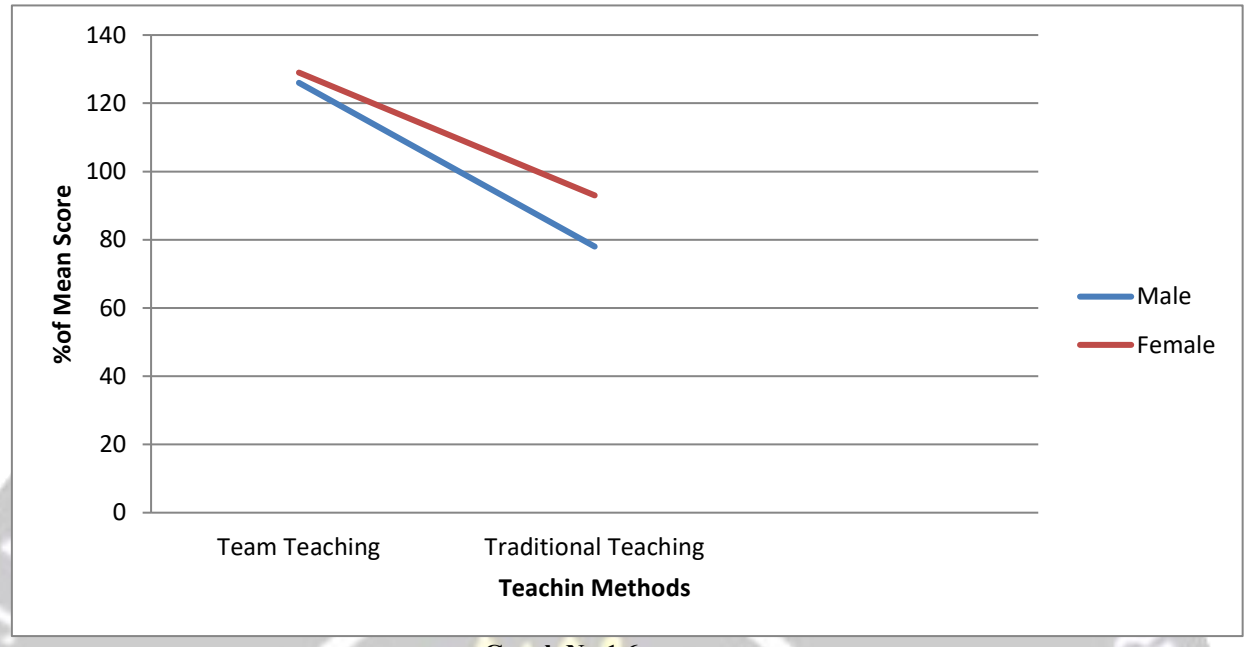


Graph No. 1.5

iii) Effect of Gender and Method on total curiosity of 12.5 – 13.5 year old students:

From Table number 1.3 it is evident that F-value for the joint effect of Gender and Methods was 6.162 which was significant at 0 .01 level of significance with df = 1/ 299. It means that the mean score of total Curiosity of 12.5 to 13.5 year old Male and Female students who were taught by Team Teaching and Traditional Method differ significantly. Thus the Null Hypothesis 2.a (iii) that "There is no Gender and Method wise significant joint difference among mean scores of total Curiosity of 12.5 to 13.5 year old students" is rejected. Further the mean scores of total Curiosity of 12.5 to 13.5 year old Male and Female students when taught by Team Teaching was 126 and 129 and when taught by Traditional Method was found to be 78 and 93 as clearly exhibited in Graph No.1.5. Therefore it may be said that total Curiosity of 12.5 - 13.5 year old Male and Female students who were taught by Team Teaching showed significantly at par performance.

Mean Score of Total Curiosity of 12.5 to 13.5 year old Male and Female students taught by Team Teaching and Traditional Method



Graph No.1.6

The third objective was to study the effect of gender wise difference among mean scores of total Curiosity of 13.5 to 14.5 year old students when taught by Team Teaching and Traditional Method. There were two levels of gender namely Male and Female, two levels of methods namely Team Teaching and Traditional Method. Thus the data were analyzed with the help of two into two way ANOVA and results are given in Table No. 1.5, & Graph No. 1.7 to 1.9

Summary of 2x2 Factorial design ANOVA of Total Curiosity of class 13.5 to 14.5 year old students

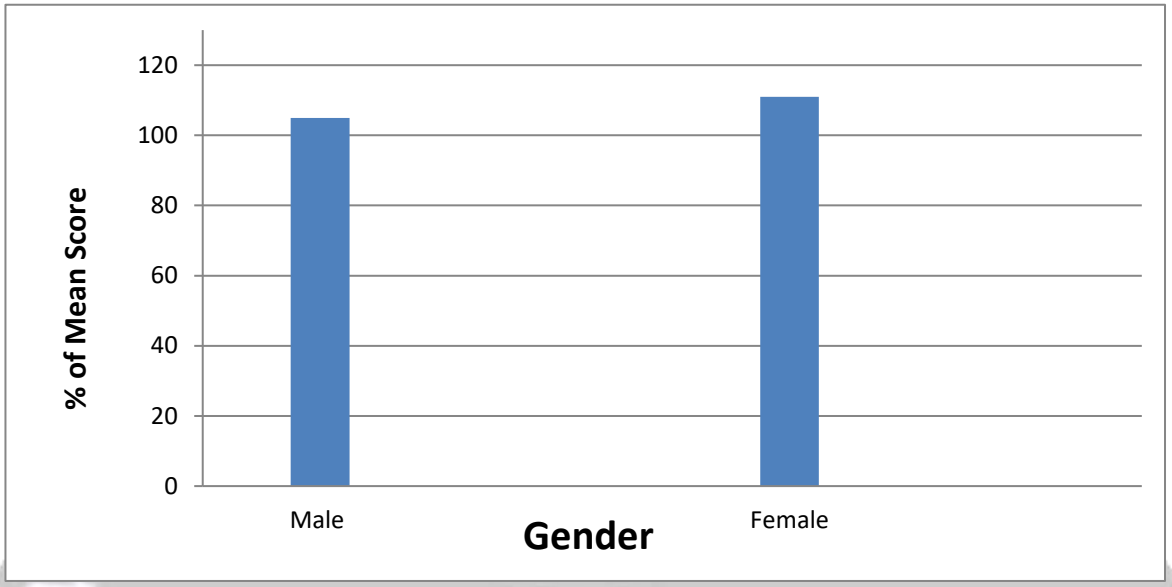
Source of Variance	Df	Sum of Square (SS)	Mean Square (MS)	F
Gender	1	748.92	748.92	6.23**
Method	1	7923	4998.610	30.231**
Gender x Method	1	921	589.312	4.26*
Total	300			

Table No.1.5

**= Significant at 0.01 Level of significance

*= Significant at 0.05 Level of significance

Mean Score of Total Curiosity of 13.5 to 14.5 year old Male and Female students



Graph No.1.7

i) Effect of Gender on Total Curiosity of 13.5 to 14.5 old students:

From the Table no. 1.5 it is clearly stated that F- value for gender was 6.231 which was significant at 0. 01 level of significance with df = 1 /299. It indicates the mean score of total Curiosity of 13.5 - 14.5 year old Male and Female students differ significantly. Thus the Null Hypothesis No. 3.a (i) "There is no significant difference between the mean score of total Curiosity of 13.5 - 14.5 year old Male and Female students" is rejected. Further the mean score of total Curiosity of 13.5 - 14.5 year old Female students was 118 which was significantly higher than that of 13.5 - 14.5 year old Males whose mean score was 110 (difference 18). It is clearly exhibited in Graph no. 1.7. It may therefore be said that total Curiosity of 13.5 - 14.5 year old Female students was found to be significantly superior than that of total Curiosity of 13.5 to 14.5 year old Male students.

ii) Effect of Methods on total Curiosity of 13.5 – 14.5 year old students:

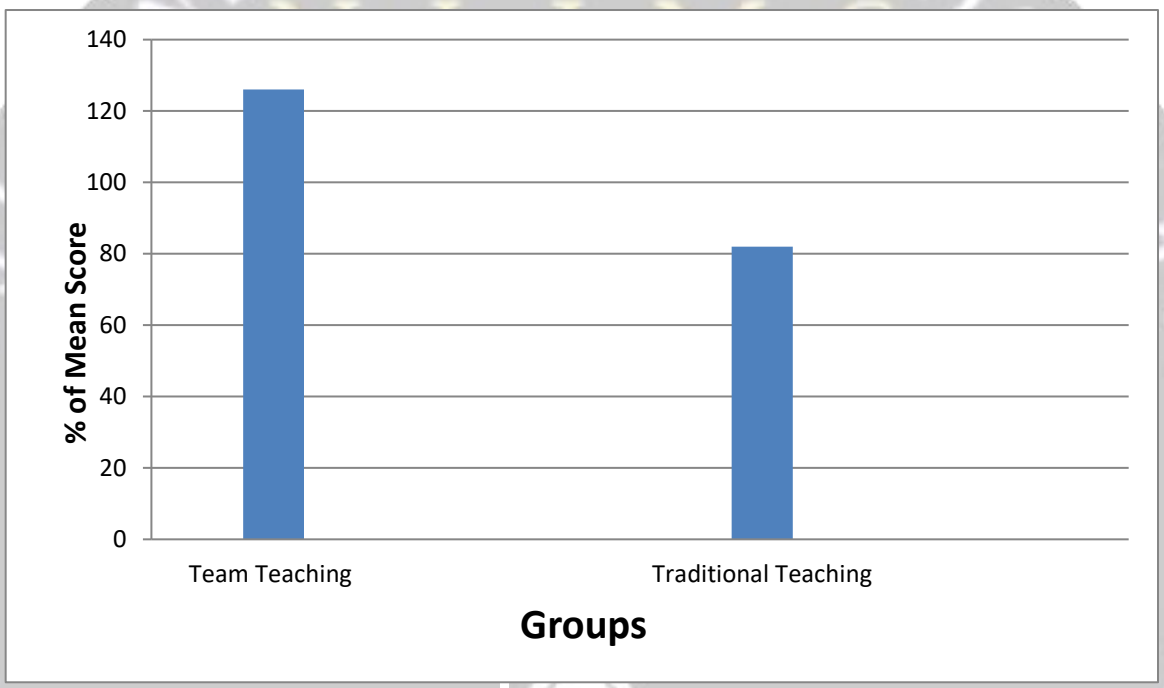
From table number 1.4 it is observed that the F - ratio for Methods was 30.231 which was significant at 0.01 level of significance with DF =1/ 299. It interprets that the mean score of total Curiosity of 13.5 – 14.5 year old students who were taught by Team Teaching (experimental group) and Traditional Method (control group) differs significantly. Thus the Null Hypothesis no. 2 a (ii) " There is no significant difference between the mean score of total Curiosity of 13.5 – 14.5 year old students when taught by Team Teaching and Traditional Method" is rejected. Further mean score of total curiosity of 13.5 to 14.5 years old students when they were taught by Team Teaching was 126 and when taught by Traditional Method was 87, the difference between team teaching and traditional method was 39. It may therefore be said that the total Curiosity of 13.5 to 14.5 year old students who were taught by Team Teaching showed significantly higher than that of Traditional Method.

iii) Effect of Gender and Method on total curiosity of 13.5 – 14.5 year old students:

From Table number 1.4 it is evident that F-value for the joint effect of Gender and Methods was 4.261 which was significant at 0 .05 level of significance with df = 1/ 299. It means that the mean

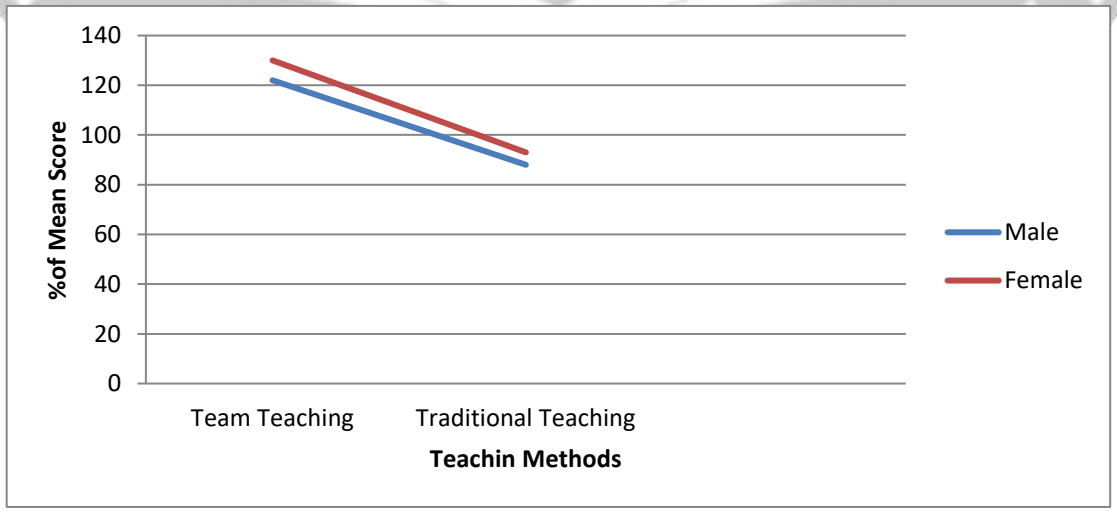
score of total Curiosity of 13.5 to 14.5 year old Male and Female students who were taught by Team Teaching and Traditional Method differ significantly. Thus the Null Hypothesis 2.a(iii) that "There is no Gender and Method wise significant joint difference among mean scores of total Curiosity of 13.5 to 14.5 year old students" is rejected. Further the mean scores of total Curiosity of 13.5 to 14.5 year old Male and Female students when taught by Team Teaching was 122 and 130 and when taught by Traditional Method was found to be 88 and 86 as clearly exhibited in Graph No.1.5. Therefore it may be said that total Curiosity of 13.5 - 14.5 year old Male and Female students who were taught by Team Teaching showed significantly higher

Mean Score of Total Curiosity of 13.5 to 14.5 year old students taught by Team Teaching and Traditional Method



Graph No.1.8

Mean Score of Total Curiosity of 12.5 to 13.5 year old Male and Female students taught by Team Teaching and Traditional Method



Graph No.1.9

Interpretation & Discussion: (Table No. 1.1 to 1.4 & Graph No. 1.1 to 1.9)

Significant difference was found for Gender. Result showed Curiosity of 11.5 to 14.5 year old Female students found to be superior than Male students. As clearly exhibited in Graph No. 1.1, 1.4, & 1.7 & Table N0.1.1 that the mean score of Total Curiosity of 11.5 to 14.5 year old Female students was significantly better than mean score of Total Curiosity of 11.5 to 14.5year old Male students.

Maslow (1976) feels that our society was inclined to encourage women to be less enquiring than Males. Women have historically been thought of as the nosy sex but that may have been perpetrated to discouraged female education and empowerment. These views do not support the present result. As the investigator realized that in present scenario Females are more outward & curious to know everything, they asking more questions & make more efforts in comparison to the Males, actually previously Females had less exposure than Males.

Significant difference was found among methods i.e. Team Teaching and Traditional Teaching. Result showed that the students who were taught by Team Teaching strategy should have the highest development in total Curiosity. It can be seen in Graph No. 1.2, 1.5 and 1.7. The investigator also realized during treatment that in Team Teaching class, students were more involved and curious in teaching learning process. They were more free to discuss their ideas in comparison to Traditional Method class. Kysilka et al. (1977) reviewed in their research that Team Teaching students were whole heartedly involved in teaching learning process. This finding supports the present result.

Significant difference was found for joint effect between Gender and Methods total Curiosity of 11.5 to 14.5 year old Male and Female students who were taught by Team Teaching and Traditional Method differ significantly as the investigator realized that Team Teaching class were more curious to know why? That's why Team Teaching method helps in development of curiosity.

Conclusion:

On the basis of above result it is clear that:

1) Curiosity of female students of class 6^{th} to 8^{th} (11.5 years to 14.5 years old) significantly higher than that of boys students of class 6^{th} to 8^{th} (11.5 years to 14.5 years old) .
2) Curiosity Scores of Experimental Group of class 6^{th} to 8^{th} (11.5 years to 14.5 years old) significantly increased in comparison of Control Group of class 6^{th} to 8^{th} (11.5 years to 14.5 years old).
3) The mean score of total Curiosity of 13.5 to 14.5 year old Male and Female students who were taught by Team Teaching and Traditional Method differ significantly.

Suggestions for Future Research:

1. This research was done for different age groups like secondary level or higher secondary level.
2. This can also be done on the background of cultural and social environment.
3. This study can also be done subject wise like Maths, Science, Arts etc.
4. This research can also be done at the learning level.
5. This research can also be done on the mutual social attitudes of teachers.

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