A COMPARISON OF THE EFFECTIVENESS OF THE CONSTRUCTIVIST AND THE TRADITIONAL APPROACH IN THE TEACHING OF ENGLISH AS PERCEIVED BY STUDENT TEACHERS

By

GEETA SHETTY

Assistant Professor, St. Xavier's Institute of Education,40-A, New Marine Lines, Churchgate,

Mumbai - 400020

Abstract

Language learning is a process that requires an active engagement of learners in knowledge building activities. Constructivism is a philosophy that believes in creating newer and better understandings through dissonance and disequilibrium. Teacher education has the responsibility to make student teachers challenge existing assumptions and beliefs. Traditional Indian classrooms are plagued with huge numbers making the practice of student centered approaches a very daunting task. Future teachers ought to be exposed to progressive approaches to teaching English and made to apply them in the classrooms to analyze the implications. The study has analyzed the perception of student teachers regarding the Constructivist as well as Traditional Approaches. The student teachers were initiated to the Constructivist Approach and made to apply it in the teaching of English Grammar and Composition. The findings indicate that the student teachers perceived the

Constructivist Approach more useful than the Traditional Approach in all the seven areas of comparison outlined for the study.

Key Words: *Constructivist Approach, Traditional Approach, English Grammar and Composition*

INTRODUCTION

The purpose of language instruction is to develop in the learners the ability to use the language with ease and fluency. Language instruction should focus on encouraging maximum use of the language in the classroom. Learners of English should be able to think, express and communicate freely, intelligently and purposefully in the language. To achieve this, teachers ought to have thorough understanding of progressive approaches and strategies of teaching a language. Well structured activities based on clear instructional and behavioural outcomes should be planned to fulfill the aims of language instruction. Future teachers should be trained in the use and application of various approaches in order to equip them to deal with any situation in their teaching learning endeavours. The Constructivist approach is widely used across countries and across disciplines to ensure interactive and meaningful learning. The approach is viewed as dynamic and action oriented by educationists and researchers all over the world.

The applicability of an approach depends upon the context of the teaching learning situation. A typical classroom in Mumbai is huge with at least 60 to 70 students attempting to learn from a single teacher. Considering the situation it becomes rather difficult to manage the classroom activities. Student centric approaches are cumbersome and would possibly yield chaos and confusion, thereby leading to little or no learning. These apprehensions on the part of teachers and the school managements give way to teacher centric traditional approaches for instruction. Traditional approaches are found to be the most "comfortable" in the given classroom scenario. The context of learning needs to be taken into account while adopting and/or adapting progressive approaches. Constructivist approach involves activities that work well in smaller class size. Does this mean that the approach cannot be used in big classrooms? Should then teacher education resort to training future teachers in just the traditional approaches of teaching languages? Should teacher trainees be exposed to progressive approaches at all if the applicability of such approaches is questionable?

These questions need to addressed in order to make teacher education courses more purposeful and relevant to the times.

Teachers should be equipped with strategies that make students active constructers of knowledge, rather than passive recipients of information. Much of traditional education, as Dewey (1938) pointed out, is directed towards isolating the learner from all social interaction, and towards seeing education as a one-on-one relationship between the learner and the objective material to be learned. In contrast, progressive education recognizes the social aspect of learning and uses conversation, interaction with others, and the application of knowledge as an integral aspect of learning. Teacher education students will have a responsibility, as teachers, to develop the higher order thinking and decision-making skills of their own students. They need to be prepared to teach in an educational environment that is most likely to be very different from the environment in which they were learners. Teachers generally teach the way they have been taught. Very few teachers have experienced constructivist approaches in the classroom. Student teachers should become teachers who are equipped to contribute to school improvement and to implement their own innovative curriculum. Didacticism should be replaced by experiential learning, if the gap between theory and real life is to be reduced. Instructional strategies that are based on co-operation, collaboration, knowledge management and problem solving, serve to provide this kind of an enriched learning experience and climate. Johnson et al (1993) (cited in Sudheesh Kumar & Bindhu, 2002) describes interdependence, face to face promotive interaction, individual and group accountability, interpersonal and small group skills and group processing as 5 essential components of co-operation. Introducing collaborative strategies in teacher education enlighten the student teachers about the importance of a warm human resource development climate and they would in turn strive to establish this in their future work environments.

For the holistic development of teachers, the training in pedagogical skills is not enough. 'The application of pedagogical skills needs to be a consequence of the exercise of pedagogical judgment which is informed by reflection in, on and about the purposes, contexts, processes and outcomes of teaching and learning' (Day C., 2003). In this sense therefore there should be an emphasis on experiential and self directed learning. Teacher education should focus on learning 'which combines knowledge with understanding' and which requires encouraging aspiring teachers to work with 'surface learning (knowledge components or facts) and deep learning (connections, relationships,

holistic understanding).' (Svingby, 1993, cited in Day C., 2003). Therefore only having knowledge of the Constructivist approach would amount to surface learning. Deep learning about the approach would happen when the student teachers applied it in their teaching practice. It is then that would help them gain deeper insights about the approach in terms of the teachers' role, expectations from learners, learning environment, classroom management, content management etc.

Language instruction is predominantly teacher structured and teacher centered. The creative function of language has been overlooked with most teachers focusing on rule based grammar and composition. The communicative competence of learners takes a back seat in traditional language instruction where the focus is on accuracy more than fluency. Learners need to have an uninhibited, democratic and free climate in order to make mistakes and also learn from them. The Constructivist approach has been considered very rewarding in facilitating such a learning environment. It is therefore that student teachers ought to learn and practice the approach and see for themselves if the approach is truly effective as is claimed to be.

CONCEPTUAL FRAMEWORK

Constructivism is a philosophy of learning that believes that the mind actively constructs knowledge from the experiences that surround it. Mental models shape learning. Jean Piaget emphasized the importance of dissonance in order to effect learning. It is disequilibrium that stimulates the mind towards assimilation and accommodation of new information. While Piaget focused on individual constructivism, Vygotsky threw light on the role of the significant others in the learning process. He emphasized the role of mediators (human and material) in providing scaffolding for greater learning. Thus social constructivists believe that culture, context and communication lead to meaningful learning.

Learning in a Constructivist classroom is process based rather than product based. It emphasizes the construction of knowledge through active and reflective collaboration. Learning is not seen as an end but an ongoing and evolving process. Constructivist approach is inquiry based and requires the learners to pursue authentic knowledge in a situated, experiential and anchored learning environment. At the heart of the Constructivist Approach is reflection and resourcefulness. The Constructivist approach;

1. Gives learners the opportunity for concrete, contextually meaningful experience through which they can search for patterns, raise their own questions, and construct their own models.

2. Facilitates a community of learners to engage in activity, discourse, and reflection.

3. Encourages students to take on more ownership of the ideas, and to pursue autonomy, mutual reciprocity of social relations, and empowerment to meet the goals.

The Traditional Approach in the teaching of English Grammar and Composition stands in sharp contrast to the Constructivist Approach. This is highlighted in the table below;

Table 1

Difference between a Traditional and Constructivist Classroom

Traditional Classroom	Constructivist Classroom
Begins with parts of the whole– emphasizes basic skills	Begins with the whole –expanding to parts
Strict adherence to fixed curriculum	Pursuit of student questions / interests
Textbooks and workbooks	Primary sources / manipulative materials
Instructor gives and students receive	Learning is interaction-building on what students already know
Instructor assumes directive, authoritative role	Instructor interacts / negotiates with students
Assessment via testing / correct answers	Assessment via student works, observations, points of view, tests. Process is as important as product
Knowledge is inert	Knowledge is dynamic / changes with experiences
Students work individually	Students work in groups

Thirteen Ed Online (2004).

Thus Constructivism;

- Shifts emphasis from teaching to learning

- Individualizes and contextualizes students' learning experiences

- Helps students develop processes, skills and attitudes

- Considers students' learning styles

- Focuses on knowledge construction, not reproduction

- Uses authentic tasks to engage learners

- Provides for meaningful, problem-based thinking

- Requires negotiation of meaning

- Requires reflection of prior and new knowledge

- Extends students beyond content presented to them

  Christie (2005); Clarkson & Brook (n.d.); Murphy citing Jonassen, 1994

**Constructivism is a process in which the instructor**

- Adapts curriculum to address students' needs

- Poses problems of emerging contextual relevance to students

- Emphasizes hands-on, real-world experiences

- Seeks and values students' points of view

- Encourages collaborative learning

- Provides multiple modes of representations / perspectives on content

- Creates new understandings via coaching, moderating , suggesting

- Encourages reflection at regular intervals

- Integrates testing with the task and not as a separate activity

- Considers errors vital to learning.

The Model used for the Study was the 5E Learning Model. The learning cycle used in the lesson plans for English Grammar and Composition followed Bybee's (1997) five steps of Engagement, Exploration, Explanation, Elaboration, and Evaluation.

Figure 1

The 5E Learning Cycle
(Source: http://agpa.uakron.edu/p16/btp.php?id=learning-cycle)
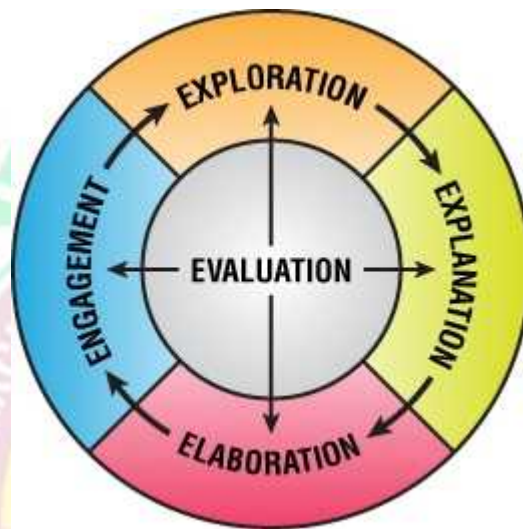
A. **Engagement:**

Engagement is a time when the teacher makes pupils ready for the lesson. The purpose of engagement is to:

- Focus students' attention on the topic.

- Pre-assess students' prior knowledge.

- Orient students about the lesson's objective(s).and their role in the learning process.

- Pose a problem for the students to explore in the next phase of the learning cycle.

Evaluation of Engagement is necessary to help the teacher make modifications if any in the objectives of the lesson or the activities or setting. Evaluation at this stage provides direction to the approach.

B. Exploration:

At this stage the students move around the problem at hand and try to find data to solve it.

The purpose of exploration is to

- Make students analyze the problem thoroughly
- Encourage the application of their previous knowledge.
- Explore various sources of relevant information.
- Encourage systematic recording and analysis of data.
- Promote collaborative efforts.

Evaluation of Exploration helps the teacher realize the relevance of the activities/experiences provided. It helps to focus on the process of learning

C. Explanation:

At this stage the teacher and the students actively discuss the problem and the tentative solutions arrived at by them. The teacher puts the concepts in proper perspective through systematic inquiry.

The purpose of this stage is to

- Generate active deliberations
- Facilitate concept clarification and theory building
- Promote analytical and critical thinking among students
- Analyze the effectiveness and suitability of sources of information

Evaluation of Explanation helps the teacher to know if there is a discrepancy in the knowledge constructed. It throws light on the process adopted by students to find solutions. Evaluation of the stage helps teachers to realize the extent of clarity that students have about the concepts. The teacher can assess the students' comprehension of the new concepts and also find out the newer interpretations and ideas generated during the process. The teacher can identify the strategies that the students adopted to find out new relationships.

D. Elaboration:

At this stage the teacher poses problems that students solve by applying what they have learned. Here the students realize the implications of the concepts in real life situations. Here too there could be new information learnt in a different context. The knowledge expansion takes place instead of remaining confined at the conceptual level.

Evaluation of Elaboration again brings in a realization of the relevance of the exercises provided. Here the teacher can find out whether the students acknowledge the use of the knowledge constructed.

E. Evaluation:

This stage finally helps the teacher to know if the learning outcomes have been achieved. Through carefully constructed exercises or by encouraging concept mapping the teacher realizes the extent of comprehension of students. The stage also helps teachers in panning future programs.

VARIABLES OF THE STUDY

The variables of the Study were mainly the Constructivist Approach and the Traditional Approach. The areas of comparison between the two approaches were as follows;
1. **Overall General Effectiveness** which included Thinking Skills, Social Skills and Learning Skills.
2. **Overall Effectiveness in English Instruction** which included Effectiveness in Grammar Instruction and Effectiveness in Composition Instruction.

Thus in all there were seven areas of comparison between Constructivist and Traditional Approach.

OBJECTIVES OF THE STUDY

The objectives of the study were as follows:
1. To train the student teachers in the 5E Constructivist Approach.
2. To make student teachers apply the Approach during their practice lessons in English.
3. To compare the effectiveness of the Constructivist Approach and the Traditional Approach as perceived by student teachers in the following areas;

- Developing Thinking Skills
- Developing Social Skills
- Developing Learning Skills
- Overall General Effectiveness
- Effectiveness in Grammar Instruction
- Effectiveness in Composition Instruction.
- Overall Effectiveness in English Instruction

HYPOTHESIS FOR THE STUDY

The hypothesis framed for the study is

1. There is a significant difference perceived by student teachers between the Constructivist Approach and the Traditional Approach in the following areas of comparison;
   - Developing Thinking Skills
   - Developing Social Skills
   - Developing Learning Skills
   - Overall General Effectiveness
   - Effectiveness in Grammar Instruction
   - Effectiveness in Composition Instruction.
   - Overall Effectiveness in English Instruction

METHOD OF STUDY

The Survey Method was used for the study. The student teachers were initially trained in the 5E Approach and then coached and guided to apply the approach in the English Grammar and English Composition lesson plans during the practice lessons (See Appendix A for Lesson Plan format). At the end of practicing the Approach the data was collected to obtain the perception of the student teachers about the approach.

SAMPLE

45 student teachers, who had opted for English Methodology Course at the Bachelor of Education Programme of the Mumbai University, were the respondents for the study.

TOOL FOR THE STUDY

The tool prepared to collect data required the student teachers to rate the Constructivist and the Traditional Approach out of 5 for each statement in a specified area. The number of items in each area is as shown in the table below.

Table 2
Number of Items in each Area of Comparison between the Constructivist Approach and the Traditional Approach

SR. NO.	AREAS OF COMPARISON	NUMBER OF ITEMS
	General areas	
I	Developing Thinking Skills	8
II	Developing Social Skills	6
III	Developing Learning Skills	6
IV	**Overall General Effectiveness**	**20**
	Effectiveness in English Instruction	
V	Effectiveness in Grammar Instruction	8
VI	Effectiveness in Composition Instruction.	8
VII	**Overall Effectiveness in English Instruction**	**16**
		Total = 36

DATA COLLECTION

The data was collected in the following way;

- **Orientation:** The student teachers who had opted for English Methodology were exposed to the theoretical aspects of Constructivism namely concept, principles and the implications. They were then provided the theoretical inputs on the 5E Approach and also lesson planning based on the Approach. Demonstrations were provided on the practical use of the Approach in Grammar and Composition.
- **Coaching:** The student teachers were then coached and guided to teach English Grammar and Composition in real classroom settings using the 5E Approach.
- **Implementation:** Student teachers implemented the Approach in the school settings as per the coaching provided.
- **Feedback:** The tool regarding the Comparison between Constructivist Approach and the Traditional Approach was administered and the data was collected.

DATA ANALYSIS

The data collected was subjected to Descriptive and Inferential Analysis. The Descriptive Analysis included Mean, Median, Standard Deviation, Skewness and Pie-charts.

Descriptive Analysis of the General Areas of Comparison between Constructivist Approach (C) and Traditional Approach (T)

Table 3 shows the Descriptive statistics calculated on the scores of the General Areas of Comparison namely Thinking Skills, Social Skills, Learning Skills and Overall General Effectiveness.

Table 3

Descriptive Statistics of the General Areas of Comparison between Constructivist Approach (C) and Traditional Approach (T)

Areas of Comparison	Mean	Median	Standard Deviation	Skewness
I a) Developing Thinking Skills (C)	33.96	34	3.19	- 0.07
b) Developing Thinking Skills (T)	15.31	14	4.92	0.88
II a) Developing Social Skills (C)	24.82	25	3.58	- 0.54
b) Developing Social Skills (T)	13.16	13	4. 47	0.60
III a) Developing Learning Skills (C)	25.78	26	2.44	- 0.64
b) Developing Learning Skills (T)	12.27	12	4.11	0.52
IV a) Overall General Effectiveness (C)	84.44	84	6.91	- 0.01

| b)Overall General Effectiveness (T)	40.73	39	12.30	0.78

Discussion of the Descriptive Analysis on the General Areas of Comparison

The Descriptive Analysis shows the following;

1. The Means of the Constructivist Approach is higher than those of the Traditional Approach on the general areas of comparison.
2. Most of the scores of the Constructivist Approach are on the higher side as is indicated by the negative skewness.
3. The difference between the Mean and the Median in the general areas of comparison is negligible. This indicates a Normal Probability Curve of all the general areas.

Figure 2

Graph of the Means of the Scores on the General Areas of Comparison between the Constructivist Approach and the Traditional Approach.
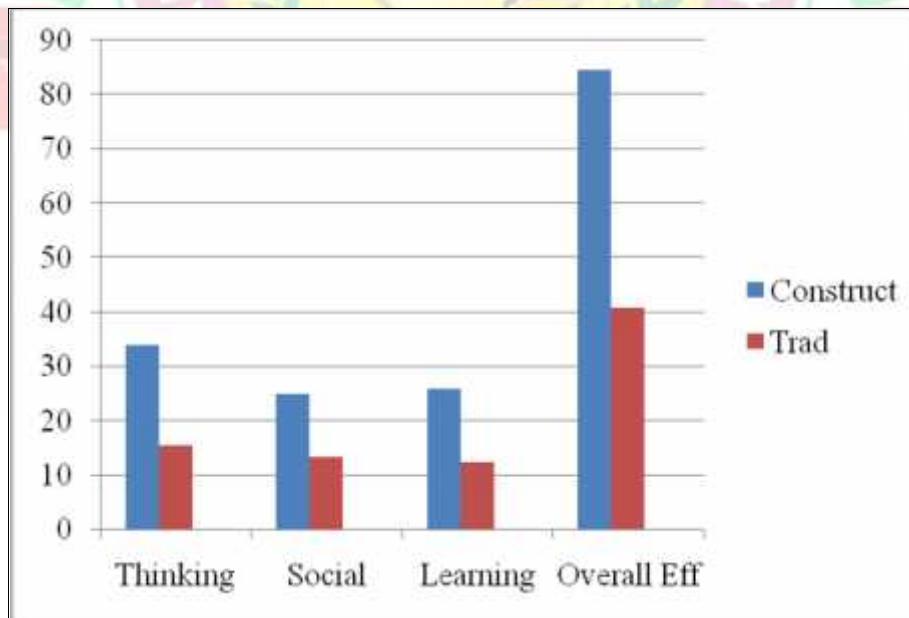
Descriptive Analysis of the Areas of Comparison regarding Effectiveness in English Instruction between Constructivist Approach (C) and Traditional Approach (T)

Table 4 shows the Descriptive statistics calculated on the scores of the Areas of Comparison on Effectiveness in English Instruction namely Effectiveness in Grammar Instruction, Effectiveness in Composition Instruction and Overall Effectiveness in English.

Table 4

Descriptive Statistics of the Areas of Comparison regarding Effectiveness in English Instruction between Constructivist Approach (C) and Traditional Approach (T)

| Areas of Comparison	Mean	Median	Standard Deviation	Skewness
V a) Effectiveness in Grammar Instruction (C)	34.82	36.00	3.63	-1.03
b) Effectiveness in Grammar Instruction (T)	15.09	14.00	4.75	0.93
VI a) Effectiveness in Composition Instruction (C)	32.82	33.00	3.30	0.28
b) Effectiveness in Composition Instruction (T)	15.80	15.00	4.53	1.12
VII a) Overall Effectiveness in English (C)	67.64	68.00	5.97	-0.31
b) Overall Effectiveness in English (T)	30.89	29	8.73	1.041

Discussion of the Descriptive Analysis on the Areas of Comparison regarding Effectiveness in English Instruction

The Descriptive Analysis shows the following;

1. The Means of the Constructivist Approach is higher than those of the Traditional Approach on the areas of comparison regarding effectiveness in English Instruction.

2. Most of the scores of the Constructivist Approach are on the higher side as is indicated by the negative skewness.

3. The difference between the Mean and the Median of the areas of comparison regarding the effectiveness in English Instruction is negligible. This indicates a Normal Probability Curve of the areas.

Figure 3

Graph of the Means of the Scores on the Area of Comparison regarding the Effectiveness in English Instruction between the Constructivist Approach and the Traditional Approach.
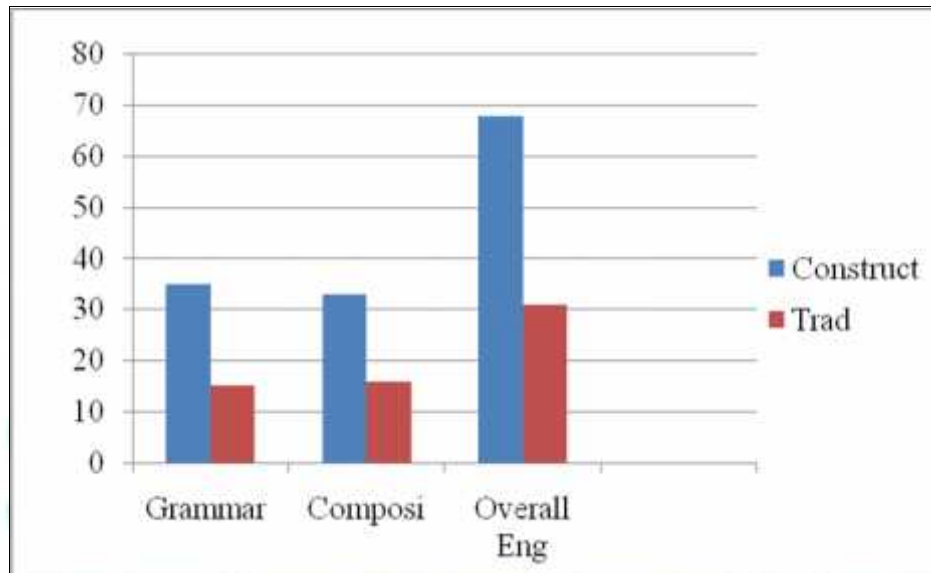
Inferential Analysis of the Scores on the Areas of Comparison between the Constructivist Approach and the Traditional Approach

The difference in the Mean Scores on the different areas of comparison between the Constructivist Approach and the Traditional Approach was analyzed using the t-ratio.

The hypothesis that was analyzed was;

1. There is a significant difference perceived by student teachers between the Constructivist Approach and the Traditional Approach in the following areas of comparison;
   - Developing Thinking Skills
   - Developing Social Skills
   - Developing Learning Skills
   - Overall General Effectiveness
   - Effectiveness in Grammar Instruction
   - Effectiveness in Composition Instruction.
   - Overall Effectiveness in English Instruction

The following Table 5 shows the t-ratio calculated for the paired differences in different areas of comparison.

Table 5

Comparison of Means of the Different Areas of Comparison between the Constructivist and the Traditional Approach

Areas of Comparison	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				lower	upper			
Thinking skills	18.64	5.93	.88	-20.43	-16.86	-21.10	44	.000
Social skills	11.67	4.96	.74	-13.16	-10.18	-15.78	44	.000
Learning skills	13.51	4.52	.67	-14.87	-12.15	-20.05	44	.000
Overall General effectiveness	43.71	13.29	1.98	-47.70	-39.72	-22.06	44	.000
Grammar Instruction	19.73	6.14	.92	-21.58	-17.89	-21.55	44	.000
Composition Instruction	17.02	6.20	.92	-18.88	-15.16	-18.42	44	.000
Overall English Instruction	36.76	11.15	1.66	-40.11	-33.41	-22.11	44	.000

INTERPRETATION

The differences in the Means of the areas of comparison have been found to be significant at the 0.05 and 0.01 levels. Hence the hypothesis stated for the study has been accepted. Therefore;

- There is a significant difference in the area of Developing Thinking Skills between the Constructivist and the Traditional Approach as perceived by student teachers.
- There is a significant difference in the area of Developing Social Skills between the Constructivist and the Traditional Approach as perceived by student teachers.
- There is a significant difference in the area of Developing Learning Skills between the Constructivist and the Traditional Approach as perceived by student teachers.

- There is a significant difference in the area of Overall General Effectiveness between the Constructivist and the Traditional Approach as perceived by student teachers.
- There is a significant difference in the area of Effectiveness in Grammar Instruction between the Constructivist and the Traditional Approach as perceived by student teachers.
- There is a significant difference in the area of Effectiveness in Composition Instruction between the Constructivist and the Traditional Approach as perceived by student teachers.
- There is a significant difference in the area of Overall Effectiveness in English Instruction between the Constructivist and the Traditional Approach as perceived by student teachers.

FINDINGS

The findings of the study were as follows;

1. The Constructivist Approach is significantly higher in the area of developing Thinking Skills among learners than the Traditional Approach as perceived by student teachers.
2. The Constructivist Approach is significantly higher in the area of developing Social Skills among learners than the Traditional Approach as perceived by student teachers.
3. The Constructivist Approach is significantly higher in the area of developing Learning Skills among learners than the Traditional Approach as perceived by student teachers.
4. The Constructivist Approach is significantly higher in the area of Overall General Effectiveness than the Traditional Approach as perceived by student teachers.
5. The student teachers perceive the Constructivist Approach significantly more Effective in Grammar Instruction than the Traditional Approach.
6. The student teachers perceive the Constructivist Approach significantly more Effective in Composition Instruction than the Traditional Approach.
7. The student teachers perceive the Constructivist Approach significantly more Effective in Overall English Instruction than the Traditional Approach.

CONCLUSION

Constructivism is a process oriented philosophy that emphasizes the need for construction of reality through dissonance and struggle. The process of teaching English Grammar and Composition necessitates active analysis and application of the language in a relevant context leading to discovery of concepts and theories. The idea that Grammar is a set of rigid, fixed, static concepts makes teachers apply the Traditional Approach that emphasizes the teaching of rules and then mechanical drilling of the rules. Language development is based on psycholinguistic principles that clearly

suggest a dynamic relationship between language and mind. It is imperative to develop this thought in teachers. Teacher education ought to provide a learning environment that would make student teachers challenge their existing beliefs about process oriented teaching and language acquisition. Unless they observe and practice Constructivist Approaches, they would not be able to know the feasibility of applying the approach in real life teaching.

The student teachers who were initiated and trained in the 5E Constructivist Approach found the Approach very favorable for developing important skills in learners. They found the Approach extremely suitable for English Grammar and Composition as compared to the Traditional Approach. The student teachers had applied the Approach to teach English Grammar and Composition in traditional Indian classrooms that are characterized by huge numbers. This shows that class size is not a barrier to practicing the Constructivist Approach as is assumed. The large number of students in a class imply many more ideas and deliberations. Thus a large class size could be viewed as a great learning resource. It is heartening to see that future teachers have a very positive perception of the Constructivist Approach in terms of its ability to develop significant lifelong learning skills in learners. Consistent efforts in equipping future teachers with progressive approaches would ensure an entire community of teacher leaders who would take initiatives in developing context specific pedagogies. It would develop reflective practitioners which is the need of the hour

REFERENCES

Abida K., Muhammad A. (2012). *Constructivist Vs Traditional: Effective Instructional Approach in Teacher Education. International Journal of Humanities and Social Science Vol. 2 No. 5; March 2012* 170

Best, J.W., & Kahn, J.V. (2006). *Research in Education.* New Delhi: Prentice Hall of India.

Christie, A. (2005). *Constructivism and its implications for educators.* Retrieved from http://alicechristie.com/edtech/learning/constructivism/index.htm on

Clarkson, B. & Brook, C. (2004). *I can't understand why I didn't pass: Scaffolding student activities.* In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds), *Beyond the comfort zone: Proceedings of the 21st ASCILITE Conference* (pp. 190-196). Perth, 5-8 December.
http://www.ascilite.org.au/conferences/perth04/procs/clarkson.html

Day C. (2003). *Developing Teachers- The Challenges of Lifelong Learning,* Routledge Falmer,

Taylor and Francis Group, London & New York.

Dewey, J. (1938). *Experience and Education*. New York: Macmillan.

Garrett, H. E. and Woodworth, R. S. (1981). **Statistics in Psychology and Education.** Bombay: Vakils, Feffer and Simons Ltd.

Grabowski, B. (2004). *Generative learning contributions to the design of instruction and learning*. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology*(3rded.), pp. 719-743. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Grennon Brooks, J., & Brooks, M. G. (1999). *In search of understanding: The case for constructivist classrooms.* Alexandria, VA: Association for Supervision and Curriculum Development.

Honebein, Peter. C. (1996). *Seven goals for the design of constructivist learning environments*. In Wilson, Brent. G. (Ed.). (1996) *Constructivist learning environments: case studies in instructional design*. Educational Technology Publications Englewood Cliffs, New Jersey

Jonassen, D.H. (1991). *Objectivism vs. Constructivism, Do we need a philosophical paradigm shift? Educational Research and Development*, 38 (3), 5-14.

Lorsbach, A. W. (2006). *The learning cycle as a tool for planning science instruction*. Retrieved from http://www.coe.ilstu.edu/scienceed/lorsbach/257lrcy.htm

Mary A. C., (2001). *Inquiry Approach*, Retrieved on 12/05/2012 from http://faculty.mwsu.edu/west/maryann.coe/coe/inquire/inquiry.htm

Nyaradzo M. & Jennifer T. (2012). *Constructivism in Practice: The Case for English Language Learners International Journal of Education* ISSN 1948-5476, Vol. 4, No. 3; doi:10.5296/ije.v4i3.2223

Sudheesh Kumar, P. and Bindhu C. (2002). *Learning Together-Classroom as a Community of Learners New Frontiers in Education*, Volume XXXII (1).

Thirteen Ed Online (2004).*Constructivism as a paradigm for teaching and learning.* Retrieved on 12/05/2012 from http://www.thirteen.org/edonline/concept2class/constructivism/index.html

Learning Cycle retrieved on 15/05/2012 from http://agpa.uakron.edu/p16/btp.php?id=learning-cycle

APPENDIX A: THE 5E CONSTRUCTIVIST LESSON PLAN FORMAT

Name: _____   **Date:** _____

Subject: _____   **Std:** _____   **Lesson:** _____

PART A

CONTEXT:

Entry Behaviour:

Correlation:

Teaching Learning Resources:

Content Analysis:

Values to be reflected upon:

Instructional Objectives and Specifications

Methodology to be followed:

Evaluation Strategies to be followed:

References: (Include the books/magazines/websites referred for the lesson)

PART B

CONTENT	TR. ACTIVITIES & PROCEDURE	RESOURCES
EXPERIENCES:		

Introduction	ENGAGE	
Presentation (Content matter to be taught)	EXPLORE EXPLAIN ELABORATE	
Summarization		
EVALUATION CONTENT	EVALUATE	
REFLECTION THEME		
ACTION		
Assignment		