5.1 Summary of the Study

Technology is improving knowledge of teaching and learning process. A didactic form of information delivery is required to promote effective learning. The pupils develop some insight into the use of historical methods and they have some idea of history may be constructed from original sources. The pupils have known the significant facts of Indian history. The understanding of the causal relationship between historical happenings are expected to reach, such a level at this stage that pupils may be able to have some insight into the process of framing historical laws and utilizing them for prediction. Historical thinking also contributes to the important educational goals of producing a thoughtful citizenry and by providing individuals with the analytical skills suitable for a wide range of jobs.

In this present study a quasi experimental method was followed in which pre-test, post-test nonequivalent control group design was conducted to evaluate the reflective effectiveness of teaching history through photographs at higher secondary level. The objectives of the study included; (1) To select units from higher secondary first year level in Indian History Text Book prescribed by Tamil Nadu Text Book Corporation. (2) To collect photographs of Delhi Sultanate - India under the Delhi sultanate, Vijayanagar Empire, The Bahmani Kingdom, The Mughal Empire - India under the Mughals, The Marathas and Coming of the Europeans at higher secondary level. (3) To construct and standardize an achievement test in Indian History to test the entry and exit knowledge level of higher secondary students. (4) To transact the content using photographs on Indian History textbook units of Delhi Sultanate - India under the Delhi sultanate, Vijayanagar Empire, The Bahmani Kingdom, The Mughal Empire - India under the Mughals, The Marathas and Coming of the Europeans to India at
higher secondary level in the experimental group. (5) To conduct the class for Indian History textbook units of Delhi Sultanate - India under the Delhi sultanate, Vijayanagar Empire, The Bahmani Kingdom, The Mughal Empire - India under the Mughals, The Marathas and Coming of the Europeans to India at higher secondary level in the control group. (6) To evaluate the level of achievement of experimental and control groups of higher secondary students in the post test.

In order to investigate the reflective effectiveness of teaching history through photographs the following null hypnoses were tested:

i. There is no significant difference between the pre-test and post-test mean scores on academic achievement of control group in Indian History at higher secondary level.

ii. There is no significant difference between the pre-test and post-test mean scores on academic achievement of the experimental group in Indian History at higher secondary level.

iii. There is no significant difference between the control group and experimental group pre-test mean scores on academic achievement in Indian History at higher secondary level.

iv. There is no significant difference between the control group and experimental group post-test mean scores on academic achievement in Indian History at higher secondary level.

v. There is no significant difference between the experimental group post test mean scores on academic achievement in Indian History based on the demographic variables (age, community, daily study time on history subject, parent's occupation, father's educational qualification, mother's educational qualification and parent's yearly income) of higher secondary students.
vi. There is no significant difference between the control group post test means scores on academic achievement in Indian History based on the demographic variables (age, community, daily study time on history subject, parent’s occupation, father’s educational qualification, mother’s educational qualification and parent’s yearly income) of higher secondary students.

vii. The independent variables (age, community, daily study time on history subject, parent’s occupation, father’s educational qualification, mother’s educational qualification and yearly income) are not predicting the dependent variable (post test scores of achievement test) for the control group of higher secondary students.

viii. The independent variables (age, community, daily study time on history subject, parent’s occupation, father’s educational qualification, mother’s educational qualification and yearly income) are not predicting the dependent variable (post test scores of achievement test) for the experimental group of higher secondary students.

ix. There is no significant difference between the control and experimental group of post test mean scores on academic achievement in Indian History units of Delhi Sultanate - India under the Delhi sultanate, Vijayanagar Empire, The Bahmani Kingdom, The Mughal Empire - India under the Mughals, The Marathas and Coming of the Europeans to India at higher secondary level.

x. There is no significant difference between the control group and experimental group of gain scores in academic achievement on Indian History at higher secondary level.

The methodology consists of Quasi- Experimental method and Non-equivalent control group design. The experimental group and control group were tested with pre and post achievement tests. The experimental group was treated with photographs and the control group was treated with conventional teaching method. Sixty five higher secondary students of first year level formed the sample for this study.
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The investigator took two different classes (control group and experimental group) for teaching Indian history. Thirty three samples were in the experimental group from the Government Boys’ Higher Secondary School, Elampallai and thirty two samples were in the control group from the Government Higher Secondary School, Muthu Naickanpatty, Salem District of Tamil Nadu State in India. The convenient sampling technique was followed to select these samples.

The following tool was used in the study. An achievement test to assess the knowledge of Indian History to first year higher secondary level was prepared by the investigator. The content was selected from the prescribed Tamil Nadu State Text Book Corporation syllabus for eleventh standard level. The units of the test were Delhi Sultanate - India under the Delhi sultanate, Vijayanagar Empire, The Bahmani Kingdom, The Mughal Empire - India under the Mughals, The Marathas and Coming of the Europeans to India. The researcher conducted a field test administration.

The test material is organized into booklets and administered to appropriate numbers of examinees. That number should reflect the importance of the test under construction. The criterion - referenced test administered a single form pre test and post test design (pre test - instruction - post test). Item analysis was done to one hundred and ninety items of the test. The difference index (DI) and B- index of the test was computed and necessary items were selected. Eighty five items are not fitting because they reflect only small gains and not related to test objectives. So these items were rejected. Finally, one hundred and five items were accepted for this achievement test.

A pilot study was done on fifteen students in higher secondary level first year (2011-2012), Municipal Girls’ Higher Secondary School, Gugai, Salem district of Tamil Nadu State in India. This test consisted of one hundred and five items having multiple choice items (one correct, three
incorrect types), completion of the sentence items, match the following items and true or false items (one correct, one incorrect type).

The test paper was administered to measure the knowledge level of the study of Indian history. The validity of the tool was obtained by face and content validity from history teachers and to find out reliability on fifteen students of the same school was used and it was 0.81. A tool tested the entry knowledge in Indian history of the first year higher secondary students of the control and experimental groups. The experimental group for which photographs were used as visual materials and the control group to which conventional teaching method were going to be used to teach Indian history at higher secondary level. Photographs have been projected by using LCD (Liquid Crystal Display) projector.

The four hundred and thirty eight photographs were used during the treatment period. After the treatment period the same tool was tested on control and the experimental groups to assess the exit knowledge in Indian History of first year higher secondary students. The treatment period of this research was for five weeks in the first term of the 2012 - 2013 academic year. For statistical analysis with SPSS (Statistical Package for Social Sciences) software (version 16.0) was used. The investigator used parametric tests analysed by the data.

5.2 Findings of the Study

The findings of the study were as follows;

There is a significant difference between the pre-test and post test mean scores of the control group on academic achievement in Indian History (‘t’ - value = 10.72, (. 00) p<. 05). There is a significant difference between the pre-test and post test mean scores of the experimental group on academic achievement in Indian History (‘t’ -value = 16.74, (. 00) p<. 05).

There is a significant difference between the pre test mean scores of the control group and experimental group on academic achievement in Indian
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History (‘t’ -value = 2.28, (. 02) p<. 05). There is a significant difference between the post test mean scores of the control group and experimental group on academic achievement in Indian History (‘t’ -value = 10.20, (. 00) p<. 05).

There is no significant difference between the post test mean scores of the experimental group on academic achievement in Indian History

i. Age (15 / 16) (‘t’ -value = 0.17, (. 85) p>. 05),

ii. Community (BC / MBC) (‘t’ -value = 1.74, (. 09) p>. 05),

iii. Father’s Educational Qualification (Illiteracy / 10th standard) (‘t’ -value = 0.52, (. 60) p>. 05),

iv. Yearly Income (up to -25000 / 25001-50000 and above) (‘t’ -value = 0.51, (. 61) p>. 05),

v. Mother’s Educational Qualification (Illiteracy / 10th standard) (‘t’ -value = 0.06, (. 95) p>. 05),

vi. Daily study time of history subject (15 minutes / 30 minutes / 45 minutes and above) (F -value = 1.09, (.34) p>.05) and

vii. Parent’s Occupation (Cooli / Agriculture / Weaving) (F -value = 1.11, (. 34) p>. 05).

There is no significant difference between the post test mean scores of the control group on academic achievement in Indian History

i. Age (15 / 16 / 17) (F -value = 2.03, (. 14) p>. 05),

ii. Community (BC / MBC / SC) (F -value = 0.22, (. 80) p>. 05),

iii. Daily study time of history subject (15 minutes / 30 minutes / 45 minutes and above) (F -value = 1.04, (.36) P>. 05),

iv. Father’s Educational Qualification (Illiteracy / 10th standard / 12th standard and above) (F -value = 0.58, (. 56) p>. 05),

v. Yearly Income (up to-25000 / 25001-50000 / 50001-75000 and above) (F -value = 0.03, (. 99) p>. 05),

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vi. Parent’s Occupation (Cooli / Agriculture / Weaving) (F-value = 1.18, (.33) 
p> .05) and

vii. Mother’s Educational Qualification (Illiteracy / 10th standard) (‘t’ value = 
0.85, (.93) p>.05).

The independent variables
i. Age (B=-.31, (.93) p >.05),
ii. Community (B=-.12.00, (.06) p >.05),
iii. Daily study time of history subject (B= - 2.44, (.42) p >.05),
iv. Parent’s Occupation (B= -.87, (.71) p >.05),
v. Father’s Educational Qualification (B= - 2.43, (.52) p >.05),
vi. Mother’s Educational Qualification (B= - 3.36, (.48) p >.05)

vii. Yearly Income (B= - 7.12, (.17) p >.05) and

viii. R square 24.6% are not predicting the dependent variable (post test 
scores of achievement test) of the experimental group of higher 
secondary students.

The independent variables
i. Age (B= - 2.77, (.07) p >.05),
ii. Community (B= -.71, (.63) p >.05),
iii. Daily study time of history subject (B= - 06, (.95) p >.05),
iv. Parent’s Occupation (B= 1.16, (.22) p >.05),
v. Father’s Educational Qualification (B= 1.84, (.27) p >.05),
vi. Mother’s Educational Qualification (B= - 1.25, (.60) p >.05)

vii. Yearly Income (B= - 1.70, (.37) p >.05) and

viii. R square 18.8% are not predicting the dependent variable (post test 
scores of achievement test) of the control group of higher secondary 
students.
There is a significant difference between the post test mean scores of the control group and experimental group in the Indian History unit of Delhi Sultanate - India under the Delhi Sultanate ('t' -value = 6.29, (. 00) p <. 05). There is a significant difference between the post test mean scores of the control group and experimental group in the Indian History unit of Vijayanagar Empire ('t' -value = 3.51, (. 00) p <. 05). There is a significant difference between the post test mean scores of the control group and experimental group in the Indian History unit of the Bahmani Kingdom ('t' -value = 5.54, (. 00) p <. 05). There is a significant difference between the post test mean scores of the control group and experimental group in the Indian History unit of the Mughal Empire - India under the Mughals ('t' -value = 7.23, (. 00) p <. 05). There is a significant difference between the post test mean scores of the control group and experimental group in the Indian History unit of the Marathas ('t' -value = 2.06, (. 04) p <. 05). There is a significant difference between the post test mean scores of the control group and experimental group in the Indian History unit of the coming of the Europeans to India ('t' -value = 5.67, (. 00) p <. 05). There is significant difference between the control group and experimental group of gain scores in academic achievement on Indian History at higher secondary level ('t'-value= 8.31, (.00) p <.05).

5.3 Conclusion

In the present study, the light of statistical analysis and the findings, the following conclusion was drawn:

The present study showed that photographs usage is important in teaching and learning process. The learning could be permanently in their mind. In this study student’s interest and curiosity in exploring the historical concepts around their environment can be developed and enhanced.
By seeing the familiar objects from which aids are made from the photographs, the students are motivated and also able to check the history concept, which leads to their sustainable memory. All historical places were covered in the photographs sent by the students help in acquiring more historical knowledge. A long-term memory and wide thinking history were given to the higher secondary students. It helped more students’ interest to learn a history subject.

In the present study point out that academic achievement in Indian History shows experimental group better than the control group. This study founded that the demographic variables (age, community, daily study time on history subject, parent’s occupation, father’s educational qualification, mother’s educational qualification and parent’s yearly income) do not cause a significant effect on the academic achievement in Indian History. Notable the demographic variables (age, community, daily study time on history subject, parent’s occupation, father’s educational qualification, mother’s educational qualification and parent’s yearly income) do not predict of the post test scores of achievement test of the control group and experimental group of higher secondary students.

The present study examined the academic achievement in Indian History units of Delhi Sultanate - India under the Delhi sultanate, Vijayanagar Empire, The Bahmani Kingdom, The Mughal Empire - India under the Mughals, The Marathas and Coming of the Europeans to India shows an experimental group better than the control group. The results of the research lead to conclude that photographs based teaching history are found to be most effective with students of an academic achievement compared to the students taught by the conventional teaching.
5.4 Educational Implications

The educational implications of the study were as follows;

i. This study will help the teachers to adopt technology based teaching method in their classroom teaching.

ii. Teaching through photographs will assist the teachers to strengthen the teaching and learning process more effective.

iii. Photographs used in teaching will assist the students to enhance their understanding of the historical concepts.

iv. Teaching with photographs will help the students to retain the acquired knowledge in their long term memory.

v. Photographs utility in the classroom will help to improve the student’s curiosity and problem solving ability.

vi. Photographs used in classroom will make the students better understanding of the historical concepts in the absence of field visit.

vii. Photographs based teaching will assist the students to enhance their academic achievement.

viii. Photographs utility in the classroom will help to develop the student’s creative thinking and critical thinking.

ix. Photographs based teaching, teacher can go back to an image repeatedly, searching its multiple dimensions, students asking new questions, bringing new information and experience to bear.

x. Teaching with photographs will help to gain an analytic frame for understanding the historical photographs.

xi. Photographs used in the classroom will have the chance to develop their skills in practice, analyse and interpret within the analytic frame.

xii. Photographs utility in the classroom will help to develop the students’ empathy and information on chronology.
photographs should be used in the history classroom teaching to gain historical information by enriching the subjects and explaining the subject.

5.5 Recommendations of the Study

The recommendations of the present study were as follows:

Governments may provide historical photographs through compact disc (CD) or digital video disc (DVD) along with social science and history subject books to school students. During the teaching practice, Bachelor of Education (B.Ed.) and Diploma in Teacher Education (D.El.Ed.) student teachers may use photographs as teaching aids to teach students. Department of culture may use photographs to emerge the culture of countries. Through photographs we may take out the tradition of so many states. In competitive examinations the questions may be provided in the form of photographs. By means of photographs the future generations may know the culture and history of ancestors.

So family history was observed through photographs. Each and every teacher provides the photographs to students taken from the website, according to their departments and teach the subjects at very easy manner. Teachers may utilize photographs based mathematical symbols, formulas, theorems for easily in teaching strategies. Clarity photographs may be provided by using modern technology during the description of the lessons about ancient monuments. During preparation of curriculum, the curriculum developers may think to include photographs in the curriculum.

5.6 Suggestions for Future Studies

The suggestions for future studies were as follows;

i. A study on utilizing historical photographs in the teaching of history and geography in higher education.

ii. A study of photographs based teaching in science and mathematics at school and higher education.
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iii. Utilization and effectiveness of photographs based learning in all subjects for deaf and dumb students at school education.

iv. Improving critical and creative thinking skills, teaching history through photographs at school education.

v. Exploring the self learning through photographs among students.

vi. Implementation of photographs in linguistic classrooms a case study.

vii. Comparative study on utilizing and photographs based teaching in primary and secondary schools.

viii. The comparative effectiveness of photographs using projective and non projective techniques.

ix. A study of teaching history through photographs among higher secondary students and their academic achievements in between genders.