Constructivist Teaching Approach and Academic Achievement in English: An Empirical Evidence of Secondary School Students

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ABSTRACT

Constructivism is a vibrant and self-motivated coaching paradigm that implies the establishment of the latest academic conceptions relying on the pupil's past educational experiences. Constructive teaching approach (CAT) accompanied with PQRST method (Preview, Question, Read, Summarize and Test) considered as an efficient way for progression of the students' comprehension regarding skills of English subject matter. This study aimed to find the effect of constructive teaching approach (PQRST) on 9th graders academic achievement in the provided subject of English. Quasi experimental Pre-test-posttest research design had employed to fulfill the fundamentals of the current study. Two intact groups were randomly selected, and teacher made achievement test used to take the score. Control group was instructed English conventionally whereas treatment group was instructed through PQRST under the shade of CAT. Pre-test scores demonstrated an insignificant statistical difference between both groups but after getting treatment for 12 weeks experimental group exposed a momentous positive statistical discrepancy in scores via getting instruction through PQRST. The current research recommends constructivist teaching approach along with PQRST may be used for the improvement of students' reading and comprehension skills in the subject matter of English which can enhance their achievement overall.

Introduction

One of the main ideological suppositions in teaching learning process has been founded, is termed as "constructivism". It is an educational premise based on learner-centeredness and pupils are thought to dynamically investigate and construe new experiences then build a connection to the past experiences of the confined phenomenon. This teaching method not only co-notates to the content to be taught but pupils' interests and needs catered well too (Lunenburg, 2011).

In education, as the time has been elapsed various educational theories were introduced by education experts belonging to various school of thoughts, like behaviorism came from behaviorist school of thought, cognitivisim came from cognitive school of thought, constructivism came from constructivist school of thought and likewise, but the selection and implementation of the educational theory within the classroom is relies on the teacher. The first and foremost responsibility comes upon the shoulders of teachers. Therefore, the teacher should select the theory very vigilantly to maximize the learning competence of students especially in second language.

Getting hold of second language is commendable as similar to any sort of triumph

(Janjua&Shehzadi, 2016). Multi faceted introduced learning theories have prescribed codes, postulates, impacts and certain gaps that give birth to new theories. Succinct percept of constructive approach is to make learner lively and vibrant in class participation rather than being a passive learner and silent absorber of the words spoken by the teacher. Constructivism stresses on teacher to be a mentor or facilitator throughout the learning process (Fosnot, 2006; Phillips, 2000 &Larochelle, 2010). Language is a great mode of communication and is utilized by the students to share the ideas, sequencing their learning, mold their arguments and to associate their perceptions with the world around (Anbreen, 2015).

Maheshwari and Thomas (2017) put forth that cognitive theory of learning has moved ahead the teaching learning cart from old behaviorism that merely focuses on the cultivation of human mind through stimulus response phenomenon. Cognitive theory sets certain goals for pupils and gives them space by motivating themselves (Butterfield, Lachman & Lachman, 1979). Teacher also offers students opportunities to set up a connection between prior and latest knowledge through schema activation, assimilation and accommodation cognitive view of learning is primarily favored by Jean Piaget (Anderson, 2005). Furthermore, Chen (2003) states that this approach implies information processing approach, where the learner pay input to a piece of information by processing, storing into conscious and getting back it for later utilization in order to assimilate and accommodate the concepts.

Burner and Jean Piaget being as proponents of the constructivism sets up the ideology that mental schemas are activate by bringing together the pieces of information and founded on the individual's reaction as well as the way of representing the reality of surroundings (Wadsworth, 1996). Duffy and Jonassen (2013) believed that constructivist teaching approach could be utilized while planning the classroom instruction and on the broader level at curriculum development stage to cater the individual's social, psychological, economical as well as ethical needs. There must be a strong coherence between the goals, curriculum, learner, teacher, and society. Hence, the national curriculum put forth keeping in view the constructive approach endows learners to cultivate their intelligence by interacting with learning materials as well as this approach facilitates them to build confidence in their personalities and productively contribute in the wellbeing of society (Kiraly, 2014).

Constructive approach is merely learner- centered and strongly postulates that learning cannot take place in rigid environment, it would be a passive absorbance of the dictated concepts as learning is to bring desirable change in personality; thus, learning adaptations could only be possible when the individuals are actively involved and fully weaved with the knowledge development process (Richardson, 2005).

This sets educational liability on the students and when they think themselves responsible for their learning outcomes their achievement gets higher enough. This approach makes them profound learners and build healthy attitudes in them regarding, how to bring up the thought's issues to the instructor, shield and mold their ideas on the basis of instruction (Fonost, 2013).

In language learning classrooms constructivist approach has gained much attention. Letter recognition, phonics and ability to comprehend the text are the basic requirements in learning English language. While pursuing English, the most important thing is to understand the context of the prescribed content (Manan, 2015). Constructivism is proved to be productive to maximize the reading and comprehension skills of pupils at secondary school level (Mvududu, 2012).

Four basic language skills are listening, speaking, Reading, and writing. The most important among all of these is "reading".

Reading is a multifaceted and persistent intellectual, creative, socio-cultural and phonological process in which reader is ought to utilize their articulated, verbal and written language, their familiarity about the text and culture to deduce the meaning from that particular cultural context (Jurnal, 2015 as cited in 2020). Comprehension is also a vital aspect in language learning as it's a conscious understanding of what has been read. Comprehension therefore is said to be the decoding of the prescribed text within the educational context. Reading comprehension proved to be productive when reader is aware of the skills, strategies, and their effective utilization to gain an insight of text to meet the reading purpose. Reading may consider a time killing activity if comprehension is neglected. In 1992, Mahmoud suggested three levels of reading comprehension:

1) Literal reading
It is the ability to follow the context; recognize characters, words, deduce meanings accurately.

2) Aesthetic Reading
Aesthetic mean to glorify the beauty and quality of
the reading material.

3) Critical reading

It is the ability to draw realistic distinctions between facts, opinion, and common ideas. Thus, to comprehend the text deliberately the student must develop the ability to read at all levels.

Reading comprehension is pivotal phenomenon of language learning classroom. Comprehension auspex's three aspects: reader who is supposed to comprehend the text, the written material to be comprehended and the situation/ context within comprehension is a part (Snow, 2002). In Pakistan, English has the status of second language (ESL) and greatly contributing to developing the nation, but it has been observed that in early academic years' students face great difficulty in comprehending the text and even unable to make simple sentences for the descriptions. This makes them insufficient and incompetent learners and creates a problem in later academic years. English has become a gateway to success of Pakistani students, whereas public school students are lacking in the Basic English language skills due to teacher centered traditional methods. One of the English teaching strategies under the shade of constructivism is PQRST. This technique is widely being used to develop reading skills as well as stimulate the English comprehension ability. This method is primarily rooted in SQ3R which was developed for World War II, 1941 military persons who were going structured pre- reading excellence courses (Hay, 2005). It is taken as previewing comprehension strategy where reader look for the idea without doing actual reading (Tarbasoo& Bouchard, 2003).

PQRST is an acronym of Preview, Question, Read, Summarize/state and Test for knowledge. This technique develops the ability to skim and scan the text, formulating questions, stating the topic sentence for each paragraph, while teacher facilitates students in a way that they keep indulged in the lesson with full attention and by the end of lesson they just become able to describe the text within the context.

PQRST substantially improves the students' retention and comprehension abilities (Syafitri, 2017). Thus, PQRST is pivotal to accelerate the reader's ability to comprehend the text and hence each stage of PQRST enhances reader's capacity to withhold the information and retrieve it later from long term memory during exams to get high scores (Ahuja & Ahuja, 2007, Miqawati&Sulistyo, 2014). Therefore, this research is a diminutive initiative to have an insight how constructivist approach along with PQRST impacts secondary school Pakistani students' academic achievement in English subject.

Objective of the Study

The present research was sought to examine the effect of constructivist teaching approach (CAT) on secondary school students' English academic achievement.

Null Hypotheses

The hypotheses narrated below were tested in the study:

$H_{01.1}$ There is no statistically significant difference in English pre-test scores of control and experimental group.

$H_{01.2}$ There is no statistically significant difference in the English post-test score of control and experimental group.

$H_{01.3}$ There is no statistically significant effect of constructivist teaching approach (PQRST) on experimental group's academic achievement in English.

$H_{01.4}$ There is no statistically significant effect of conventional method (GTM) on control group's academic achievement in English.

Conceptual Framework

Constructivist approach (Vygotsky, 1978) of teaching is widely being used in English language classroom. It entails three types, for the present research cognitive constructivism was chose. Reading comprehension takes place through schema activation. Schemas play an important role in creating a bridge between simple and complex concepts. Hence, PQRST can also help the students in maximizing their reading comprehension skills which may enhance their academic achievement.
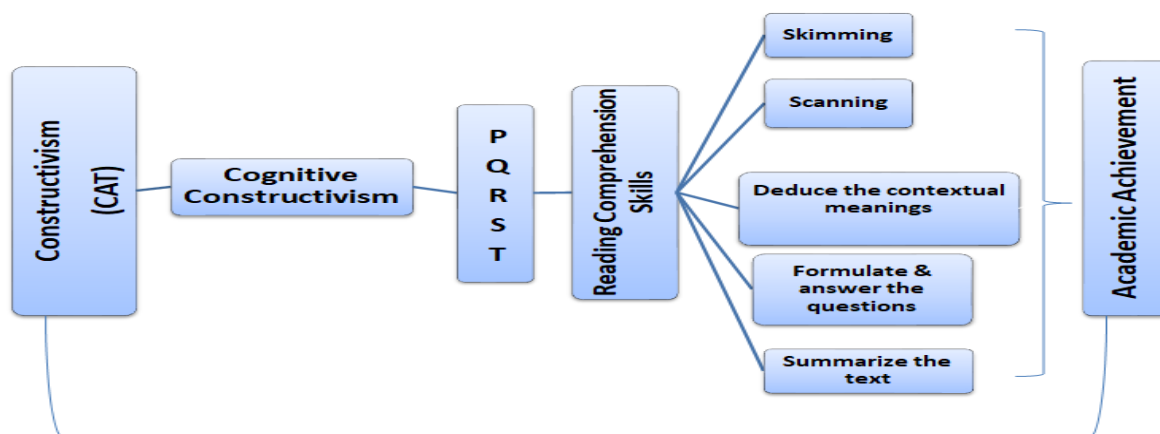

Figure 1: *Conceptual Framework of the study*

Review of related Literature

Miqawati and Sulistyo, (2014) conducted a study. like this one titled "The PQRST strategy, reading comprehension and learning styles" researcher used two by two factorial design. Researchers conducted experiment in eight meetings. Experimental group was taught through PQRST whereas, control group was taught using translation and reading aloud strategy. Two instruments were used to determine the effectiveness of treatment; reading comprehension test and set of questionnaires for learning styles. Mean of experimental group was higher than the mean of control group with the difference of 9.67 for reading comprehension test.

The second research was conducted by Sari (2015). Purposes of this research were to draw inferences about experimental group reading comprehension skills, control group reading comprehension skills, affirmative and momentous effect of PQRST on students' reading comprehension skills. She used quasi experimental design. She used teacher-made multiple-choice questions test. Results revealed that experimental group posttest mean was higher 64.39 than control group posttest mean 55.13.

An experimental research aimed to find the effect of applying Preview-Question-Summary-Test method on the students' reading comprehension. showed that experimental group showed remarkable achievement as compared to control group P= 0.05 (Ismiyanti,2017).

Research Methodology

This study was adopted positivist philosophical paradigm and quantitative in nature (Crowther & Lancaster, 2008). As the aim of current research was to figure out how constructivist approach effects the secondary school students' academic achievement in English. Aligning with the previous research's researcher used quasi-experimental pretest-posttest control group research design was used. Therefore, to conduct the present study the researchers selected intact groups. Major justifications for adopting this design: 1) non-randomization; 2) institutions permission as they have predetermined system i.e., class wise sections; students' strength; and time duration for the study periods. In such circumstances quasi experimental design is best. Moreover, validity threats i.e., history and maturation were deliberately controlled through continuous interaction with the participants as no certain unfavorable happening was occurred during experiment. Experimental mortality remained negative as no dropout occurred. Thus, to carry out the present study, researchers has utilized the pre and posttest control group design given as:

X$_1$O
X$_2$O

Participants of the study

Class Nine students studying in school X, was considered as the population of this study. Intact group X consisting upon 36 number of students served as experimental group and intact group Y with 33 number of students served as control group.

Research Instrument

Teacher made test; comprising upon 30 MCQs and one comprehension passage from English textbook of 9 grade was used as pre and post-test. Content and face validity of test was censured by three field experts. Researchers modified the instrument in the light of experts' opinion. Moreover, psychometric analysis was done to ensure the reliability of the test. Items with item difficulty p-value (.30-.70) and discrimination index (> 0.25) are acceptable (Hingorjo& Jaleel, 2012). Correspondingly, all the items of the test were in the range. In the same way, to confirm the reliability of scoring for comprehension passage, rubric was developed. Reliability has been checked through split half method and overall reliability was 0.81.

Table 1.*Summing up of experts' opinion regarding validity of instrument*

	Before Revision (Expert 1*3)	After Revision
Format	Avoid tabular arrangement, put distracters in vertical arrangement. Mark numbering for each question.Give proper instruction i.e., encircle/ tick the right option.	MCQ's distracters were placed in vertical arrangement. Numbering was marked. Instruction was given.
Language		
Content selection/weight age		
MCQ's		
Comprehension Passage	Avoid specific paragraph to measure the understanding. Make a general paragraph including different sentences from a single chapter. (Two experts recommended Unit # 11 for comprehension Passage)Mention the time allocated to respond the passage	Generalization has been ensured by combining different sentences. Recommended unit has been selected for paragraph formation. Time Allocated was written on the top of the passage.

Table 2. *Rubric for Assessment of Reading Comprehension*

Marks	Remarks
2	Responding the question with proper structure (context, grammar, sequence of the sentence, spellings)
1.5	Accuracy of grammar, context, sequencing and with 2-3 spelling mistakes.
1	Accuracy of grammar, with improper structure and 2-3 spelling mistakes.
.5	At least to attempt the question having a little connection with the context.
0	Not attempting or skipping any question.
Words- Meaning	
1	Contextual meaning and with no spelling mistake
.5	Contextual meaning and with 2 spelling mistakes
0	Wrong Meanings

Intervention

Pre and post-test technique were used for the data collection. Earlier to conduct the pretest pilot testing was done on secondary school students at school X of Lahore district. The premise of pre-test was to ensure that students of both intact groups are lying on same learning grounds before intervention. Control group was taught with the traditional method of teaching, on the other hand, experimental was taught through PQRST method of teaching. Same test was utilized as posttest after 12 weeks were elapsed to measure academic achievement of students within last four chapters of English of both cohorts i.e., control along with experimental. Scores were collected for both tests that were later used for analysis to draw the findings of the research.

To gather the evidence how constructive teaching approach along PQRST impacts the secondary school students' academic achievement in English subject. PQRST drastically enhances the students' reading comprehension abilities through previewing the prescribed text, constructing questions followed by scanning the text to find the answers then summarizing the text in own words and lastly testing the knowledge without looking at book (Siafitri, 2017).

This strategy follows a reading modal; named as top-down modal. Top- down modalentails recall of previous knowledge to gain an insight of the new one. Students utilize hands-on experiences to make predictions and considering context is key; they look for the main idea rather than decoding each single word Ismiyanti (2017). This stance states that comprehension is more general end in view (exploring the title, grasping the main idea for each paragraph etc.) such type of dispensation is primarily based on the previous knowledge. Therefore, to understand the new chunks of reading material schemas get activated to guide the reading activity and thus become vital to comprehension process (Angosto, 2013).

The researcher taught the experimental group with above mentioned approach for 12 weeks.

PQRST

1. P: Preview is the first and foremost stage where teacher prepared students to learn. The researcher captivated students' attention constructively by asking them to view the illustrations carefully, while beginning of each new chapter. The researcher dragged their attention towards the formal discussion by inquiring one or two questions for the brain storming purpose. The researcher guided students step by step that how to extract the main idea from the paragraph and determine the topic statement for each paragraph.In this way students got an insight of the text briefly and build a connection of certain grammatical as well as theoretical concepts what they already knew related to the lesson to be taught.

2. Q: Question is the second stage where teacher scaffold the students and acted as a facilitator. The researcher asked students to make verbal or written questions to get a deeper insight of the context of the lesson. Thus, in this way students revealed what they comprehend. This stage was quite helpful for assimilation and formulating questions and did not let them distract during lesson.

3. R: Read and it is the third stage of this method. Here the students read the lesson to scan. The researcher guided them to underline the new and difficult words and explained the phrases; scaffold the students regarding grammatical concepts by recalling students' previous knowledge of grammar and language. While reading the researcher reinforced the concepts and asked the pupils to explore the answers to the question they made earlier. Henceforth students were taught lesson constructively so that their comprehension skills must be developed. The researcher asked them to read the entire paragraph rather than single words.

4. S: summarize/state. The fourth or second last stage is S-summarize/state. It can also be termed as "recall" stage because students repeat the lesson loudly in a logical sequence. The Researcher asked randomly from students to summarize the lesson to get an insight that how many have grasped the lesson and to what extent they were able to convey the comprehensive knowledge to rest of the class. The Researcher asked them to discuss the questions they listed and analyzed how well they replied. While summarizing the lesson the researcher made certain additions which necessary. This ended up

the monotony of the class and ultimatelymotivated the students.As a result, they were able to solve the comprehension part of textbook exercises themselves in a very organized way.

5. T-test: Fifth and last stage of this method is T-test. This can be in both forms i.e., testing for Knowledge and testing of knowledge. At summarize stage students were made enable to comprehend the text productively in their own words. Learning happened till above mentioned stage and at T-test stage knowledge was tested by certain verbal or written activity. This is quiet essential aspect to check the productivity of the intervention and to get the insight of teacher's efforts. For example, most of the time the researcher asked the students to solve English textbook exercise questions and then the researcher assessed the learning levels of students and provided feedback accordingly.

Data Analysis and Interpretation

After intervention tests were collected, scored and compiled. Collected data were analyzed and interpreted using inferential statistics.

Table 3. *Independent Samples t-test for Pre-Test scores of Control and Experimental Group*

Groups	N	M	SD	Df	t	P	η^2
Control	33	10.12	4.357	26.56	0.229	.820	0.1
Experimental	36	10.11	4.041				

Note: *Eta squared value = η^2; Significant at level p <0.05*

Table 1 indicates an insignificant difference in the pretest scores of control group (M= 10.12, SD= 4.357) and experimental group (M= 10.11, SD= 4.041) as P> 0.05, t (26.56) =0.229), *p*=0.820 with very small eta square value (η^2 =0.1).

Table 4. *Paired Samples t-test for Pre-Test and Post-Test scores for Control Group Students' Achievement*

Control Group	M	SD	T	Df	p	η^2
Pre-test	10.2	3.925	.470	68.46	0.639	0.006
Post-test	11.3	3.918				

Note: *N= 33; eta squared value =η^2.*

Paired samples t-test was applied to compare the pre and posttest scores of the control group on students' academic achievement in the subject of English at secondary level. Statistically, an insignificant difference with very small effect size (η^2 =0.006) found between the mean scores of Pretest (M= 10.2, SD= 3.925) and Posttest (M= 11.3, SD= 3.918) as t (68.46) =.470, *p*=.06.

Table 5. *Paired Samples t-test for Pre and Posttest scores of Experimental Group Concerning the Effect of CAT on Students' Achievement*

Experimental group	M	SD	df	t	P	η^2
Pre-test	10.11	4.04	35			
				-28.39	.000	0.95
Post-test	12.47	5.16				

Note: *N= 36; eta squared value =η^2; Significant at level p <0.05*

Table 3 illustrates that there is a statistically significant difference in mean scores of pre-test (M= 9.89, SD= 4.041) and post-test (M= 12.47, SD= 5.169) as P< 0.05, t (35) =-28.398, *p*=.000 with large effect size (η^2 =0.95). Higher mean of post-test scores indicates that constructivist approach along with PQRST significantly improved students' achievement in English.

Table 6. *Independent samples t-test for Posttest scores of Control and Experimental Group for the Effect of CAT on Students' Achievement*

Groups	N	M	SD	Df	T	p	η2
Control group	33	11.3	4.50	67	-14.16	.000	1.5
Experimental group	36	12.47	5.62				

Note: *eta squared value = η2*

Table 4 demonstrates that a statistically significant difference in post test mean scores of control group (M= 11.3, SD= 4.505) and experimental group (M= 12.47, SD= 5.624) as p< 0.05 t (65.854) =-14.161, *p*=0.000 and high eta squared value (η2 =1.50). This demonstrates that intervention provided to the experimental group significantly improved secondary school students' academic achievement.

Discussion

Language learning classroom needs to be more vibrant and efficient. Learning is not confined to a one-way process rather it has become a two-way process and individual's need should given priority while designing the instruction. Whereas, English has become an international language and thought to be a key to success student is lacking in the English reading and comprehension skills at secondary school stage. Constructivism is an efficient approach to improve the students' reading comprehension skills. Current study confined to scrutinize the outcomes of constructive approach (PQRST) on secondary school students' academic scores regarding English reading and comprehension.

The findings showed an insignificant difference in achievement of both groups before the start of intervention. Pre-test was taken to check the homogeneity of both groups and to minimize the threats of internal validity. On the other hand, after 12 weeks intervention a statistically significant difference found in the post-test scores of both groups. It is favored by Khoiriah and Suparman (2019). They found that statistically significant improvement of students' reading comprehension capacity by using PQRST strategy. Khoiriah and Suparman (2019) argued that constructive teaching make student's self- regulated and independent. Hence, they become vigilant and alert while getting instruction. Kim (2005) conducted an experimental study and results supported the present study as no significance difference originated in pre-test scores whereas in post-test experimental group taught with constructivist approach outperformed as compared to control group.

 Research showed that utilization of PQRST strategy to teach English could help the understudies to figure out the text well. Stages in PQRST are extremely valuable for helping the pupils in interpreting the text (Oxford, 2003). Results revealed a substantial difference in pretest as well as posttest mean scores of investigational clusters. These results coincide with the findings of Priyanti, Padmadewi and Saputra (2017). PQRST significantly effect on the students' text reading and comprehension (Balim, 2009; Saniyah, 2019). Estaria, (2017) has conducted a study in Indonesia titled role of PQRST in improving students' reading skills as the researcher gathered the evidence that PQRST proved to be effective in enhancing students' reading comprehension skills.

The results showed that there was no variation in the performance of the group taught English through conventional method. Empirical research evidence support this results when students were not given the chance to cultivate their intelligence and merely behave as passive absorber of the content delivered by the teacher with the classroom their reading and comprehension skills will not be developed (Ahuja & Ahuja, 2007; Miqawati and Sulistyo, 2014) This argument was also favored by the findings of the Kim, (2005) as control group have shown the decline in posttest scores.

Conclusion

In this modern age of scientific research, it is quite hard to go with the conventional teaching practices like stimulus- response, rote memorization, beating and corporal punishments to make students learn their lesson. With the emerging trends of education, new and vibrant teaching approaches and methodologies have been introduced. Those techniques have been proved to be productive and efficient in improving students' knowledge gaining and retaining practices in language learning classrooms. One of them is constructivist teaching approach (PQRST). As English has become an international language and considered to be a gateway to success so it is of utmost importance to make students well versed in English

reading and comprehension skills. Secondary school is the most crucial stage in one's academic life. It laid the foundation for rest of the academic year. Nobody could deny the importance of English as it is covering a huge portion of academics. Therefore, it is most important to equip the learner here with best language skills and it is not possible without choosing right teaching approaches. PQRST accompanied with constructivist approach proved to be a great contributor in excelling secondary school students' reading comprehension skills by aiding them in learning fast and in logical sequence.

Recommendations

Keeping in view the findings and conclusion, following recommendations were made. Teacher may utilize constructive approach along with PQRST to prepare lesson plans as it makes the learning fruitful. Teachers may train more students in classroom to comprehend the text for better understanding. Researchers have proved that CAT proved beneficial to improve students' reading and comprehension skills and academic achievement in English language learning. This methodology can be utilized as a game so that students can take more interest and enjoy the teaching learning process. Adding up, reading and comprehension supplementary material may be tailored to the learner's concept sustaining capacity.

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