CHAPTER – 2
REVIEW OF RELATED LITERATURE

Having discussed the problem on hand and established the need for the study in the previous chapter the investigator probed into the main area of related research conducted by other researchers. When a research project is based on the relevant thinking and research studies that has preceded it, it becomes a part of the formulated knowledge in the field and thus contributes to thinking and research as a whole.

The reviewed related researches on Social Constructivist Strategies, Achievement in Geography and Group Cohesiveness have been classified under the following four sections in this chapter:

2.1. Studies related to Constructivism and Social Constructivism
2.2. Studies related to Teaching Geography
2.3 Studies related to Achievement in Geography
2.4. Studies related to Group Cohesiveness

Studies related to Constructivism and Social Constructivism are discussed in section 2.1. A review of teaching Geography literature is discussed in section 2.2. Review of related literature on Achievement in Geography is discussed in section 2.3 and review of related literature on group cohesiveness is discussed in section 2.4. On over view of this chapter is presented in Figure no 2.1
On overview of this chapter is presented in Figure no 2.1

*Figure No. 2.1: Figure showing the overview of review of related literature*
2.1 Studies related to Constructivism and Social Constructivism

Whiteside (2000) conducted a study on building geography skills and community understanding through constructivist teaching methods. He designed a program to enhance social studies skills and knowledge. The target areas were enhancement of Geography skills and community understanding. The targeted population was a 2nd grade class in rural mid-western setting. The need for strengthening these skills was documented by observation, checklists, surveys and pre and post tests. Analysis of the probable causes for lack of Geography skills had revealed that students do not have good definitions of Geography and community or why they are important. The literature reviewed had indicated that young children are not cognitively able to grasp some concepts set forth in Geography. The interventions were found to enhance mapping skills and were found to use them as well. It was concluded that students need to understand and be informed about their world.

Pooran (2000) examined the use of approaches to teaching science based on two contrasting perspectives in learning viz., social constructivist and traditional, and their effects on student’s attitudes and achievement. It was found that students who were taught through constructivist-based teaching, showed more favourable attitude towards science as a subject. They were found to have obtained higher scores in class achievement, total achievement and achievement on the knowledge and application test. It was also found that students in the traditional group showed more favourable attitude towards school. Females showed more positive attitude towards the importance of science and obtained significantly higher scores in class achievement. No significant interaction effects were obtained between method of instruction and gender.
Lamer (2001) conducted a study with an objective of finding whether significant difference existed in male and female, high and low achieving students, and students with different learning styles with respect to their perception of constructivist pedagogy. 152 secondary school students were selected for the study. A significant difference was found in the perceptions of male and female, high and low achieving students regarding constructivist pedagogy. A significant difference was found in visual and tactile learners with respect to their perception of constructivist instruction.

Micheel. J (2001) examined the theoretical discourse over constructivism in education and empirically studied the shift in one teacher’s praxis as he moves from individual constructivist pedagogy to social constructivist pedagogy. It was found that taking a constant stance towards teaching could create an illusion for a teacher committed to discipline based pedagogy. The study also raised questions about the enterprise of reading in a constructivist classroom.

Alien (2001) using an eight month, quasi-field work approach and depth interviews examined how the staff of pioneer station high school constructed personal meaning for a decade long district initiative to restructure their school using outcomes-based education. The study recommended that administrators rethink the traditional, single-reality, cause-effect world view and consider a constructivist worldview that supports the existence of multiple realities, multiple paths to understanding and the possibility of influencing rather than directing change. It outlined a framework for constructing a better understanding of the change process, and it also cautioned administrators to respect the power of the culture of their schools.

Heyoung (2001) conducted a study to determine whether the present Korean teacher education programme for secondary school teachers was effective in improving teacher understanding of constructivism because the current Korean National Science curriculum emphasized both ideas as reforms. After the treatment in the pre-service and in-service teacher education
programmes, the teachers were inclined to agree with ideas of constructivism. Pre-service programme was more effective than that of in-service programmes in improving teachers’ perspectives of constructivism and science and technology.

Hand, Treagust and Vance (2002) investigated the issues to curriculum implementation, pedagogical skills and the processes of social construction of knowledge extensively for a period of four years. They examined student’s perceptions of the changing nature of the secondary science classrooms as a consequence of the implementation of constructivist approaches. The results of the study indicated that the students were not only appreciative of the opportunity to use their own ideas and knowledge but were also aware of the changing roles and responsibilities required of them within the classroom. It also indicated that a clear understanding of group interactions needed to be developed for evolving social construction of knowledge as a more powerful learning approach.

Uzuntiryaki (2003) compared the effectiveness of instruction based on constructivist approach over traditionally designed chemistry instruction on 9th standard students’ understanding of chemical bonding concepts. In addition, the effect of instruction on students’ attitude towards chemistry as a school subject and the effect of gender difference on understanding of chemical bonding concept were investigated. The result indicated that instruction based on constructivist approach caused a significantly better understanding of scientific conception related to chemical bonding and produced significantly higher positive attitude towards chemistry as a school subject than the traditionally designed chemistry instruction. It was also found that science process skill was a strong predictor in understanding the concepts related to chemical bonding. No significant effect of gender difference was found on understanding the concept about chemical bonding and students’ attitude towards chemistry as a school subject.
Betsy Binkley Henry (2003) explores the relationship between frequency of use of constructivist teaching strategies with student academic performance, student social behaviour, and class size. The research tool was developed to measure frequency of use of constructivist teaching strategies in three areas: classroom management, teaching and learning activities, and assessment. The study was a survey which included 699 middle school teachers in a south western Florida County school system. Among them 318 teachers responded to the survey. Data collected using the final survey instrument indicated that there was no significant correlation between the frequency of use of constructivist teaching strategies and student academic performance as measured by each middle school’s grade on the states mandated grading of schools scale. A small significant negative correlation between the use of constructivist teaching strategies and the number of student behavioural referrals indicated that the more teachers use constructivist teaching strategies, the lower the numbers of referrals per year.

Laura Azzarito & Catherine D. Ennis (2003) investigated how teachers used social constructivist strategies to encourage student construction of knowledge and meanings, and how students constructed knowledge and meanings in two middle school physical education classrooms. A qualitative naturalistic design was used to collect data over a five-month period with two experienced middle school physical education teachers. Data included 11 weeks of observational field notes and interviews with teachers and students. Data were analyzed using cross-case and inductive analysis. Findings indicated that the teachers’ strategies created a learning environment in which students actively constructed knowledge and meanings by making connections to their peers and by connecting physical education to their lives, their communities, and the real world. Students shared information, assumed leadership and responsibility, and became decision-makers. By connecting to their peers, students felt supported in their learning. This finding of this study also supports
social constructivist pedagogy in physical education to encourage individual growth and social awareness in communities of learners.

Akar Hanife (2003) conducted a study to find the impact of constructivist learning process on pre-service teacher education students’ performance, retention, and attitudes in Classroom Management Course. 144 third year pre-service teachers formed the sample. Data were collected through qualitative and quantitative methods. The findings indicate that retention was fostered through constructivist activities like reflective writing, critical thinking, and problem solving. Factors such as active learning, meaningful and enjoyable learning environment, and the attitudes of instructors had a positive impact on student learning. Nevertheless, the load of reflective diary writing and portfolio preparation tasks, and collaborative work could be overwhelming and discouraging and these were found to have a negative impact on learners’ attitudes towards the course.

Kate Hawkey (2003) in the case study attempted to find the effect of using asynchronous text-based discussion. It considers the role of the tutor and discusses the extent to which online discussions can facilitate social constructivist approaches to instruction and the creation of knowledge. Participants were 17 trainee teachers studying in a post graduate teaching course. The asynchronous text-based discussion (using e-blackboard) focused on planning for progression in children’s learning in history and culminated in the trainee teachers writing individual assignments on the topic. The study analyses the different types of contributions made and reports on the trainees’ evaluations of the benefits and limitations of using e-blackboard.

Dara Celeste Dozier (2004) took up a study to determine what relationships, if any, exist among interactivity, social constructivism, and satisfaction with distance learning in the target population of U. S. Army Infantry soldiers participating in college Distance Learning (DL) courses. 131 Infantry soldiers at Fort Benning, Georgia formed the sample, statistically
significant relationships were found between satisfaction with DL and the variables of interactivity, social constructivist characteristics and some of the demographics. Statistically significant relationships were found between DL satisfaction and demographics like; prior experience with web-based learning, computer and Internet expertise, and number of media used for student instructor interaction. The findings supported the use of highly interactive social constructivist instructional approaches in computer-mediated and other learning environments.

Kroesbergen, E. and Van Luit, J. (2005) investigated the effects of a constructivist mathematics intervention for secondary students with Mild Mental Retardation (MMR). A total of 69 students from elementary schools for special education participated in the experiment, 48 boys and 21 girls. At pre- and post-test, two multiplication tests were administered. The findings reveal that students improved significantly during the training period. However, students who received directed instruction showed greater improvement than students who had received guided instruction. Their findings show that students with MMR can profit from constructivist instruction, although direct instruction seemed to be more effective.

Ambrose Hans G. Aggabao (2005) compared the effectiveness of three teaching approaches based on constructivist learning philosophies on achievement as well as retention of learning of students. The study focuses on comparing new teaching approaches that were designed based on constructivist learning philosophies to current traditional teaching. Interactive small-group learning was used as a social constructivist approach while individualized self-engagement was used as radical constructivist approach. Both were supported with instructional materials and instructional protocol consistent with constructivist philosophies. Equivalent-Groups-Pre test-Post test Experimental Design was adopted for the study. The experiment was conducted on 92 math students of a college of teacher education. Results of this study showed
significant differences among mean gain scores on both achievement and retention measures. Radical constructivist approach showed significant advantage over the other two approaches, while the social constructivist approach showed better gain scores than the traditional teaching approach.

Kim (2005) aimed at validating the value of the constructivist approach in 6th standard mathematics in relation to student’s academic achievement, self-concept and learning strategies on the part of the students. Students’ feedback in relation to constructivist teaching was also focused in the study. It was found that Constructivist teaching was more effective than traditional teaching in terms of academic achievement. Constructivist teaching was not found to be effective with respect to self-concept and learning strategy but was found to have some effect upon motivation, anxiety towards learning and self-motivation. It was also found that the students preferred constructivist environment to a traditional classroom.

Chin-Chung Tsai (2005) took up a study to develop a questionnaire to explore students’ preferences toward constructivist Internet-based science learning environments. The questionnaire included eight scales: ease of use, relevance, multiple sources, student negotiation, cognitive apprenticeship, reflective thinking, critical judgment and epistemological awareness. The sample included 853 high school students (438 males and 415 females) from ten high schools in Taiwan. The questionnaire responses were gathered from 853 Taiwan high school students. Through factor analysis, these scales revealed highly satisfactory validity and reliability in assessing students’ perceptions for Internet-based science learning environments. The students’ responses also showed that they strongly preferred the Internet-based learning environments that could connect scientific knowledge with real-life situations. Moreover, female students tended to place more emphasis on the instructional guidance offered by the Internet-based environments for science learning, as well as the presentation of scientific knowledge in authentic contexts than did male students.
Sridevi K.V. (2006) took up a quasi-experimental study to find whether constructivist approach to science instruction could help 8th standard students of Mysore, India to improve the Science achievement and Attitude towards Science. The sample included 37 boys and 31 girls in total. The experimental group consisted of 36 eighth standard students, of which were 21 boys and 15 girls and the control or alternate group consisted of 32 eighth standard students, which included 16 boys and 16 girls. This study also attempted to understand how the students construct their own meanings. Purposive sampling was employed to select the schools for the study. An Achievement test in Science and an Attitude towards Science scale was developed by the researcher. The students were tested on the above tools before and after the treatment. Analysis of Covariance test was performed to control the initial variance. The results showed that Constructivist teaching is more effective than traditional teaching in terms of Achievement in Science and Attitude towards Science among 8th standard students. It was found that constructivist approach was equally effective for both boys and girls in improving Achievement and Attitude towards science. A constructivist environment was preferred to a traditional classroom by the students. The results confirmed research supporting the positive effect of constructivist learning practices and view that constructivist approach to teach science is a viable alternative to traditional modes of teaching.

Karaduman and Gultekin (2007) investigated whether the learning materials that were based on constructivist learning principles had any effect on social studies’ attitude, academic success and retention of 5th grade students. The findings of the study indicated that learning materials based on constructivist learning principles increased students’ academic success and retention in social studies but have any effect on their social studies’ attitude.
Vickneasvari. A and P. Krishnasamy (2007) examined the effects of a multimedia constructivist environment on Form Four students’ achievement and motivation in the learning of “Chemical Formulae and Equations”. Multimedia Constructivist Instruction (MCI) and Multimedia Objectivist Instruction (MOI) courseware were developed. The MCI was assigned to 80 students whereas the MOI was assigned to 89 students. Students’ ability levels (high-ability, HA or low-ability, LA), cognitive styles (field-independent, FI or field-dependent, FD) and gender were the moderator variables. The study found that, the MCI students performed significantly better and were significantly more motivated than the MOI students. Whereas the HA students performed significantly better and were significantly more motivated than the LA students. The FI students did not perform significantly better but were significantly more motivated than the FD students. The male students did not perform significantly better but were significantly more motivated than the female students. HA students performed significantly better and were significantly more motivated than the LA students in MCI. Whereas the HA students using MCI performed significantly better but were not significantly more motivated than the HA students using MOI. The LA students using MCI did not perform significantly better but were significantly more motivated than the LA students using MOI. The FI students performed significantly better and were significantly more motivated than the FD students in MCI. The FI students using MCI performed significantly better but were not significantly more motivated than the FI students using MOI, and the FD students using MCI did not perform significantly better but were significantly more motivated than the FD students using MOI, whereas the male students did not perform significantly better but were significantly more motivated than the female students in MCI. The male students using MCI performed significantly better but were not significantly more motivated than the male students using MOI, and the female students using MCI also performed significantly better but were not significantly more motivated than the female students using MOI. The
study found that multimedia constructivist environment fostered the learning of “Chemical Formulae and Equations”.

Kimeko McCray (2007) designed a program to enhance social studies skills and knowledge. The target areas for enhancement were geography, economics, history and core democratic values. The need for strengthening these skills was documented by literature, and surveys. Social and cognitive constructivist learning methods were the main focus of the interventions chosen to help. The sample consisted of 25 teachers between the ages of 25 and 50 years old throughout the Southeast Michigan, including urban and suburban schools. It was revealed that constructivist technique improved students’ academic performance and achievement. The program enhanced the student’s skills and understanding in the area of social studies and community.

Christina Solomonidou & Dimitrios Kolokotronis (2008) examined the role of multimedia software package ‘Interactions between Objects’ on students’ learning of mechanical interaction forces and Newton’s laws. They designed and developed this software adopting social constructivism on the basis of 226 students’ initial conceptions (categorized in six categories), in order to help students construct appropriate knowledge about the subject. Teaching with the software was conducted in 13 primary, lower secondary and upper secondary school classes. In the software’s evaluation research 226 students (aged 11–16) and 13 teachers of the classes participated. Data analysis showed students’ substantial learning gains with respect to their initial alternative conceptions of the six conceptual categories. Particularly, the students’ incorrect answers to the post-test questionnaire had perceptibly decreased (a mean of 65%). In contrast, their correct answers to the questions had reached high percentages, from 60% to 90% depending on the question and the students’ age. Also the teachers’ opinion and comments enhanced software’s evaluation. The contribution of the software’s specific
characteristics on students’ learning was discussed along with implications for designing constructivist science learning tools.

Powell, Katherine C. Kalina, and Cody J. (2009) conducted a study on Cognitive and Social Constructivism. It aimed at developing tools for an effective classroom and found that an effective classroom, where secondary teachers and students are communicating optimally, is dependent on using constructivist strategies, tools and practices. The two major types of constructivism were used in the classroom: (1) Cognitive or individual constructivism depending on Piaget's theory, and (2) Social constructivism depending on Vygotsky's theory. Similarities included inquiry teaching methods and students creating concepts built on existing knowledge that were relevant and meaningful. Differences include language development theory where thinking precedes language for cognitive constructivism and language precedes thinking for the theory of social constructivism. It was concluded that understanding communicative tools and strategies help teachers to develop individual learning methods such as, discovery learning, and social interaction to develop peer collaboration.

Stears, Michele (2009) conducted a study on how Social and Critical Constructivism can improve Science Curriculum Designs. This study from South Africa found that the introduction of a new National Curriculum in post-apartheid South Africa heralded a different approach in education. This curriculum not only advocated the development of knowledge and skills, but also emphasized education for democracy and citizenship. It sought to balance central control (and a single curriculum) with local design, which required educators to design curricula according to central guidelines and set outcomes. A science curriculum informed by principles of social, as well as critical constructivism, was thought of as more likely to meet the criteria as set out by policy makers. The research was conducted to probe learners’ responses to a science curriculum informed by social and critical constructivist principles, and
discuss the possible implications of such curricula for science education. Grade 6 classes of 45 isiXhosa-speaking learners aged 11 to 12 from a former black township in the Western Cape of South Africa were purposely selected for the case study. Most of them came from disadvantaged backgrounds. One class of learners were taught science lesson series by the researcher while the class teacher acted as an observer in the classroom. The lesson series was based on the principles of social and critical constructivism. The lesson series was taught over four days for three hours every day. Data were collected as the series was taught. The entire lesson series was video-taped and focus group interviews were conducted with five different learners at the end of each day. In this small scale, qualitative study, pupils’ responses suggested that this approach allowed for greater participation by learners, as they had considerable input with regard to the chosen theme. Activities were learner-centered and drew on learners' everyday experiences. Although this was a series of science lessons, it was clear that the social issues also needed to be addressed in the lessons. The strategy allowed learners to take ownership of their learning, as they could make choices regarding the curriculum. The response of the learners to the science curriculum informed by social and critical constructivist principles raised questions about curriculum design, the nature of science and purpose of science education.

Bose and Sutapa (2010) took up a study on Social Constructivism and found that in many schools of India, students of even elementary level were encouraged to use computer and the internet for carrying out assignments independently during the summer break. This reflected the schools’ efforts to use the potential of Information and Communication Technology (ICT) for supporting constructive learning. Technology can also address the social dimension of learning by supporting not merely cooperation but also collaboration. Unlike web 1.0, web 2.0 could facilitate collaborative content creation, thereby making learning a socially constructive process. The first objective of this study was to determine whether assignments that required
students to use ICT were also meant for collaborative work. The second objective was to determine whether students preferred individualized or teamwork. Descriptive method was used for the study. Data collected with the help of questionnaire and interview from 72 students and 24 teachers of 12 schools of New Delhi were interpreted. Non-random sampling was employed. It was found that although learners preferred teamwork, the concept of collaborative learning was yet to be implemented by schools and a strong bias towards individualized work with web 1.0 persisted. In the light of the findings it was suggested that the students should be trained in web 2.0 technologies and initiated in collaborative learning practices.

Oludipe Bimbola and Oludipe I. Daniel (2010) examined the effectiveness of constructivist-based teaching strategy on academic performance in integrated science of Junior Secondary School students in South-West Nigeria. Quasi-experimental research design was used for this study. 120 Junior Secondary School Students were randomly selected from four out of the 25 co-educational Junior Secondary Schools in Ijebu-ode local government area of Ogun state of South-west Nigeria. The findings revealed that the constructivist instructed students had higher scores on the post test and the delayed post test, compared to those exposed to conventional method of teaching. The study concluded that if integrated science teachers could incorporate constructivist-based teaching strategy into their teaching methods, there would be an improvement in academic performance of Junior Secondary School Students in integrated science.

Peter et. all. (2010) conducted a study to assess the effect of constructivist instructional approach on teaching practical skills in general mental work to mechanical related trade students in South Western Nigeria technical colleges. The findings indicated that the students taught with constructivist instructional approach showed higher academic achievement in general mental work than the students taught with conventional method as they
were exposed to concept mapping, co-operative work skill and cognitive apprenticeship. But it was found that this approach was not gender sensitive.

Calik (2011) examined how the graduate course influenced the graduate students’ views about the meaning of the terms constructivism, conceptual change, worksheet, analogy, and conceptual change test after completing the course. The findings proved that constructivist environment not only helped the post graduate students to gain practical experience but also to see how the developed material worked.

Chitanana Lockias (2012) examined the International Education and Resource Network Science Technology and Math (IEARN-STM) online professional development course. The purpose of the study was to understand how the IEARN online professional development course supported teachers’ learning through effective discourse in an online environment and to identify the constructivist learning principles that were behind the success of the course. The study used the constructivist framework as the conceptual model to examine the way in which the constructivist theory had shaped the design and implementation of the course, as reflected by the interactions of a cohort of participants in the course. Twenty eight educators, comprising of 13 female and 15 male with mean age of 35 years working in different educational institutions in different countries throughout the world were enrolled in the course. These were Science, Mathematics and Technology teachers drawn from Cameroon, China, Egypt, Indonesia, Iran, Jordan, Lebanon, Nigeria, Oman, Pakistan, Palestine, Romania, United States and Zimbabwe. This study used qualitative methods in gathering data where the role of the researcher was that of an active participant who was engaging in joint communicative discourse with the participants. Data collection included data mining of online activities, discussion forums and e-mails exchanged between course participants and course facilitators. The design of the course appeared to have a positive impact on participants’ collaboration with peers. Results of the study confirms earlier research findings that the constructivist approach to course design and delivery
provides a powerful structure for creating learning environments conducive to the development of professional skills among educators. It was suggested that the results of this study could be used to assist professional development coordinators and administrators to plan effective professional development. The results of the study were also expected to contribute to improvements in the design of professional development course content, instruction, delivery and administration, focusing on factors such as program model, delivery, contextual factors or best practices.

Lisa Kindleberger Hagan and Aaron S. Richmond (2012) conducted an experimental study to investigate the effect of teaching constructively in an educational psychology course and to develop and share a methodology for teaching future educators about constructivism. Over an eight week period, 34 pre-service educators were taught constructivism through constructivist techniques and administered pre and two post measures of knowledge and perceptions of constructivist teaching methods. Results indicated that using a constructivist approach to teaching constructivism in educational psychology helped pre-service teachers to make significant gains in their academic and self-reported knowledge of constructivist theory. In addition, students reported that they enjoyed being taught constructively.

Erdal Bay, Birsen Bagceci and Bayram Cetin (2012) investigated whether there is a significant difference in the learners’ problem solving skills and meta-cognitive levels when the authentic task-based social constructivist approach is used in an experimental group and a traditional approach is used in a control group. In this research, semi-experimental design with pre test-post test control groups was used. The experimental group was taught by constructivist approach (task based collaborative learning process) on the other hand, the control group was put in learning environments based on meaningful learning approaches. 89 teacher candidates (trainees) formed the experimental group and 48 teacher candidates formed the control group. The adapted
Problem Solving Scale of Heppner and Peterson was used for acquiring data on problem solving skills. Meta cognitive awareness scale was developed by the researcher and used for obtaining the data on meta-cognitive levels. It was found that the experimental group teacher candidates’ significantly scored higher in problem solving skills and meta-cognitive levels than the control group. It was concluded that the task-based social constructivist approach had positive effects on teacher candidates’ problem solving skills and meta-cognitive levels.

Madu B. C and Ezeamagu M. U (2013) investigated the efficacy of the constructivist strategies the 5Es viz., Engagement, Exploration, Explanation, Elaboration and Evaluation at the primary school level. 134 fourth standard primary pupils participated in the study. 72 pupils were taught the concepts of fraction in fourth standard primary mathematics using the 5Es, while 62 pupils were taught content comparable unit on fraction using the regular conventional method. Pupils in the treatment group made significantly greater gains on fraction achievement test than the comparison group. Results of the study showed promising occasionally robust trends on numbers and numeration outcomes thus contributing to the growing body of evidence suggesting that 5Es approach not only facilitated pupils’ mathematics learning outcomes, but were also found to support pupil’s number and numeracy development.

Richard O. Ongowo (2013) investigated the teachers’ perceptions of actual and preferred constructivist biology learning environment. The study adopted a survey design. Data were collected from a sample of 41 biology teachers from Gem District, Kenya using a 20-item Teacher Perception Questionnaire (TPQ) which was a modified version of Constructivist Learning Environment Survey (CLES), the teachers’ version. The TPQ consisted of two forms which were “Actual” and “Preferred”. While the actual form assessed the current biology learning environment, the preferred form assessed the teacher perception of a constructivist learning environment. The data were analyzed
using paired t-test. The results showed that the teachers’ scores on the preferred form of some scales (Personal relevance, uncertainty and student negotiation) were significantly different from the actual form (p< 0.05). On the other hand the teachers’ scores for scales of critical voice and shared control scales of actual and preferred forms of TPQ were not statistically significant (p< 0.05). The implications of the study for practice and further research were discussed.

Olubunmi Omoniyi conducted a study to test the effect of a constructivist-based learning strategy - the Learning Cycle Approach (LCA) on male and female student’s misconceptions on selected concepts in chemistry. The former was used to test the students’ reasoning ability on how to solve given problems in chemistry while the latter was used to test the students’ practical skills in solving given scientific problems. The sample included 55 Nigerian Secondary Students (30 males and 25 females) from a semi urban area of Nigeria. The findings showed that the female students performed significantly better than their male counterparts in the test of reasoning ability, the subjects’ possessed low understanding of manipulative skills and Female (57%) students responded better than males (43%) at formal operational levels while the greater proportion of males (62%) responded at the concrete levels as against 38% of females at concrete level respectively.

2.2 Studies related to Teaching of Geography

Rambuda A.M. and W.J. Fraser (2004) conducted a study on teachers’ perceptions of the application of science process skills in the teaching of Geography in secondary schools in the Free State province. A teachers’ questionnaire on the application of the science process skills in the teaching of Geography was constructed and the questionnaire was content validated against the theoretical assumptions supported by the literature and practical applications of the subject. The questionnaires were distributed to 150 respondents and 71 completed questionnaires were returned for further analysis. The responses to the items of the questionnaire were subjected to a
principal component factor analysis and a varimax method of rotation. Two prominent factors were identified and investigated. Factor 1 was labeled “basic science process skills” and reaffirmed teachers’ understanding of the basic process skills as autonomous and independent functions. The second factor confirmed the existence of a higher level of advanced and integrated process skills that build upon the basic or foundational process skills. These results confirmed the researchers’ assumption that respondents could distinguish cognitively between the two very prominent constructs. They were found to be comfortable with the fact that the science processes applicable to the teaching of Geography could be grouped into two main distinctive clusters or factors. The homogeneous clustering of items were also found to emphasize the understanding that the classical science process skills could easily be applied to the teaching of Geography. In addition, the results supported the hypothesis that although teachers did not apply integrated science process skills to the teaching of Geography on a regular basis, they were well-acquainted with the fact that these skills remain an important facet in the teaching of Geography in schools.

Eric Pawson, Eric Fournier, and Martin Haigh (2006) took up a critical assessment of Problem Based Learning (PBL) in Geography. It assessed what PBL is, in terms of the range of definitions in use and in light of its origins in specific disciplines such as medicine. It considered experiences of PBL from the standpoint of students, instructors and managers (e.g. deans), and asked how well suited this method of learning was for use in geography curricula, courses and assignments. It identified some ‘best practices in PBL’, as well as some useful sources for those seeking to adopt PBL in geography. It concluded that PBL is not a teaching and learning method to be adopted lightly, and that if the chances of successful implementation were to be maximized, careful attention to course preparation and scenario design was essential. The findings also suggested that more needed to be known about the circumstances in which applications of PBL had not worked well and also about the nature of the inputs needed from students, teachers and others to reap its benefits.
T.O. Adeyemi (2008) examined the different methods of teaching geography in secondary schools in Ondo state, Nigeria. This was a descriptive research that tended to examine the situation as it is without any manipulation of variables. The population of the study comprised of all the 257 secondary schools that presented candidates for the senior secondary certificate (SSC) examination in Ondo state Nigeria. The sample consisted of 168 secondary schools drawn from the study population through the process of stratified random sampling. The instruments used to collect data were the inventory and a questionnaire. The analysis of data was carried out through the use of the t-test, correlation analysis and multiple regression. The findings of the study showed that the performance level of students in Geography was low. The number of teachers in post did not match the approved teacher quota per school. Expository method of teaching was found to be the best predictor of students’ academic performance in geography. Based on this findings, the study recommended that more specialist teachers in geography should be recruited and posted to all secondary schools in the state. It was also suggested that the state Ministry of education should intensify more efforts in monitoring schools to ensure that teachers use the appropriate teaching method that would enhance the effective teaching of geography in all schools in the state.

Ali Demirci (2009) conducted a study aimed at understanding the extent to which Geographical Information System (GIS) technology has been diffused throughout secondary school Geography lessons in Turkey by focusing on geography teachers’ attitudes towards GIS. A survey form was sent to Geography teachers of around 200 private secondary schools in Turkey, 79 of which were responded to from 55 high schools located in 33 separate provinces. The study provided an understanding of teachers’ knowledge, skills, and attitudes about GIS. As the study revealed, knowledge of GIS and its use in Geography lessons by teachers was minimal. More than half of the teachers (66%) had no precise understanding of what GIS is and 82% of the teachers did not know how it could be used in Geography lessons. The use of GIS among
teachers in Geography lessons was also found to be dramatically low. Around one seventh of the teachers (16%) said that they had used GIS software on a basic level before. Only seven of these teachers indicated that they had used GIS software in their Geography lessons. Teachers’ attitudes, however, were positive towards Geographical Information System (GIS). It was found that most of the teachers (76%) thought that GIS is an effective teaching tool for Geography lessons. It was implied that although some external barriers regarding lack of hardware, software, and data existed, the positive attitudes of teachers towards GIS was a significant factor which would contribute to integration of GIS into Geography lessons in Turkey in the future.

Catherine W. Cooper (2011) examined the intended versus the taught curriculum in geography in selected middle school social studies classes in the State of Maryland. The study also assessed the extent to which the level of standards-based teaching was associated with teacher training and skills. Using a mixed methods approach that included a survey of teachers, data were collected that provided for quantitative analysis. In focus group discussions, teachers elaborated on the questionnaire items yielding qualitative data. The data from both methods formed the basis of analysis of comparison between the intended curriculum of the published standards and the taught curriculum as reported by the teachers themselves. The analysis indicated a variance between the intended and the taught curriculum in the classrooms of participating teachers. Teachers’ college course work was found to correlate with the intensity of classroom teaching of some of the Maryland standards. The research and analysis suggested several actions that might enhance the standards-based teaching of geography. It was suggested that the Maryland standards might be strengthened to: 1) encourage higher order cognitive skills; 2) emphasize spatial thinking skills; 3) include greater guidance for teachers in activities and assessments; and 4) build a progressive curriculum in geography. Other findings included the opportunities for additional professional development for teachers, use of the technology of geography in the classroom, additional classroom materials, textbook supplements, and field trips. It was
also implied that although statewide assessments were discussed by educators, committed and dependable class time for the subject of geography might be an effective alternative to increase the accountability of teaching and learning course material.

F. Aydın and M. Coskun (2011) investigated the achievement motive of secondary school students and the relations between the achievement motive towards geography curriculum and “gender”, “class level”, “parent education level” and “family income level”. 151 students studying in high schools in the city center of Karabük in the academic year of 2010-2011 participated in the research. Survey model was used for the study. "The Achievement Motive Scale" developed by Ellez (2004) was used as data collecting tool. Descriptive statistics, t-test and one way variance analysis (ANOVA) were used for the analysis of data. At the end of the study, the arithmetic mean of the views of students about the scale of achievement motivation had been determined to be 3.74. it was found that achievement motivation towards geography had shown significant difference according to “class level”, but it did not show any significant difference according to “gender”, “mother’s education level”, “father’s education level” and “family income status”. Based on the findings of the study, suggestions for increasing the achievement motivations of the students towards geography curriculum had been developed.

Samson Rosana Ondigi (2012) conducted a study on the existing pedagogical strategies and methods of training that teacher training institutions in Kenya used to prepare trainee teachers who teach in secondary schools. It further examined the framework of conceptualizing school Geography within the school curriculum in order to prepare learners for challenges that befall them long after schooling. The study used an exploratory survey approach to collect data from 435 pre-service teacher trainees at Kenyatta University. The study concluded that the current pedagogical strategies used had not achieved the high global levels of training that adequately equipped the teachers for their professional works that is meant to equip the learners with content and high
level skills that met the global labor market demands and the expected threshold in society. Hence the study proposed the use of American Humane Association Model for adapted in the training of pre-service teachers in the Kenyan Universities.

Unal Ozdemir (2012) investigated the four high school students' attitudes towards geography lessons. The research group of the study comprised of 200 students attending high school students in Karabük in 2011-2012. As means of data collection “Geography attitude scale” developed by Aydn (2009) was used in this research in the frame of survey model. The gathered data were analyzed by SPSS-15 statistical programme in terms of frequency, percentage, arithmetic mean, t test and one way variance analysis (ANOVA). From the results of the study, it is clear that 83.5 % of the students love geography. According to the results of the analysis, high school students’ attitudes towards geography courses had no meaningful correspondence with their “gender” and “class level” variants.

Akintade B.O (2012) examined the factors that possibly influence the choice of Geography in secondary schools in Ilorin, Nigeria. Literature were reviewed to buttress the findings of the study. The study was basically a descriptive survey; with questionnaire constructed and administered to respondents, who were students in secondary schools. Frequency counts and percentages were used in analyzing the data. Prominent findings indicate that out of the 200 students who took the survey, only 96 (48%) of the respondents offered geography because it is related to their future career. While 40% of the geography students did not like the teacher’s method of teaching while 64 % affirmed that the teachers do not make use of teaching aids in teaching geography. Only 35 % of the students however agreed that their choice was muted because they enjoyed the geography lessons and that the teacher’s attitude was significant in their decision.

Soon Singh Bikar Singh, Grant Kleeman and Penny Van Bergen (2012) examined the potential for Geographical Information System (GIS) to be
implemented into the teaching of Geography in secondary Smart schools in Sabah, an area which is well known for having the most advanced ICT equipment in the country. This study gathered both quantitative and qualitative data from a set of survey questions and a structured interview process. The purposive sampling method was applied to select Secondary Smart School. Two teachers, with varied profiles from each school, were selected randomly for an interview. The data gathered verified the analysis that an increased number of computer labs, computers, internet access and ICT tools in schools broadened the potential to establish and apply GIS within the teaching of geography in Sabah. It was found that 90 per cent of geography teachers in these schools attended a GIS course at the university. This significant support, in terms of the human resources available to implement the new systems, further supported the opportunity to apply GIS in teaching geography. The result from interview showed the main issue preventing teachers from using GIS to teach geography is the lack of availability of GIS software and the incompatibility of this teaching method with the existing geography curriculum.

2.3 Studies related to Achievement in Geography

Battacharya, G.C (1984) studied the effectiveness of various models of teaching geography in relation to institutional resources. The major objectives of the study were (i) to find out the effectiveness of the teaching geography through the Concept Attainment Model in relation to institutional resources, (ii) to find out the effectiveness of teaching geography through the inductive model teaching in relation to institutional resources, (iii) to compare the effectiveness of teaching geography through the Concept Attainment Model of teaching in relation to institutional resources and (iv) to find out the interaction effect of the different levels of educational institution resource status, models of teaching and types of concepts taught on the gain in achievement scores of junior high school students in geography. The study was conducted with parallel group design with three treatments, viz; teaching with traditional
method, Concept attainment Model and inductive Model. The data were collected with the help of Educational institution status index, Socio – Economic status index, entering behaviour test in Geography prepared and standardized by the investigator. Other tools used for the data collection were Joshi’s General Mental Ability Test and Study Habits and Attitude Inventory. Mean, t-test, f-test and three way analysis of variance in a 2×2×2 factorial design were used for analyzing data and drawing conclusions. The major findings of the study were: 1. The Concept Attainment Model group of students did not differ significantly in Achievement from the traditional teaching technique group in high resource status educational institutions. 2. The students taught through the Concept Attainment Model showed better achievement in Geography than the traditional teaching technique group in average and low resource status educational institutions. 3. The Inductive Thinking Teaching Model group proved itself to be more effective for achievement in Geography in Comparison to the traditional teaching techniques as well as the Concept Attainment Model, irrespective of the resource status of educational institutions. 4. The main interaction effects of high and low levels of educational institution resource status, Inductive and Concept attainment Models of teaching, and achievement in physical and human geographical concepts were found significant beyond .011, .5, 0.1 levels of confidence respectively. 5. No other combined interaction effect was found significant. 6. Achievement of class VIII students belonging to high resources status educational institutions was found significantly better in geography in comparison to their counterparts in low resource status institutions in the Concept Attainment as well as in the Inductive Model Groups. 7. The students showed better Achievement in Physical Geographical concepts in comparison to human geographical concepts irrespective of the high or low resource status of the educational institutions. 8. The models of teaching approach produced better achievement in geography even in low resource status educational institutions.
Patil.T.B (1985) conducted an inquiry into the present position and problems of teaching Geography in the Rural Secondary Schools of Solapur District. The main objectives of the study were (i) to study the existing facilities available for teaching of geography in rural secondary schools, (ii) to study the professional preparation of geography teachers, (iii) to study the methods and techniques followed in the teaching of geography, and (iv) to suggest measures helpful in improving the teaching of geography. The study was of the survey type. The investigator used the following tools for gathering information: (a) A questionnaire for geography teachers, (b) structured interviews for headmasters, parents and experts, (c) visits and observation. The questionnaire and the interview schedules dealt with different aspects of geography teaching, like teacher, students, objectives, curriculum, teaching, evaluation and facilities such as library, museum, etc. The number of schools covered was 155 and the estimated number of geography teachers was 360 (i.e. two teachers per school). Out of these respondents 80 teachers responded. In order to check and validate the information furnished by the geography teachers, interviews of 40 headmasters, 20 parents and 40 experts were held. The investigator visited 20 schools and conducted discussions with students and teachers from these schools. He also observed the lessons of the teachers through no specific observational instruments was used. The data collected were analysed using percentages and arithmetic means. The major findings of the study were: 1. Facility of a geography room nor museum was available in a large number of schools, and the facilities of library and teaching aids were inadequate. 2. The teachers of geography were academically and professionally well qualifies; however, they could not participate in the in-service programmes and the activities of the subject teachers, association for various reasons. 3. According to the teachers, the objectives of teaching geography could rarely be achieved through regular teaching due to inadequate time. 4. The majority of the teachers followed traditional methods such as or question answer method, however, they were aware of certain recent techniques and method like evaluation approach. 5. Geographical
excursions were one of the main co-curricular activities organized in schools. 6. The percentage of students passing in the subject of geography was found to be very high.

Elbie Mwenesongole (2005) conducted a study to identify the factors that contribute to poor and good performance of learners in Geography map work at Grade 12 level in the South African schools. In this study, the factors influencing learner achievement in Grade 12 Geography map work were investigated. The investigation involved 208 research participants from schools in Mafikeng District. Survey method was used to collect the data from educators and learners. Questionnaires and interviews reflected the learners’ achievement, school problems and how the learners’ performance could be improved. Observation which was both participatory and non-participatory served two purposes: to establish the teaching strategies/methods used in the classroom, and to establish the classroom interaction between educators and learners and their influence on learner achievement. The findings revealed that most learners did not perform well in map work because they lack motivation in doing map work, basic skills to map reading, and basic mathematical skills. The study also revealed the need for re-skilling and retraining of all educators involved in teaching map work in areas of basic skills of map reading and interpretation, basic mathematical skills and the need for the educators to realize the importance of motivation.

Falaye, F. V. (2006) studied the influence of numerical ability, course of study and gender differences on students’ achievement in practical geography. Practical Geography is dreaded by secondary school students. Many of them believe that this aspect is mathematical. Therefore the study investigated the influence of numerical ability, gender and course of study on secondary school students’ performance in the practical aspects of geography. Using 367 Geography students as the study sample and three validated instruments, the data collected were subjected to \( t \)-test, Levene’s test
and univariate ANOVA. Findings of the study showed the course of study and numerical ability differentiated students’ performance whereas gender did not.

Dorothy Bernadette Felix (2012) attempted to find the relative status of achievement of Process Skills and Map Skills compared between Secondary School students of Seychelles and Mysore (India), and experimentally study the effects of Inductive Thinking Model of Teaching (by Hilda Taba, 1966) on the development of Competencies – Knowledge and Understandings, Process skills and Map Skills, in the learning of Geography among Secondary students in Seychelles. The purpose of the study was to study and make comparisons between the Secondary schools of Seychelles and Mysore (India) in levels of achievement in Map Skills, and Process Skills. Another aim was to prepare an Instructional Programme using a strategy based on Hilda Taba’s Inductive Model of Teaching to develop expected competencies in Geography among Secondary students at S1 level in Seychelles, and finally compare the effectiveness of teaching through the Instructional Programme in terms of achievement of the selected competencies in Geography among secondary students at S1 level. The methodology of the study is divided into two phases: descriptive and experimental phases. The descriptive phase included survey of achievement levels of Map Skills and Process Skills among 8th Standard students in Mysore and among S1 students in Seychelles, and the experimental phase conducted in Seychelles in two schools using post test-two group design. Some results of the study were that the girls are better than the boys in Seychelles in all the Map Skills and that the students in India are better than Seychelles students in all sections of Process Skills. It was found that the experimental treatment based on Hilda Taba’s Inductive Thinking Model of teaching is more effective than the conventional treatment in the parallel groups in achievement in Knowledge and Understandings in Geography, in school 1, school 2 and, school 1 and 2 taken together both before and after adjusting for the covariates namely; Pre-achievement in Knowledge and Understandings in Geography” and Intelligence. This model of teaching was
built into the instructional programme which was activity-based. Hence it is also demonstrated that the instructional programme was effective. Further, it is demonstrated that the developed programme is feasible from the following points of view – one, it can be fitted into the existing Geography curriculum, and two it is perceived favourable by the students who were exposed to it.

Nandita Deb (2012) examined the effectiveness of few Micro teaching skills of teaching Geography in terms of achievement level of the students of secondary schools. The study included 40 students (20 Experimental group and 20 control group). This study definitely indicated the great potential of microteaching in assisting geography teacher-trainees with the implementation of learner-centered instruction in classrooms. It was found that the focused feedback and encouragement, combined with the examples set by fellow-students, helped to change trainees’ perceptions on the value of learner-centered instruction. It was also found that microteaching gave students the opportunity to make thoughtful judgments on their own and fellow-students’ lesson presentations and help them to develop their teaching abilities. The results of the study further revealed that significant differences had taken place in the scores of the students who were taught geography by using several micro-teaching skills by the trainee teachers. The findings of the study also claimed that micro-teaching technique brings positive results in terms of providing student teachers with classroom management skills, which further provide positive results in the achievement level of the students.

Lena Molin & Ann Grubbstro M (2013) examined the relationship between selective traditions in geographical education, what middle school teachers choose to emphasize in geographical education, and student achievement. The study, conducted in Sweden, was based on observations made by students in teacher training programmes, interviews with teachers, and analyses of a test administered to middle school students. The study included three teachers, one student teacher, and 106 students. The study showed that
selective traditions in geographical education were strong, and hence resulted in a focus on country-related knowledge and map reading skills. Both teachers and students seemed unclear about what other subject-specific skills geography teaching provided. Furthermore, students had difficulty achieving a high level of geographic reasoning. It was argued that a subject-specific language in geography is important in both teaching and assessment. They stressed that students needed more practice in geographic reasoning, since this was required by the new curriculum and in the national test in geography for Year 6 (i.e. pupils in the age range 12-13 years). The study added to earlier research by highlighting Swedish middle school teaching, which was a neglected field within curriculum studies.

Obondo Gaudence, Jaction K. Too and Violet K. Nabwire (2013) took up a study with the main objective of investigating if video can enhance learning based on Cohun’s and Edgar’s theories on hearing, sight and learning experience arranged in hierarchy. The study adopted Experimental research design involving pre test-post test control group design. The target population was provincial schools in Homa Bay district. The sample size was 194. Stratified random sampling procedure was used to obtain four schools. The experimental group was exposed to teaching that integrated video for three weeks and the control group was exposed to conventional teaching for the same duration. Both quantitative and qualitative approaches were used to collect data. Post-test and questionnaire were administered to all respondents. Data was analyzed through use of inferential statistics viz., t-test and Chi-square. Descriptive statistics viz., means, frequencies, percentages and standard deviation were used. Hypothesis was rejected at significance level of 0.05. The results of the study showed that use of video in teaching enhanced learning achievement. It was established that video motivates and enhances understanding, retention and participation. The findings of this study created awareness and need for integrating video in teaching and learning for improved performance in Geography. It was recommended that use of video be supported
It was also recommended that Geography curriculum had to embrace ICT, and teachers had to be equipped with skills and knowledge they need to use video for teaching of Geography.

2.4 Studies related to Group Cohesiveness

Kern, Wilfried (1992) investigated the effects of group cohesiveness on group conformity, and on member satisfaction. In this study, group cohesiveness, group conformity, and member satisfaction were considered to be constructs. The major research hypotheses suggested that group cohesiveness had an effect on member satisfaction, on acceptance of social influence, and on compliance with the group. The study examined also the role of the moderating variables of self-esteem, sociometric status, and gender. 77 undergraduate students at Virginia Tech participated in a decision-making experiment. The students were led to believe they were assigned to congenial work groups based on their responses to pre-experimental questionnaires. In fact, the students were randomly assigned to groups, and randomly assigned to one of the two treatment conditions high or low cohesiveness. The experimental results suggested that group cohesiveness and member satisfaction were significantly correlated. There was no evidence for a relationship between group cohesiveness and acceptance of social influence. This finding, however, should not be generalized since it is possible that group cohesiveness has no immediate impact on acceptance in emerging groups. The results also suggested that there is a relationship between group cohesiveness and compliance. Students who were assigned to the high cohesiveness treatment complied more frequently with their group than students who were assigned to the low cohesiveness treatment.

Faria A J (1996) examined team cohesiveness as a multidimensional construct composed of perceived interpersonal cohesiveness and perceived task cohesiveness as related to business simulation game performance. The study involved a sample of 316 students divided into ninety-one simulation teams.
who played The Marketing Management Simulation. It was found that beginning perceived interpersonal and perceived task cohesiveness was not related to ending simulation performance. However, ending perceived task cohesiveness was related to ending game performance but ending interpersonal cohesiveness was not. The findings were taken as support for the multidimensional view of the cohesiveness construct as described.

Michael A. Hogg and Sarah C.Hains (1998) study failed to clarify the causal role of group cohesiveness in groupthink because of a failure to distinguish cohesiveness from friendship. To remedy this, a conceptual distinction, based on social identity theory, is drawn between positive regard grounded in interpersonal relations (personal attraction, friendship), and solidarity grounded in group identification (depersonalized social attraction, true group cohesiveness). An experiment compared the roles of friendship and social attraction in groupthink. Four-person discussion groups of friends, or socially attractive or random groups of strangers, made decisions (N=472). Background conditions for groupthink were established, and a wide range of subjective and behavioural measures of friendship, identification/social attraction, and the decision-making process were taken. Analyses isolated effects associated with friendship/personal attraction, from those associated with identification/social attraction. Friendship was found to be weakly and negatively related to symptoms of groupthink, while group identification and social attraction were strongly and, with some exceptions, positively related to symptoms of groupthink.

Leisa D. Sargent and Christina Sue-Chan (2001) examined the relation between racio-ethnic diversity and group efficacy. Social cohesion was hypothesized to moderate this relationship. The sample consisted of 42 student project groups. Data was gathered at the completion of the groups’ projects. Results indicated support for the hypotheses that racio-ethnic diversity was positively related to group efficacy, that the effect of racioethnic diversity on
group outcome efficacy was enhanced by social cohesion and some support for the mediating role of task interdependence.

Elaine Chapman (2002) examined whether the effects varied with the incentive structure under which groups worked and with the level of social cohesiveness between group members. 89, 5th and 6th grade students were assigned randomly to one of four conditions in a 2 (incentive) by 2 (cohesiveness) factorial designs. Results indicated that students who received rewards based on their individual contributions to an overall group product outperformed those who received rewards based on an overall group product alone. Students in the former condition also made significantly greater pre-post increases on a sociometric scale. In contrast, students who worked in groups that were high in social cohesiveness were found to perform marginally worse than those who worked in low cohesive groups. Implications of these results for theory and practice in the area are discussed.

Scott Glass.J and James M. Benshoff (2002) conducted an experimental study to examine the effects of participation in a low-element challenge course on younger adolescents' perceptions of group cohesion. A pre and post test of the Group Cohesion Evaluation Questionnaire was administered to 167 participants, 76 male and 91 female, between the age 11 and 14 from public schools in Eastern North Carolina. It was found that group cohesion was developed through the one-day, low-element challenge course experience. It was also found that race, gender, and age of participants did not affect their perception of group cohesion. Statistically significant increase in mean scores from pre to post-tests (+4.35) was found, suggesting that participants did perceive increased group cohesion as a result of participation in the challenge course program.
Elizabeth J. Rozell and David E. Gundersen (2003) explored leader impression management (LIM) as a predictor of group cohesion, consensus, and communication using a sample of 105 undergraduate business students from a midwestern university. Results indicated that the Impression Management (IM) tactic of exemplification was predictive of group cohesion, feelings regarding group member relationships and decision processes, and feelings regarding group decision outcomes. The IM tactic of ingratiation was positively related to group cohesion. Helplessness was negatively related to feelings regarding group member relationships and decision processes.

Todd M. Loughead and Albert V. Carron (2003) examined whether cohesion serves as a mediator between leader behavior and participant satisfaction. The sample of 90 female (Age 40 years) participants was enrolled in recreational exercise programs. Each participant was assessed on cohesion (individual attractions to the group-task and -social, group integration-task and -social), class leader behaviors (commitment to service quality, interpersonal interaction, and task interaction), and satisfaction (satisfaction with involvement and satisfaction with service). Findings of the study for respondents scoring high in preferences for commitment to service quality, individual attraction to the group-task served to mediate the relationship between the leader behavior of perceived commitment to service quality and satisfaction with involvement. For respondents scoring high in preferences for task interaction, individual attraction to the group-task served to mediate the relationship between the leader behavior of perceived task interaction and satisfaction with service. For respondents scoring low in preferences for task interaction, individual attraction to the group-task served to mediate the relationship between the leader behavior of perceived task interaction and satisfaction with service.
Chansler P.A and Swamidass P.M and Cammann C (2003) examined the determinants of group cohesion in self-managing work teams (SMWT) called “natural work groups” (NWG) at the Harley-Davidson Motor Company’s Kansas City, MO (HDKC), assembly plant. At this plant, NWGs are empowered to successfully run the business of assembling motorcycles. A 156-item survey was completed by 233 employees (67% response rate) at the plant. Regression model, which includes the two statistically significant independent variables, (a) employee control over team staffing and (b) perceived fairness, explains nearly 42% of the variance in group cohesion.

Rajnandini Pillai and Ethlyn A Williams (2004) examined a model proposing that transformational leaders build committed and high performing work groups by enhancing employee self-efficacy and cohesiveness. Questionnaires were completed by 303 fire department personnel following preliminary in-depth interviews with fire rescue personnel. After accounting for missing data, 271 responses were included in the data analysis. Results indicated support for the theoretical model in comparison to three alternative models that were considered.

Jordan and Troth (2004) studied 108 teams in an undergraduate introductory management course to identify the relationship between conflict resolution, team cohesion, and team performance. Utilizing mixed methods, Jordan and Troth found that emotions and Emotional Intelligence (EI) are important factors influencing group performance. However, the teams they studied only had three members. Jordan and Troth admitted that the increase in members would have likely changed their results. Furthermore, the students who they studied only worked together for one day on a single task.

Mariana Lima, Sofía Liberman and Jane M. Russell (2005) conducted a study on the relationship between the bonding number and a measure of group cohesiveness on a Likert-type scale in three research areas, Biotechnology, Mathematics and Physics, at the National University of Mexico (UNAM). A
total of 45 scientists were intentionally drawn from the three disciplines: Physics, Mathematics and Biotechnology (15 from each). Sample of scientists had an average age of 44.5 years. Physicists had an average of 18.2 years working at the University, mathematicians, 14.9 and biotechnologists, 11.9. They found a difference between disciplines with regard to group size. Although there was little difference between disciplines in cohesiveness, results suggest that there was a direct relationship between the level of cohesiveness and the bonding number in Physics and Biotechnology, but not in Mathematics where the groups are much smaller. Findings indicate that Mathematics is different from Biotechnology and Physics with respect to bonding number, Physics was the “odd man out” on the cohesiveness scale. Mathematicians tend to publish alone or with few co authors explaining their low bonding number compared to Biotechnology and Physics. When it comes to group dynamics it appears that the physicists give less importance to all four aspects related to group integration and task than do the researchers from the other two disciplines analysed.

Mikael Salo (2006) examined the relations between sociometric choices and Group Cohesion. Data were collected from records through a survey. Sociometric questionnaires were given to 537 group members in 47 squads near the end of their 6 to 12 months of conscript training in Finland. Results showed moderate, significant correlations between the number of sociometric choices received and perceived cohesion such that soldiers who were more often chosen as a friend or a combat partner felt that there was more cohesion in their group. Also, soldiers who received more sociometric choices had higher expected personal and group performance, better performance as rated by their instructors, more positive attitudes toward military service and future refresher training, greater well-being during conscript service, and fewer exemptions from duty during their service. Groups where soldiers made more in-group sociometric choices were also found to be more cohesive based on questionnaire measures of cohesion. Overall, the findings suggested that socio
metric individual choices and group level sociometric cohesiveness were related modestly but positively to questionnaire-based cohesion measures and a wide range of criteria covering performance, attitudinal, and behavioral outcomes.

Mikael Salo (2006) examined the differences in cohesion among platoons in the Finnish conscript service and the relations between platoon cohesion and an array of outcome criteria. Data were collected from records and by questionnaires given to 514 platoon members in 21 platoons near the end of their 6 to 12 months of conscript training. Results showed that mean expected and rated performance, mental state, sense of personal growth, social skills aptitude, attitudes toward refresher training and national defense, and good conduct were related overall to strong platoon mean perceived cohesion. Platoon size was not found to be significantly related to cohesion. The different cohesion components (peer, leader, organizational, and institutional bonding) were found to be related differently to various predictor and outcome variables.

Richard Clement (2006) conducted a study on applied social psychological constructs to the acquisition of English in the unicultural Hungarian setting. A total of 301 Grade 11 students from the region of Budapest answered a questionnaire assessing their attitude, anxiety, and motivation toward learning English, as well as their perception of classroom atmosphere and cohesion. In addition, their teachers rated each of the students on proficiency and a number of classroom behaviors and evaluated the relative cohesion of each class group. Factor and correlational analyses of the results revealed that xenophilic (M=4.22 on a 1–6 scale), sociocultural (M=3.96), instrumental (M=3.78), and media-use reasons (M=3.79) were most strongly endorsed by the students whereas an identification orientation (M=1.81) was rejected. Factor analysis of the attitude, anxiety, and motivation scales confirmed the existence of attitude-based (integrative motive) and self-confidence, motivational sub processes and revealed the presence of a relatively independent classroom based sub process, characterized by
classroom cohesion and evaluation. Correlational analyses of these clusters revealed that sub processes were associated with achievement, self-confidence and anxiety showed no relationship to classroom atmosphere.

Kenna D. Hudgins (2007) investigated whether the grief process and group cohesion were affected by the incorporation of music therapy interventions into grief support groups. An independent groups design with one pre-test/post-test measure and one post-test only measure was used. The participants (n=13) were members of grief support groups who were registered in one of three possible groups. Each group met weekly for six weeks. Of the three support groups, one was assigned as the control group and the other two were assigned as experimental groups. Experimental Group A received music therapy interventions along with the grief counselling programming. Experimental Group B received the grief counselling programming with recorded background music while the Control Group received only the standard support group curriculum without music interventions. A standardized tool, the Hogan Grief Reaction Checklist (HGRC), measured the grief process in pre-test/post-test design through six factors: despair, disorganization, detachment, blame and anger, panic, and personal growth. A post-test Support Group Questionnaire measured group cohesion at the end of the six weeks. The Kruskal Wallis non-parametric statistical test was applied to analyze both the HGRC and Support Group Questionnaire. HGRC analysis revealed no significance on any of the six factors from pre-test to post-test change in grief process. Significant differences were not found in group cohesion among the three groups measured by the Support Group Questionnaire. A linear regression revealed no significance of group cohesion predicting the grief process. Findings suggested that referral-based grief groups yielded a better understanding of those struggling with complicated or unresolved grief.
Martin L. Martens (2007) examined the group cohesion using latent growth modelling methods that are well-suited to understanding how levels of cohesion may change over time. In this study with 106 groups, 11 different sections of a required Business Strategy course at a business school of a large Canadian University (N = 412), the mean age of participants was 24.2 years, and 52.9% were female. Participants were members of 106 groups that ranged in size from two to five members. The result of the study was an exploration into how the dynamics of cohesion affect the dynamics of group performance. In general, a positive, reciprocal relation between group cohesion and performance was observed. It was found that traditional regression analyses were consistent with prior cohesion-performance research.

Anca Cristina Colibaba (2009) aimed at studying situation-specific factors that contribute significantly to English Foreign language (EFL) motivation in a classroom context and the effect of a new approach that would be more pertinent to foreign language teaching. The approach adopted specifically involved increased classroom relevance of group cohesion and demanded an awareness of the social and psycholinguistic correlates of pedagogical interventions. The study included 182 high school students from seven different forms at six schools in Iași. Special care was taken to select a mix of schools in terms of both prestige and location. The teacher was found to influence class cohesion. Class cohesion was found to produce a positive perception of the learning environment by the student. In this learning environment, teacher-student group-task were viewed as an interdependent cluster. Student achievement was found to lead to self confidence and to motivation. The motivation produced by class achievement in the cohesive environment was found to be related to the group; it was not found to be integrative, nor related to the teacher or to the task/language.
Curt Ryan Wakefield (2009) studied the relationship between self-disclosure and cohesion in a religious setting. Altman and Taylor’s social penetration theory was used to understand self-disclosure in the unique setting of religious education. This relationship between self-disclosure and cohesion had been varied in the traditional school classroom and in therapy groups. The inconsistency of results regarding self-disclosure and cohesion as well as the unique setting of the religious classroom required further consideration. The study included 96 high school students from 12 different religious. Students had been in class for 4 months prior to this study. In addition, test subject’s degree of communication apprehension was examined by comparing partner, group, and class communication and their willingness and competency to communicate. The correlation between cohesion and self-disclosure in the religious classroom was found to be statistically significant (p = .001). In addition, students were found to perceive themselves as more competent and willing to communicate with a partner rather than with the entire class.

Soo-Young Shin Won-Woo Park (2009) examined the moderating effect of group cohesiveness both at the individual and at the group level. In the individual-level study, moderating effect of group cohesiveness was tested with 249 employees from a Korean manufacturing company. Group cohesiveness turned out to have a negative moderating effect on the individual competency-performance relationship, and the finding suggested that competency of a given group member would be restrained by other group members under high cohesiveness. In this group-level study, group data of 42 teams from the same company was collected. Unlike results at the individual level, group cohesiveness was found to have a positive interaction effect with competency on performance at the group level. In other words, group cohesiveness was found to reinforce competent group to achieve better performance.
Prerna Arora (2009) examined the effects of group cohesion in the context of a group Cognitive-Behavioral Therapy (CBT) treatment on changes in depressive symptoms in biethnic youth. CBT was an empirically supported intervention for the treatment of depression. Group processes occurring during therapy, such as group cohesion, had been proposed as mechanisms through which positive change occurred, though their effectiveness had only begun to be explored. Specifically, this study analyzed self-reports of group cohesion and pre- and post-treatment depression scores of 8- to 14-year old 146 girls of Latina and European-American undergoing a CBT treatment for depression. This study led to an increased discernment in cultural sensitivity with regards to the delivery of interventions for the treatment of depression.

Marianne Van Woerkom and Karin Sanders (2009) explored the effects of disagreement and cohesiveness on knowledge sharing in teams, and on the performance of individual team members. Survey included 1,354 employees working in 126 teams in 17 organizations. The findings showed that cohesiveness had a positive effect on the exchange of advice between team members and on openness for sharing opinions, whereas disagreement was found to have a negative effect on openness for sharing opinions. The exchange of advice in a team was found to have a positive effect on the performance of individual team members and acted as a mediator between cohesiveness and individual performance.

Ethlyn A. Williams, Rebecca Duray and Venkateshwar Reddy (2009) examined computer-supported collaborative learning. The study included 300 Master’s of business administration (MBA) students from online courses. The online courses delivered using E-education course software at Western university in an online program were surveyed to examine the extent to which an orientation toward teamwork and the development of group cohesiveness affected the overall student learning and the learning that results specifically from team interactions (team-source learning). The results indicated that both teamwork orientation and group cohesiveness predicted student learning, with
group cohesiveness mediating the relationship between teamwork orientation and student learning. Teamwork orientation and group cohesiveness appeared to be equally important predictors of team source learning.

Rune Hoigaard, Reidar Safvenbom, and Finn Egil Tonnessen (2009) examined the relationship between group cohesion, group norms, and perceived social loafing among 118 soccer players playing junior league in Norway. Each player completed a questionnaire assessing group cohesion (task cohesion and social cohesion), team norms (productive norms, role involvement, and social support norms), and perceived social loafing. As predicted, all cohesion and team-norm subscales were negatively correlated with perceived social loafing. Furthermore, the results showed that the players’ attraction to their team’s task as well as their perception of the productive- and social-support norm predicted perceptions of social loafing. A significant three-way interaction between task cohesion, social cohesion, and performance norm emerged. The analysis showed that the combination of high social cohesion, low task cohesion, and low team norms seemed to underlie perceptions of social loafing.

Xiangli Gu (2009) conducted a study to measure group cohesion during the early stages of group development affect subsequent adherence behavior in college female students participating in structured exercise classes. Participants were 124 female college students (M age = 21.37) enrolled in aerobics classes at a southeastern university. Pearson correlations and multiple regression analyses was used to assess the effects of group cohesion on students' perceived effort and exercise attendance during the program. Pearson correlations indicated that group cohesion correlated with perceived effort and exercise attendance. Findings showed that specific measures of group cohesiveness were associated with adherence behavior in exercise settings involving female college students.
Chi-Cheng Huang (2009) conducted a study on a research model based on knowledge sharing and group cohesiveness to examine team performance in technology R&D teams. The research model composed of two parts: knowledge sharing predicted by the trans active memory system (TMS) and trust, and team performance predicted by knowledge sharing and group cohesiveness. This research model was assessed using data from a sample of 290 members of 60 R&D teams in a government-supported R&D institute and was analyzed using the partial least squares (PLS) method. The results of this study suggested TMS positively and significantly mediates the relationship between trust and knowledge sharing and group cohesiveness exerts a positive and significant effect on team performance.

Quoidbach and Hansenne (2009) examined the relationship between Emotional Intelligence (EI), work performance, and group cohesiveness in 23 professional nursing teams in Belgium. The participants in this study worked for a hospital and were primarily women. Quoidbach and Hansenne utilized the Modified Schutte Emotional Intelligence (EI) Scale to assess the EI of each team. They found that even one member with a low EI score or a very high EI score can have an effect on the performance and cohesion of the entire group. Additionally, they found that emotional regulation was the most important quadrant of EI in predicting team cohesiveness and work performance.

Thomas W. Treadwell (2011) study examined the notion that the construction and telling of a collaborative group story would facilitate the development of group cohesion within the context of an actual classroom setting over the duration of the course. Participants were 125 students in 8 classes (4 experimental, 4 control) of a group psychotherapy course that focused on the principles and techniques of cognitive behavior therapy in conjunction with psychodrama techniques. Results showed significantly higher cohesion scores in the experimental condition compared to the control condition, suggesting that collaborative story building and telling is a viable strategy for improving group cohesion.
Xiangli Gu, Melinda A. Solmon, Tao Zhang and Ping Xiang (2011) examined the predictive strengths of group cohesion on students’ motivation (expectancy-related beliefs and subjective task values) and motivational outcomes (exercise choice and class attendance) in college physical activity classes. Study included 121 female college students (Mean age = 21.4, SD = 4.3) who took part in four group aerobics classes at a south eastern university in the United States. Participants enrolled in aerobics classes completed questionnaires assessing group cohesion, motivational constructs, and exercise choice. Group cohesion constructs were significantly associated with motivation and motivational outcomes. Findings provided insight into how to design environments to promote motivation in physical activity classes.

Usha Borkar and Madhura Kesarkar (2012) took up an experimental study with the purpose of determining the effect of Cooperative Learning Strategy on group cohesiveness. The study was restricted to the student teachers undergoing the B.Ed degree course in English medium from the Colleges of Education affiliated to University of Mumbai, 84 Subjects were randomly placed into experimental and control groups. The experimental group was subjected to intervention using a Training Package on Cooperative Learning Strategy of fifty hours duration and Post test was administered to both the groups after completion of the intervention. The results of post test of both the groups were compared to determine the effect on group cohesiveness. The study asserted that Cooperative Learning made everyone responsible for his/her part in the group work and also responsible for helping others with their parts.

Amanda Moore and Ketevan Mamiseishvili (2012) investigated the relationship between emotional intelligence (EI) and group cohesion by studying 44 undergraduate teams who were completing semester-long projects in their business classes at a small private university. Explanatory correlational design was used to evaluate the relationship between EI and group cohesion.
The results showed that there was a significant positive correlation between overall emotional intelligence and total group cohesiveness. Of the quadrants of emotional intelligence, awareness of own emotions, and management of others’ emotions showed the strongest positive correlation with group cohesion.

Xin Zhao (2012) examined the role of five dimensions of Asian values (collectivism, conformity to norms, emotional self-control, family recognition through achievement, and humility) as a moderator in the relationship among peer group cohesion and four dimensions of college adjustment (academic adjustment, social adjustment, personal-emotional adjustment, and attachment) among 150 Asian college students. Data were collected from Asian American and Asian international students attending a college in the United States who completed an online survey. 80% of the students reported low college adjustment on one or more dimensions measured. However, personal-emotional adjustment and attachment were found to be positively correlated with group cohesion. The results of the moderation analyses indicated that Asian value of humility moderated the effects of cohesion and personal emotional adjustment. Specifically, students who had lower Asian value of humility and high peer group cohesion also reported higher personal emotional adjustment. No other dimensions of Asian values were found to be significant moderators.

Mohd Zainal Munshid Bin Harun and Rosli Bin Mahmood (2012) examined the extent to which respondent’s perceptions of the relationship between task and social cohesion determined the performance in the cooperatives movement. Data was collected from 371 respondents from Malaysia Co-operative Commission through a questionnaire. The results showed that group cohesiveness was significantly related to the organizational performance. In addition both task and social cohesion were found to be significantly correlated with organizational performance as predicted by hypotheses. The results also presented new perspectives for cooperative
movement where members’ strong relationship could further contribute to the growth of the movement’s performance. The degrees of cohesiveness among members were found to determine the success of cooperative’s performance in stirring toward its future direction. The study also highlighted the need for future empirical research on group cohesion and performance in other context.

Joseph Singh (2013) conducted a study to compare the Group Cohesion at three different levels of competitions in football. 20 players were selected randomly from each levels i.e. Intervarsity, inter college and district players. To assess Group Cohesion at three different levels, Group Environment Questionnaire (GEQ) by Brawley and Widmeyer was used. F-ratio (Analysis of variance) was used to assess the data. No significant difference was found in Group Cohesion at all three levels of competitions in football.

**Insights from the review**

The overview of the researches reviewed related to Social constructivist Strategies (SCS), Achievement in Geography (AG) and Group Cohesiveness (GC), crystallized some of the issues and observations that helped in framing hypotheses, selection of tools for collection of data, sampling techniques, adopting experimental design and employing statistical techniques for analysis of data for the present study. Researches have shown that using Social Constructivist Strategies has a great effect on students’ achievements levels.

The overview of the related literature in general made clear that there is lot of research conducted on Constructivist in different areas. Apart from this, studies reviewed stressed that Constructivism is an epistemology that views of learning rather than teaching and knowledge cannot simply be transformed from teachers to students, it has to be conceived. One of the study reviewed emphasized the readiness of teacher, curriculum and society for the success of Constructivist strategies. Reviews also enumerated the imported characteristics of Constructivist approach. A drastic change can be deducted from the review with respect to the role of the teacher in the Constructivist paradigm. Along
with this, studies stressed the importance of Social Constructivism. Research
support for constructivist teaching techniques has been mixed, with some
research supporting these techniques and other research contradicting those
results.

Lucks (1999) surveyed teachers in New York, Delaware, and Maryland
and asked their opinion on Social Constructivist teaching and why? Many
teachers that were surveyed said, “Social Constructivism is great in the special
education inclusion class. It leads itself to higher order thinking and
cooperative learning strategies. It enhances relevance.” “This method sways a
teacher to become more organized.” “It is a great tool for teaching math
productively. It is a great tool in kindergarten for developmental learning.” In
using a socio-cultural approach, learning is focused on the types of social
engagement that obviously could enable learners to participate in the activities
of the expert (Cobb, 1994).

Social Constructivism as a pedagogical approach has wider scope in
various subject areas also. From the reviews it is found that few studies
concentrated on the effectiveness of Social Constructivism in ICT, Mathemastics,
Science and Technology, Physical Education, Education psychology. Studies have
found that most students liked working in cooperative groups and appreciated getting help from other students, especially
for learning difficult concepts. Several reviews of research have identified
Group Cohesiveness as an important variable for a variety of groups (e.g.,
therapy groups, living units, task groups, sport teams, and exercise groups) and
different types of group processes (e.g., influence, conformity, communication,
and behavior change). A few studies have focused on the effects of group
cohesion building on the development of prosocial behaviors and academic
performance of school-aged children. Studies have compared differences
between high Cohesive and low Cohesive groups in elementary classes on
completion of school tasks.
Review of related studies was also done in the area of teaching of Geography which is the main focus of this study. All the studies reviewed in this section showed that Constructivist approach is effective in imparting educational curriculum with special reference to science subjects. Cooperative learning, problem solving and jigsaw were some of the strategies applied in the Constructivist approach.

In spite of certain variables been researched upon as an effect of Constructivist approach, there are certain research gaps, which are obvious. For instance very few studies were found which stressed the effect of Constructivist approach on achievement in Geography and group cohesion. The review of related studies revealed that there is no study being conducted to investigate the effect of SCS on achievement in geography and group cohesion at secondary level in the Indian context. Drawing the essential cues along with the research gaps identified from the review carried out, the present study aims to explore the effect of Social Constructivist Strategies of teaching on Achievement in Geography and Group Cohesiveness secondary school students.