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Abdul Waheed Dahri [1]
Mehboob Ali Dehraj [2]
Naseem Hyder Rajput [3]
Masroor Hussain Abbasi [4]

Analysis of the prevailing teaching strategies to promote critical thinking at elementary level

Abstract

The purpose of this study was to analyze the effective teaching strategies that promoted critical thinking among the students of public elementary schools in four Talukas of District Shaheed Benazirabad. A self-made questionnaire containing 15 statements was distributed among 102 participants including 64 male and 38 female teachers in 28 public elementary schools. The target population was 314 junior school teachers in 64 public elementary schools in the district. It was found that visual-aid used as a teaching tool to promote critical thinking and logics through colorful text, voice, pictures, and videos. Study is very important because it has dragged the teachers' attention towards the most effective and result-oriented teaching strategies.

Keywords: *Critical thinking, teaching strategies, classroom, public elementary students.*

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[1]*Shaheed Benazir Bhutto University, Shaheed Benazirabad Email: awaheed.910@gmail.com*
[2] *Shaheed Benazir Bhutto University, Shaheed Benazirabad*
[3] *Shaheed Benazir Bhutto University, Shaheed Benazirabad*
[4] *Shaheed Benazir Bhutto University, Shaheed Benazirabad*

Introduction

Critical thinking draws logical based conclusions, guides in emotional play to reach at conclusions. Human critical thinking is to make human efforts conscious, uncover biases and leads to draw conclusions. It uses open minded to accept the evidences. The critical thinking believes cognitive efforts rather than blind beliefs. Teachers face challenges to promote critical thinking among their students by introducing innovative teaching strategies (Barnet, 2017).

Prevailing Instructional Teaching Strategies Promoting Critical Thinking

In the current scenario, education in Pakistan has suffered greatly from the lack of quality education and the inadequate implementation of adequate sources available at the basic level for education, so the capacity building of students is a challenge. In most of the public elementary classrooms, junior school teachers use traditional teaching methods that limit productivity and critical thinking of students (Kazmi, 2005). Teachers are concerned about the completion of the work, instead of focusing on new ways of developing the thinking process. They focus mainly on structured grammatical models that focus strictly on bookish knowledge. Such an approach emphasizes the development of only reading and writing instead of thinking skills in the students. Most of the teachers use traditional teaching strategies for the memorization of text rather than promoting thinking critically (Rashid, 2017). The first language enables grade students to think more critically than the second language. Most of the teachers, deputed in the elementary schools even don't know about the student's psychology, only a few teachers can read students' minds; unfortunately, they don't have skills of such teaching strategies that can enhance student's creative thinking. Most of the students are not genius by birth but they are groomed by applying different teaching strategies in the elementary classroom. The

majority of students even could not learn during their entire academic years in the schools. There is a lack of professional junior school teachers that activate and change such student's minds which could be able to think actively and participate in the classroom. Today, we are facing the 21st century and this century is known as the century of inventions. In this century, education plays a very important role for learners. Critical thinking is very important to develop students' understandings, helps in observation, conceptualization, problem identification, information gathering, problem solution, reflection, decision-making and real-life problem solutions (Belecina, 2018). In the modern era of education, teacher plays a vital role in actively involving the students in different activities to enable them think critically in the classroom (Buehl, 2017). Teachers have a great challenge to create such an active learning environment in elementary education, which leads students to think critically for a productive acquisition. Critical thinking is designed to achieve the best results in any situation. This paper intends to analyze the effective teaching strategy that promotes high order critical thinking process among the elementary students. The purpose of analyzing effective teaching strategy is to help the teachers developing critical thinking among students to get fruitful results and to know applicable teaching strategy in the classroom. Public elementary school level children are in developing stage, and at this stage, critical thinking inculcation will be more effective, so the teacher needs to apply those strategies that inculcate critical thinking among the elementary students (Abrami et al., 2015).

OBJECTIVES

- To investigate prevailing teaching strategies promoting critical thinking in elementary classroom.
- To analyze effective teaching strategy promoting high order critical thinking in the classroom.

RESEARCH QUESTIONS

- What are the prevailing teaching strategies used in elementary classroom?
- Which is the most effective teaching strategy promoting high order critical thinking in elementary classroom?
- Can students be encouraged to think critically?

PROBLEM STATEMENT

For the years in Pakistan, just traditional teaching methods have been used in schools instead of using methods focusing on the development of critical thinking skills. The junior school teacher lacks the ability to promote critical thinking in elementary classrooms so the students seem to be less rational and logical in critical thinking. Teachers use old teaching strategies because of effective training are rarely arranged by the authorities in the district. The concept of refining a child in schools has remained a challenge for the years. Teachers are sticking to their salaried-jobs instead of developing creativity among the elementary students though it's a divine profession.

SIGNIFICANCE OF THE STUDY

This study increases the students' interest in elementary classroom and furnishes thinking skills by transmitting effective knowledge in classroom. The approach facilitates exploring inspired transferable teaching methodology for improving classroom situations as compared to previous experiences. It is to be investigated and analyzed the effective strategy that promotes critical thinking and capabilities of students. This strategy will benefit the students, junior school teachers and the policymakers.

SCOPE OF RESEARCH STUDY

The study is so vast in its nature because it will save the time of teachers by choosing effective strategy among the prevailing strategies. By applying effective teaching strategy a teacher can get more results and also inculcate critical thinking among the young generation because they are the future assets.

LITERATURE REVIEW

Educationists and reseearchers have still been struggling to investigate innovative teaching strategies to improve thinking among elementry students. Problem based teachings have played significant role by implemented variety of teaching techniques that promote critical thinking in classroom. Technological tool assisted learning have facilitated effective teaching-learning both in public and private schools.

Rashid & Qaisar (2017) stated in a case study about scheme based experiments, taking elementary students as a sample. Samples were taken in the form of visual aid (i.e. audio and video), questionnaire and field notes. The results calculated using the dialogues of the students during the interaction of teacher and student in the classroom by comparing the results before and after the investigation of the questionnaire. The post test results found higher than pre test. In the Pakistani context, this method is considered more authentic and effective to encourage critical thinking.

Vieira (2016) found that critical thinking and scientific literacy are the basic terms in science related education that enforces elementry studnets to think critically in the clssroom. Science and technology has played main role to trigger students' needs in engaging in learning, building knowledge, thinking skills, developing values and thinking abilities in newly integrated ways. The study focused on learning experiences of grade 6, had very significant effect on elementry school science students' critical thinking and scientific literacy. This practice supported students' critical thinking and scientific literacy among students by implementing practical aid teching approach.

Griffin (2014) concluded that teaching strategies can develop more critical thinking when teachers create a good thinking environment in the classroom, students can solve problems, share opinions, work together and communicate with each other.

Asari (2013) presented ideas for the development of critical thinking. Finalized different ideas including (1) determined a

method for thinking reasons, suggestions for improving the weaknesses of any problem, (2) suggest a method to present substitute ideas, (3) at every stage using a problem/project-based learning and (4) modeling the behavior of a critical thinker from a teacher in the elementary classrooms.

Collier (2002) conducted **s**tudies in various primary schools; references have shown the usefulness of implementing various teaching strategies to promote important thinking in young children. It shows that students can develop critically thinking skills if teachers apply an environment that helps in thinking developing activities.

Anderson (2002) conducted research based on child's development; it depicts the maturity of execution domains. Attention control seems to develop in childhood and develops rapidly at an early age. In contrast, cognitive flexibility, goal setting, and information processing experienced a critical developmental period of 7 to 9 years and were comparatively mature at 12 years of age. It is assumed that the transition period begins at the beginning of puberty and is likely to be shortly after "executive control". In order to validate our current understanding of executive function development and further to improve our understanding of the relationship between brain behaviors, longitudinal studies, including structural and functional neuroimaging, are needed.

Piaget (1952) stated in terms of cognitive development; the thinking process is one of the most important skills to develop in preschool children. Each new situation becomes an opportunity for young children to assimilate and manage information in order to create new conceptual structures.

OPERATIONALIZED DEFINITIONS OF PREVAILING TEACHING STRATEGIES USED IN CLASSROOMS (1-5)

S.No	Instructional Teaching Strategies	Characteristics
1	Appreciating students on questions-answers	Students are appreciated for answers on questions asked by teacher.
2	Showing pictures and objects for the description	Students think critically about seen pictures and objects and can describe easily in their own words.
3	Visual-Aid	Visual aid improves deeper understanding in the form of colored text, voice and video. Multimedia promotes thinking. .
4	Memorize new words from the text	Increases vocabulary. Students can communicate by reading, writing and speaking.
5	Understand the text and make possible questions in first language	Teacher provides a paragraph and asks student to make possible questions as he can in the first language. Student understands the paragraph and makes a number of the question from given text.

OPERATIONALIZED DEFINITIONS OF PREVAILING TEACHING STRATEGIES USED IN CLASSROOMS (6-10)

	Instructional Teaching Strategies	Characteristics
6	Debating on the topic	Improves public dealing, critical thinking, information getting and self confidence.
7	Problem-based activity	Engages student in working independently, improves critical thinking, involves in active participation and helps in problem solution.
8	Repeat lines to create ideas	Helps the student to construct the sentences, improves speed and brain connections.
9	Making charts on the topics	Improves students' behavior, keeping busy in activity, makes positive classroom environment and builds confidence.
10	Group Discussion	Improves communication skills, collaborative learning, improves thinking skills and sharing experiences.

OPERATIONALIZED DEFINITIONS OF PREVAILING TEACHING STRATEGIES USED IN CLASSROOMS (11-15)

	Instructional Teaching Strategies	Characteristics
11	Focusing on text written on the white board	Engages student to the presentation of the content. Improves students' attention to the main points with different colors.
12	Chalkboard	Common traditional method applied in the public schools. Cheapest learning
13	Making fair copies	Keeps student in discipline maintained, develops reading and writing skills.
14	Writing own word stories	Improves students' self expression, critical thinking, improves confidence and writing skills.
15	Focusing on the exercises given in the text book	It is the most important activity for the analysis of the text lesson. This strategy helps student for quick memorization of key points of lesson.

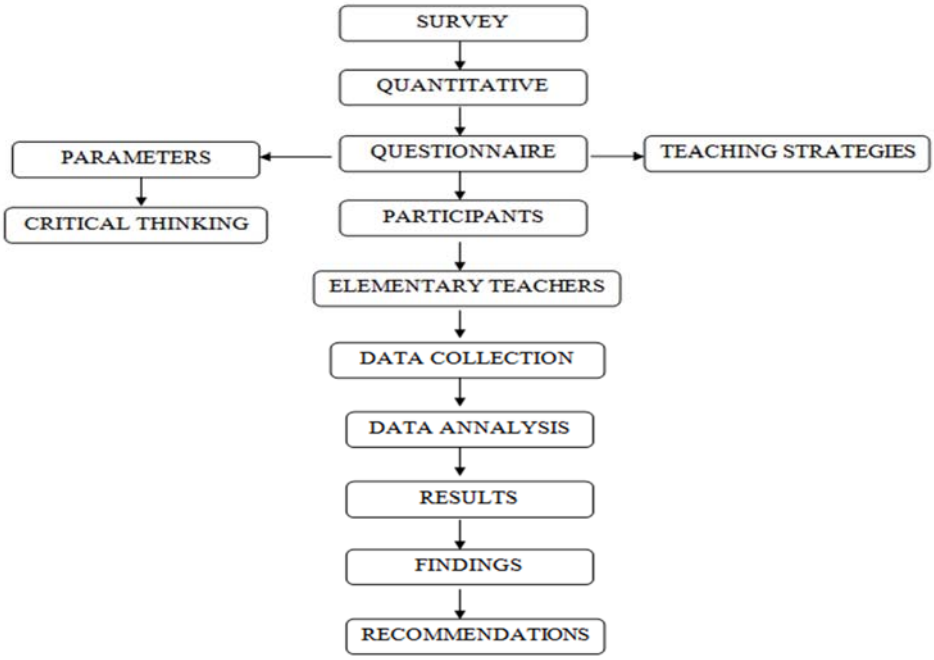
STUDY DESIGN AND METHODOLOGY

This study is quantitative in nature and survey approach was used. Self-made questionnaire was distributed to collect data from the participants. The research design leads the researcher to explore the teaching strategy promoting high order critical thinking in elementary classroom. The student's way of thinking is changed cognitively to study the productivity of this involvement.

Sample and Population

The population comprised on 314 male and female junior school teachers in 64 public elementary schools. A sample of 102 participants including 64 male and 38 female, were randomly selected from the population including 201 male and 113 female teachers from 28 schools. All the randomly selected respondents from four talukas of district Shaheed Benazirabad were having

more than five years of teaching experience in public elementary schools.



Data Collection and Instrumentation

Researcher personally traveled to the public elementary schools of four Talukas of district Shaheed Benazirabad where he obtained permission from the headmaster/mistress/in-charge of the schools and distributed Likert based questionnaire as an instrumentation to collect data from respondents. The questionnaire was distributed among both male and female teachers. The rate of participation from the respondents was 100%.

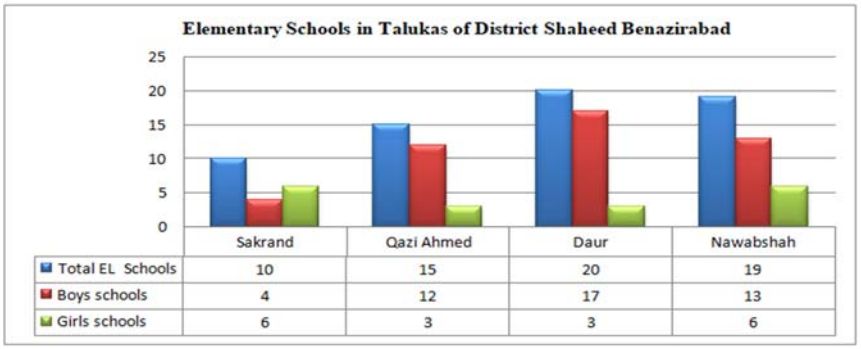


Figure 1 Public Elementary Schools

In Figure 1, the graph shows total number of public elementary schools in the individual talukas of district Shaheed Benazirabad. Total public elementary schools in the district were observed as 64, in which boys schools were 46 whereas, total girls elementary schools in the district were 18.

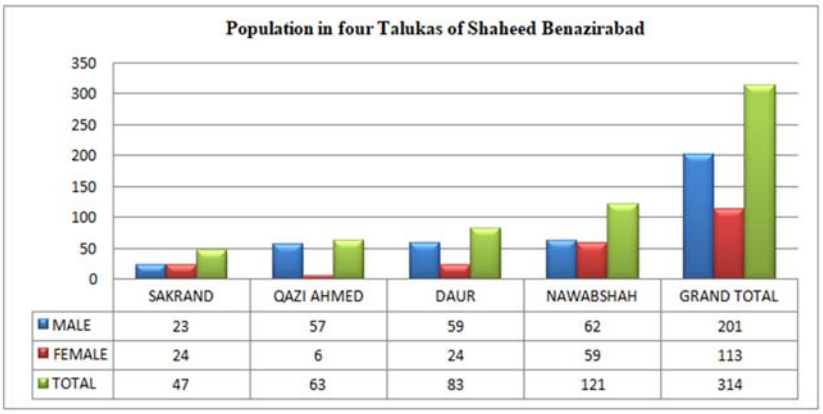
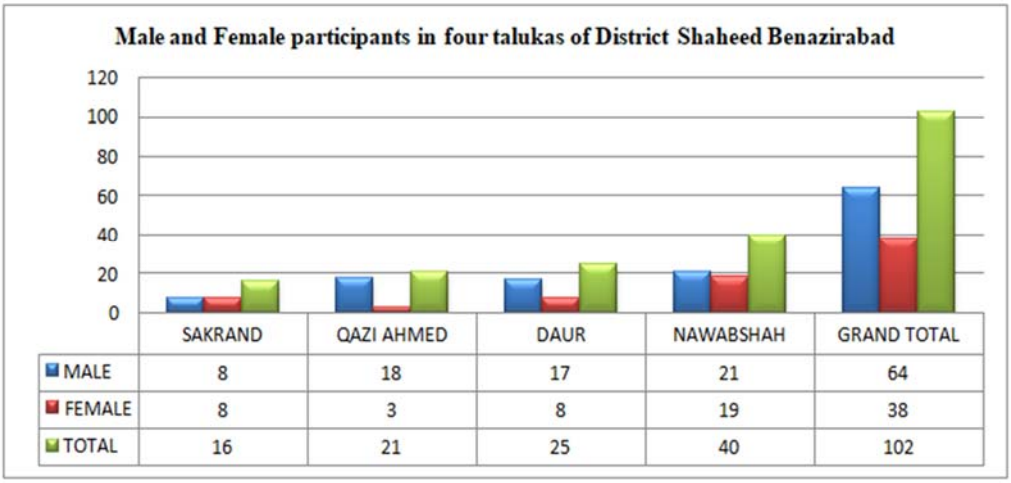


Figure 2 Population

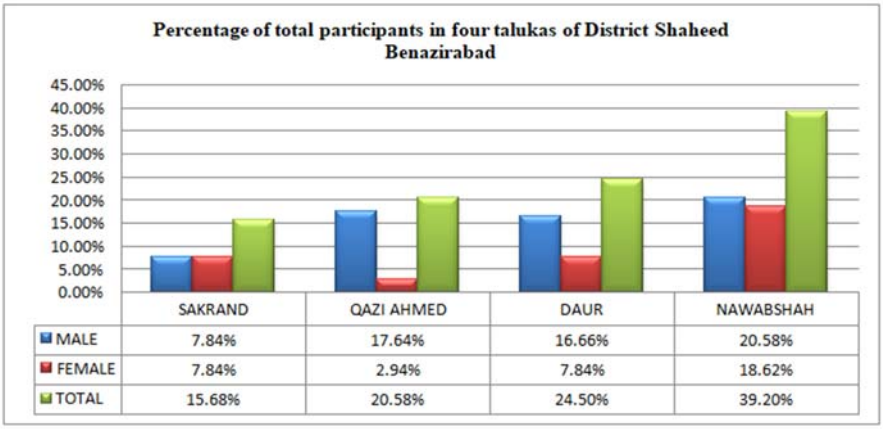
In Figure 2, the graph shows the total population of four talukas of district Shaheed Benazirabad. Overall population in district was 314, including 201 male teachers and 113 female teachers in the district. In Sakrand, either male or female were observed 47 whereas, in Qazi Ahmed either male or female were observed 63 while in Nawabshah the population, either male or female were observed as 121 and in taluka Daur either male or female teachers observed as 83.



	SAKRAND	QAZI AHMED	DAUR	NAWABSHAH	GRAND TOTAL
MALE	8	18	17	21	64
FEMALE	8	3	8	19	38
TOTAL	16	21	25	40	102

Figure 3 Participants

In Figure 3, the graphical representation shows total number of male and female respondents participated in survey in district Shaheed Benazirabad. Overall 102 respondents participated in survey including 64 male and 38 female. From taluka Sakrand, 16 respondents, either male or female participated. 21 respondents either male or female participated from taluka Qazi Ahmed, whereas 25 respondents either male or female participated from taluka Daur and total 40 respondents either male or female participated in taluka Nawabshah.



	SAKRAND	QAZI AHMED	DAUR	NAWABSHAH
MALE	7.84%	17.64%	16.66%	20.58%
FEMALE	7.84%	2.94%	7.84%	18.62%
TOTAL	15.68%	20.58%	24.50%	39.20%

Figure 4 Percentage distributions of participants

In Figure 4, graph shows the total percentage of respondents participated from the four talukas of district Shaheed Benazirabad. It was observed from the statistical data, 15.68% either male or female respondents participated in taluka Sakrand, 20.58% of respondents, either male or female participated in taluka Qazi Ahmed whereas, 24.50% of respondents, either male or female participated in taluka Daur and 39.20% either male or female respondents participated in taluka Nawabshah.

RESPONSES TO STATEMENTS SHOWING PERCENTAGE DISTRIBUTION

Five point rating scale contributes series of statements to measure the attitudinal scale (Boone, 2012). It is the measured response from the people participated in the survey containing a series of questions on the topic (McLeod, 2008).

RESULTS AND DISCUSSION

The questionnaire displays the percentage of responses to the statements. Each questionnaire comprising 15 items was responded by 102 participants with five point rating scale as strongly disagree, disagree, neutral, agree and strongly agree in

the favor of enlisted prevailing teaching strategies. The purpose of the study was to investigate effective teaching strategy promoting high order critical thinking among the students of public

		SAKRAND	QAZI AHMED	DAUR	NAWABSHAH	%
1. Appreciating students on questions-answers	Strongly Disagree	1.96%	1.96%	3.92%	2.94%	10.78%
	Disagree	4.90%	3.92%	4.90%	7.84%	21.57%
	Neutral	1.96%	0	1.96%	0.98%	4.90%
	Agree	3.92%	7.84%	8.82%	17.65%	38.23%
	Strongly Agree	2.94%	6.86%	4.90%	9.80%	24.51%
2. Showing pictures and objects for the description	Strongly Disagree	3.92%	2.94%	4.90%	3.92%	15.68%
	Disagree	2.94%	2.94%	3.92%	6.86%	16.66%
	Neutral	0	0	0.98%	0	0.98%
	Agree	5.88%	8.82%	10.78%	19.60%	45.10%
	Strongly Agree	2.94%	5.88%	3.92%	8.82%	21.57%
3. Visual Aid	Strongly Disagree	1.96%	0.98%	1.96%	1.96%	6.68%
	Disagree	1.96%	1.96%	3.92%	2.94%	10.78%
	Neutral	0	0	0	0	0
	Agree	3.92%	2.94%	3.92%	5.88%	16.66%
	Strongly Agree	7.84%	14.71%	14.71%	28.43%	65.69%
4. Memorize new words from the text	Strongly Disagree	3.92%	2.94%	5.88%	4.90%	17.65%
	Disagree	6.86%	7.84%	11.76%	15.68	42.15%
	Neutral	0	0	0.98%	0.98%	1.96%
	Agree	2.94%	4.90%	1.96%	10.78%	20.59%
	Strongly Agree	1.96%	4.90%	3.92%	6.86%	17.65%
5. Understand the text and make possible questions in L1	Strongly Disagree	3.92%	1.96%	4.90%	2.94%	13.72%
	Disagree	4.90%	6.86%	6.86%	12.74%	31.37%
	Neutral	0	0	0	0	0
	Agree	4.90%	6.86%	9.80%	18.63%	40.19%
	Strongly Agree	1.96%	4.90%	2.94%	4.90%	14.70%

elementary schools in District Shaheed Benazirabad.

Table 1 Taluka wise percentage distribution in responses to 1-5 statements

Table 1 shows the statistical data for percentage distribution on statements (1-5) responded by the participants on five point rating scale. The statement *"Appreciating students on questions-answers"*

showed 62.74% of respondents either strongly agree or agree while 32.35% either strongly disagreed or disagreed and 4.90% respondents' undecided towards this prevailing strategy that promotes thinking in public elementary classroom. Most prevailing strategy in public elementary schools *"Showing pictures and objects for the description"*, 66.67% was average responded either strongly agree or agree while 32.34% was responded either strongly disagree or disagree. Majority of the participants found highly impacted towards most prevailing real-life and animated based *"Visual-Aid"* teaching strategy that promotes high order critical thinking, 82.35% of the respondents found either strongly agree or agree to this statement including 65.69% strongly agreed, 16.66% agreed while 17.64% either strongly disagreed or disagreed to this item. 38.24% of participants either strongly agreed or agreed to item *"Memorize new words from the text"* while 59.80% of respondents disagreed because this strategy doesn't help students to think critically though most of the junior school teachers use this strategy in elementary classroom. A number of elementary junior school teachers use *"Understand the text and make possible questions in L1"* in the classroom because it helps students feel free to make possible questions in the first language, 54.89% of the participants responded as either strongly agree or agree while 45.09% disagreed with this statement.

Table 2 represents statistical data for the series of statements (6-10), whereas percentage distribution of four talukas of district is shown. In the responses to statement 6, overall 55.87% of respondents agreed to prevailing item *"Debating on the topic"* that it promotes thinking skills in classroom while 40.19% either strongly disagreed or disagreed, just 3.92% responded as undecided. The statement *"Problem-based activity"* has been used by teachers for thinking skills development in elementary schools while conducting a survey this strategy was responded 68.72%

6. Debating on the topic	Strongly Disagree	5.88%	2.94%	7.84%	7.84%	24.51%
	Disagree	2.94%	3.92%	2.94%	5.88%	15.68%
	Neutral	0	0.98%	0.98%	1.96%	3.92%
	Agree	1.96%	2.94%	5.88%	4.90%	15.68%
	Strongly Agree	4.90%	9.80%	6.86%	18.63%	40.19%
7. Problem-based activity	Strongly Disagree	3.92%	1.96%	4.90%	2.94%	13.72%
	Disagree	2.94%	3.92%	3.92%	6.86%	17.65%
	Neutral	0	0	0	0	0
	Agree	5.88%	7.84%	10.78%	19.60%	44.11%
	Strongly Agree	2.94%	6.86%	4.90%	9.80%	24.51%
8. Repeat the lines and create ideas	Strongly Disagree	6.86%	5.88%	9.80%	10.78%	33.33%
	Disagree	5.88%	8.82%	10.78%	18.63%	44.11%
	Neutral	0.98%	0.98%	0	1.96%	3.92%
	Agree	0.98%	1.96%	2.94%	4.90%	10.78%
	Strongly Agree	0.98%	2.94%	0.98%	2.94%	7.84%
9. Making charts on the topics	Strongly Disagree	5.88%	2.94%	6.86%	6.86%	22.55%
	Disagree	0.98%	2.94%	2.94%	3.92%	10.78%
	Neutral	0.98%	0	0	0.98%	1.96%
	Agree	1.96%	2.94%	3.92%	5.88%	14.70%
	Strongly Agree	5.88%	11.76%	10.78%	21.57%	50%
10. Group Discussion	Strongly Disagree	3.92%	2.94%	4.90%	3.92%	15.68%
	Disagree	7.84%	8.82%	14.70%	20.59%	51.96%
	Neutral	0	0	0	0.98%	0.98%
	Agree	2.94%	5.88%	3.92%	10.78%	23.53%
	Strongly Agree	0.98%	2.94%	0.98%	2.94%	7.84%

Table 2 Taluka wise percentage distribution in responses to 6-10 statements

either strongly agree or agree and it was disagreed by 40.19% respondents, 3.92% found undecided for this statement. 18.62% of respondents found either strongly agree or agree in favor of the statement *"Repeat lines to create ideas"* while majority 77.44% of respondents rejected this strategy and just 3.92% of respondents found neutral.

In elementary classrooms, it is considered that *"Making charts on the topics"* develops critical thinking by self-made charts among students, 64.70% of respondents favored this strategy by either

strongly agree or agree while 33.33% disagreed to this statement. *"Group discussion"* is considered as thinking development strategy by sharing an individual's ideas in classroom. Just 31.37% responded either strongly agree or agree while most 67.64% responded disagreed with this prevailing teaching strategy at the elementary level.

11. Focusing on text written on whiteboard	Strongly Disagree	6.86%	5.88%	9.80%	10.78%	33.33%
	Disagree	6.86%	8.82%	10.78%	20.59%	47.06%
	Neutral	0	0.98%	0	0.98%	1.96%
	Agree	0.98%	3.92%	3.92%	5.88%	14.70%
	Strongly Agree	0.98%	0.98%	0	0.98%	2.94%
12. Chalkboard	Strongly Disagree	6.86%	5.88%	8.82%	10.78%	32.35%
	Disagree	3.92%	3.92%	7.84%	9.80%	25.49%
	Neutral	0	0	0	0	0
	Agree	1.96%	4.90%	3.92%	10.78%	21.57%
	Strongly Agree	2.94%	5.88%	3.92%	7.84%	20.58%
13. Making Fair copies	Strongly Disagree	3.92%	2.94%	6.86%	5.88%	19.60%
	Disagree	6.86%	8.82%	11.76%	16.66%	44.11%
	Neutral	0.98%	0	0.98%	0	1.96%
	Agree	1.96%	3.92%	1.96%	11.76%	19.60%
	Strongly Agree	1.96%	4.90%	2.94%	4.90%	14.70%
14. Writing own-word stories	Strongly Disagree	3.92%	1.96%	4.90%	3.92%	14.70%
	Disagree	4.90%	3.92%	5.88%	7.84%	22.55%
	Neutral	0	0.98%	0.98%	1.96%	3.92%
	Agree	1.96%	4.90%	6.86%	7.84%	21.56%
	Strongly Agree	4.90%	8.82%	5.88%	17.65%	37.25%
15. Focusing on the exercises given in the text book	Strongly Disagree	4.90%	2.94%	6.86%	5.88%	20.58%
	Disagree	7.84%	11.76%	13.72%	25.49%	58.82%
	Neutral	0	0	0	0	0
	Agree	1.96%	2.94%	1.96%	4.90%	11.76%
	Strongly Agree	0.98%	2.94%	1.96%	2.94%	8.82%

Table 3 Taluka wise percentage distribution in responses to 11-15 statements

Table 3 represents the percentage distributions in responses to the statements (11-15). The whiteboard has remained students' center of attention for the years but at this stage the survey showed 80.39% of respondents either strongly disagree or disagree to *"Focusing on text written on the white board"* while just 17.64% agreed to this statement. The *"Chalkboard"*, traditional teaching

has been remained the most favorite teaching strategy in all public elementary schools but nowadays it is replaced by innovative teaching strategies. The survey showed just 42.15% of participants responded either strongly agree or agree while 57.84% responded as either strongly disagree or disagree with this traditional teaching strategy. The most prevailing strategy *"Making fair copies"* has been remained common in all elementary schools; this statement was agreed by 34.30% of respondents while 63.71% either strongly disagreed or disagreed. *"Writing own word stories"* develops thinking by collected ideas while writing own stories; the survey responses showed 58.81% either strongly agree or agree while 37.25% respondents disagreed with this item. The most prevailing teaching strategy *"Focusing on the exercises given in the textbook"* in almost all public elementary schools of the district was responded as 20.58% agreed while most 79.40% of participants responded as either strongly disagree or disagree.

Findings of the study

The findings show that teachers have rejected old teaching strategies by disagreeing with those statements which are no longer supported for the critical thinking development process among the students of public elementary schools. According to *Table 1,* the findings of statistical data resulted as 82.35% of respondents found overall agree and recommended '*visual-aid*' teaching strategy that promotes high order critical thinking in public elementary classrooms. Whereas *Table 2* showed the results for the statements '*Problem-based activity*' and '*making charts on the topic*' also strongly recommended by the respondents as 68.72% and 64.70% respectively.

Conclusion

Analysis of prevailing teaching strategies in the elementary classroom showed the significant impact on the respondents towards visual-aid teachings that promoted high order critical thinking. The survey conducted from the public elementary junior school teachers; resulted, 82.35% of respondents found highly

influenced towards visual teachings. It was concluded that visual aid teachings made elementary classroom a realistic education; young children think for next by visualizing colored text, voice, pictures and videos, all influenced children's thinking and logic. The elementary students found very much attracted to moving pictures and objects that enhanced child's thinking capability.

RECOMMENDATIONS

Visual-aid teaching promotes critical thinking than any other prevailing teaching strategy used in public elementary schools so it is recommended to install LED TV in classrooms through it is the best use for students of elementary classes. Teachers can personally arrange a flash drive that costs Rs.300 to Rs.500. It is easily accessible in the market. Through the pictures from Google, videos from Youtube, colorful text and variety of presentations on the related topic; junior school teachers can develop critical thinking among young students. If any of the teachers don't have the internet facility at their home or workplace, they can easily get data on demand from the market. LED TV is available at lowest cost of Rs. Rs.5000 to Rs.6000 with 20 inches, can easily be managed from the School Management Committee (SMC) funds. Multimedia is an expensive tool; it costs from Rs.15000 to RS.20000 per single item. The government has not sufficient funds to implement multimedia for visual aid teachings throughout the 64 elementary schools in the district Shaheed Benazirabad.

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