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RESEARCH PAPER

Levels of Students' Critical Thinking Skills and Their Academic Achievement at Secondary Level: A Diagnostic Study

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ABSTRACT

The main theme of the study was to assess the levels of critical thinking skills and academic achievement of students at secondary level. The study was descriptive in nature and survey method was used to conduct the study. All the schools of district Gujrat were taken as cluster. Among all clusters 10% clusters were randomly selected. Moreover, all 10th class students of selected clusters were taken as sample for the study. Test was developed to assess students' critical thinking skills. Students' achievement was considered as overall score obtained by the students in the annual examination directed by Board of Intermediate and Secondary Education Gujranwala in 2021. Results of the study concluded that majority of students had high critical thinking and academic achievement level in public and private schools at secondary level. On the basis of conclusions, it was recommended that the curriculum wing may add more content in the curriculum at secondary level regarding different levels of Bloom's cognitive domain for developing critical thinking and problem solving skills among students, as well as the administrative authorities of educational institutions may focus on the development of critical thinking skills among students to improve their learning progress and academic achievement.

Keywords: Academic Achievement, Critical Thinking, Secondary Level

Introduction

Education is the fundamental necessity of a person. The focus given on education of the individuals is increasing day by day, throughout the world. As this world is becoming modern, it is also becoming difficult to educate the individuals to meet the complicated situations and to live a better life. In the modern and complicated world, teachers are searching and formulating more accurate education models to educate the individuals to give them ideal education. Today, the teachers expect from the students to meet the problems logically and sensibly in this modernizing world and then make decisions to minimize their mistakes. Teachers are trying to prepare students for thinking logically, and deal the matters through their critical thinking. They are also expecting from the students to use their critical thinking in accurate decision making to minimize the mistakes.

Paul and Elder (2008), asserted that crucial thinking presents a vehicle for teaching the thoughts. Critical wondering is a potential that is beyond memorization. When college students suppose seriously, they may be advocated to assume for themselves, to inquiry suppositions, to examine and create the openings, to move one phase extra by using emerging fresh suppositions and examine them towards the statistics. Inquiring is the basis of essential questioning which in flip the supply of information creation and as such must learn as an outline for all mastering. Scholars are regularly habituated of their method to mastering by reviews in trainer-focused, textbook-pushed lecture rooms.

In the present time, the condition is a worrying case for modern teachers and for this purpose they have to rather select the contemporary academic styles and approaches having greater power and effectiveness in guiding school pupils to suppose seriously. There is a dire

need to develop critical thinking and problem-solving skills amongst college students for better studying and reflection of their academic in addition to in their destiny lifestyles (Sharma & Elbow 2000).

Every scholar needs to equip him/herself with specific effective abilities of logical thinking and questioning, they should not receive something for fixed however it's far very critical to train and develop important thinking amongst scholars. Numerous methods of organizing for instruction in crucial wondering are in practice. It is a time when an effective teacher has to retain the ability to use different strategies to teach the students or to solve the pedagogical issues during their classroom. It has described that it is compulsory for teachers to understand have awareness about the particular unit of their content to improve the critical thinking among their pupils. Our curriculum has a very little material for this purpose to improve critical thinking. It is also concluded that there a worst lack of familiarity of teaching strategies among teachers to develop and improve their skills for critical thinking (Wright, 2002).

In Pakistani education system, less focus is given on promoting students' critical thinking skills at secondary level as it is obvious from text books of grade IX that SLOs regarding measuring students' critical thinking skills are missing. Moreover, current assessment system at secondary level does not focus on critical thinking. Furthermore, there is possibility that students have developed critical thinking skills but they are not measured properly. Additionally, there may be gender and sector wise disparity between students' level of critical thinking skills. Although, developing the capacity to suppose significantly is an essential detail for current training approaches and models at secondary stage. Critical thinking abilities are also important to ensure students' success inside and outside the classroom. This situation inspired researcher to investigate the following research problem to determine the actual position of secondary school students' level of critical thinking skills and their academic achievement.

Literature Review

The term 'critical thinking is earmarked by nearly, mainly since the logical existence, to mention to a shape of thoughtful wondering engaged in the direction of the assessment and evaluation of existing communication, facts and urgings, in specific from side to side the practice of reason and intention. It is an ability to look deeply the current situation, making its connections with previous experience, situation and results. It is a process of specified steps to face and solve the problems or phenomenon (Browne & Keeley, 2011).

It turned into pointed out that mental conceptions of vital questioning generally have a tendency to emphasize the submission of examination and assessment to solve the existing problem and selection of choice conditions, instead of to styles of familiarity or discussion (Tarricone, 2011). Critical thinking is considered as an individual process that effects in decision making and choice selection approximately dogmata, activities, and matters, and allows a character to keep in mind diverse features of a wonder or distress or numerous occurrences, or to decide by distinctive feature of legitimate explanations (Pozhhan et al., 2019).

Academic success is problem that parents are sensitive to, due to the fact they assume that destiny success of their kids relies upon on gaining necessary evaluations in school. It is the results of students after completing specific period of time and certain curriculum (Seif, 2013). It also known as the reputation of an individual as a student in the school based on his/her performance in the class and examinations. This term refers to the quantity of individual college studying as measured by means of numerous lesson checks which includes mathematics, geometry, sciences, and so forth. According to definitions described above, it is concluded that the process of learning, obtaining new knowledge and skills, implementation of acquired knowledge and skills and them assessment of level of acquired knowledge and skills to promote for further level of learning. In short, it is the "very

last responsible of the active gaining knowledge of method that is done by way of the useful resource of coaching schooling activities" (Behzadi, 2009).

Academic success is normally appeared as the show of understanding attained or talents evolved inside the faculty challenge. It is the extent of overall performance in college subject as exhibited by means of a man or woman. In the school placing, it's far known as the exhibition of expertise attained or skills developed in college subjects. Test ratings or marks assigned by using instructors are indicators of this fulfillment. Recently, it could be located that academic psychologists have started to address what has historically been regarded as the tender side of individual variations. This includes mood, feelings and feelings with regards to educational achievement - a way wherein students feature and perform in accordance with the anticipated tasks handy. However, achievement may be said to be the outcome of guidance. It is also stated that success is the give up made of a mastering revel in. Attaining an excessive degree of educational overall performance is what each figure or dad or mum as well as trainer wishes for their children, wards and students. Schools and instructors are normally graded qualitatively by means of fulfillment primarily based at the performance of their students (Busari, 2011).

One of the elements affecting the educational achievement is critical wondering. Critical questioning, as a standard application of the process of questioning with a way and rule, not handiest method practical contemplation, however also to check the diploma and common sense that humans use (Jackson, 2015). Achievement in vital questioning skill is regularly most of the most important formal academic reasons; due to the fact important questioning capacity is critical for achievement in trendy hastily advancing world. Today, education and training professionals agree that essential questioning need to now not best be one of the dreams of schooling and schooling, but additionally have to be an inseparable a part of schooling at any stage, because important thinking is the wondering that leads to the best answer with the aid of analyzing, evaluating, choosing and applying; the same thing that today's global desires (Finn & Wright, 2015).

Material and Methods

This study was correlational research in nature. Relationship between different the level of students' critical thinking skills and academic achievement at secondary level. All students of 10th class of public and private secondary schools (547) in district Gujrat were the population of this study. Number of public schools was 292 while private schools were 255. Total enrolled students in 10th class of both private and public schools were 22566 (Govt. of Punjab, 2021). Stratified cluster sampling design was used to select the sample. Stratification was done with respect to public and private sector schools. Moreover, these strata were further divided into male and female stratus (Singh &Mangat, 2013). All the schools of district Gujrat were taken as cluster. Among all clusters 10% clusters were randomly selected: public 29 (male 14, female 15) and private 26 (male 13, female 13). Moreover, all 10th class students of selected clusters were taken as sample for the study.

Instrumentation

Self-made test was developed to assess students' critical thinking skills: application, analysis, evaluating and creating levels. Test was consisted of multiple choice and short questions. Moreover, students' achievement was considered as overall score obtained by the students in the annual examination directed by Board of Intermediate and Secondary Education (BISE), Gujranwala in 2021. This score was used to correlate with the critical thinking instrument score.

Results and Discussion

Table 1
Critical Thinking Skills Categories of Students at Secondary Level

Critical Thinking Skills Category	Frequency	Percent %	Mean	S.D
Low Critical Thinking	454	41.3	1.79	.756
Moderate Critical thinking	423	38.5		
High Critical Thinking	223	20.3		

The table 1 showed percentage frequency of three levels of critical thinking and overall mean value for the critical thinking skills among students. Table values showed that 41.3 % students have low critical thinking skills, 38.5% students have moderate and only 20.3% students have high critical thinking skills. It displays that majority of students had low critical thinking skills level at secondary level.

Table 2
Critical Thinking Skills Levels among Students at Secondary Level

Critical Thinking Skills Level	N	Minimum	Maximum	Mean	Std. Deviation
Analysis	1100	3.00	16.00	10.45	4.21
Evaluation	1100	1.00	16.00	7.78	3.70
Creation	1100	.00	16.00	4.91	3.55

The table 2 showed mean and standard deviation of three levels (Analysis, evaluation and creation) of critical thinking and minimum and maximum value for each critical thinking skills level among students. Table values showed that students have critical thinking skills at Analysis level (M=10.45, S.D=4.21), students have critical thinking skills at evaluation level (M=7.78, S.D=3.70) and students have critical thinking skills at creation level (M=4.91, S.D=3.55). It displays that majority of students had high critical thinking skills at analysis level in secondary schools.

Table 3
Critical Thinking Skills Categories of Students in Public Sector Schools at Secondary Level

Critical Thinking Skills Category	Frequency	Percent %	Mean	S.D
Low Critical Thinking	236	40.7	1.90	.841
Moderate Critical thinking	165	28.4		
High Critical Thinking	179	30.9		

The table 3 showed percentage frequency of three levels of critical thinking and overall mean value for the critical thinking skills among public school students. Table values showed that 40.7 % students have low critical thinking skills, 28.4% students have moderate and 30.9% students have high critical thinking skills. It displays that majority of students had low critical thinking skills level in public sector schools at secondary level.

Table 4
Critical Thinking Skills Levels among Public Sector Students at Secondary Level

Critical Thinking Skills Level	N	Minimum	Maximum	Mean	Std. Deviation
Analysis	580	3.00	16.00	10.36	4.49
Evaluation	580	1.00	16.00	8.16	4.09
Creation	580	.00	16.00	5.68	4.10

The table 4 showed mean and standard deviation of three levels (Analysis, evaluation and creation) of critical thinking and minimum and maximum value for each critical thinking skills level among public sector students. Table values showed that students have critical thinking skills at Analysis level (M=10.36, S.D=4.49), students have critical thinking skills at evaluation level (M=8.16, S.D=4.09) and students have critical thinking skills at creation level (M=5.68, S.D=4.10). It displays that majority of students had high critical thinking skills at analysis level in public sector schools at secondary level.

Table 5
Critical Thinking Skills Categories of Private Schools Students at Secondary Level

Critical Thinking Skills Category	Frequency	Percent %	Mean	S.D
Low Critical Thinking	218	41.9	1.66	.626
Moderate Critical Thinking	258	49.6		
High Critical Thinking	44	8.5		

The table 5 showed percentage frequency of three levels of critical thinking and overall mean value for the critical thinking skills among private sector students. Table values showed that 41.9 % students have low critical thinking skills, 49.6% students have moderate and 8.5% students have high critical thinking skills. It displays that majority of students had low critical thinking skills level in private sector schools at secondary level.

Table 6
Critical Thinking Skills Levels among Private Sector Students at Secondary Level

Critical Thinking Skills Level	N	Minimum	Maximum	Mean	Std. Deviation
Analysis	520	3.00	16.00	10.56	3.88
Evaluation	520	2.00	14.00	7.36	3.17
Creation	520	.00	10.00	4.05	2.56

The table 6 showed mean and standard deviation of three levels (Analysis, evaluation and creation) of critical thinking and minimum and maximum value for each critical thinking skills level among private sector students. Table values showed that students have critical thinking skills at Analysis level (M=10.56, S.D=3.88), students have critical thinking skills at evaluation level (M=7.36, S.D=3.17) and students have critical thinking skills at creation level (M=4.05, S.D=2.56). It displays that majority of students had high critical thinking skills at analysis level in private sector schools at secondary level.

Table 7
Students' Academic Achievement Categories at Secondary Level

Students' Academic Achievement Category	Frequency	Percent %	Mean	S.D
Low Academic Achievement	106	9.6	2.32	.641
Moderate Academic Achievement	537	48.8		
High Academic Achievement	457	41.5		

The table 7 showed percentage frequency of three categories of academic achievement and overall mean value for the Academic Achievement of students. Table values showed that 9.6 % students have low Academic Achievement, 46.1 % students have

moderate Academic Achievement and 41.5% students have high Academic Achievement. It displays that majority of students had moderate academic achievement level.

Table 8
Students' Academic Achievement Categories among Public Sector Schools Secondary Level

Students' Academic Achievement Category	Frequency	Percent %	Mean	S.D
Low Academic Achievement	70	12.1	2.24	.653
Moderate Academic Achievement	299	51.6		
High Academic Achievement	211	36.4		

The table 8 showed percentage frequency of three categories of Academic Achievement and overall mean value for the Academic Achievement of students. Table values showed that 12.1 % students have low Academic Achievement, 51.6 % students have moderate Academic Achievement and 36.4% students have high Academic Achievement. It displays that majority of female students had moderate Academic Achievement level.

Table 9
Students' Academic Achievement Categories among Private Sector Schools Secondary Level

Students' Academic Achievement Category	Frequency	Percent %	Mean	S.D
Low Academic Achievement	36	6.9	2.40	.616
Moderate Academic Achievement	238	45.8		
High Academic Achievement	246	47.3		

The table 9 showed percentage frequency of three categories of Academic Achievement and overall mean value for the Academic Achievement of students of private sector schools. Table values showed that 6.9 % students have low Academic Achievement, 45.8 % students have moderate Academic Achievement and 47.3% students have high Academic Achievement. It displays that majority of female students had high Academic Achievement level.

Conclusions

a. In overall schools, majority of students had low critical thinking level and a few students had high level of critical thinking at secondary level. Furthermore, in public schools' majority of the students were equipped with low level of critical thinking but private schools' students were equipped with moderate level of critical thinking.

b. Critical thinking among students in both public and private schools at secondary level at analysis level was highest where as it was lowest at creation level. The students had greater skills to understand and solve the problems using critical thinking skills at analysis level whereas students were very weak at creation level.

c. The majority of students had moderate level of academic achievement in public and private schools at secondary level. Few students were at low level of academic achievement in public schools and private schools.

Recommendations

a. The curriculum wing may add more content in the curriculum at secondary level regarding different levels of Bloom's cognitive domain for developing critical thinking and problem solving skills among students.

b. The administrative authorities of educational institutions may focus on the development of critical thinking skills among students to improve their learning progress and academic achievement.

c. The authorities of Boards of Intermediate and Secondary Education may increase portion of critical thinking skills in papers to focus on developing critical thinking skills among students and ultimately their academic achievement.

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