

***CHAPTER V***  
***MAJOR FINDINGS, DISCUSSIONS***  
***AND CONCLUSIONS***

### **5.1.0 INTRODUCTION**

The current chapter, titled " Key Findings, Discussions and Conclusions," focuses on the final aspects of the study, to be specific the overall conclusions derived from the study. The researcher arrived at this conclusive phase built on data analysis & interpretation, presented in the former chapter. However, this fifth chapter examines how the use of constructivist approach-based module might boost students' development of 4Cs in the context of learning their English subject. It presents the most important results of the current study and offers certain helpful suggestions to curriculum developers, policy makers, scholars and other stakeholders in the domains of language, and education. In this final chapter, the outcomes of the experimental study are consolidated and their educational implications are also interpreted. This chapter encompasses the following sections: i. Key findings of the study, ii. Comprehensive conclusions, iii. Discussion of the results, iv. Educational implications, v. Limitations of the study, vi. Future Research Suggestion and vii. Researcher's Reflection

### **5.2.0 KEY FINDINGS OF THE STUDY**

The crucial findings of the current research obtained through data analysis, are outlined below under the subsequent headings.

#### **5.2.1 Effect of CAM over TLM on the enhancement of overall Twenty first century learning skills in English subject learning at secondary stage.**

1. Students who were taught through CAM were found to be successful for enhancing overall Twenty first century learning skills in English subject when compared to the students who were taught through TLM. CAM was found to be highly effective over the TLM in facilitating the augmentation of overall Twenty first century learning skills in English subject among the learners at secondary school level.

#### **5.2.2 Effect of CAM over TLM on the enhancement of component wise Twenty first learning skills in English subject learning at secondary stage.**

2. The enhancement of critical thinking skill in English subject was more effectively achieved through the use of CAM rather than TLM in English learning at the secondary school level.

3. The enhancement of creativity skill in English subject was more effectively achieved through the use of CAM rather than TLM in English learning at the secondary school level.

4. The enhancement of collaboration skill in English subject was more effectively achieved through the use of CAM rather than TLM in English learning at the secondary school level.

5. The enhancement of communication skill in English subject was more effectively achieved through the use of CAM rather than TLM in English learning at the secondary school level.

### **5.2.3 Effect of Group, Gender and their interaction on overall Twenty first century learning skills in English subject learning at secondary stage by considering the pre-test as covariate**

6. i) Enhancement of overall Twenty first century learning skills of learners treated via CAM was evidently superior to TLM when both the groups were matched in respect of their pre-Twenty first century learning skills.

ii) There existed no significant effect of Gender on Overall Twenty first century learning skills in English subject learning at secondary stage while pre-Twenty first century learning skills was regarded as covariate. So overall Twenty first century learning skills was found to be independent of their Gender when pre-Twenty first century learning skills was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Gender on Overall Twenty first century learning skills in English subject learning at secondary stage while pre-Twenty first century learning skills was regarded as covariate. So, overall Twenty first century learning skills was found to be independent of interaction between Group & Gender of the students when pre-Twenty first century learning skills was regarded as covariate.

### **5.2.4 Effect of Group, Gender and their interaction on component wise Twenty first learning skills in English subject learning at secondary stage by considering their representative components at pre-test level as covariates**

7.i) Enhancement of critical thinking skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- critical thinking skill.

ii) There existed no significant effect of Gender on Critical thinking skill in English subject learning at secondary stage while pre- critical thinking skill was regarded as covariate. So

critical thinking skill was observed to be independent of their Gender when pre- critical thinking skill was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Gender on Critical thinking skill in English subject learning at secondary stage while pre- critical thinking skill was regarded as covariate. So critical thinking skill was discovered to be independent of interaction between Group & Gender of students when their pre- critical thinking skill was regarded as covariate.

8.i) Enhancement of creativity skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- creativity skill.

ii) There existed no significant effect of Gender on creativity skill in English subject learning at secondary stage while pre- creativity skill was regarded as covariate. So, creativity skill was found to be independent of their Gender when pre- creativity skill was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Gender on Creativity thinking skill in English subject learning at secondary stage while pre- creativity skill was regarded as covariate. So, creativity skill was independent of interaction between Group & Gender of students when their pre- creativity skill was regarded as covariate.

9. i) Enhancement of collaboration skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- collaboration skill.

ii) There existed no significant effect of Gender on collaboration skill in English subject learning at secondary stage while pre- collaboration skill was regarded as covariate. So, collaboration skill was found to be independent of their Gender when pre- collaboration skill was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Gender on collaboration skill in English subject learning at secondary stage while pre- collaboration skill was regarded as covariate. So, collaboration skill was observed to be independent of interaction between Group & Gender of students when their pre- collaboration skill was regarded as covariate.

10.i) Enhancement of communication skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- communication skill.

ii) There existed significant effect of Gender on communication skill in English subject learning at secondary stage while pre- communication skill was regarded as covariate. Male students were found to have higher communication skill as compared to their counterparts of Female students when pre- communication skill was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Gender on communication skill in English subject learning at secondary stage while pre- communication skill was regarded as covariate. So, communication skill was discovered to be independent of interaction between Group & Gender of students when their pre- communication skill was regarded as covariate.

#### **5.2.5 Effect of Group, Locale of Schools and their interaction on overall Twenty first century learning skills in English subject learning at secondary stage by considering pre-test as covariate**

11. i) Enhancement of overall Twenty first century learning skills of learners treated via CAM was evidently superior to TLM when both the groups were matched in respect of their pre- Twenty first century learning skills.

ii) There existed significant effect of Locale on overall Twenty first century learning skills in English learning at secondary stage while pre- Twenty first century learning skills was regarded as covariate. Students of Urban school were found to have higher overall Twenty first century learning skills as compared to the counterparts of students of Rural school when pre-Twenty first century learning skills was regarded as covariate.

iii) There existed significant effect of Interaction between Group & Locale of School on overall Twenty first century learning skills by considering the pre-test as covariate. Urban students belonging to the treatment group were found to have significantly greater 4Cs in comparison with the Rural students belonging to the experimental group. However, no significant difference between the urban students & the rural students of the control group was observed.

**5.2.6 Effect of Group, Locale of Schools and their interaction on component wise Twenty first century learning skills in English learning at secondary stage by considering their representative components at pre-test level as covariates**

12. i) Enhancement of critical thinking skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- critical thinking skill.

ii) There existed significant effect of Locale on critical thinking skill in English subject learning at secondary stage while pre- critical thinking skill was regarded as covariate. Students of Urban school were found to have higher critical thinking skill as compared to their counterparts of students of Rural school when pre- critical thinking skill was regarded as covariate.

iii) There existed significant effect of Interaction between Group & Locale of School on critical thinking skill by considering the pre-test as covariate. Urban students belonging to the treatment group were observed to have significantly greater Critical Thinking Skill compared to the Rural students belonging to the experimental group. However, no significant difference in critical thinking was observed between the urban & the rural students of the control group.

13.i) Enhancement of creativity skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- creativity skill.

ii) There existed no significant effect of Locale on creativity skill in English subject learning at secondary stage while pre- creativity skill was regarded as covariate. Thereby, both the students of Urban school and the students of Rural school were found to have creativity skill to the same extent when pre- creativity skill was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Locale on creativity skill in English subject learning at secondary stage while pre- creativity skill was regarded as covariate. Creativity skill was independent of interaction between Group & Locale of school when the pre-creativity test was considered as covariate.

14.i) Enhancement of collaboration skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- collaboration skill.

ii) There existed no significant effect of Locale on collaboration skill in English subject learning at secondary stage while pre- collaboration skill was regarded as covariate. Thereby, both the students of Urban school and the students of Rural school were found to have collaboration skill to the same extent when pre- collaboration skill was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Locale on collaboration skill in English subject learning at secondary stage while pre- collaboration skill was regarded as covariate. So, collaboration skill was observed to be free of interaction between Group & Locale of school when the pre- collaboration was considered as covariate.

15. i) Enhancement of communication skill of students treated through CAM was evidently superior to TLM when both the groups were matched in respect of their pre- communication skill.

ii) There existed no significant effect of Locale on communication skill in English subject learning at secondary stage while pre- communication skill was regarded as covariate. Thereby, both the students of Urban school and the students of Rural school were found to have communication skill to the same extent when pre- communication skill test was regarded as covariate.

iii) There existed no significant effect of interaction between Group & Locale on communication skill in English subject learning at secondary stage while pre- communication skill was regarded as covariate. So, communication skill was observed to be free of interaction between Group & Locale of school when the pre- communication test was considered as covariate.

### **5.3.0 OVERALL CONCLUSIONS**

The primary discoveries of this study served as the base for drawing comprehensive conclusions. When considering the present study from a broader perspective, it was possible to derive conclusions by examining a total of 25 experimental effects. The present study entailed a set of 25 experimental effects that were directly associated with the six main objectives of the research. The first five cases of experimental effects were related to the first and second objectives (i.e., study the effect of CAM over TLM for the enhancement of overall twenty first century skills, study the effect of CAM over TLM for the enhancement of component wise twenty first century skills comprising critical thinking, creativity,

collaboration & communication in English subject learning. Next ten cases of experimental effects were related to the third and fourth objectives (i.e., studying the effect of Gender, also the Group- Gender interaction on the enhancement of overall twenty first century skills, and studying the effect of Gender, also the Group- Gender interaction on the enhancement of component wise twenty first century skills such as critical thinking, creativity, collaboration & communication in English subject learning). The last ten cases of experimental effects were related to the fifth and sixth objectives (i.e., study the effect of Locale and the interaction between Group and Locale on the enhancement of overall twenty first century skills, and study the effect of Locale and also the interaction between Group and Locale on the enhancement of component wise twenty first century skills which are critical thinking, creativity, collaboration & communication in English subject learning). All of these experimental effects were analysed and studied with the help of ANOVA and ANCOVA. The statistical outcomes, obtained from ANOVA and ANCOVA analysis of all the 5 cases which were concerned about examining the experimental effect on the basis of treatment group, revealed that in every case the experimental cohort accomplished better than the control cohort. So, there existed neither any case in which the control group did better than the treatment group nor any case in which no substantial difference was found between the experimental & the control groups. Further, the ANCOVA of the next five cases which were concerned about examining the experimental effect on the basis of gender, showed that out of 5 cases, in 4 cases no significant difference was observed between boys and girls students, and only in one case it was discovered that male learners performed better in comparison with the female learners; so, no case was found where Female students performed better compared to the Male students. Subsequently, the ANCOVA analysis of the next more five cases which were concerned about examining the experimental effect on the basis of interaction effect between group and gender, exhibited that in all the 5 cases interaction effect between Group & Gender was found insignificant; there was no case found in which interaction effect between Group & Gender was found significant at 0.05 level. As per the ANCOVA results in the next five cases which were concerned about examining the experimental effect on the basis of locale of school, showed that out of 5 cases, in 2 cases significant difference was observed between Urban schoolchildren and the Rural schoolchildren, and it were the Urban learners who performed better compared to Rural Students at 0.05 level. And in the rest of the 3 cases no statistically significant difference was observed between the Urban & the Rural learners, and so no single case was found where the Rural learners performed better contrary to Urban learners. Finally, the ANCOVA analysis of



the last five cases which were concerned about examining the experimental effect on the basis of interaction effect between group and locale, revealed that out of the 5 cases, in 2 cases only interaction effect between Group & Locale was found significant at 0.05 level while in the remaining 3 cases the Group & Locale interaction effect was found insignificant. Taking into consideration all these inferences, the researcher arrived at the conclusion that the advantageous side of CAM as teaching-learning strategy for fostering the acquisition and advancement of Twenty first century learning skills among learners cannot be ignored at all. Because Constructivist Approach based Module had significant merit over TLM in terms of the development of 4Cs (overall as well as component wise) in the field of English Subject learning of students at secondary stage of education. When it comes to the development of overall 4Cs and its components on the basis of gender, both males and females were found to be benefitted equally from their learning through CAM in comparison to TLM when both the groups were matched with respect to their pretest scores except one case where the male students were found to have superior score in communication skill in comparison to the female students when both the groups were coordinated in terms of pre-communication scores. When it is about the enhancement of overall 4Cs and its components on the basis of locale of school, it was found that in case of the development of overall 4Cs and critical thinking skill among learners, the urban school students achieved significantly higher scores than the rural school students when both of the groups were matched on their respective pretest scores; but in case of the enhancement of creativity, collaboration & communication abilities, both the groups-urban as well as the rural school students performed equally well when both the groups were matched on their respective pretest scores. Nevertheless, it can be widely concluded that the usage of CAM exhibited greater potential for enhancing overall Twenty first century skills, and also its components in comparison to the usage of TLM in English teaching classroom.

A comprehensive chart has been presented that aims at demonstrating the experimental impact of CAM compared to TLM in the context of English Subject learning, as determined through the analysis of variance (ANOVA) and analysis of covariance (ANCOVA) scores.

**Table: 5.1 Master Chart illustrating the experimental effect of CAM over TLM in English Subject learning on the basis of ANOVA & ANCOVA results**

SI No.	Principal areas of English subject Learning	Sub areas of English subject learning	Experimental effect of Group on the basis of ANOVA and ANCOVA results			Experimental effect of Gender on the basis of ANCOVA results			Experimental effect of Group & Gender Interaction between on account of ANCOVA results		Experimental effect of Locale on the basis of ANCOVA results		Experimental effect of Group & Locale Interaction between on account of ANCOVA results		
			Cases where EG performed better compared to CG at 0.05 level	Cases where CG performed better compared to EG at 0.05 level	Cases where no significant difference discovered between EG & CG	Cases where Male performed better compared to Female at 0.05 level	Cases where Female performed better compared to Male at 0.05 level	Cases where no significant difference discovered between Male & Female	Cases where Interaction Effect between Group & Gender was found significant at 0.05 level	Cases where Interaction Effect between Group & Gender was found not significant	Cases where Urban students performed better compared to Rural Students at 0.05 level	Cases where Rural students performed better compared to Urban students at 0.05 level	Cases where no significant difference discovered between Urban & Rural students	Cases where Interaction Effect between Group & Locale was found significant at 0.05 level	Cases where Interaction Effect between Group & Locale was found not significant
1	Overall, Twenty First Century Learning Skills		√				√		√	√			√		
2	Component wise Twenty First Century Learning Skills	Critical thinking	√				√		√	√			√		
		Creativity	√				√		√		√		√	√	
		Collaboration	√				√		√		√		√	√	
		Communication	√			√			√		√		√	√	
Total Cases =25			5	Nil	Nil	1	Nil	4	Nil	5	2	Nil	3	2	3

#### **5.4.0 DISCUSSION OF THE RESULTS**

This discussion section involves a thorough description, analysis, interpretation & explanation of the obtained outcomes of the research. The discussion of the main findings has been conducted within the context of pre-existing literature. For this purpose, the researcher revisited the existing related literature and analysed whether the research findings of the study aligned with or diverged from the existing literature. Coherent explanation had also been provided to study the underlying factors or issues that might have attributed to their observed outcomes.

Objective wise the significant findings of this study were interpreted in connection to prior studies to find out whether the research findings fit in with those earlier reviews. They were as follows:

**Objective No. 1: To develop a constructivist approach-based module from the selected units of the English Textbook for students of class IX in order to enhance twenty first century learning skills in English subject**

Previous literature in this regard can be found that primarily concentrated on the development of learning modules in alignment with the educational theory of constructivism, and provided necessary guidelines to the researcher regarding the designing of constructivist module. As per the requirement of first objective the researcher developed CAM on English subject that exhibited similar traits or influences of the prior studies carried out by Kaur & Singh (2017), Andika, et al. (2023), Beers, et al. (2003), Rufii & Rochmawati (2019), Nopparatjamjomras (2012), Loe (2017), Natalia & Kerdid (2022), Funa & Talaue (2021). All these studies focused on preparing modules based on the guiding tenets of constructivist approach to learning. However, studies mentioned in this regard are different with respect to their context as they had been conducted in different discipline-areas including Mathematics, Biology, Social science, English language Subject, Economics, Statistics and so on. They aimed at improving pupils' academic performance in their respective fields with the help of constructivist module. The present study too developed a constructivist approach-based module that is found largely in line with the aforementioned studies in terms of including innovative learning experiences that emphasise on students' active engagement, reflexive cognition, cognitive apprenticeship, different perspectives, process-based evaluation and students' exploration critical thinking, creativity and other skills; and in terms of the utilisation of exciting and novel classroom activities like brainstorming, providing motivation

or insight, articulating learning objectives, and providing relevant examples or illustrations, small group studies and peer-led debates along with discussion exercises, formative tests, answer keys. The very development of the constructivist-oriented module in this study, thus, prominently demonstrated similar designing process of module using a constructivist perspective highlighted by prior research studies.

**Objective No. 2. To study the effect of the constructivist approach-based module (CAM) over traditional lecture method (TLM) on the enhancement of overall Twenty first century learning skills in English subject with regard to the pre-test and post-test scores.**

Prior studies conducted by Kaur & Singh (2017), Loe (2017), Natalia & Kerdid (2022), Funa & Talaue (2021), Anwar & Rahmawati (2017) provided the similar outcomes in terms of examining the efficacy of the developed constructivist approach-based module. All these studies though attempting to achieve different objectives like studying the academic achievement score, motivational level, attitude or perception of students etc. came with similar findings that indicated that learners who gained the exposure of constructivist learning process successfully beat those who were instructed through conventional methods. Thereby it can be said that results of these previously conducted researches are corroborating positively with the current study in the light of confirming that constructivism leads to more effective learning, There were other studies conducted by Price, (2008), Muller et al. (1998), Phillips (1995), Duffy & Cunningham (1996), Dullien ( 2005), Altun & Büyükduman (2007) Kumar, & Teotia, (2017), Gautam (2016), Kim (2005), Shah (2019) and Rout (2020) that acknowledged the advantages associated with the constructivist approach to the field of education and thereby, supported the research outcome of the present study that was in favour of the application of constructivism in classroom scenario. They all favoured the implementation of constructivist learning framework as the highly influential paradigm in elucidating students' knowledge building process.

Within the context of adoption of constructivist approach in the realm of English language subject learning, existing literatures including the studies of Vannak (2012), Mvududu & Burgess (2012), Sharon & Trina (2008), Chaudhari (2014), Sharma & Poonam (2013), Dev (2016), AlShareef (2015) and Zhang (2008) revealed the crucial role of constructivism in facilitating the learning of the English Language Learners students, in enhancing the basic objectives of English language teaching like: comprehension, communication, application,

expression and creativity, in the development of English reading proficiency, grammar and translation as well. Thus, all these studies in relation to the application of constructivism in English subject learning of school students strongly supported the results of the present study. If the efficacy of constructivism in different subject areas for better learning outcome is studied, again it was observed that constructivism was proved to be an effective approach for more successful and productive learning when compared to the typical lecture-based approach to teaching-learning process. This finding was revealed in past studies like Khanna (2008), Singh (2011), Adak (2017), Nair (2014), Bimbola & Daniel (2010) in science, Olivier (1999), Gupta, N. (2021) in mathematics, Achary (2016), Tabago (2011), Ibrahim (2001) in physics, Fui (2010) in chemistry, Khalid & Azeem (2012), Oguz (2008) in teacher education, Kelley (1999) in liberal arts where the participants belonging to the experimental group being enriched through constructivist learning model demonstrated significantly higher levels of achievement compared to those participants belonging to the control group who were taught using regular teaching techniques. Thus, again these studies, in spite of being undertaken in different streams, more or less corroborate with the current study in terms of accepting constructivism as an effective learning theory to be practiced in real learning environments. On the other hand, there were certain previous studies carried out by Hanife (2003), Vaca et al. (2010), Pettitt, (2008), Brown-Lopez & Alva (2010) revealing no significant effect of a constructivist learning method on students' academic performance, and some competence development which undesirably corroborated with the outcomes of the present investigation.

Noticeably, there were few studies conducted regarding the constructivist learning theory in relation to 4Cs development. Researches undertaken by Anagün (2018), Orak (2021) demonstrated positive correlation 21st century competencies and constructivist learning elements. Thereby, they supported the outcomes of this present research which also upheld the strong connection between 21st century skills and their alignment with the constructivist learning paradigm in the context of English subject teaching. Prior studies like researches carried out by Brokensha (2007), Golder, J. (2018), Achzab et al. (2018), Van (2019), Vafaeikia (2023) highlighted that constructivist learning framework can be utilised to cultivate critical thinking, creativity, reflective skills and other relevant skills and also to foster effective learning experiences. The findings of these studies indicated that constructivist approach is an effective instructional tool for facilitating the development of 21st century abilities, and thereby, recommended that these learning skills need to be integrated into the school curriculum for enabling the enhancement of 21st century abilities

among students. These outcomes derived from the aforementioned researches were in favor of the results of the current study in the light of recognizing the effective enhancement of 4Cskills through the use of constructivist learning strategies.

**Objective No. 3. To study the effect of CAM over TLM on the enhancement of component wise Twenty first learning skills (critical thinking, creativity, collaboration and communication) in English subject with regard to the pre-test and post-test scores**

Earlier research studies carried out by Sheela (2015), Ranjana (2022), Joseph (2018), Seeja (2012), Rumpagaporn (2007), Topolovčan & Matijević (2017), Kwan & Wong (2015), Ernst and Monroe (2006), Beach (2007), Dill (2003), and Hung (2002) exhibited that constructivist strategies are very efficient in developing critical thinking of school children, and thus their findings were found to be in line with the results of this present study. The present study resonated the similar view regarding the beneficial effect of constructivism-oriented learning on the development of critical thinking skills, but it disagreed with the finding of the study conducted by Iranfar (2009) that resulted in the acceptance of the null hypothesis stating that there was no significant difference between the pre-test and post-test scores of totals of critical thinking in constructivist learning.

The current analysis concerning the development of creativity skill within the purview of constructivism is consistent with the findings found in existing studies conducted by Sharma (2019), Singh & Gihar (2020), Pillay (1976), Bam (2006), Ubbes et al. (1999), Jarutkamolpong, et al (2023), Tan (2018), Ubaidah & Aminudin (2019), Yustina, et al (2021) Sriburin et al. (2022), Guaman-Quintanilla et al (2023), Saggu (2012) and Joy (2014) as they all agreed with the positive impact of implementation of the constructivist approach on creativity enhancement. Current study favorably corroborated with these aforesaid researches which reported that learners instructed with the help of the constructivist techniques, showed superior performance in creativity compared to the learners instructed through traditional pedagogical approaches.

Prior research studies conducted by Bansal (2018), Mahesha (2014), Nyikos & Hashimoto (1997), Ashcraft et al (2008), Alzahrani & Woollard (2013), Ramsook (2018), Behera (2014), Jin et al (2020) and Zhang (2023) more or less demonstrating that constructivist learning environment enriched with the utilisation of innovative constructive learning strategies was significant in fostering group cohesiveness and facilitating the improvement of collaborative abilities of students, were positively related to the current study. In line with the findings of

those studies, the present research also suggested that constructivist theory should be adopted in real classroom practices due to the considerable efficacy of the constructivist learning approach for fostering collaboration skills among learners.

There were some previously conducted studies done by Burlison (2006), Reich (2007), Gruba and Lynch (2000), Gaikwad (2017), Divya (2013), Shubhangi (2017), Bodie & Jones (2015), Rao (2019), Boeriswat et al (2021), Selim (2022), Loy (2006), Hadijah (2018), Umida & Umar (2020), Saidalvi & Mansor (2012) Sakti et al (2020) that were observed to support the advantageous side of Constructivist learning techniques to improve communication competence, were thereby, aligned with the research outcomes of the present study. Because the present study also arrived at the conclusion that constructivism as an instructional strategy for improving communication skills in English was effective.

**Objective No. 4. To study the effect of Group, Gender and their interaction on overall Twenty first century learning skills by considering the pre-test as covariate**

The concept of 21st century learning skills as an integrated framework is one emerging discourse that is currently getting significant recognition in the academic community. As a result of which there were found few studies relating to the comprehensive theory of 4C skills and its utilisation in the field of education. They had not, however, delved into detail however, gone into detail on the investigation of the 4Cs' overall development in relation to gender.

Noticeably, few studies were available that aimed at studying the impact of constructivism in the development of academic performance, improvement of subject oriented content knowledge and process skills on the basis of gender categorisation of learners. While earlier research study conducted by Singh (2011) showed significant difference in the academic performance of male and female students, majority of other studies by Nair (2014), Ibrahim (2001), Ryak (2003) reported that there existed no significant difference between boys and girls students in their performance. So, if the efficacy of constructivist learning approach is separately considered, it can be said that the finding of Singh (2011) did not positively correlated while the findings derived from the studies conducted by Nair (2014), Ibrahim (2001), Ryak (2003) positively correlated with the outcomes of the present study which also revealed that there existed no significant effect of Gender as well as that of the interaction between Group and Gender on Overall Twenty first century learning skills in English subject learning at secondary stage.

There might be many reasons behind such research outcome that stated that male and female students both more or less performed equally so far as development of 4Cs as a whole approach was concerned. They are as follows- i) Accessibility to Education: Male and female students of both the schools under investigation used to enjoy equal privileges to education. This indicated that the chances for both sexes to acquire and master the abilities required for the twenty-first century were equivalent. ii) Evolving Gender Roles: The teachers and the non-teaching staffs of those schools were very much aware of issues like gender sensitivity as well as gender equality. Being associated with enlightening programmes the schools were successful to create gender sensitive learning culture. Societal developments had resulted in a more equitable distribution possibilities and duties among each gender. There was no as such demand from the side of the school teachers and other personnels for learners to fit into societal moulds or stereotypical role. As a result of the shifting of traditional gender norms, both boys and girls were encouraged to develop a wider range of capabilities. iii) ICT Access: In the age of digitization, there is ubiquitous and non-gender-specific availability of information and technology. The same resources were available to boys and girl students, levelling equal opportunities in terms of learning skills for the twenty-first century. iv) All-embracing Policies: To advance equality among genders, Indian educational policies have put in place initiatives that are inclusive in nature. Both the institutions adhered the polices sincerely. Every learner was guaranteed a fair chance to develop the skills necessary for the twenty-first century through equal engagement and treatment irrespective of their gender. v) Research outcomes: Studies investigating the effect gender in the field of education had revealed that there existed no innate cognitive differences between men and women that would limit either group's capacity to learn 21st-century abilities. If disparities in educational attainment between genders occurred, they frequently stemmed from cultural expectations rather than biological causes. Studies conducted by Else-Quest et al. (2010), Halpern et al (2007), Lippa (2005), Spencer et al (1999), Hyde (2005) reported that cognitive skills between men and women were more alike than distinct suggesting that cognitive capacities were not fundamentally gender-dependent. The discussion regarding the gender- basis as well as the interaction between group and gender basis enhancement of twenty first century learning skills, thus, meets the optimistic conclusion that 4C abilities can be effectively taught to students of all genders using contemporary educational methods because they are gender-independent.



**Objective No. 5. To study the effect of Group, Gender and their interaction on component wise Twenty first learning skills (critical thinking, creativity, collaboration and communication) by considering their representative components at pre-test level as covariates**

Inconsistent results had been found in previous research studies that had examined gender differences in assessing critical thinking, with some studies reporting gender differences that favour either girls (Schafer, 1972) or boys (Simon & Ward, 1974; Topolovčan & Matijević 2017; Aliakbari & Sadeghdaghighi, 2011; King et al., 1990), while others had found no significant differences (Burns, 1974; Cooney, 1976; Skinner, 1971; Sheela, 2015). It can be said that present study studies that indicated critical thinking of the English subject learners to be independent of their gender as well as the interaction between Group and Gender, positively corroborated with the previous studies done by Burns (1974), Cooney (1976), Skinner (1971) and Sheela (2015) while negatively corroborated with the findings of other studies mentioned in this regard.

The result of the current study indicated creativity skill of the English subject learners to be independent of their gender as well as the interaction between Group and Gender. It positively was in line with the findings of studies conducted by Bam (2006), Singh & Gihar (2020) where it was observed that both male and female participants had similar levels of creativity prior to the implementation of the treatment. On the other hand, the present study showed inconsistency with the outcomes of the researches including Kapri (2017) that revealed females' higher level of creativity compared to their male counterparts.

The results of the present study indicated collaborative skills of the English subject learners to be independent of their gender as well as the interaction between Group and Gender. They were in alignment with the outcomes of some previously conducted studies; for example, research by Mahesha (2014) which indicated no existence of any significant effect of the treatment in male and female in collaborative abilities; and also, other studies by Eagly & Karau (2002), Halpern et al (2011), Voyer (2014) that did not believe in the significant role of gender influencing the social skills like cooperation and collaboration of individuals. But the current study was negatively related with studies carried out by Bozeman & Gaughan (2011), Iglič et al (2017), Araújo et al (2017) which all were in favour of women having higher level of collaborative skills in comparison to their male counterparts.

Noticeably, the present study's result in the case of communication skill was totally different as it showed a significant effect of Gender on communication skill, though no significant impact of the interaction between Group and Gender on communication skill was found. Male students were found to have higher communication skill as compared to their female counterparts. This finding of the current research was in conflict with the outcomes of the study Burleson et al (1996), Loy (2006), Snider (2021) declared no observance of significant difference between male and female participants with respect to communication skill. However, the study also negatively corroborated with the study carried out by Dash (2021) which demonstrated how females were found to be significantly better in most of the aspects of communication than their male counterparts.

**Objective No. 6. To study the effect of Group, Locale of Schools and their interaction on overall Twenty first century learning skills by considering pre-test as covariate**

Existing studies relating to the exploration of the comprehensive theory of 4C skills development in relation to locale of the schools as well as the interaction between group and locale were not found by the researcher. But there were limited number of studies that attempted to examine the effectiveness of constructivist learning strategies in the development of academic performance, improvement of subject oriented content knowledge and process skills on the basis of locality of the academic institution. While earlier research study conducted by Singh (2011) showed significant difference in the academic performance of male and female students, majority of other studies by Nair (2014), Ibrahim (2001), Ryak (2003) reported that there existed no significant difference between urban school pupils and rural school pupils in their performance. So, if the efficacy of constructivist learning approach is distinctly considered, it can be said that the finding of Singh (2011) positively correlated with the research findings of the current study that too declared that there existed significant effect of Locale on overall Twenty first century learning skills in English subject learning at secondary stage, in support of learners of urban school possessing higher overall Twenty first century learning skills as compared to their counterparts of students of rural school. On the other hand, outcomes derived from the study of Nair (2014) which revealed no significant difference in performance based on locale of the school, thereby, negatively correlated with the current study.

There might be various reasons behind such research outcome that stated that students of urban area schools gained greater score in 4C skills compared to the students of rural area

school. The inferior performance of rural school students on 21<sup>st</sup> century learning skills through adoption of constructivist learning approach may be caused due to the nihilistic attitude of rural school teachers towards the implementation of constructivism, as well as their negative perception regarding the importance of 4C skills within the context of key subject learning, their lack of pedagogical knowledge, understanding and awareness required for translating those innovative learning theories into classroom practices, certain psychological factors of the rural students like their hesitation for any change from the regular pattern, fear for something new, unknown, shyness fear for the new, lack of confidence etc., unavailability of advanced learning resources and also lack of basic facilities in the rural area school, as observed by the researcher herself. All these factors might be the reason behind the non-effective performances the rural school pupils in comparison with their counterparts of urban school students.

**Objective No. 7. To study the effect of Group, Locale of Schools and their interaction on component wise Twenty first century learning skills (critical thinking, creativity, collaboration and communication) by considering their representative components at pre-test level as covariates**

Though many studies were found regarding the effect of constructivism on the development of critical thinking, creativity, collaboration and communication skills – each skill addressed individually. But no researches as such had been found to be studied to examine the impact of constructivist learning strategies on 4Cs on the basis of locality of the schools as well as on the basis of combined interaction effect of group and locale. Noticeably, there were some previous studies on these 4C skills in relation to the rural-urban categorisation but in different contexts.

Here are certain studies on the development of critical thinking skill on the basis of locale of schools showing mixed research outcomes. For example, previous studies conducted by Tanti (2020), Uddin (2023) positively was in line with the current study's finding in the sense that they too revealed that students of urban school were found to have higher critical thinking skill as compared to their counterparts of students of rural school, while the study conducted by Tamam et al (2021) reported about the observance of difference in critical thinking skills between urban and rural participants, showing the rural pupils with better critical thinking abilities compared to the urban students; thus oppositely corroborated with the finding of the present study.

Previous study like Bam (2006) positively was in line with the findings of the current study in the light of its declaration about insignificant difference between rural and urban participants in terms of their creativity skill. The current study also supported that pupils of urban school and the pupils of rural school both have creativity skill to the same extent. On the other hand, studies carried out by Parkash & Hooda (2019), Halder & Bhattacharya (2020), Yeh & Ting (2023) were unfavourably related with the findings of the present study in the sense that they supported that urban school going learners performed better than the rural school going learners.

The research outcome of the current study also stated that there existed no significant effect of Locale and the interaction between Group and Locale on collaboration skill in English subject learning. This finding was favourably related with prior studies done by Hong (2020), Monika & Rajkumari (2023) that supported both the students of urban school and the students of rural school possess collaboration skill to the same level; while research study conducted by Ulfatin & Mukhadis (2017) indicating higher collaboration skill of rural pupils compared to the urban ones, was negatively juxtaposed with the current study.

Lastly, the outcomes of the current study in relation to communication skill development declared that there existed no significant effect of Locale as well as interaction between Group and Locale on communication skill in English subject learning. In this regard prior studies conducted by Sharma & Chawla (2013), Rambabu et al (2021), Javed et al. (2013). Pawar & Shinde (2016) in the context of English communication skill, and Wang et al (2022) in different context, showed dissimilarity with the findings of the current study. These aforementioned studies came with the conclusion that pupils studying in schools located in urban area are superior to the pupils studying in schools situated in rural area in terms of their communicative skills. Thereby, these studies did not support that both the students of urban school and the students of rural school have communication skill to the same extent as indicated by the current study.

#### **5.4.1 DISCUSSION OF THE UNEXPECTED RESEARCH RESULTS**

While describing, interpreting and explaining the research findings in the discussion section, it is also necessary for the researcher to mention and discuss the unexpected research results. It is crucial to transparently acknowledge the gap between expectations and outcomes. Because no result is right or wrong from research perspective; after all unexpected results are still the results. So, every researcher should adopt a proactive approach by effectively

communicating those unanticipated outcomes and by clearly articulating the reasons behind the divergence, offering context and insights into potential contributing factors to the unexpected results.

In the current study the researcher's expectation was met in the results concerning the first and second, third and fourth objectives of the study as they revealed that constructivist approach to English education has the potential to enhance the overall twenty first century learning skills, and its individual components which were critical thinking, creativity, collaboration and communication, and also declaring the no existence of any significant difference between boys and girls students in their performance on overall twenty first century learning skills. But the unexpected results were found while dealing with the fifth objective where as per the expectation critical thinking, creativity, collaboration skills of the English subject learners were observed to be independent of their gender as well as the interaction between Group and Gender, but surprisingly in the case of communication skill, the result appeared to be unusual that the researcher did not anticipate at all. It indicated significant effect of Gender on communication skill as the male students were found to have higher communication skill as compared to their female counterparts. However, a variety of factors might have contributed to the result that revealed the discernible differences between male and female learners in terms of communication skills. Though both the schools under this current study used to foster open, conducive and diverse learning environment giving all students the chance to practice necessary skills, the outcomes of the experiment showed that the male learners exhibited superior performance in communicative abilities in comparison with their female classmates. The probable factors leading to that result of the current study are as follows-(i) Culture and family influences: A male student's upbringing and culture might have a major effect on his increased communication abilities. The male students might be provided with enough encouragement, exposure to various communicative situations and events that the girls might be were deprived of that family and cultural support to nurture their communication skill. (ii) More participation of Male students in constructive activities: It was observed by the researcher that the boy students were mostly eager and enthusiastic to be engaged in different activities inside or outside the classroom. This might have helped them to work with peers, teachers and have given them the scope to interact with others and thereby to strengthen their communication skills. (iii) High Motivation level for interactive classroom practices: The male learners used to be very enthusiastic and highly motivated to engage themselves in classroom activities like storytelling, debating, discussing, extempore, stating film and book reviews etc. (iv) Adaptability: In order to effectively communicate, one

must frequently be able to adjust to various settings and people. The sudden change of their English teacher might have caused much time for the girl students to overcome their shyness and hesitation to freely communicate with their new teacher whereas the male pupils showed better flexibility with this change as the boys were more comfortable in establishing rapport with their new teacher. These issues, as observed by the researcher, might be the reasons behind the findings that supported male learners as better communicators compared to the female learners. Again, the research findings concerning the sixth objective and one sub-objective of the seventh objectives of the study where the result expectation was desirably met in case of Locale of school on overall Twenty first century learning skills and critical thinking skills as well since they revealed that urban school going pupils were having higher overall Twenty first century learning skills as wells critical thinking skill as compared to their counterparts of rural school going pupils. But in case of the other three sub-objectives of the seventh objective that focused on studying the effect of locale of schools on creativity, collaboration and communication abilities as well, a discrepancy between the expectation and the outcome, was observed as they indicated both the students of urban school and the students of rural school had creativity, collaboration and communication skills to the same extent. Because majority of the previous research works with respect to locale, indicated that constructivist learning approach was more effective for urban school students than the rural ones on their performance, thereby, it was naturally expected that these three skills developments with the help of constructivist approach to learning would be more operative in urban school students than their rural counterparts. This might have been resulted due to the modern reforms that address the rural-urban inequality in terms of development and living circumstances and equitable access to resources and educational opportunities including appropriate stress on the delivery of project-based learning, technology integration, extracurricular activities like drama clubs, debate teams, art classes, or community service, professional development through arrangement of teacher training programme on contemporary trend-based education, flexible learning environment promoting cultural awareness and diversity. These could be some of the probable factors that contributed to the closely equal level development of creativity, collaboration, and communication skills in students, regardless of whether they were in urban or rural contexts. These unexpected findings, thus, suggest that despite differences in their environments, both urban and rural students are equally capable of developing important skills such as creativity, collaboration, and communication. They also have highlighted the importance of recognizing and appreciating the strengths and potentialities of children from diverse backgrounds.

### **5.5.0 EDUCATIONAL IMPLICATIONS OF THE STUDY:**

The study outcomes demonstrated prominently that it is possible to augment overall twenty first century learning skills along with its individual components in the field of English subject learning of students in the secondary educational stage with the help of constructivist approached oriented module. The discoveries of the current study showed that learners who gained constructivist approach based English classroom experience, developed 21<sup>st</sup> century learning skills better. The present study yields several educational implications. Those implications are briefed below.

#### **FOR TEACHERS/EDUCATORS**

- 1) The present study which demonstrated the beneficial outcomes of incorporating CAM in classroom instruction, has the potential to provide guidance to educators, specifically English language teachers, in developing a comprehensive understanding of the principles of constructivism and thereby, facilitating its application within the classroom setting.
- 2) The effectiveness of the constructivist approach in promoting twenty-first century learning skills has been observed to surpass that of the conventional method in teaching English subject. Teachers should implement this approach within educational institutions to encourage the cultivation of meaningful learning experiences among students. Thereby, this study has the potential to provide valuable insights for educators seeking to develop innovative classroom situations that foster students' active engagement in constructing meaning, which is the fundamental objective of education.
- 3) The key goal of language subject learning in schools should not solely focus on the acquisition of language skills and linguistic accomplishments. It should also work towards the development of other crucial abilities like critical thinking, cooperation, communication, innovation, creativity & collaboration which are indispensable for gaining success in contemporary society. The teachers should make every effort to employ constructivist approach-based module for developing various skills and abilities of the school children. The interpretation of quality education for learners in our school should be approached from a holistic perspective, with a particular focus on fostering the development of the 4C skills. Thus, the results of the current study

might help teachers to promote young learners leading to their comprehensive development.

- 4) Findings from the research could also assist in offering the in-service possibilities for teachers to brush up on their skills in accordance with contemporary needs.
- 5) Constructivist assessment engages the students in various classroom activities in a real-world based authentic context. Proper care must be taken by the teachers to employ constructivist assessment that would make the students feel connected with their real-life situation.
- 6) Appropriate learning environment should be provided to the children for facilitation of twenty first century learning skills in language learning. This study provides insight into an educational setting characterised by innovation and democracy, wherein emphasis is placed on fostering student autonomy and cultivating positive relationships between students and teachers, as well as among the students themselves. It is recommended that educators must create suitable constructive learning environments in which students can directly engage with equipment, utilise their senses, engage in exploration and experimentation, and ultimately draw conclusions based on their observations.

#### FOR SCHOOL STUDENTS

- 1) This study also emphasises on the transition from an instructor-centred to a student-centred classroom where learners are granted full autonomy to independently explore and uncover knowledge when constructivist approaches are employed in English instruction. Students would be benefitted with such flexible and liberal learning approach which would assist them to grow in life in true sense.
- 2) The study provides the opportunity for students to gain familiarity with both the discourses of constructivism and twenty first century learning skills, and to realise the urgent need for being part of such constructivist learning that focuses on the development of 4Cs.
- 3) Development of critical thinking through CAM should be given value as it impacts students' learning in the most positive way. It would assist the students to critically comprehend, analyse, interpret and evaluate information, and to create new



knowledge on the basis of logical analysis and understanding because constructivism concentrates on the development of the cognitive skills of the individuals.

- 4) Due attention should be given to utilise English subject learning through CAM as a means for fostering creativity in students within the educational settings. The objective should be to promote the development of creative thinking in terms of ideational fluency, and originality in the area of English subject.
- 5) Proper care must be exercised to consider English subject learning through CAM as a helpful tool for developing collaborative skill among learners in terms of facilitating their coordination, group interaction, cooperation.
- 6) Attention should be also paid for encouraging students' communication skills in terms of their expressive capacity in speaking and writing tasks. In today's modern world it is must to ensure that students are confident enough regarding their communicative abilities. Emphasis on the development of communication skill can make the learning process a reciprocal experience between teachers and students. Having effective communication skill is also crucial for individual's success in the real world because it exposes them to a variety of circumstances where they will need to work with people and navigate among different perspectives of others.
- 7) Prevailing underachievement of students in examinations and their misunderstandings regarding certain topics in the English subject area have raised concerns within the educational field. In order to enhance the quality and effectiveness of English learning of students, it is imperative to incorporate constructivist learning strategies into the instructional process. The findings of the study could provide learners great assistance to prevent their poor academic result, and to build a strong academic career.

#### FOR PARENTS

- 1) The parents would be enriched with awareness and understanding of the novel theories and techniques, themes of educative process that their children are experiencing now. Observing their children engaged in constructivist learning and developing 4C skills, and witnessing the importance of these innovative learning initiatives for leading successful life, parents themselves might come forward to learn and utilise them in their lives too.

- 2) The parents could also benefit as this research would assist them to support their children by guiding their everyday activities and assisting them in developing positive self-expression and independence skills.
- 3) The outcomes of the present investigation would also be extremely valuable in fostering effective parent-teacher ties so that parents could express their perspectives, voice their thoughts and thus, confirm a deeper comprehension of the teaching-learning processes.

#### FOR CURRICULUM DEVELOPER

- 1) This research may pave the way for new ways of realizing the importance of constructivist approach to curriculum design. The efficacy of Constructivist Strategies, implemented through an instructional module in English subject learning has been established in this study. The findings of this study have significant implications for the inclusion of constructivist approach in the process of school curriculum development.
- 2) A significant portion of the school curriculum in the area of English discipline had been seen emphasising in the academic accomplishment or linguistic skills development. Educators should realize the importance of the all-around development of youngsters with different potentials by giving crucial stress on skill development (for example, improving skills like Critical thinking, Communication, Collaboration, and Creativity). Consequently, curriculum designers should revise the current English curriculum to facilitate the extensive utilisation through innovative learning strategies for fostering the acquisition of essential skills and abilities.
- 3) It is imperative to ensure that these learning skills are cultivated among students by incorporating them into the teaching of English as a foundational subject, rather than treating 4Cs as separate discipline area. Inculcation and enhancement of twenty first century learning skills should take place during their learning of English subject in an integrated way manner, not in isolated manner at all. In other words, development of 4C skills should form the integral part of constructivist teaching learning procedure in the updated curriculum.

## FOR POLICY MAKERS

- 1) The results of the current study are expected to be of great use to secondary education policymakers as they endeavour to execute constructivist learning strategies and also 4Cs enhancing strategies for determining the most suitable extracurricular and curricular activities to build the ideal secondary education programme.
- 2) The importance of fostering the 4Cs among young students of the twenty-first century at the national level has been stressed by NEP, 2020. However, policies relating to the constructivist education and the development of the 4Cs in language acquisition need to be more carefully specified at local level.
- 3) Policies should concentrate on the grassroots level of the implementation of theories of constructivism and 21st century learning skills by taking into account the obstacles that could prevent proper application of those theories and also by offering the likely solutions to overcome those obstacles. Addressing these educational discourses in terms of their nature, characteristics, importance and scope is not sufficient. Policy makers should focus on the process of translating the theories into classroom practice possible in actual learning scenario.

## FOR HIGH AUTHORITIES & ADMINISTRATORS

- 1) The adoption of a constructivist approach is recommended for teaching in all schools in West Bengal, as well as other regions of India, irrespective of the school's locale and management. Regardless of whether they are private or public, urban or rural, all academic institutions should strive to deliver education by incorporating innovative teaching strategies based on the theory of constructivism.
- 2) The head of the high schools might benefit from analysing the current study. They would be encouraged to go for several corrective actions to address obstacles to successfully completing the English education at secondary level. School administrators may comprehend the need for monitoring the provision for basic facilities, infrastructures and learning resources in rural area schools to enhance educational experience for every student.
- 3) Both the aspiring and current teachers should benefit from training programmes on the constructivist approach and 4Cs enhancing teaching strategies, which would help them gain the knowledge and expertise necessary to successfully execute the

constructivist model in a classroom setting. Considerate care should be taken to prepare the teachers to foster the holistic development of every learner. For this purpose, teacher training programme must be giving educators a solid grounding in the constructivist method of education in order to better enhance the 4Cs in their students. It is recommended that the higher authorities, such as DIETs and state departments of education, incorporate the constructivist method of teaching and also 4Cs enhancing teaching strategies into the teacher training programmes.

- 4) Careful consideration should be exercised in the selection process of school teachers, ensuring that those chosen are not inclined towards imparting basic knowledge to students solely through rote memorization of facts. Instead, those teachers should be selected who would encourage and promote the cultivation of inventive, practically applicable and cognitively adaptable knowledge.
- 5) The current research would inform administrators about the current status of English education at secondary stage in West Bengal; as a result, it may prove more beneficial to administrators as well as policy makers in dealing with the challenges that are laid out here.

#### FOR RESEARCHERS

- 1) The current study would aid scholars better grasp the problems and difficulties that schools of West Bengal are currently experiencing while delivering English education.
- 2) This investigation might assist the researcher to conduct additional research on the concerns this study brings up.

#### **5.6.0 LIMITATIONS OF THE STUDY**

The present research advocated the utilization of constructivist learning framework-based module for enhancing Twenty first century learning skills in the context of English subject learning. Despite the fact that the outcomes of the study were quite positive, the study had some limitations. Limitations refers to the potential drawbacks or shortcomings in the study that are beyond the researcher's control. Those uncontrollable constraints, challenges or factors known as limitations that the researcher faced while carrying out this study are clearly stated below.

1) The first limitation concerns the insufficiency of technological and instrumental Support. The number of ICT resources, particularly computers, was unsatisfactorily limited for the total number of learners enrolled in that class. In one of the two schools there was no desktop or computer available at all while in the other one it was found that only a few machines were to be inoperable condition. Both the schools were not even furnished with a projector and screen. The researcher had to face also the challenge of lacking steady internet connectivity in the school located in remote area. And also, the absence of basic amenities or resources like white boards, power points, educational games posed a substantial barrier to the implementation of CAM in the classroom setting.

2) The second limitation is concerned with the constraints imposed by the fact that there was not enormous amount of prior research or evidence on the topic of the research. Literature reviews are built on the citation of previous research works to provide context for the research problem being investigated. But there was a smaller number of evidence or previous research on the topic of the current research. Because twenty first century learning skills or 4Cs is an emerging discourse while constructivism in the field of education being a discursive phenomenon is gaining prominence now a days. Most importantly, upon the convergence of both the discourses for investigating the effect of constructivism on fostering twenty first century learning skills, then the researcher found inadequate number of reviews on constructivism in relation to 4Cs development in education in general as well as in English learning in particular. So, there was very little previous research on the research problem of this study. The scarcity of previous reviews of related literature can be counted as a notable limitation of the study.

3) Controlling all the extraneous variables that might have influenced the experimental process was not feasible for the researcher. The researcher encountered hurdle in regulating every unwanted extraneous variable. This constituted the third constraint.

4)The fourth limitation is related to the assessment process in terms of the reliability of the scoring key. Since the assessment tools were self-constructed ones, there was no readymade or already existed scoring key to be adhered in this study for the tests on twenty first century learning skills. Because many questions posed in these tests necessitated responses that were divergent and open-ended in nature. So, the situation demanded a scoring key to be developed by the researcher herself to ensure objectivity and consistency in the evaluative process.

5)The last but not the least limitation is related with time constraint. Shortage of time was an issue felt by the researcher. The class IX students who were the participants of the study were only accessible within a specific timeframe. Stipulated time period for English class was 45 minutes only which was not sufficient for the researcher to make students understand the constructivist approach-based learning activities and then to make them involved in those activities. CAM in daily classroom practice and also collection of the data through pretests and post-tests were really time consuming but the researcher had to complete the experimentation within the pre-determined time frame. Researcher had a limited period for gathering data. Therefore, time constraints can be counted as the fifth constraint of this research.

As such, it is crucial to interpret the observed outcomes of the experimental study in light of the aforementioned limitations.

#### **5.7.0 FUTURE RESEARCH SUGGESTIONS**

There exist multiple avenues for prospective research directions that can be pursued in future research studies. Those suggestive directions for further investigation are pointed below.

1) This experimental study can be conducted in different context for broader application of the outcomes of the present study. For example, similar study can be carried out to find out the effectiveness of the CAM on the development of 4Cs among learners of various schools in different states of India.

2) The present study concentrated on the English learning of students at their secondary level of educations. A corresponding experimental study can be undertaken to encompass students across various grade levels, including primary, elementary, secondary and higher secondary education.

3) Further studies on the similar research problem can be conducted across different academic disciplines, or areas of study. Future research may include other language subjects such as Bengali, Hindi, and Sanskrit, or social science subjects like History, Geography and science subjects like Life science, Physics, Chemistry, Mathematics by developing constructivist module for enhancing students' learning experience in those subject areas.

4) Later research endeavours may investigate the same research problem but within the context of some alternative school boards such as *Indian Certificate of Secondary Education* (ICSE), *Central Board of Secondary Education* (CBSE), and the *Visva Bharati* (VB) board.

Comparisons can be drawn regarding the bearing of CAM on pupils' learning under diverse boards of education. Thereby, a potential avenue for research involves conducting a comparative study to assess the efficacy of the constructivist perspective based instructional method on a diverse population of learners from various school boards.

5) Inclusion of other demographic variables may have the potential to widen the scope of this research study. Students of different age, socio-economic status, family structure, management of their school might differ in students' responding to the constructivist approach. Along with these variables, other demographic variables like income status, marital status, political affiliation and education level of teachers may have effect on their responding to constructivist approach. So, experimental studies to investigate the interaction effects of constructivist approach with alternative demographic variables may be considered for future research.

6) Future research can be undertaken to explore teachers' beliefs, perceptions, attitudes, and interest in constructivism concerning the 4Cs development (Critical thinking, Creativity, Collaboration & Communication) through innovative classroom practices. Similarly, conducting an evaluative study on the beliefs, perceptions, interests, and attitudes of students towards the constructivist approach as a learning strategy for fostering twenty-first century skills holds significant potential as a valuable avenue for future research. Noticeably, further studies may be undertaken to examine whether any significant difference exists in students' as well as teachers' interest, attitude beliefs, perceptions of the constructivist classroom with regard to their gender, socio economic status, the locale and management of their school.

7) Constructivist approach has been utilised as a comprehensive teaching learning theory in this study. Researchers may delve into this research problem by looking into it from a more detailed, specific and precise angle. In future research the focus can be made upon the Cognitive Constructivist approach towards learning upholding only those learning strategies which conform with Piagetian view about the theory of constructivism or upon the social constructivist approach towards learning based on Vygotskian view about constructivism in the context of 4Cs in English subject learning.

8) The research problem of this study had been dealt with purely quantitative approach of research by analysing the numerical data statistically. Similar study can be addressed intensively by undertaking qualitative approach of research to explore participants' thought, opinion about constructivist learning strategy and its influence on students' learning

outcomes along with 4Cs development. Coding, theme generation can be done to penetrate into the various facets of the research phenomenon and thereby, to provide more in-depth and comprehensive conclusions.

9) Qualitative research study could be undertaken to explore the characteristics and role of teachers in constructivist classrooms in the inculcation of Twenty first century learning skills among learners.

10) Development of teaching learning module in English subject within the context of constructivism for enhancing of L.S.R.W. skills in English may be regarded as another major direction for future study. Concentration can be given to develop students' abilities of speaking, reading, writing, and listening in English with the help of constructivist approach to learning.

11) This study focused on the inculcation & augmentation of 4Cs. In future research endeavours there is a huge scope to conduct researches with objectives to develop Literacy skills (IMT) referring to literacy relating to information, media & technology; and also, Life skills (FLIPS) referring to skills of flexibility, leadership, initiative, productivity and also social skills which are also necessary to be cultivated among today's learners.

#### **5.8.0 REFLECTION OF THE RESEARCHER:**

The present study offered me the opportunity to gain experience of a researcher through classroom application of Constructivist approach-based module for the development of 4Cs among learners of two governmental schools located in the state of West Bengal. Due to the experimental nature of my research, I got the chance to have practical experience of dealing with class IX students within their authentic classroom settings. In this section, sincere endeavour is made to present a narrative account of my reflection as a researcher on my observations, understanding, and realisations pertaining to my interpretation of the events and behaviours exhibited by the participants of this study. My field work experience as a researcher in conducting the experimental study highly stimulating; it was mingled with positive and challenging moments.

The full cooperation of the institutional authorities in allowing me to engage with the class IX students according to the requirements of my research brought about moments of joy and great satisfaction. The headmaster, headmistress along with the assistant teachers in English subjects of both the schools were very supportive throughout my research work. The English



teachers of class IX used to visit my classroom being curious about the implementation of constructivist approaches in classroom situation and they appreciated the innovative approach to English teaching and gave me relevant advice regarding better class management so that transaction of the English module could be made possible in a smooth way without any disturbance.

Throughout the course of my experimental endeavour, I encountered numerous problems that demanded my special attention. I also enjoyed the moments of interacting with students who were very enthusiastic in engaging themselves in classroom activities. But I faced a big challenge when I found that many of the students were hesitant to speak English. They exhibited extreme shyness and introversion to be involved in any English conversation or tasks related to their English learning. They had apprehension when it came to the pursuit of acquiring the English language. The most difficult situation for me was to build good rapport with those students to make them feel comfortable with the process of English learning.

Secondly, some of the students in the class were feeling uncomfortable and uneasy with novel approach to English subject learning. Already English is a fearsome subject to them, generally do not like to attend English classes. Additionally, a change in this domain in terms of new teacher, her new way of taking classes and asking for more participation became a trouble to them. At the initial phases, few students were not ready to cooperate at all. Another reason behind lack of enthusiasm of the students to be involved into the given tasks was that those tasks they found were not text book oriented. Some students were adamant that they would not do extra classroom tasks or home assignments. They just wanted to do the textbook prescribed exercises only. It was a really challenging task to transform their attitude towards innovative English learning. Gradually they became enthusiastic to solve the given problems in the most innovative way and became the most active participants in English class. I felt a sense of achievement with students' growing enthusiasm and willingness for better performance in English class as they were introduced with the concepts and nature of the learning activities. It was the fear of additional academic pressure that restricted them to accept and explore the new. But as soon as they started to enjoy the fun element of those constructivist approach-based learning activities, they were excited in their English Learning process. The researcher witnessed the beauty of Constructivist learning as it transformed the Fear into Fun and Facilitated the students' active participation.

Completion of the research experimentation within the stipulated period was another hurdle. It took a lot of time to make them prepared to be happily engaged in the learning through CAM. I noticed that the majority of learners from the rural area school showed poor academic performance in English subject. Initially many students preferred bilingual method. They were not comfortable if their teacher speaks English only. It demanded extra time on my part. At first, I was becoming restless due to the paucity of time as I had four months intervention programme. However, I had to keep patience in dealing with the situation. Many times, I needed to explain the activities in Bengali for some students just to make them feel at ease. It demanded extra time. I failed to avoid repeated talk of the same while interacting with the learner as many students were found to be slow learners. I took special care to make them understand. Gradually I lessened the use of Bengali language, and started to use simple English speech as much as possible. It took almost a month when the students felt confident to talk in easy English. It took additional time to reach that favourable stage. Ample time was needed to make the learning environment suitable to implement CAM in classroom practice.

Again, time management was a troublesome barrier to me as the constructivist learning activities highlighted in the developed module to be implemented in the classroom, needed an extensive period of time to be completed. It was really time consuming when application of CAM was concerned. Specially the group activities needed huge time. It was not possible at all to complete all the tasks in the scheduled time of 45minutes for English class. However, this problem was somehow resolved as I was allowed to utilize the provisional periods (7th and 8th period) of 1 hour 30 minutes to continue my implementation task satisfactorily. In this respect also I am grateful to the school authorities that they happily cooperated with me to give permission to take classes on the provisional periods thrice in a week. That is why, I felt satisfied as I was able to do justice with CAM. I had to take a prolonged duration to make the work fruitful for the students, and I did take my time to implement the constructivist approach-based module, and never compromised with the quality of my experimental work in the fear of scarcity of time.

I had to assume several responsibilities like fostering classroom engagement of students, capturing images, acquainting students with unfamiliar innovative classroom activities, providing them with question sheets, managing as well as supervising the class and also offering guidance throughout their performance. As an academic researcher, I encounter challenges in effectively doing the various tasks associated with my multiple roles. In addition to conducting all these different classroom activities, it was necessary to create a

contextualised, conducive, constructive learning situation through the utilisation of CAM so that that students should feel their learning context was relevant enough to gain meaningful learning.

The insufficiency of resources posed an additional obstacle for me. I was in a difficult situation when I found out that there was lack of ICT resources, particularly computers, white boards, power points, projectors. Though white board and few educational games were available in the urban school, but lack of operatable computers in both the schools made by situation tough. This situation necessitated the need for me to devise an alternative solution, hence increasing my workload. I decided to use my technological devices like mobile phone and laptop for facilitating constructivist learning. I divided the class (experimental group) into distinct groups. One group was assigned an activity that required the use of pen and paper, such as solving puzzles or playing word search games. While the remaining students constituted the other group, provided with the opportunity to watch animated videos on English content related to their syllabus by using my laptop. On the subsequent day, the pupils who participated in problem-solving activities were afforded the opportunity to acquire knowledge in English through the utilisation of animated educational videos, while their counterparts engaged in puzzle-solving tasks. It was not possible to make all the students of a section to watch those educational videos at a time. For large sample it would not be fair as it might not be clearly visible and audible to all the students. However, I managed this situation by arranging needed additional resources on my own and thus, did not allow for any kind of learning deprivation due to the non-availability of audio-visual teaching aids.

When I reflect upon the constructive outcomes of the experiment, I feel happy observing how the execution of constructivist approach-based module impacted positively every facet of the students' English learning. When students were allowed to engage in the construction of knowledge within personal and social contexts, they exhibited feelings of happiness and excitement. Their growing interest and active participation in classroom activities made English subject learning a vibrantly enthusiastic process. The participants experienced a heightened sense of importance as I did not assume the role of an authoritative strict teacher, instead I assumed the role of a facilitator, aiding them in their process of constructing meaning. They opined to me that they felt valued because of my optimistic approach towards their capacity to learn things on their own. My faith in them and in their potential made them highly stimulating. I realized how they lacked this aspect from many of their teachers, who most of the time instructed them and taught them in conventional way; never gave the scope

of exploring and discovering new knowledge at individual level or with the help of peer friends. The success of the developed module lied in the fact that gradually majority of the learners started to make themselves engaged actively in the process of English learning. The positive change in their performance proved the efficacy of the constructivist module on 4Cs development. After collecting the pretest scores, I was enabled to identify the weak students because of their low performance in the tests. But the constructivist teaching method, interactive classroom environment, innovative learning activities- all these served as catalyst to the low-performing students for promoting an increased level of engagement and regular attendance in their classes which further led them for better performance in the post tests. I observed that through the implementation of increased group discussions, students were able to develop a more robust basis for effectively communicating their ideas orally. Those interactive activities fostered a more profound understanding in the process of acquiring knowledge. Incorporation of group activities aligned with a Constructivist approach was very helpful for me to enhance students' motivation, collaborative abilities, problem-solving skills, and self-esteem. I observed that the students exhibited greater enjoyment when they engaged in active participation of the learning process as opposed to assuming a passive role as mere listeners. It was also observed that the cultivation of students' creative inclinations encouraged the development of their capacity to articulate knowledge through diverse constructive modalities. I was really amazed by observing that activities like solving puzzles, riddles enhanced their higher-order cognitive abilities whereas their creative spirit got empowered by building rhymes, creating acronyms, drawings or posters given themes etc. The students were also better equipped to effectively retain and apply their acquired knowledge in practical tasks set within a real-world context.

Nevertheless, I really enjoyed the entire process. I realized about myself that being a researcher I do possess an inherent inclination towards acquiring knowledge and exhibit a perpetual desire to expand my intellectual horizons both within and beyond the confines of formal educational settings. I relished the challenge and was motivated to perform to my best ability. Now I have a lot more faith in my proficiency in implementation of any intervention in real classroom situation, also in data collection and analysis, all of which constitutes the fundamental aspect of my role as a researcher. Overall, I find the experience to be quite fruitful for me because I was able to meet and network with a diverse group of professionals with whom I could exchange ideas and gain insights for my academic life. Looking back, I

can say how this experience benefited me as a student, research scholar and a budding professional.

These are all the reflections that emerge in my mind as a result of my daily observation, interaction with the students throughout the entire journey of my field work. From this experience I learnt many things; I became aware of my weakness and strengths as a researcher and also, I was able to recognise my achievements as well as challenges encountered while conducting this study. Lastly, I have to express that my time spent doing fieldwork has provided me with invaluable experience.