

# *Chapter II*

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## **CHAPTER II**

### **REVIEW OF RELATED LITERATURE**

#### **2.1.0 INTRODUCTION**

Review of related literature is one of the significant aspects of research. It enables the researcher to know the amount of work done in the concerned area. It also helps to explore the need of research in unknown and unexplored areas. It is necessary that the researcher is aware of the knowledge generated and the ongoing process of knowledge generation in an area of research for the better clarity of the problems in that area of research. The review of related literature can help a lot to the researcher in this aspect. It also helps to through an insight into the methodological aspects of research in a specific area and issues related to methodological aspects of it. For any researcher, review of related literature forms the basis for the problem identification, helps to find ways and means of studying problem, methods used in studying problems, tools used to collect data and the ways of analyzing data to arrive at a solution. In a nut shell, it helps the researcher to arrive at the proper perspective of the study. In the present study the researcher had gone through review of related literature in the area of his study. In the present chapter the researcher had presented some of the reviews of related literature in a summarized form those are related to the present study.

#### **2.2.0 REVIEW OF RELATED STUDIES**

For the present study, the researcher came across the research studies which have been classified under the following headings.

- Studies related to the art education
- Studies related to computer based education

#### **2.2.1 Studies Related to Art Education**

The study of **Gibbs (1961)** on the teaching of art in school was entirely based on the imaginative painting and craft work done by the students. The findings revealed that the

imaginative picture, although technical guide have in essentials the qualities which are apparent in the works of artist. The machine, however, can be made to produce articles of real quality if it is guided by someone who having first studied and understand the beautiful qualities of individual craftsmanship, turns them to investigate and appreciate the possibilities and limitation of the machine.

**Punja (1981)** studied on an approach to art education; a survey and tryout of a renewed programme. Data were collected through reports of the various committees, curriculum analysis and a questionnaire administered to art teachers (Data collected through administering questionnaire to art teachers was not used because of the poor performance of the respondents). On the basis of first phase of the study, the investigator developed a renewed approach to art education, which was implemented in class VI comprising of 100 students for two weeks. Social study class was chosen for the try out so that the two main aspects of the renewed approach could be tried out. The first aspect being the role of art as an aid to teach integrated units of syllabus, and secondly the process of learning through art about other subjects and the skill related to art activities and history. The data related to try out were collected with the help of observation schedule, reactions and observation by teachers and students, only qualitative analysis was done to improve the general framework of art education. The purpose of the observation schedule was to highlight the process activated in the classroom by implementation of the renewal units and not to study the effectiveness or outcome of the same. The major finding of the study were, (i) the effect of an inconsistent educational philosophy gave art education low status in school as an extra curricular activity, (ii) the philosophy of aesthetics and art history analysed during the period 1947-79 was not based on democratic ideas, (iii) an examination of art education content revealed that education in the fine arts had no cultural history content and (iv) art- making contributed to the development of qualitative concept format and qualitative problem-solving skills among students.

**Sullivan (1984)** studied a covariance structure model of symbolic functioning, 'a study of children's cognitive style, drawing, clay modeling and story telling'. The study investigated the relationship between individual styles of symbol use and performance in variety of media.

The findings revealed that the electronic media have the potential to enhance individual style and performance in the creation of fine arts.

**Wright (1985)** studied art education in secondary school classrooms: factors related to what students learn. The attention of the study was to explore relationships among many elements of teaching and learning in classrooms. The study used the data collected in a national research project, a study of schooling. The sample consisted of 122 arts classes in 25 secondary schools. A conceptual framework for teaching and learning was developed to guide the selection of variables. Sources of data included classroom observations, teacher surveys and interviews, student surveys and curriculum materials. Canonical correlation analysis was used to examine relationship between students' perceptions of what they learned in their art classes and several sets of variables; teachers demographic characteristics and self concepts; class room environment; curricular contents, teachers behaviour regarding use of time, decision-making and instructional practices; type and variety of class activities; and the nature of students interactions and relationships with teachers and peers. Statistical associations were examined across all arts classes, for visual and performing arts classes, and four junior and senior high classes. The results of the study revealed that four sets of variables – Teachers behaviour, interactions and relationships; curricular content and student characteristics – accounted for the greatest variation in students' perceptions of what they learned. Differences between levels of schooling and type of arts classes emerged. The implications of the study were that (i) the conceptualization should be revised by modifying the sets of variables and by investigating direct and indirect relationships, (ii) arts teachers should communicate and organize their classes better, (iii) students' decision-making opportunities should be increased, (iv) more attention should be given to classroom interaction and relationship, (v) more specialized arts classes should be offered in junior high schools, (vi) cooperative group activities should characterize more visual arts classes, and (vii) multivariate research and multifaceted school improvement efforts need to be more prevalent in arts education.

**Robkin (1987)** studied creativity and productivity: the relationship of talent, interest and energy among secondary students. The hypothesis that productivity and creativity require the interaction of talent with high interest and high energy, was tested with two groups of

secondary school students. the creative, productive group was participants in a summer arts camp for gifted/creative high school artists and the control group was students from untracked English classes in rural and urban high schools. Demonstrated interest in the arts was assessed by self-reports of the number of in and out of school art classes. Affective interest was measured by feelings about creating and viewing art on evaluative, potency and activity semantic factors of the semantic differential technique. Demonstrated energy was measured by self-reports of participatory activities in and out of school. Affective energy was assessed by a dynamism score on an abstract drawing task, independently judged, and by action and challenge scores on a verb action preference test. Analysis of variance showed significant interactions between creative and control students on variables of gender, environment, parents' occupation, art media and age. Creative students showed greater energy, demonstrated by participation in more arts classes and activities, including jobs. Higher dynamism scores on the drawing taste and higher challenge scores on the action preference test suggested greater affective energy. The responses on the semantic factors of evaluative, potency and activity indicated greater interest in creating art. Several findings were not limited by group differences. Both groups' semantic responses for viewing art were similar. Younger control students indicated greater interest in the arts than older control students. Rural students among both groups showed greater interest in creating art than urban students. Performers had greater energy and interest than visual artists/writers as measured by reported activities and art classes, greater affective interest in creating and viewing art, and greater affective energy as indicated by the challenge score of the action preference test. Visual artists/writers' feelings about making and viewing art were more ambiguous than performers' feelings as shown by lower affective interest scores. These findings suggested that creativity, talent and motivation in the various art media developed in distinct ways and act different rates such as among visual artist/writers and performers.

**Shotwell (1987)** studied the descriptive analysis of a magnet program of visual and performing arts in an urban high school. Many affirmative studies have concluded that arts programs have demonstrated value in children's development and the education system offers, perhaps the ideal medium through which, arts can be introduced to children. This study had two major components. The first involved the investigations of the origin and development of

a significant curriculum project called Visual and Performing Arts Centre (VAPAC), including its program's integration and involvement, the essentials of a five-year plan, the program's needs and demands for leadership to insure a long-term success. The second component involved a survey of students' perception of the VAPAC program as they had actually experienced. It. Formal and informal interviews were conducted, which include the program coordinator, the program consultant, the high school principal, parents, students, educators and others to obtain perceptions of the community at large about the VAPAC program. In addition, available documents such as letters, memos, and various reports were reviewed. The study revealed illustrations of program involvement and integration, the essentials of a five year plan, the program needs, and VAPAC's strong leadership role in the community at large. The analysis of the survey identified 41 statistically significant findings. The analysis offered strong support that, participation in the VAPAC program significantly affected the students' apperception for the arts and their decision to remain in the arts as an avocation or vocation. Eight dependent variables gave support that the majority of students were satisfied with the various aspects of the VAPAC program, and possible changes, which could be made, to further improve the VAPAC program and make it even stronger.

**Wilson (1989)** made a study on a role for representational style in secondary art education. The study consists of two parts: the first, a body of work consisting of eleven photo realistic paintings, the second, a study which deals with the candidate's relationship with representational styles, presenting a case for their instruction in secondary art education. The hypothesis was that, styles such as realism and figurative forms by the representational and illustrative nature have the ability to meet adolescent students at their level of aesthetics and visual understanding. They may also be useful is encouraging the elective study of the visual arts. Representational and figurative styles, when used effectively, have the ability to communicate program goals, content and values effectively to parents, administrators, and school officials. The researches carried out by Amheim, Burton, Gardener, Lowenfeld, Wilson and Wilson etc, have been explored. These works indicates that many adolescents have a desire to depict the world realistically, representing thing as they see or interpret them to be. The writer's experience, as a realist painter, high school and college teacher and a public school K-12 art supervisor, has afforded him the opportunity to observe and experience the

effect which this style of art has had on adolescents. Their attraction to the use of technical skill and their desire to learn and master these skills often opens the path for them to experience many other styles and methods of creating art. It is this circumstance, which may make the use of representational style most valuable. The role of representational art instruction points out the need of adolescents to participate in the world they know and understand before they may move into those areas that are unknown to them. Representational imagery can serve as an inspirational source for artistic pursuits and serve as the foundation for further academic training in the visual arts. In addition, it may become a source of instruction to their classmates, their families and the community at large.

**Smith (1992)** developed conceptual framework and model for uncovering meaning in contemporary print advertising in secondary schools. America's consumer society runs on desire. The mass media are instrumental in feeding this desire, transforming common objects and experiences from peanut butter to political candidacy into signs of things people covet most; security, health, beauty, love and so on. They successfully use, as commodity, our most instincts in this way. With the current proliferation of mass media advertisements, it seems appropriate that art education, dealing as it does in visual imagery, should prepare students to intelligently address advertising imagery. The purpose of this study, then, was to develop a conceptual framework and model to teach secondary students to understand commercial print advertising. It was thought that the value of it lied, in helping students become informed participant rather than manipulated subjects within larger social context. A review of literature provided the data for the study. First, an overview of advertising theory and history established advertising's philosophical foundations and reasons for being, and advertising philosophy's relationship to the methods it used to portray visual imagery in a printed format. Second, teaching and learning theories were examined that potentially provided qualitative thinking skills necessary for critically studying advertising imagery. Third, educational art criticism methods were reviewed, analyzed and evaluated to determine their effectiveness and appropriateness in both addressing advertising imagery and in promoting critical thinking skills. A synthesis of the information led to the formation of a critical model composed of nine stages: receptiveness, reaction, contextual information (option I), description formal analysis, characterization, interpretation, contextual information (option II), and synthesis.

**Parmeswaran (2001)** made an attempt to develop an art education curriculum at the secondary level. The study conducted on secondary schools of CBSE and Rajasthan SBSE reveals that problems are existing not only in the infrastructure facilities and other basic requirements to function art in a meaningful way but also in the present art education syllabus and its methodology of teaching. The researcher developed a comprehensive curriculum of art education in his study.

**NCERT (2005)** studied Teaching–Learning Practices and Evaluation Procedure in Art education and observed that all children enjoy creativity in their earlier stage of education but by the time they reach class VI, they start losing interest in art education. One of the major reasons why art education has been a neglected area in the majority of schools is placing too much emphasis on the core subjects, which have a formalized procedure for assessment throughout the year including tests and exams. Since the assessment of art education is not reflected in the marks secured by students, neither teachers nor students, not even schools, take it seriously. Another major problem is the shortage of trained teachers for teaching art education subjects. Art education teachers who have undergone training in various visual and performing arts in art colleges for four or six years have very little to do with art education in school, let alone methods of teaching art in schools. They are trained in their own disciplines but not as educators; they lack training in methods of teaching art to children in the age group of 10 to 15 years. Another reason why art education is languishing is lack of awareness about career options in art among students as well as teachers. Teachers do not link art education with professional training and apprise the students of avenues of developing these as a career for their livelihood in future. The art teachers need to convince the school administration, parents, and students of the various aspects of art education which students can apply in their day-to-day life either as artists or as connoisseurs.

The study of **WJZ (2011)** on Reinvesting in Arts Education examined recent data from Maryland schools and others. It finds integrating the arts with other subjects is particularly helpful in raising certain achievement levels. The study shows how visual arts instruction improves reading and learning to play an instrument improves math. The study also examined

in the schools of North Carolina, Oklahoma, Chicago and New York and found that the integrating arts with other subjects is helpful in the learning process of the students and also increasing achievement levels of students.

**Drake & Winner (2012)** examined two ways in which art-making may function to elevate mood—venting (expressing negative feelings) and distraction (expressing something unrelated to the negative feelings). In this study the researchers induced a negative mood in participants by showing them a sad film clip and then assigned them to one of two conditions. In the venting condition they were asked to draw something related to the film; in the distraction condition they were asked to draw an image unrelated to the film (a house). In the later part of the study the researchers induced a negative mood by asking participants to think of the saddest event they had experienced and then assigned them to one of three conditions: venting, distraction, and sitting - a new condition in which participants just sat quietly. This latter condition allowed the researchers to assess the effect of passage of time. In both parts of the study, positive and negative affect were measured before and after the assigned activity. In both parts, mood improved significantly more in the distraction than in the venting or sitting condition. They argue that the mood elevating effects of art-making are stronger when art is used to distract than when used to vent.

The research study of **Hedayat et. al. (2013)** aims to investigate lecturer's feedback over the art curriculum in Tehran, the capital of Iran, and introduce the applicability of Discipline-Based Art Education (DBAE), as a new way of teaching art, and its implication of art instruction in studio-based fields of study for undergraduate degree. This study is carried out based on a survey in which fifty art lecturers contributed. The standard questionnaires included 22 questions were used to assess the objectives of the study. The findings revealed that: (a) of the three components of DBAE, art history, art criticism, and aesthetics were not dominated in seven art university studio based classes according to the lecturers' ideas; (b) all participants were dissatisfied with the current art curriculum; (c) the majority of the lecturers were enthusiastic about further training which would enable them to teach the four components of DBAE. In the conclusion, a novel curriculum might be welcome based on the

participants' responses, and also a discipline-based art education curriculum may be presented as superior method.

**Lummis, Morris & Paolino (2014)** investigated Western Australian Pre-Service Primary Teachers' Experiences and Self-Efficacy in the Arts. A mixed methods study was conducted with first and fourth-year Bachelor of Education primary students at a Western Australian university, to determine students' arts experiences prior to and during the course. Fourth-year graduating students were also asked to reflect on their self-efficacy to teach the arts based on the course. Data were analysed using descriptive statistics, and interview observations are presented to contextualise the findings. The research emphasised the importance of building self-efficacy to support ongoing personal and professional engagement with the arts.

### **2.2.2 Studies Related to Computer based Education**

**Chumely (1987)** made an attempt to compare computer Koala pad drawings with paper and pencil drawings to determine if there were any differences in regard to detail, relationship and uniqueness that occurred in three specific drawing tasks; flying bird, flower and tree. A sample of 95 students in four intact classes from a total population of 19,233 students was selected. Students were randomly assigned to the experimental group, which drew with the computer Koala pad, or the control group, which drew with the paper and pencil. Four judges scored the drawing using the scoring instrument entitled, 'The Chumely Scales: Detail, Relationship, and uniqueness in traditional median and Computer Drawings of Flying Birds, Flowers and Trees.' The differences were explained by the limitations of the particular type of electronic drawing utilized and the lack of experience with the electronic medium. Results of the study implied a need for both practical applications regarding the use of computer drawing in school classrooms and a need for further investigation regarding electronic drawing.

**Gupta (1987)** conducted a study entitled, "Computer assisted instruction in chemistry". The study revealed that the students of strategy – I scored significantly higher than the students of strategy – II in terms of their mean gain scores and mean retention scores. Girls of both the strategies scores significantly higher than the boys, in terms of their mean scores and mean

retention scores. Also the students of both the strategies revealed highly favorable opinion in terms of percentages of favorable response.

**Reeve (1988)** made an attempt to compare the effects of computer assisted instruction (CAI), interactive video, and traditional instruction on third- grade students in art education. 90 subjects were randomly selected from classrooms in three elementary schools and assigned to one of three treatment groups. Each subject was administered a pre-test of cognitive knowledge on fundamental art concepts and was required to create an original drawing. Subsequently, all subjects were exposed to different instructional methodologies according to the treatment group. The subjects in the traditional group were given classroom presentations, in accordance with a lesson plan pertaining to the concepts of line, shape and patterns. Subjects in CAI received the same lessons delivered on a floppy disk using computer generated graphics. Subjects in the interactive group were given the same lessons, except that video segments of the instructor were presented through computer controlled, instructive video instruction. After the subjects underwent the instruction, each was required to complete the cognitive test and to create a second drawing as post-test measures. The study concluded that interactive video and CAI were effective means of teaching art concepts to third grade students. Recommendations for further research were made, including the use of interactive video and CAI in longitudinal investigations and replication, to determine why artistic expression sub-test scores revealed contradictory patterns among the treatment groups.

**Prabhaker (1989)** conducted a study on Development of software for computer aided instruction (CAI) and its comparison with traditional method for teaching semiconductors at +2 levels. The CAI was found to be effective in terms of achievement of students belonging to class 11<sup>th</sup> and class 12<sup>th</sup>. Also it was found to be effective in terms of reaction of students belonging to class 11<sup>th</sup> and 12<sup>th</sup>. The sex did not influence effect of interaction between treatment and sex on achievement. Both classes' 11<sup>th</sup> and 12<sup>th</sup> students were found to have equally favorable reaction towards CAI material when the groups were matched with respect to pre-test.

**Mc Allister (1990)** made an attempt on pencils or computers as drawing media: a comparison of drawings and attitudes towards drawings of fifth grade children. The thesis presented results of a quasi-experimental study in which six classrooms of 120 fifth grade subjects received randomly assigned media designations. Control group subjects worked with traditional drawing media and experimental group subjects worked with microcomputer graphics media for drawing practice and production of realistic portrait drawings. The study explored subjects' attitudes toward drawing activities and drawing media before and after a short course on portrait drawing, how subject manipulated their media while drawing, and how drawings made with the two types of media compared or differed. Primary statistical procedures used to analyze performance of the two groups were descriptive statistics and chi-square analysis of categorical data. Pre and post test drawings were scored on four index variables related to introductory realistic drawing: proportion, facial expression, shading, and use of contour lines. Result confirm that computer based drawing instruction involving computer graphics technology was a beneficial as the strategy relying upon traditional art media for instruction and practice. Results suggested that art educators may appropriately pursue developing computer managed instructional sequences of at the fifth grade level which required learner drawing input as component.

**HSu (1994)** conducted a study on "Computer Assisted Language Learning (CALL): The effect of Elementary Language Students (ELS) use of interactional modification on listening comprehension". The objectives were to examine (i) Is L2 student request modification of the input they hear while working on computer based listening exercise and (ii) If this international computerized modifies help L2 students listening comprehension and language acquisition. Data were collected from 15 elementary L2 students by using a single group pretest, posttest research design. The finding revealed that L2 students use the tools made available by the Computer technology to make input comprehensible and computerized modification and language acquisition.

**Das (1998)** conducted a study entitled "Exploring effectiveness of Computer assisted learning materials on rhymes in different modes". The objectives of the study were: (i) To develop computer software on rhymes in graphic test (GT), Graphic Text Music (GTM), and Graphic

Test Music Recitation (GTMR) modes. (ii) To study the effectiveness of computer assisted learning material (CALM) prepared in different modes for teaching the rhymes in terms of (a) word teaching of the students (b) analytical understanding of students (c) comprehensive understanding of the students (d) writing ability of students (e) recitation ability of students. The sample consisted of second grade pupils, which were selected randomly from one school. The design of the study was developmental cum experimental in nature. The tools used were treatment tool and testing tool. The findings of the study revealed that Computer as a potential medium significantly contributed the realization of the Objectives of the study were of the study were and also Computer assisted teaching material developed by the researcher ensure higher learning in all areas of languages development.

**Khirawadkar (1998)** developed Computer software for learning Chemistry at standard XI". The findings of the study revealed that the CAL was effective in terms of academic achievement of students and instructional time, the teacher and students have positive attitude about developed CAL. Achievement of students was affected by IQ, academic motivation and attitude.

**Nimtrakul (1999)** measured effectiveness of using computer assisted instruction on Atomic structure in Chemistry of Mathayom Suska 4 students. The major findings were as follows: (i) The efficiency of the computer-assisted instruction on atomic structure in Chemistry of Mathayom Suksa 4 students was 93.26/92.06, which was higher than the standard criterion 85/85. (ii) The learning achievement in Chemistry on atomic structure of Mathayom Suksa 4 students after being taught through the computer-assisted instruction on atomic structure in Chemistry was higher than that before being taught through the computer-assisted instruction on atomic structure in Chemistry at the .01 level of significance. (iii) The learning attitude in Chemistry with the computer-assisted instruction on atomic structure of Mathayom Suksa 4 students was at the moderate to satisfactory

**Robkob (1999)** conducted a study entitle , "Achievement and Retention in science of Prathom Suksa 5 students learned through computer assisted instruction". The results showed that

learning achievement and retention of students which studied Computer-Assisted Instruction and studied by a conventional method were difference.

**Suwanma (1999)** conducted a study entitle, “Construction of computer assisted instruction in Science on topic “Earth and Changing” for Mathayom Suska 2 ”. The result showed the efficiency of the Computer Assisted Instruction. The students mastered at 84.75 percent criterion of Objectives of the study were of the study were. They were satisfied and appreciated with this Computer Assisted Instruction program.

**Vaisopha (1999)** conducted a study entitle, “Construction of computer assisted instruction in the Mathematics on topic “Adding fraction” for Prathom Suska 5 students”. The result indicated that the subjects were able to master learning Objectives of the study were of the study were with the percentage of 94.5 average. The students were satisfied and appreciated with this Computer- Assisted Instruction program.

**Wanna (1999)** conducted a study entitled, “Construction of computer assisted instruction in Mathematics for Prathmil School students”. The results indicated that the subjects were able to master learning Objectives of the study were of the study were with the percentage of 88 average.

**Zyoud (1999)** conducted a study entitled “Development of Computer assisted English language teaching for VII standard students” with the objectives – (i) To develop a computer assisted ELT programme for standard VIII Gujarati medium students, (ii) To study the effectiveness of Computer Assisted ELT programme on experimental students’ achievement in vocabulary, grammar and comprehension with respect to their intelligence, motivation and attitude, (iii) To study the attitude of the students towards the usefulness of Computer Assisted ELT programme. The investigator has used BASICA for developing software. Sample was selected randomly for control and experimental groups from the Gujarati medium schools. for the purpose of the study, different tools used were achievement tests, JIM scale and Raven’s Progressive matrices. The finding of the study revealed that developed package helped the students in vocabulary and grammar. Whereas, no effect in comprehension. Also, IQ had an

impact on students' achievement, while motivation had not found impact on students' achievement. Students were found to have positive attitude towards the packages.

**Yadav (2000)** conducted a study entitled "A study of the effectiveness of the Computer software for students of standard I". The finding of the study revealed that a significant gain terms of mean achievement through CAL. Also CAL has evoked positive perceptions amongst teachers and students regarding Computers.

**Dalwadi (2001)** conducted a study entitled "Development of Computer Assisted instruction in science for the students of standard. IX" with the findings like, (1) CAL was found to see to be effective individualized instructional technique for teaching Science to standard IX students.(2) Students were found to have a positive opinion towards the developed CAL.(3)Student's opinion towards the CAL was found to be favourable as far as the statements related to the interest, mode of presentation, content clarity, and the question asked in the CAL. (4) A science teacher was found to have a positive opinion towards developed CAL.

**Chang (2000)** conducted entitled 'Design and implementation of a schema-based learning system on the web.' The purpose of the study was to address the design and development of web-based system that complements the human cognition need to structure and restructure information in is hierarchical representation, and to view and associate information at the learner's preference. The study evaluated the usability and the effectiveness of the schema-based learning system by collecting feedback from a group of students in this course. The study used the feedback to refine the design of the schema-based learning system.

**Bolliger (2002)** conducted a study entitled 'The design, implementation, and evaluation of a web-based training programme for future school and administrators in a north west Florida school district'. For the study web based instructional product was successfully developed and evaluated through a field test. The module was a prototype of a new learning and training system which was required for the Florida principal certification. The participants consisted of

one instructor and twenty five trainees. Trainees evaluated this web-based training programme favorably. They have also offered several recommendations for the revision of the module.

**Buzhardt (2002)** conducted a study on ‘Integrating internet into the classroom: the effect on learning, student satisfaction, and labor costs.’ The study assessed the cost effectiveness of replacing pen-and-paper assignments graded by instructors with online assignments graded by computer. One hundred ten students were randomly assigned to use either pen-and-paper study guide or online study guide. No statistically significant differences were found on any of the measures. The researcher concluded that while these results may not generalize to all settings or courses, in this case online instruction into a classroom-based college course saved labour cost and increased students’ satisfaction.

**Lyson (2002)** conducted a study entitled ‘The effect of technology use on student writing proficiency and student attitudes toward written assignments in a ninth-grade language arts classroom’. The purpose of the study was to determine whether computer technology had an effect on essay writing, as measured by an established writing assessment rubric and readability index. As well as writing proficiency, this study sought to address whether computer technology had an effect on students’ attitude toward writing, as by a survey instrument. A sample of 281 ninth grade language arts students at one junior high school participated in the project. The students were divided in two groups, with one group (experiment) utilizing laptop computer in English class through out the year for writing the assignments and activities. The other group (control) used traditional handwritten methods for completing written work in the language art classroom. Administration of pre-test and post-test essay for both the groups took place at the beginning and end of the investigation. Analysis of the scores from both groups indicated that students using computers had significant essay scores on the post-test essay. The results of this data indicated that indicated that students may have more positive attitude toward writing, both with and without a computer, when using computer technology. The conclusion was drawn that computer technology, when utilized in a writing classroom, can enhance student writing proficiency and promote positive attitude towards writing.

**Springer (2002)** conducted a study on ‘the formative evaluation of a computer assisted instruction module for metric area instruction, for pre- service teachers: its effect on student achievement and its congruence with ADDIE (Analysis, Design, Develop, Implement and Evaluation) instructional design model.’ This research examined the effectiveness of a computer assisted instruction programme in teaching basic knowledge of the metric area to pre-service teachers. The pre-test and post-test design was used for the study and the population was divided into two groups-treatment and control. An analysis of variance of group means derived from a quasi –experimental non-equivalent control-group design was used to examine a research question on the effectiveness of CAI teaching metrics to pre-service teachers. The CAI metrics programme produced a significant increase in metric knowledge as measured by the post-test instrument. Analysis of linear and area subtests revealed that the increase on overall scores was attribute to the area subtest.

**Williams (2002)** conducted a study on an examination of the relationship between learning style as measured by the matching familiar figures test and a computer assisted instruction metric unit. The study was conducted with the purpose to identify the learning style, to determine the relationship of the effectiveness of the CAI and to serve as a pilot study to establish reliability for the computerized version of MFFT. The conclusion is drawn that when developing CAI as one of the instructional design stages, it is important to consider the target population. One of the characteristics to consider is the preferred method of learning, or learning style, while there was no statistical significance in the relationship between the learning style and performance in the CAI metric instructional unit.

**Gabrielle (2003)** conducted a study entitled ‘The effect of technology-mediated instructional strategies on motivation, performance, and self directed learning.’ The purpose of the study was to check the affect of motivation, performance and self directed learning of undergraduate students. The other purpose of the study was to use new technologies to efficiently deliver these instructional strategies as supplementary course content. The researcher communicated with control and experiment group via e-mail and used e-mail to direct experimental group students to technology-mediated instructional strategies. The findings of the study suggest that systematically designed technology-mediated instructional strategies can positively effect

motivation, performance, and self directed learning. Further, new technologies can help improve the efficiency of delivering such strategies.

**Casanova (2004)** conducted a study entitled 'An analysis of computer-mediated communication technologies as tools to enhance learning'. The integration of computer-mediated communication (CMC) technologies into the higher educational settings have required faculty to change their roles from the direct instructional model to a model based on constructivist's ideas. CMC instructional tools (Its) have provided a change by shifting a traditional teacher centered setting into a teacher facilitator environment. Teacher's professional development has become an important task to effectively integrate technology into their courses. Questions concerning the implementation and value of CMC technologies and their impact in higher education are not yet clear. The purpose of this research study was to determine the extent to which CMC technologies promoted the achievement of stated goals and objectives for course taught in higher education. This study was directed by three research questions: (1) In what ways are higher education faculty using CMC technologies to deliver their courses? (2) What is the faculty's primary instructional intent for the CMC technologies they selected for integration into the teaching process? (3) In what ways does the integration of selected CMC technologies promote achievement of stated goals and objectives in their courses? The research study population consisted of 17 higher education faculties from the Trek 21 project at West Virginia University during the year 2001. These participants received technical training, enhanced web-designed courses, worked collaboratively and prepared instructional resources during a 7-day week period during summer 2001. The data collection was done by survey, course analysis and interview. Findings indicated that faculty was mainly using CMC technologies to support teaching practices and to improve teacher's productivity.

**Charsky (2004)** conducted a study on 'evaluation of the effectiveness of integrating concept maps and computer games to teach historical understanding.' The purpose of the study was to determine if one of scaffolding, concept mapping, would affect the participants' games performance, game knowledge, and historical understanding. Three different ninth grade advanced global history classes participated in the study. Each class was randomly assigned a treatment condition. The results indicate that there was not a significant difference between

the treatment groups in game knowledge, and historical understanding. However, the participants' responses and comment made in journals shows that the student did learn about theoretical history and history in general. The results also indicated that the no concept map groups' motivation for the treatment improved compared to their motivation for regular classroom instruction.

**Eteokleous (2004)** conducted a study on 'Computer technology integration in Cyprus elementary schools.' The purpose of this study is to evaluate the current situation in Cyprus elementary classrooms regarding computer technology integration. The study examined how Cypriot elementary teachers use computers and the factors that influence computer integration in their classroom practices. To address the research questions that guided the study, an evaluative case study design was applied. It employed a mixed method approach through the usage of structured questionnaires and semi-structured, open ended interviews as the major methods of data collection. The value of the proposed study lies in its potential to help policymakers, educators and stakeholders that have the power to take decisions and design policies, in gaining understanding on how computers are used in the classroom and the factors that influence their use. The results of the quantitative analysis indicated that while Cypriot teachers use computers rather extensively for their own purposes, they use them less frequently in their classes. Regression analysis revealed that teacher's education, school climate, teacher's professional behavior and teacher's attitudes towards the use of computers in education, were significant predictors for classroom computer use. The results of the qualitative analysis summarize the factors that influence teachers in applying computers in their classroom practices. A general uniformity across the three categories of teachers revealed, in terms of the factors that function as barriers in applying computers in the classrooms. The factors can be summarized as follow: lack of resources; tyranny of the curriculum; incomplete and inadequate professional development training.

**McLaughlin (2004)** conducted a study entitled "Towards a new paradigm for teaching and learning: A case study of the process of integrating instructional design and technology at Florida Community College at Jacksonville." The study examined the process by which administrators, faculty and instructional design staff at Florida Community College converted four traditionally formatted courses to online courses in order to integrate innovative

instructional design and learning strategies with instructional technology. The study also examined the design and development of an electronic instructional design assistant that would enable the user to systematically design curriculum that incorporated learning and motivational theory. The researcher used case study design to describe the model and processes the college administration used to implement the project. The purpose of this study was to explore how one institution of higher education addressed the gap that exists between systematic and collaborative instructional design and the use of instructional technology in online course development. Data for the study was collected through semi-structure interview and a review of project related records, reports, guidelines and artifacts. Data was also obtained through field observations and researcher participation in training and professional development sessions with faculty and staff.

A study of **Chandrakar (2005)** entitled “An Analytical Study of the Computer Education Teaching Learning Process at Secondary Schools in Gujarat”. The objectives of the study were (i) to study the nature of computer curriculum used at secondary school level in Gujarat, (ii) to analyze the practice of Computer Education teaching at secondary school level in Gujarat, (iii) to analyze the Computer Education learning among secondary school students in Gujarat, (iv) to study the experts view and suggestions for effective Computer Education teaching learning process at the secondary school level in Gujarat, and (v) to design a framework for effective Computer Education teaching learning process at secondary school level in Gujarat. The data were collected with the help of observation schedule and interview schedule. The findings of the study were as follows. The class was teacher centered and there was no proper interaction among teacher and students. In all the theory classes teacher followed lecture cum discussion method and used blackboard as a media. In practical classes students were not properly instructed and they followed their note book for practice. While teachers were supervising the class, students used to concentrate in their practical work and the experts differs in their views regarding Computer Education teaching learning process but all of them suggested the need for training of computer teacher and suggested that training institutions should take this responsibility.

**Chitiyo (2006)** conducted a study entitled ‘Integration of instructional technology by university lecturers in secondary school teacher education programmes in Zimbabwe: An exploratory study. The objective of the study was to examine how the lecturers conceptualize IT integration. How they integrate IT into their instruction, the support given by their institutions and the constrain they face. The qualitative methodology was used. For data collection three tools were used questionnaire, interview and analysis of documents. Findings of the study revealed that majority of the lecturers were integrating IT largely as hardware in nature viewing it as audio-visual aids.

**Floyed (2006)** conducted a study on ‘the use of technology and its effect on student achievement. The study was conducted to examine the use of technology and its effect on student achievement’. The result of the study revealed that when comparing surveys of administrators, teachers and students with student test scores, the principal responses indicated a negative correlation to student test score result. The responses of the teachers in the teacher technology survey and the teacher pedagogy survey showed no correlation to student achievement and responses for the students in the student technology survey indicated a positive correlation to student achievement. The data showed that student technology use increases student achievement increases.

**Gilbert (2006)** measured effectiveness of computer-assisted instruction blended with classroom teaching methods to acquire automotive psychomotor skills.’ The study was conducted to check the effectiveness of blending online computer – assisted instruction (CAI) With traditional classroom instruction were investigated in the Automotive technology Department at Southern Illinois university Carbondale. Results were determined by a psychomotor electrical diagnostic skill evaluation of two matched groups exposed to different blending methods of teaching basic electrical concepts. Following the course of blended instruction, active electrical circuit boards measured participants’ hands – on diagnostic problem solving abilities. Frequency trends within the response data set exhibited could be attributable to CAI blending methods. In conclusions of this research study blended teaching methods experienced by the experimental group demonstrated a comparatively higher level of psychomotor electrical diagnostic skill capability.

**Paul (2007)** conducted research entitled ‘An aural –oral approach to the teaching of English usage’. The objective of the study was to compare the effectiveness of a conventional reading – writing and aural- oral approach in teaching Standard English usage to high school students. The population sample of the control group consisted of 111 students. The experiment group included 145 students. The control group was taught with reading- writing approach and the experimental group was taught English usage. The findings established the hypothesis of this investigation at 0.05 level of confidence. The result that the high school students who were taught with aural-oral approach performed significantly better than the students of control group, taught with reading-writing approach.

**Patel (2009)** measured effectiveness of developed CAI in teaching English grammar to standard VIII students through different modes presentation i.e. only CAI, CAI with repetition and CAI with discussion. The major findings of the study were: (i) The achievement of the students in English grammar taught through different modes of CAI were found significantly higher than that of the students taught through traditional method. (ii) From the three modes of the presentation of this CAI, the mode i.e. teaching through CAI with discussion was found significantly superior in comparison to other two modes i.e. only CAI and CAI with repetition in terms of students’ achievement in English grammar. No significant difference was found between two modes that only CAI and CAI with repetition. (iii) CAI was also found to be effective in terms of the reaction of the students.

The study of **Serin (2011)** aims to investigate the effects of the computer-based instruction on the achievements and problem solving skills of the science and technology students. This study was based on the pre-test/post-test control group design. The participants of the study consisted of 52 students; 26 in the experimental group, 26 in the control group. The achievements test on “the world, the sun and the moon” and the Problem Solving Inventory for children were used to collect data. The experimental group received the computer-based science and technology instruction three hours a week during three weeks. In the analyses of data, the independent groups t-test was used at the outset of the study to find out the whether the levels of the two groups were equivalent in terms of their achievements and problem

solving skills and the Kolmogorov-Smirnov single sample test to find out whether the data follow a normal distribution and finally, the covariance analysis (ANCOVA) to evaluate the efficacy of the experimental process. The result of the study reveals that there was a statistically significant increase in the achievements and problem solving skills of the students in the experimental group that received the computer-based science and technology instruction

The purpose of the study of **Song & Kang (2012)** was to evaluate the impacts of ICT use on achievements by considering not only ICT use, but also the process and background variables that influence ICT use at both the student- and school-level. This study was conducted using data from the 2010 Survey of Seoul Education Longitudinal Research. A Hierarchical Linear Modeling (HLM) analysis was employed to control the student and school characteristics. The study results show that the use of ICT explained a significant portion in the overall variance in mathematic achievement at the elementary school level, at the middle school level, and at the high school level, respectively. Information communication and transactions, a component of ICT literacy, had negative impacts on mathematic achievement, and ICT self-efficacy was more likely to result in academic achievement than other background and processing variables.

**Magen & Peled (2013)** investigated whether there are differences in the level of computer literacy, the amount of implementation of ICT in teaching and learning-assessment processes and the attitudes of teachers from computerized schools in comparison to teachers in non-computerized schools. In addition, the research investigates the characteristics of Israeli school teachers in a 21st century computer-based learning environment. A quantitative research methodology was used. The research sample included 811 elementary school teachers from the Jewish sector of whom 402 teachers were from the computerized school sample and 409 were teachers from the non-computerized school sample. The research findings show that teachers from the computerized school sample are more familiar with ICT, tend to use ICT more and have a more positive attitude towards ICT than teachers in the non-computerized school sample. The study concluded that positive attitudes of teachers towards ICT are not sufficient for the integration of technology to occur. Future emphasis on new teaching skills of

collective Technological Pedagogical Content Knowledge is necessary to promote the implementation of optimal pedagogy in innovative environments.

### **2.3.0 SOME OBSERVATIONS AND IMPLICATIONS FOR THE PRESENT STUDY**

From the above review of related literature, researches carried out are concerned with the various aspects of art education. The studies related to art education by Gibbs (1961), Sullivan (1984), Punja (1981), Wright (1985), Shotwell (1987), Smith (1992) deals with the descriptive analysis about the art education in schools. Parmeswaran (2001) developed a comprehensive art education curriculum for CBSE and RSBSE board. The study of NCERT (2005) deals with the process of art education at school and tries to find out the problems related to the art education at schools. The study by WJZ (2011) tried to integrate art education with other school subjects. Drake and Winner (2012) in their study tried to relate the feeling of students with art making. Hedayat et al (2013) in their study tried to implement a disciplined based art education programme focusing on the teachers' feedback for students. The study of Lummis, Morris & Paolino (2014) emphasised the importance of building self-efficacy to support ongoing personal and professional engagement with the arts.

From the review of past researches carried out in the field of art education, it was observed that none so far have paid attention on secondary art education in India. Though Parmeshwaran (2001), studied the secondary art education curriculum with a view to modify and updating it. The study attempted to develop a secondary school art education curriculum. However, none so far have tried to develop the computer based package in teaching art education at secondary level. Thus it clearly indicates towards the need to study computer based art education and to measure its effective and to compare it with the traditional teaching method. It was also observed that most of the researches have taken sample either from primary or upper primary school students but studies on secondary school students are very few indeed. So the study on secondary school students will be useful as critical awareness regarding art develops in the early adolescence of students due to the changes taking place in the spheres of their mind and body.

The experimental studies on the use of computer and computer based instruction conducted by Gupta (1987), Prabhakar (1989), HSu (1994), Das (1998), Khirwadkar (1998), Nimtrakul (1999), Robkob (1999), Suwanma (1999), Vaisopha (1999), Wanna (1999), Zyud (1999), Yadav (2000), Dalwadi (2001), Patel (2009), Serin (2011), Song and Kang (2012) revealed that most of the studies used computer either in the form of CAI or CAL to teach different school subjects and in all the studies the packages were found to be significant in terms of enhancing students achievement. So the question emerges here that whether the computer is effective in teaching art education too like other subjects? Therefore, it is important to study the effectiveness of computer based teaching of art education.

From the reviewed studies, it can also be observed that many studies conducted on the computers and art education. Studies conducted by Chumely (1987), Robkin (1987), Reeve (1988) and Allister (1990) used the computers in different forms to teach art education based on the comparison of traditional approach and in all the cases computer added art education teaching was found to be superior in comparison to the traditional approach. However, no Indian study was available in the area of art education and the use of computer and/or e-medium. Also from the review of the studies, following implication for research can be drawn. There is a need of computer based art education as there is an absolute lack of research in computer based art education in India. There is no proper interaction among teachers and students in the classes of art education and students are not satisfied with the traditional methodologies of teaching art which became the barrier in students learning as they can use computer for creating art and the traditional methods cannot be satisfy their creativity and interest in art. So, computer based art education can be useful to the students for practicing different arts at their convenient time.

Thus, considering these specific implications, a need to conduct the study on development of computer based art education package for secondary school students. The present study is an attempt in this direction to use computer in the area of art education in secondary schools.