CHAPTER II

REVIEW OF RELATED STUDIES
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2.1. INTRODUCTION

The aim of the second chapter is to review the related literature which forms the basis for all research projects. “Study of the related literature implies locating, reading and evaluating reports of research as well as reports of casual observation and opinions that are related to the individuals planned research projects”.

Once a topic has been selected, the investigator is naturally eager for action. The topic must be related to relevant knowledge in the field. It is important for educators, as it is for others engaged in research, to know how to locate, organize and use the literature in their field basically. For most scholars and scientists critical reading of the related literature serves as a stimulus for thinking and creativity. The survey of the related literature is crucial aspect of the planning of the study and the time spent in such a survey invariably is a wise judgment.

The related literature work as a guide post not only in regard to the quantum of work done in the field but also enable us to perceive the gaps-locations, to avoid duplication to scrutinize the methodology used, to co-ordinate the study with others and to work along in useful lines. Review of related literature pertaining to a problem makes the researcher familiar with summary of previous research, the writings of recognized experts, what is already known, and what is still unknown and untested and thus provides a background for the
development of the study undertaken. It brings the researcher to the proximity of the solution.

A review of related literature is necessary to have an idea of what has been done in similar areas, to scrutinize the methodology used, to co-ordinate the study with others, to find gaps, to avoid duplication and to direct the work along useful lines. “For most scholars and scientists, critical reading of the related literature serves as a stimulus to thinking and creativity”. (Carter V.Good)

2.2. ROLE OF RELATED LITERATURE IN A RESEARCH PROJECT

The search for related literature should be completed before the actual conduct of the study begins. This stage serves several important functions.

The following are the important functions:

- A knowledge of related research enables investigators to define the frontiers of their field.
- One should review the literature for the purpose of finding a link between one’s study and the accumulated knowledge in one’s field of interest.
- A careful review of the literature can help researchers to revise their initial question so that it can be investigated. It also helps in clarifying the concepts involved in the study and in translating these concepts into operational definitions.
- A critical review of related literature often leads to insight into the reasons for contradictory results in an area.
Through studying related research, investigators learn which methodologies have proved useful and which seem less promising.

A thorough search through related research avoids unintentional replication of previous studies and

The study of related literature places researchers in a better position to interpret the significance of their own result.

2.3. VIRTUAL LEARNING RELATED STUDIES

Miller, Erez Cedric (1993) discussed some of the potential benefits and hazards that virtual reality holds for exceptional children in the special education system. Topics addressed include (1) applications of virtual reality, including developing academic skills via cyberspace, vocational training, and social learning in cyberspace; (2) telepresence and distance education; (3) the role of teacher in cyberspace; (4) changing teacher-training programs; (5) the corollary curricular change; and (6) the risks of using virtual reality in special education. Although virtual reality is in its infancy, a theoretical framework must be developed that will guide its use.

Avigail Oren, et.al (2002) examined the Development of Social Climate in Virtual Learning Discussion Groups International Review of Research in Open and Distance Learning. As the educational use of Computer Mediated Communication (CMC) increases there is growing interest among researchers as to social processes evolving within the varied models of group work using Internet, e.g., special interest groups, topical discussion groups, discussion forums attached to virtual courses, and learning communities. In this paper, the author
present a synthetic summary of _ve studies that explored social climate issues in synchronous and asynchronous online activities in academic courses, focusing on the following questions: Does a social atmosphere develop in online learning discussion groups? What are the different modes of social interaction that are manifest in online learning discussion groups? What is the role of the virtual teacher with regards to the social climate in online learning discussion groups? Discussed and the implications of these _ve studies' on the design of virtual-learning-discussion-groups, and the results for the characterization of teacher moderation functions.

Barkand, Jonathan; Kush, Joseph (2009) investigated the Virtual Learning Environments (VLEs) which are becoming increasingly popular in online education environments and have multiple pedagogical advantages over more traditional approaches to education. VLEs include 3D worlds where students can engage in stimulated learning activities such as Second Life. According to Claudia L'Amoreaux at Linden Lab, “at least 300 universities around the world teach courses and conduct research in Second Life.” However, to date, VLEs have been very limited in use for K-12 education. One option for secondary schools was developed by Game Environment Applying Real Skills (GEARS) and can be used in online or traditional schools. The 3D VLE is named ARC. The Impending Gale. This program has been used successfully for over a year as part of the Lincoln Interactive online curriculum. ARC allows students to create their own custom avatar and enter the educational environment. The actual content of the game differs depending on the subject the student is taking. Current
courses include earth science, geography, pre-algebra, and Spanish. The 3D VLE experience is designed to serve as a reinforcement of the concepts learned in the traditional lessons. The game environment itself has been very well received by students primarily because many of the continued development features were derived from student suggestions. One unique feature that was most requested was the inclusion of voice chat. Voice chat was only added as part of the ARC headquarters where students were able to meet before going out into the game world for their own specific content. The students are also highly motivated to progress through the content. ARC has been a great success for Lincoln Interactive and its parent company is the National Network of Digital Schools.

The social aspect of ARC was limited, and the ARC Headquarters prompted a plan to create a 3D Virtual Social and Educational World (VSEW) for the 15,000 students that had access to the Lincoln Interactive curriculum in 2009. With the inclusion of a social component, the concept of an online community was evaluated. Garrison’s et al. (2000) Community of Inquiry framework is used to explore the Lincoln Interactive Community. The VSEW contains a 3D social space with custom avatars, chat, Voice Over Internet Protocol (VOIP) communication, social objects in the form of community musical instruments, and a tutor zone for teachers. In 2009 four educational games are included in the VSEW. These educational games focus on basic concepts in the three disciplines of maths, social studies, and language arts. Garrison et al, (2000) Social Presence, Cognitive Presence, and Teaching Presence are each explained in regards to the VSEW. Both ARC and the VSEW are implemented and from November 2009
they are currently being used by students. While there is still much to learn and explore in regards to 3D VLEs and Social Worlds, practical application by GEARs in an online secondary school has been positively accepted by faculty and students.

Ibohal Singh Madhuri Devi (2009) investigated the Virtual Learning Environment: Issues and Challenges before LIS Open Access to Textual and Multimedia Content. There has been a change in the ways how education is provided with the application of new ICTs. Providing LIS Education in Virtual Learning Environment (VLE) has become an issue today. Delivery of library services has also been in existence such an environment. As such it is a big issue and challenges before the LIS Schools and Libraries. The present paper highlighting VLE, Virtual Community, Characteristic features, objectives, Issues, Essentialities, Choice of content, LIS Education in VLE, etc., emphasizes on the American Experience, IGNOU initiatives in India concluded that Indian LIS Schools should adopt virtual learning system.

Ehrlich, Justin (2010) examined the application of virtual reality which is becoming ever more important as technology reaches new heights allowing virtual environments (VE) to complete with global illumination. Sample: The study with 24 subjects. Tool: ASD utilizing a quantitative questionnaire, illumination realism was found to have a positive effect on the presence felt by these individuals. Findings: One successful application of virtual environments is educational interventions meant to treat individuals with autism spectrum disorder (ASD). VEs are effective with these individuals because the environment induces
them to use pretense to successfully navigate the virtual world, without the social fear of failing in the real world. It improves the user's theory of mind (ToM), and this ability to conceptualize others is particularly lacking in individuals with ASD and is detrimental to the development of social skills. A greater feeling of presence in the virtual environment enhances pretense and the development of ToM because the experience seems more like the real world to the user. Therefore, this study targeted the presence as a prime candidate to improve a virtual environment since it increases the ability of the VE to induce pretense, which allows the user to improve his/her ToM. In the field of computer science visual realism, new research has surfaced linking illumination realism to presence. Since this research was limited to Neurologically Typical (NT) individuals (those without ASD), and because generalization is particularly important to individuals with ASD, the study targeted these individuals. Further, since head mounted displays (HMD) are impractical for widespread delivery of a VE intervention application and since there is a lack of research about VEs without HMDs, the study used standard desktop displays, called pseudo virtual environment (PVE). One of the main goals of this dissertation was to measure the extent to which visual realism can induce the presence of a VE intervention, enumerate the specific characteristics of rendering to promote the sense of presence and the ability to generalize, and statistically verify the enhanced outcomes from using these techniques. **Implications:** This work contributes to the field of visualization and special education by providing
empirical evidence supporting the claim that illumination realism increases the presence felt by users with ASD when interacting with a PVE.

Grace Keyes (2010) discussed on Teaching the Scientific Method in the Social Science in Virtual Learning. Teaching the scientific method is a staple of standard introductory social science courses such as sociology, anthropology, psychology, and political science. For instance, sociology textbooks typically devote a chapter to research procedures designed to show how students scientific research is achieved. While such coverage in introductory textbooks is meant to provide the basics, most students come into social science classes already armed with some notion about how scientific research is conducted. From as early as grade or middle school, and certainly since high school, students begin accumulating the scientific wisdom of their science teachers. Once in college, students again enroll in courses that refresh their memories about the scientific method, in case they have forgotten what they learned in high school, and hopefully build on this knowledge. Students internalize the words and phrases they have associated with science throughout their school years. Underlying this apparent knowledge, however, is a lack of understanding of what it means “to do science”.

Mukerji, Siran, Ed.; Tripathi, Purnendu, Ed. (2010) described the technology which holds the key for bridging the gap between access to quality education and the need for enhanced learning experiences. This book contains case studies on divergent themes of personalized learning environments, inclusive learning for social change, innovative learning and assessment techniques,
technology, international partnership and transnational collaboration for enhanced access under the core domain of technological adaptability and transnational learning. Chapters include: (1) Learning across Social Spaces (Gilbert Ahamer and Josef Strobl); (2) Online Teaching Partnerships in Diverse Socio-Cultural Institutions (Julian Scheinbuks and Anthony Pina); (3) Balanced Assessment of Flexible e-Learning versus Face-to-Face Campus Delivery Courses at an Australian University (Kenneth Strang); (4) Planning a Quality Education System (C. Sukati); (5) Using Portable DVD Players to Deliver Interactive Simulations for Training Health Care Workers in Kenya (Wallace Hannum); (6) Transnational Postgraduate Study for Development Workers (Elizabeth Beckmann and Patrick Kilby); (7) Learning Patterns of Learner's Interaction in the Learning Management Systems (Wu Bing, Teoh Ping and Ye Ming); (8) EPICT (Katalin Csoma); (9) Japanese Students' Digitally Enabled Futures Images (Michael Vallance and David Wright); (10) Development of a Transnational Framework for E-Learning Technologies (Deryn Graham); (11) Second Life Brought to Life (Kevin Yee and Jace Hargis); (12) Perspectives on the Influences of Social Capital upon Internet Usage of Rural Guatemalan Teachers (Douglas Tedford); (13) Interactive Hypermedia-Based Learning Environment (Billie Eilam and Ofir Gurtler); (14) Using e-mail as a Cultural Bridge in the Learning Process for Transnational Students (Sandra Smith); (15) Integrated Cross-cultural Virtual Classroom Exchange Program (Eunhee O'Neill); (16) Live Interactive Virtual Explorations via the High Performance Wireless Research and Education Network (Kimberly Bruch, Hans-
Werner Braun and Susan Teel); (17) Effectiveness of Problem Based Learning for Engineering Curriculum (J.I. Rojas, X. Prats, A. Montlaur, M. Valero and E. Garcia-Berro); and (18) Using How People Learn Framework for Online Course Design in Teacher Education (Sharon Dole and Lisa Bloom).

Wyatt, Erin Drankwalter (2010) examined middle school students engaged in a virtual learning environment used in concern with face-to-face instruction in order to complete a collaborative research project. **Methodology:** Experimental cum survey was adopted in the study. **Sample:** Thirty-eight students from three eighth grade classes participated in this study where data were collected through observation of student work within the virtual learning environment, an online survey, and focus group sessions with students involved in the project. **Findings:** Results indicated that students found the virtual learning environment to be valuable as a platform to complete a collaborative research assignment because of portability, ease of use, and organization. Embedded resources within the environment were helpful because of the convenience. Other people, including peers and teachers, were the preferred source of help when problems navigating the environment or finding information arose. Students were communicated within the virtual learning environment as a social outlet, a way to check in, and a means to offer content related comments. Ideally the study's findings will give insight into student experiences in a virtual learning environment in order to help educators design more effective learning experiences and incorporate useful supports within such environments.
Charles, Darryl et.al (2011) examined the Game-Based Feedback for Educational Multi-User Virtual Environments. It is generally accepted that informative and timely feedback is important to a student's learning experience within higher education. In the study of commercial digital games it has also become increasingly understood that games are particularly good at providing effective feedback of this form to game players. The author discussed recent game based learning research that attempts to harness the motivating qualities of digital games to inform the design of educational technology. Results from this research demonstrate that student participation and performance can be improved by providing Game-Based Feedback (GBF) to students. The GBF approach awards points to students for the successful completion of tasks throughout a course of study. Points and achievements accumulated over time builds a profile that provides a student with a potentially powerful representation of their educational identity. In this paper, the author argues that virtual worlds are particularly suitable for this form of GBF and can further enhance a student's understanding of their educational standing. The author outline a Virtual Learning Landscape (VLL) design that is embedded within a multi-user virtual environment, where educational feedback is supplied to students via their avatar and a virtual world's landscape. The core structural principles of the proposed VLL are explained and several examples of the use of the VLL are provided to illustrate the system.

Choi, Beomkyu and Baek, Youngkyun (2011) found out factors of media characteristic which are considered to influence flow in learning through virtual worlds. **Methodology:** Exploratory study was adopted for the
study. **Sample:** One hundred ninety eight elementary students who are eleven to twelve years old participated in this study. After the exploratory factor analysis, to extract media characteristics of virtual worlds, seventy-eight elementary students who are eleven years old were used in the analysis of exploring relationships between factors influencing flow. **Findings:** The results of the study show that distinct media characteristics of virtual worlds affecting engagement were labeled "interactivity", "representational fidelity", "immediacy of communication", "consistency", and "persistence" after the exploratory factor analysis. Another result of this study is that the media characteristics are positively correlated: when students effectively recognize media characteristics, the level of flow is also high. In addition, virtual worlds' characteristics have a significantly consistent predictability on learners' flow, which is consistent with previous research that demonstrated media characteristics were a critical factor for influencing engagement. Lastly, factors of media characteristics such as "immediacy of communication", "consistency" and "persistence" are related to flow, but don't have an influence on causality, so it is difficult to assert that these factors predict learner's engagement. However, other factors such as "interactivity" and "representational fidelity" are significant factors that predict flow in learning through virtual worlds.

**Gamage, Vimani et.al (2011)** examined the Teacher Perceptions of Learning Affordances of Multi-User Virtual Environments. While the affordances of multi-user virtual environments (MUVEs) for teaching and learning are a subject of numerous experience reports, there is little research on educators'
perceptions of various MUVE affordances claimed in the literature. The author investigates the educators' perceptions of claimed MUVE affordances for learning by conducting in-depth semi-structured interviews with 22 educators (11 with experience in using MUVEs for teaching, and 11 with no MUVE experience). The author analyzes the resulting data by using the constant comparative method. 

**Findings:** indicate that the perceptions of MUVE affordances for learning by educators with no experience in using MUVEs are similar to the perceptions of early adopters, and are overall positive, suggesting a positive outlook for eventual wider MUVE adoption. The rich descriptions of teacher beliefs and perceptions given in the article will be of interest to education managers and teachers considering MUVE adoption.

**Jaradat, Suhair et.al (2011)** explained how the activity theory is used as a framework to analyze the barriers to a virtual Management Information Stream (MIS) Curriculum in Jordanian schools, from both the socio cultural and pedagogical perspectives. Taking the activity system as a unit of analysis, this study documents the processes by which activities are shaped by their different levels of context. Through qualitative data collection methodologies, the study explored the various contextual and personal imbalances that appeared while implementing the MIS at schools. At the end of the study, several suggestions and recommendation are offered to enhance the curriculum and its implementation at schools.

**Jones, Allan and Bissell, Christopher (2011)** investigated the Social Construction of Educational Technology through the Use of Authentic Software.
A major strand of science and technology studies in recent decades has related to the Social Construction of Technology (SCOT) movement, whose adherents maintain that technological systems are determined just as much by social forces as by technological ones. Taking this SCOT notion as a starting point, and putting a focus on the user, this paper looks at some examples of the educational use of software tools that exploit the functionality of the software in ways far removed from the original design. Examples include the use of spreadsheets, graphics editors and audio editors, and online translation software. Connections are made between the social construction of technology and constructivist pedagogy, particularly in relation to authentic learning.

Liu, Feng and Cavanaugh, Cathy (2011) described a study of success factors in high enrollment courses in a K-12 virtual school learning environment. The influence of variables: time student spent in the learning management system (LMS), number of times logged into the LMS, teacher comment, participation in free or reduced lunch programs, student status in the virtual school (full time or part time student), race/ethnicity, and grade level in the physical school student attends on student academic achievement was investigated in this study. Student final score in the courses was used as the measurement for academic achievement and also the dependent variable of the study. Hierarchical Linear Modeling (HLM) was the data analysis method used to account for the influence of school characteristics on student final score. The results show the success factors affect student academic achievement in the high enrollment online courses in different ways. The implications for teaching and research were addressed in the discussion.
of the findings. Future research is proposed based on the limitations in this study to help improve the effectiveness of online education in K-12 virtual learning environments.

Lu, Yun (2011) shared the experience of using the virtual classroom when teaching online mathematics course. Various softwares including MyMathLab and Wimba are introduced and the teaching methods and tips are provided and analyzed. Results show that the use of the virtual classroom enhances the communication in the online mathematics teaching. Educators are recommended to adapt the virtual classroom to enhance their communication.

Mamo, M. et al. (2011) examined on multi-user virtual environment (MUVE), such as second life, allows educators to fill the gap of first-hand experience by creating stimulated realistic evolving problems/games. In a pilot study, a team of educators at the University of Nebraska-Lincoln and extension created a soil and water environmental case study using Second Life in extension's Morrill2 Island for testing and use by students in an introductory soil science course (n = 126). In this pilot test with a class period of 110 minutes, approximately half of the students (n = 64) were first given an orientation on how to navigate in Second Life before beginning the soil and water pollution activity. Another group of students (n = 62) formed a control group and completed the same activity using a traditional paper and pencil method and using supporting data presented in table or graphics format. A pre-activity survey suggested that about 33% of all students had same level of experience with virtual environments and/or playing computer/video games. Results from a
randomized experiment showed that the average post-test score for the control group was 8.38 (out of a possible 12 points), which was significantly higher than the 7.34 for the Second Life group. Post-activity student survey results suggested that students prefer to have educationally designed virtual interactive objects such as stimulation activities and experiments, characters with whom to interact and gain information and overall more action and gaming features to benefit their educational experience. While Second Life and other stimulation software packages have potential for educational use, in order to improve learning, the design of the activity within the technology must be pedagogically sound and also create tasks that capture and engage the learner.

Mikropoulos, Tassos A. and Natsis, Antonis (2011) analyzed the ten-year critical review of empirical research on the educational applications of Virtual Reality (VR). Results show that although the majority of the 53 reviewed articles refer to science and mathematics, researchers from social sciences also seem to appreciate the educational value of VR and incorporate their learning goals in Educational Virtual Environments (EVEs). Although VR supports multisensory interaction channels, visual representations are predominate. Few are the studies that incorporate intuitive interactivity, indicating a research trend in this direction. Few are the settings that use immersive EVEs reporting positive results on users' attitudes and learning outcomes, indicating that there is a need for further research on the capabilities of such systems. Features of VR that contribute to learning such as first order experiences, natural semantics, size, transduction, reification,
autonomy and presence are exploited according to the educational context and content. Presence seems to play an important role in learning and it is a subject needing further and intensive studies. Constructivism seems to be the theoretical model in which the majority of the EVEs are based on. The studies present real world, authentic tasks that enable context and content dependent knowledge construction. They also provide multiple representations of reality by representing the natural complexity of the world. **Findings:** Show that collaboration and social negotiation are not only limited to the participants of an EVE, but exist between participants and avatars, offering a new dimension to computer assisted learning. Little can yet be concluded regarding the retention of the knowledge acquired in EVEs. Longitudinal studies are necessary, and we believe that the main outcome of this study is the future research perspectives it brings to light.

Mueller, Daniel and Strohmeier, Stefan (2011) focused on Virtual learning environments constitute current information systems' category for electronically supported training and development in (higher) education(al) and vocational training settings. Frequently expected advantages of using virtual learning environments refer, for instance, to the efficiency, individuality, ubiquity, timeliness and learning task orientation. However, a crucial precondition of realizing such advantages is an appropriate system design. Hence, the question "Which specific design characteristics actually characterize successful virtual learning environments?" is of specific interest for training and development practice. This paper therefore discusses virtual learning environments' design
characteristics by conducting an in-depth literature review. Based on this, a comprehensive set of diverse design characteristics of virtual learning environments as well as particular information associated with them are elicited, presented and discussed. Beyond this, particular implications for research and practice are derived. This may contribute to a successful development, implementation and (continuous) improvement/evaluation of virtual learning environments.

Rae, Andrew and Samuels, Peter (2011) examined on Web-Based Personalized System of Instruction: An Effective Approach for Diverse Cohorts with Virtual Learning Environments? The Personalized System of Instruction is a form of mastery learning which, though it has been proven to be educationally effective, has never seriously challenged the dominant lecture-tutorial teaching method in higher education and has largely fallen into disuse. An information and communications technology assisted version of the Personalized System of Instruction using a virtual learning environment is promoted here based on the authors' longitudinal design research into this pedagogy. The particular elements of the virtual learning environment which are promoted are short video clips, online formative tests and an assessment management system. The authors present their experiences of developing and deploying this pedagogy for the teaching of introductory discrete mathematics to large classes of Computer Science students at two UK higher education institutions both with whole cohorts and "at risk" groups of students. In particular, this method is promoted as particularly helpful to students who do not adopt a deep approach to learning as
many students fail to do. Moreover "at risk" students using this method (n=71) demonstrated an average Glass effect size of 0.83 compared with other "at risk" students who did not (n=35). Based on these experiences, this pedagogy is promoted as an effective approach to teaching in higher education, especially the teaching of cognitive skills to diverse cohorts of students on foundation level modules.

Waters, John K. (2011) investigated on competing for the Virtual Student. Most K-12 school districts know that they are losing children who are going to other programs to get their needs met, and they know that they are going to have to offer some kind of online program to meet those needs if they are going to survive. K-12 districts have not exactly been sitting on the online-learning sidelines. In fact, by pioneering online learning and proving its effectiveness, K-12 districts have unwittingly broadened the market for for-profit schools. It is very clear that online learning has found its time and place and it lies at the heart of some serious competition between traditional brick-and-mortar schools and entrepreneurial propriety schools that are taking advantage of the charter movement. It is just so easy in many states now for an online entity to come in and take enrollment. Some districts realize how heavy the competition is—that there is competition now for attendance dollars that were safer in the past—and some do not. District-led online programs are currently emerging in three forms: (1) the virtual school, in which students are enrolled full-time and get their entire course of study online; (2) programs that simply offer a few supplemental classes
online; and (3) "blended learning," which combines traditional classroom-based learning with online learning assets.

**Bouta, Hara;et.al (2012)** examined the effect of using an online 3D virtual environment in teaching Mathematics in Primary Education. In particular, it explores the extent to which student engagement—behavioral, affective and cognitive—is fostered by such tools in order to enhance collaborative learning. For the study, the author used a purpose-created 3D virtual environment and a macro-script incorporating learning tasks related to basic fractions. The study itself took place during four teaching sessions in a primary school classroom. The data collected and analyzed included chat logs, classroom observation notes and the results of pre and post-tests. **Findings:** Indicate that the 3D virtual environment actively engages the students' interest and leads to richer interaction between them. This in turn results in a higher level of student engagement in the collaborative learning process. The author believes that 3D virtual environments provide novel learning opportunities. However careful design is necessary in order to use their full potential.

**Cavalluzzo, Linda et.al (2012)** conducted a rigorous evaluation of the Kentucky Virtual Schools hybrid algebra I curriculum. The curriculum combines traditional face-to-face instruction with an online program. This study used a two-cohort sample with 25 high schools in year 1 (SY 07/08: 13 treatment and 12 control) and 22 in year 2 (SY 08/09: 11 and 11), the randomized sample included 6,908 students, 61.4 percent of whom were in rural schools. As reported in the study, "Effects of the Kentucky Virtual Schools Hybrid Program for Algebra I on
Grade 9 Student Math Achievement," researchers found that the hybrid class format was no more effective at increasing student achievement and future course taking in math than algebra offered in the traditional face-to-face format. Eight appendixes present: (1) Power Analysis; (2) Data Collected but Not Analyzed; (3) Sample Detail; (4) Technical Information; (5) Data Cleaning and File Construction; (6) Professional Development Timeline; (7) Detailed Teacher Survey Results; and (8) Results of Sensitivity Analyses. [This report was prepared for the National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences with Regional Educational Laboratory Appalachia administered by CNA Education].

DeNoyelles, Aimee and Seo, Kay Kyeong-Ju (2012) examined the 3D multi-user virtual environment which holds promise to support and enhance student online learning communities due to its ability to promote global synchronous interaction and collaboration, rich multisensory experience and expression, and elaborate design capabilities. Second Life[R], a multi-user virtual environment intended for adult users 18 and older, is the most cited in educational literature, so it is important to explore how college-aged students are using it to form online learning communities. Previous research suggests that there is unbalanced participation between traditional college-aged men and women with regards to 3D multi-user video games, which closely resemble Second Life[R]. In this research study, the authors investigated in what manner women and men college students projected their virtual identities and engaged in interaction in
Second Life[R], and how this influenced their learning of course content. Analysis of multiple data sources revealed that conceptions of identity, beliefs of the nature of the virtual world, and technical skill were primary factors which affected group cohesion and learning within the community. Results from this study can provide insight into the class activities that can support all learners in accessing and contributing to the multi-user virtual environment learning community.

**Dieker, Lisa et.al (2012)** examined on The Use of Virtual and Simulated Teaching and Learning Environments: Inviting Gifted Students into Science, Technology, Engineering, and Mathematics Careers (STEM) through Summer Partnerships New technologies and virtual environments are emerging globally, yet the way these tools can impact the learning and future career paths of students who are gifted is limited in the literature at this time. The purpose of this article is to provide a summary of how a science, technology, engineering, and mathematics (STEM) summer camp, based on virtual and simulated environments, impacted the self-confidence of targeted diverse secondary science students from low socio economic backgrounds who were considered gifted with strong potential in these future STEM fields.

**Farran, Emily K.et.al (2012)** examined the ability to learn a route through a virtual environment which was assessed to 19 older children and adults with Williams Syndrome (WS) and 40 Typically Developing (TD) children aged 6-9 years. In addition to comparing route-learning ability across groups, we were interested in whether participants show an adult-like differentiation between
"useful" and "less useful" landmarks when learning a route and the relative salience of landmark position versus landmark identity. Each virtual environment consisted of a brick wall maze with six junctions. There were 16 landmarks in the maze, half of which were on the correct path and half on incorrect paths. Results showed that both groups could learn each route to criterion (two successful completions of a route without error). During the learning phase, the WS group produced more errors than the TD group and took longer to reach criterion. This was predominantly due to the large number of preservative errors (i.e., errors that were made at the same choice point on consecutive learning trials) made by the WS group relative to the TD children. Authors suggest that this reflects a difficulty in inhibiting erroneous responses in WS. During the test phase, the TD group showed stronger recall of landmarks adjacent to junctions (more useful landmarks) than of landmarks along path sections (less useful landmarks) independent of each individual's level of non-verbal ability. This pattern was also evident in the WS group but was related to level of non-verbal maturation; the differentiation between recall of junction and path landmarks increased as non-verbal ability increased across WS participants. Overall, the results demonstrate that individuals with WS can learn a route but that the development of this ability is atypical.

Korallo, Liliya et.al (2012) examined the potential use of VEs in teaching historical chronology to 127 children of primary school age (8-9 years). The use of passive fly-through VEs had been found, in an earlier study, to be disadvantageous with this age group when tested for their subsequent ability to
place displayed sequential events in correct chronological order. All VEs in the present studies included active challenge, previously shown to enhance learning in older participants. Primary school children in the UK (all frequent computer users) were tested using UK historical materials, but no significant effect was found between three conditions (Paper, PowerPoint and VE) with minimal pre-training. However, excellent (error free) learning occurred when children were allowed greater exploration prior to training in the VE. In Ukraine, with children having much less computer familiarity, training in a VE (depicting Ukrainian history) produced better learning compared to PowerPoint, but no better than in a Paper condition. The results confirmed the benefit of using challenge in a VE with primary age children, but only with adequate prior familiarization with the medium. Familiarity may reduce working memory load and increase children's spatial memory capacity for acquiring sequential temporal-spatial information from virtual displays.

Renzulli, Joseph S. and Reis, Sally M. (2012) focused on a Virtual Learning Application of the School wide Enrichment Model and High-End Learning Theory. Remarkable advances in instructional communication technology (ICT) have now made it possible to provide high levels of enrichment services to students online. This paper describes an Internet-based enrichment program based on a high-end learning theory that focuses on the development of creative productivity through the "application" of knowledge rather than the mere acquisition and storage of knowledge. The program, called Renzulli Learning System (RLS), extends the pedagogy of the School wide Enrichment Model
(SEM) to various forms of enrichment as well as first-hand investigative and creative endeavors. In this paper, a brief overview is provided about the SEM, the organizational framework upon which the RLS is based. This section will be followed by summaries of the Three-Ring Conception of Giftedness and the Enrichment Triad Model, the two theories underlying SEM, and the final section presents a detailed description of the RLS.

Rice, Jennifer King (2012) investigated on review of "The Costs of Online Learning. Schools and school systems throughout the nation are increasingly experimenting with using various instructional technologies to improve productivity and decrease costs, but evidence on both the effectiveness and the costs of education technology is limited. A recent report published by the Thomas B. Fordham Institute sets out to describe "the size and range of the critical cost drivers for online schools in comparison to traditional brick-and-mortar schools" (p.2). The study divides online learning into two broad categories—virtual schools and blended-learning schools—and, based on data from 50 experts, reports that "the average overall per-pupil costs of both models are significantly lower than the $10,000 national average for traditional brick-and-mortar schools" (p.1). These findings, however, are undermined by a general lack of clarity about the models being studied and problematic data and methods. While the report addresses an important topic, the utility of its cost estimates are limited. Of more value are the qualitative findings about how various cost drivers affect the overall costs of online learning. The study would be more useful if it provided a rigorous analysis of a set of well-defined promising models of online
learning as the basis for its cost estimates. (Contains 7 notes.) This paper reviews the following document: "The Costs of Online Learning, Creating Sound Policy for Digital Learning: A Working Paper Series from the Thomas B. Fordham Institute".

### 2.4. STUDIES RELATED TO SOCIAL SCIENCE

Ferris, Sharmila, Ed.; Godar, Susan, Ed. (2006) explained the growth of e-learning and distance education today creates an increasingly pressing need for research and writing on the pedagogy of e-learning. Teams are, or should be, an integral component of e-learning. "Teaching and Learning with Virtual Teams" develops this concept by investigating many issues around teams in the virtual and hybrid classroom, bringing a variety of current research and practice on the subject of virtual and collaborative teams in teaching and learning together in a single accessible source. The issues covered by this book include, but are not limited to, theoretical models, pedagogy of e-learning, virtual team design and management, collaborative learning, and strategies for effectiveness in teaching and learning. These issues are considered in virtual or online classes as well as an added pedagogical element in "traditional" classes. Chapters of this book includes: (1) Seven Principles of Good Practice for Virtual International Collaboration (Diane Boehm and Lilianna Aniola-Jedrzejek); (2) Learning Style Flexibility for Effective Virtual Teams (Pieter Toit and Peter Petegem); (3) From Web Quests to Virtual Learning (Robert Zheng); (4) Team Effectiveness in Virtual Environments (Pnina Shachaf and Noriko Hara); (5) Learning in a Geographically
Dispersed Context (Rashmi Assudani); (6) Virtual Study Groups (Gregory Northcraft, Terri Griffith, and Mark Fuller); (7) Computer-Supported Collaborative Learning (Kara Orvis and Andrea Lassiter); (8) A Blueprint for Assessing Learning in Virtual Teams (Patricia O’Conner and Susan Godar); (9) One School/Two Campuses (Anne-Laure Fayard); (10) Students International Collaboration Projects (SICP) (Kathryn Hashimoto and Jean-Marc Lehu); (11) Computer Mediated Technology as Tools for Social Interaction and Educational Processes (Karen Stout); (12) Virtual Teams in the Traditional Classroom.

Akdag, Hakan and Kaymakci, Selahattin (2011) examined on Social Studies education which has played an important role for ages in Turkey. The aim of this study is to inform international scientific community about the historical development of social studies education in Turkey. In the study, document analysis, a technique of qualitative approach, was used. The data were collected from documents like social studies curricula, books, articles, online sources, etc. Then, the data obtained from these documents were analyzed in two periods: Pre-republican period and republican period. The results showed that throughout the history, social studies education has been shaped by the political, social and economic forces within Turkey and has been used for creating good and loyal citizens.

Conklin, Hilary G. (2011) described on Teaching Intellectually Challenging Social Studies in the Middle School. Are middle schoolers capable of discussing the war in Iraq in meaningful ways? Can seventh graders develop informed ideas about presidential candidates' positions on health care? Should
young adolescents discuss controversial public issues, interpret primary sources, and analyze social problems? Thoughtful social studies educators disagree. While some educators advocate engaging all students in challenging intellectual work, some teachers believe this kind of teaching and learning is not possible or appropriate at the middle school level; they believe such instruction should be reserved until high school. As a result, many students in middle school classrooms experience social studies instruction that emphasizes factual recall and hands-on activities that require only lower order thinking. What explains this mismatch between what is possible and what is often put into practice in middle school social studies classrooms? In this article, the author examines several likely explanations for disconnect and then she explores the teaching and learning possibilities for social studies instruction in the middle school years.

Ekuri, Emmanuel Etta; et.al (2011) evaluated and perceived the assessment practices needs among social studies teachers in Cross River State, Nigeria, in relation to some teacher factors (attitude towards social studies, sex, teaching experience and educational qualification). Subjects who participated in this study were 297 social studies teachers (144 males and 153 females) from 116 secondary schools in the state. Teacher Classroom Assessment Practices Needs Questionnaire (TCANQ) and Teacher Attitude towards social studies Inventory were used for data collection in the study. Cronbach coefficient alpha of 0.81 and 0.93 were obtained as estimate of construct validity and internal consistency reliability for the Teacher Classroom Assessment Practices Needs Questionnaire and the Teacher Attitude towards social studies Inventory respectively.
Independent t-test, one way analysis of variance and Pearson Product Moment correlation were used to test the hypotheses. Results indicated that gender and teacher qualification significantly influence perceived assessment practices needs of social studies teachers. Significant positive relationship was observed between years of teaching experience and expressed assessment practices needs; and between attitude towards social studies and assessment needs. It was concluded that factors such as years of teaching experience, attitude towards social studies, gender and educational qualification significantly influence social studies teachers perceive priority needs in assessment practices.

**McBain, Robert (2011)** highlighted the problems ESL students faced when studying social studies at Saint Joseph Bangna School. In particular, what improvements could be made to the kinds of academic exercises contain within the books & websites as teaching materials. It was designed around three research questions relating to what problems students faced when studying social studies. What kinds of academic exercises do their social studies books and websites contain? And finally in what ways can these books and websites be improved? The researcher carried out a broad, shallow and qualitative approach using three phases starting with a student survey of the books. The second phase was a more in-depth study of 50 books from Saint Joseph School Bangna library & Saint Gabriel's library and a random sample of 25 websites. **Findings:** The research findings were recorded on data tables and it was shown that many of the books used for ESL social studies had few quality academic exercises for students to study the necessary grammar and other items to prepare them for studying. As
a result, the researcher completed the research by designing new style academic exercises that focused on these vital study areas of vocabulary and related grammar related to the texts.

**Risinger, C. Frederick (2011)** believed that the effective teaching of social studies is being pushed out of schools and that's simply wrong and dangerous. In this article, the author offers some websites that he thinks it will provide individuals and groups with information they can use to promote social studies/citizenship education and defend it within the curriculum. Some of these have information already formatted for presentation or which can be easily turned into a Power Point or other format. All of these sites provide links to other sites that can help individuals or groups prepare materials for presentation to both educational groups and the general citizenry.

**Bulu, Saniye Tugba (2012)** investigated the relationship among three types of presences, including place presence, social presence, and co-presence in virtual worlds and their relationship with satisfaction and immersive tendencies of students. Students' scores on a subjective questionnaire were analyzed. The results indicated that there was a significant relationship among the place presence, social presence, and co-presence. While social presence seemed to affect the satisfaction most, place and co-presence also affected students' satisfaction in the virtual world. Moreover, immersive tendencies of the students were related to their place and co-presence but not to their social presence. **Findings:** highlighted the important issues for the design of virtual world environments to increase presence and satisfaction of students.
Colley, Binta M. (2012) focused on Teaching Social Studies through the Performing Arts in the past decade, there had been growing efforts to improve and enhance the delivery of social studies content in the classroom through arts integration. Some educators have used music as a method for teaching social studies and found that interdisciplinary work increases students' understanding of history and different cultures. This article focuses on a pilot project designed to prepare pre-service social studies teachers on methods of teaching their content area using the performing arts. It describes the context, methodology, and findings, and ends by discussing some of the implications for pre-service social studies teacher education. Participants' reflections suggest that using the performing arts in social studies methods not only promotes student engagement and learning, but also gives voice to students who are rarely heard.

Gvaramadze, Irakli (2012) focused on the increasing demand for generic competences both from governments and industries. Despite this fact, there is insufficient awareness and information in education systems on how to equip graduates with appropriate generic competences for the world of work and citizenship. This is even more complicated in online virtual learning programs where face-to-face communication is excluded in the design and implementation of the program curriculum. The paper seeks to question if it is possible to develop generic competences in an online virtual learning environment. Design/methodology/approach: For this purpose, the research develops a theoretical framework based on the generic competences, learning content, learning support and learning activities. The paper argues that an online virtual
learning curriculum design differs from a traditional face-to-face classroom environment in terms of learning content, learning activities and nature of learning support. Taking these elements in designing online virtual learning programme would promote acquisition of generic competences among the students. **Findings:** The research examines possibilities of the online virtual learning platform ALUD (Aprendizaje en Linea de la Universidad de Deusto) at the University of Deusto, Spain, to develop generic competences online. The research demonstrates opportunities of the online virtual learning platform ALUD to develop and practice generic competences among students even without actual and traditional face-to-face educational communication. Originality/value: The paper explores generic competence development through the online virtual learning platform ALUD at the University of Deusto, Spain. It examines possibilities of online education platform of the University of Deusto to produce alignment between what is espoused through the curriculum, what is enacted and how students experience learning through a virtual learning programme in order to develop their generic competences online. The paper argues that the virtual learning platform ALUD provides many opportunities for learners to develop and practise their generic competences even without actual and traditional face-to-face educational programmes.

Heafner, Tina L. and Fitchett, Paul G. (2012) examined the impact of national educational policy implementation on the role of social studies in elementary schools. Specifically, with the reauthorization of No Child Left Behind (NCLB) in 2007 and the continuation of federal-mandated testing of
English language arts (ELA) and mathematics in grades three through five, researchers sought to understand how policy decisions to extend testing to science affected teacher decisions in regard to instructional time allocations for core subject areas of ELA, mathematics, science, and social studies in elementary schools. **Result:** of this quantitative study offer large-scale evidence of the declining role of social studies in an era in which testing is clearly linked to subject-area importance. **Finding:** provides an overview of the national scope of testing and the ramifications for social studies in elementary schools. Researchers conclude that curriculum standardization, accountability, and high-stakes testing have had adverse affects on social studies time allotments in comparison to tested subjects.

**Neumann, Richard (2012)** concerned textbook analysis regarding the presentation of socialism in four leading high school social studies books, one in each of the following subjects: United States history, World history, United States Government, and Economics. **Findings:** indicate that students relying on these texts to gain understanding of socialism and contemporary expressions of socialist ideas in modern societies will be invariably short changed. In most of the books, students are not encouraged to analyze or evaluate socialism. The potential of the books to help students achieve goals identified by the National Council for the Social Studies, certain content standards established by the National Council on Economic Education, and other standards established by state boards such as the California State Board of Education, is quite limited.
Pyatt, Kevin and Sims, Rod (2012) investigated the learning dimensions that occur in physical and virtual inquiry-based lab investigations, in first-year secondary chemistry classes. This study took place over a 2 year period and utilized an experimental crossover design which consisted of two separate trials of laboratory investigation. Assessment data and attitudinal data were gathered and analyzed to measure the instructional value of physical and virtual lab experiences in terms of student performance and attitudes. Test statistics were conducted for differences of means for assessment data. Student attitudes towards virtual experiences in comparison to physical lab experiences were measured using a newly created Virtual and Physical Experimentation Questionnaire (VPEQ). VPEQ was specifically developed for this study, and included new scales of Usefulness of Lab, and Equipment Usability which measured attitudinal dimensions in virtual and physical lab experiences. A factor analysis was conducted for questionnaire data, and reliability of the scales and internal consistency of items within scales were calculated. The new scales were statistically valid and reliable. The instructional value of physical and virtual lab experiences was comparable in terms of student performance. Students showed preference towards the virtual medium in their lab experiences. Students showed positive attitudes towards physical and virtual experiences, and demonstrated a preference towards inquiry-based experiences, physical or virtual. Students found virtual experiences to have higher equipment usability as well as a higher degree of open-endedness. In regards to student access to inquiry-based lab experiences, virtual and online alternatives were viewed favorably by students.
Scruggs, Thomas E. et.al (2012) investigated the Peer-Mediated Instruction in Inclusive Secondary Social Studies Learning: Direct and Indirect Learning Effects ten inclusive middle school social studies classes, including 133 general education students, and 24 students with mild disabilities (21 with learning disabilities and 3 with emotional disabilities), were assigned at random to a traditional instruction condition, or an experimental condition involving class-wide peer tutoring with specialized materials and parent training. After 18 weeks of instruction, post-test data revealed that students in the experimental condition gained significantly more than students in the traditional instruction condition. These effects were observed on content included in the tutoring intervention, as well as on related content that was taught but not included in the tutoring intervention. **Findings:** Results are discussed within the context of recent research on inclusive secondary content area instruction.

### 2.5. INDIAN STUDIES

Beena Y. Desai (2004) examined Efficacy of Teaching through the Traditional Method and the Multimedia Approach in the Subject of Home Science. **Objectives of the study:** 1. To develop a multimedia package for teaching the subject of nutrition (Protein) to the undergraduate level students of Home Science. 2. To find out the effectiveness of the multimedia package in terms of achievement of the students. 3. To find out the effectiveness of the lecture method and practical method used in the teaching of Home Science. 4. To study the effect of achievement at the Std. XII examination on the acquisition of knowledge through traditional teaching methods and multimedia approach. 5. To
study the effect of intelligence on the acquisition of knowledge through traditional teaching methods and multimedia approach. **Research Design:** It is an experimental study, which has employed experimental group and control group design. **Sample of the Study:** The sample of the study is constituted of 98 students. **Tools and Techniques:** The multimedia package constituted of transparencies, pie graph, charts, diagrams, pictures, video tape, audio tape, and slide set has been well developed by the investigator. All the tests pre-test, post-test, retention test and opinionates have been well constructed by the investigator. The intelligence test by Dr. K.G. Desai has been suitably selected. The experiment has been conducted systematically. **Data Analysis:** T-test and F-test were appropriately employed for data analysis. **Findings of the Study:** The mean achievement of the experimental group was found significantly higher than that of the control group. From post-test to retention, test almost equal reduction in performance was found in both the groups. The study has arrived at significant findings when caste, location, income, Std. XII examination marks, and IQ of the students were considered as co-variables. The students were found to have favorable opinions towards the multimedia approach.

**Annapurna Prusty (2006)** investigated the Effectiveness of Inductive Thinking Model of Teaching on Learners’ Achievement in Social Studies

**Objectives of the Study:** To assess the effectiveness of Inductive Thinking Model of Teaching (ITMT) on learners’ achievement in three subject areas of Social Studies. The sub objectives under this major objective were i). To assess the effectiveness of Inductive Thinking Model of Teaching (ITMT) on learners’
achievement in Geography, ii). To assess the effectiveness of Inductive Thinking Model of Teaching (ITMT) on learners’ achievement in History and iii). To assess the effectiveness of Inductive Thinking Model of Teaching (ITMT) on learners’ achievement in Civics. **Research Design Employed:** Quasi Experimental-pre-test post-test experimental control group design has been well employed for the study. **Sample for the Study:** 190 8th Std. students of the 4 selected schools out of 9 Oriya medium high schools of Sambalpur Municipal area, affiliated to BSE, Orissa constituted the sample for the pilot study. All the 35 students of Std. VIII of Budharaja High School constituted the Experimental Group for the final study, whereas, all the 34 students of Std. VIII of Zilla School constituted the control Group for the final study. **Tools used:** The characteristics of all the tools constructed by the investigator, namely, 3 comprehensive tests, 18 learning assessment tests, on Geography, History and Civics, the Inductive Reasoning Test (IRT) and Concept Attainment Test (CAT) in parallel forms have been well established. The Verbal Test of Creative Thinking (Mehdi, 1985) has been well selected for measuring Creative Ability. **Data Analysis Techniques Employed:** Compatible statistical techniques have been employed for data analysis, namely, Mean, SD, Skewness, Kurtosis, Percentiles and ANCOVA. **Findings of the Study:** 1. ITMT was found to be effective on learners’ achievement in three subject areas of Social Studies, namely, Geography, History and Civics. 2. Impact of ITMT was found to be better than that of traditional method of teaching on learners’ achievement in Geography.
Bhattacharya, Bani (2008) investigated the Engineering education in India has witnessed a major change over the past few years. Substantial increase in the demand for high-quality education has led to the adoption of Information and Communication Technologies for extending the outreach of education. This paper presents a review of some of these technology-enhanced initiatives already taken up by the government of India, as well as by some of the leading institutions in the country. Important developments include the National Programme on Technology Enhanced Learning (NPTEL), the use of an educational satellite called the EDUSAT and various other approaches such as the use of "virtual classrooms" and "virtual laboratories." The paper goes on to discuss some of the problem areas in the present mode of dissemination and deployment; some possible future trends and modalities are also outlined. These include blending collaborative learning with interactive technology-enhanced learning initiatives and finding ways of providing support for learners' queries.

Singaravelu.G (2008) examined the effectiveness of Virtual Tour in learning social science at standard V. Objectives: To assess the problems of the young learners using the present methods of learning Social science at standard V in Pooluvapatti panchayat union primary school, Coimbatore. *To find out the significant difference between the post test of control group and post test of Experimental group in achievement mean scores of the pupils in Social science. *To find out the significant difference between the pre test of Experimental group and post test of Experimental group in achievement mean scores of the pupils in
Social science. *To assess the impact of Virtual Tour in learning Social science. **Method of study:** Experimental method (control group and experimental method) was adopted for the study. **Sample design:** Eighty pupils of standard V from panchayat union primary school at Pooluvapatti in Coimbatore were selected as sample for the study. **Tools:** The investigator’s self made Achievement test was used for the pre-tests and post-tests of both control groups and experimental groups. The same question was used for both pre and post-tests to evaluate the pupils’ skills in Social science through objective types of question which carried one mark for each question and contained 25 marks. Pupils could answer appropriately by using the virtual learning in learning Social science. **Data Analysis:** Statistical technique ‘t’ was applied for the study. **Findings:** There is significance difference between the post-test of control group and post-test experimental group in achievement mean scores of the pupil of standard V in learning social science through Virtual Tour in panchayat union primary school, Pooluvapatti. There is no significant difference between the pre test of Experimental group and post test of Experimental group in achievement mean scores of the pupils in Social Science. Learning Social Science by using Virtual Tour gives significant improvement in in learning social science. **Educational implications:** Virtual Tour can be extended to upper primary level, secondary level and higher secondary level. It can be encouraged to implement to use in adult education. It may be implemented in teacher education. It may be implemented in alternative school. Slow learners can improve by using it. It may be more supportive to promote Sarva Siksha Abiyan in grass root level.
Jaen, Maria Moreno (2009) presented survey data from English Philology students (University of Granada) on a virtual course entitled ADELEX-Assessing and Developing Lexis which was carried out in 2007-08 to enhance vocabulary acquisition. In the first part of this paper, the author briefly offer a description of this second generation virtual course to enhance lexical competence. However, in the second part, the author reports on student perceptions about relevant aspects of web-based learning: 1) the role of the teacher; 2) the planning of the course and effectiveness of activities; 3) some differences between virtual learning and traditional learning; 4) motivation; 5) the use of communication tools: discussion forums. By and large, students showed great satisfaction at this virtual learning experience confirming the benefits of online learning versus traditional learning. Implications offered in this study may also be useful to academics interested in developing lexical competence.

Chaudhary, Sohanvir; Garg, Suresh (2010) discussed one of the serious problems associated with Indian school education has been high dropout rate. The reasons are many and varied but the major constraints are: non-availability of adequate number of competent and trained teachers in most of the schools and separate room for each class. To overcome such problems and increase equitable access to all, it was considered prudent to use capabilities of satellite based teaching-learning. This network was also to be used for capacity building of in-service teachers. So an indigenously built, dedicated satellite for education-Educational Satellite (EduSat)-was launched on September 20, 2004, which supports one national hub and five regional hubs. This paper discusses the case
study of Rajiv Gandhi Project for EduSat-Supported Elementary Education (RGPEEE) project for imparting value added education and professional development of in-service teachers. The project was implemented by Indira Gandhi National Open University (IGNOU). More than 862 schools in four Hindi speaking states chosen on the basis of physical contiguity were networked through 850 ROTs and 12 SITs. In the first phase (pilot), the project focused mainly on Sidhi district, inhabited mainly (90%) by tribal population and one of the most educationally less-developed districts of Madhya Pradesh. Through ten orientation programmes, 868 teachers and functionaries associated with the project were oriented at different levels to familiarize them in imparting instruction through EduSat and their role and responsibility in facilitating child learning. They were also trained in developing content for Tele-teaching; development of knowledge repositories as effective and sustainable sources of courseware. Feedback studies undertaken to judge the effectiveness of EduSat reveal that it is being well received and making steady progress towards improvement in attendance and academic achievement of children and creation of better learning-environment in schools.

2.6. SYNTHESIS OF THE STUDY

Moreno (2009). Mikropoulos, Tassos A.and Natsis, Antonis (2011) analyzed the ten-year critical review of empirical research on the educational applications of Virtual Reality (VR). Munkerji, Siran, Ed.; Tripathi, Purnendu, Ed. (2010) described the technology which holds the key for bridging the gap between access to quality education and the need for enhanced learning experiences. Avigail Oren, et.al (2002) examined the Development of Social Climate in Virtual Learning Discussion Groups International Review of Research in Open and Distance Learning. Barkand, Jonathan; Kush, Joseph (2009) investigated the Virtual Learning Environments (VLEs) which are becoming increasingly popular in online education environments and have multiple pedagogical advantages over more traditional approaches to education. Lu, Yun (2011) shared the experience of using the virtual classroom when teaching online mathematics course. Rice, Jennifer King (2012) investigated on review of "The Costs of Online Learning. Schools and school systems throughout the nation are increasingly experimenting with using various instructional technologies to improve productivity and decrease costs, but evidence on both the effectiveness and the costs of education technology is limited. Waters, John K. (2011) investigated on competing for the Virtual Student .Most K-12 school districts know that they are losing children who are going to other programs to get their needs met, and they know that they are going to have to offer some kind of online program to meet those needs if they are going to survive. K-12 districts have not exactly been sitting on the online-learning sidelines. Ibohal Singh Madhuri Devi (2009) investigated the Virtual Learning Environment: Issues and Challenges.

2.7. CONCLUSION

Above all the related studies analyzed the different experimental studies on virtual learning, social studies and critical studies on virtual learning in international level and also national level. The above studies pave way to identify the proper research design, sampling techniques, selection of tools, indicating the research gape, procedure of the study, Statistical technique and data collection.