

*In-Service Teachers Perception about The Effectiveness of Brainstorming Strategy at Elementary Level*

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## **Abstract**

The study aimed to measure the in-Service teachers' perception about the effectiveness of brainstorming strategy at elementary level. Contemporary teaching is considered as collaboration, communication, and participation. It is believed that a collaborating class must include participation in order to guarantee learner-centered teaching and better outcomes. Brainstorming is one of the techniques to approach student-centered learning in the light of the fact that it is an open sharing activity, which is generally led in small groups to empower involvement. This study described the in-service elementary teachers' perception about brainstorming strategy and the role of teachers in execution of brainstorming strategy. The study used the descriptive approach of research. The population of the study was F.G Public schools in Rawalpindi City. With the help of convenience sampling, 50 elementary school teachers were selected as a sample of the study. To answer the research questions of the study, the study used a quantitative approach in which questionnaire was used to obtain data from the concerned samples. Descriptive statistics: percentages were used to analyze the data. Quantitative data indicates that teachers think brainstorming is an effective strategy of teaching at elementary level and it is very useful for better understanding of the learners and for motivating them. It is expected that the results would be helpful for in-service teachers, prospective teachers, and students. Thus, it is suggested that the curriculum developers should add brainstorming activities in elementary level textbooks.

**Keywords:** Brainstorming Strategy, Effectiveness, teachers' Perception, Elementary level

## **1. Introduction**

### **1.1 Definitions of Brainstorming**

Using one's brain to generate ideas for an issue is known as brainstorming. One of the best methods for coming up with ideas is to brainstorm which enables students to choose the best concept to use, to solve problems (Baumgartner, 2003). One of the most crucial techniques for encouraging creativity and finding solutions to issues in the field of education is brainstorming (AlMutairi, 2015). The goal of a brainstorming session is to generate original

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answers to issues. Thus, brainstorming is the process of applying the mind to active problem solving (Jarwan, 2005; Maaravi et al., 2021).

### **1.2 Importance of Brainstorming Strategy**

The main goals of brainstorming as a teaching technique are to develop and improve communication skills, support the development of critical thinking and decision-making abilities, and encourage a diversity of perspectives and opinions. It can be used equally to every important field of education. The instructor meticulously develops the course using brainstorming strategies in order to achieve the intended learning goals. The instructor does not actively participate in the discussion; instead, the group responds to questions and engages in conversation. Pupils are encouraged to actively share knowledge, insights, and viewpoints in order to gain an understanding of the subject. Instead of being a recitation and answer exchange between each student and the teacher, communication flows among all of the pupils (Humaidan 2002; Nurhikmah 2023).

According to Sayed (2006), Brainstorming has a great importance in the teaching process. Referred to its importance for students in as follows:

- Helps students to solve problems, an innovative solution.
- Helps students to benefit from the ideas of others through the development and build on them.
- Helps the cohesion of the students and build relationships among them and assess the views of others. "

And its importance for the teacher are as follows:

- Helps the teacher to conclude ideas that are broader than students' thinking solutions
- Makes the teacher more democratic and respectful of views regardless of the different points of view.
- Through student participation, the teacher becomes an integral component of the educational process; as a result, he is not the only leader in problem-solving (Humaidan 2002).

Baumgartner (2003) claims that brainstorming is a useful technique for producing a large number of ideas related to a certain problem and then identifying which concept, or ideas, is the best answer. Brainstorming works best in groups of eight to twelve people and in a laid-back setting. Participants extend their thoughts further and come up with more original ideas if they are allowed to unwind and joke around. A facilitator, a brainstorming area, and a writing surface—such as a white board, flip chart, or software tool—are necessary for a brainstorming session. Leading the session, promoting involvement, and documenting ideas are all part of the facilitator's duties. A diverse gathering of people is ideal for brainstorming. Participants should have diverse backgrounds and come from a variety of organizational departments. Outsiders can inspire specialists with new ideas, even in specialized fields. There are many other ways to brainstorm, but the conventional method is usually the most successful since it is the liveliest and most transparent, enabling participants to build on one other's ideas (Humaidan, 2002; Murphy et al., 2023). Before the meeting, attendees can de-stress with creative exercises, relaxation techniques, or enjoyable activities to enhance their creativity during the brainstorming session.

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### **1.3 Brainstorming Techniques in Education**

Skilled educators are able to modify the lessons in their modules to fit the needs of every learner. Instructors are encouraged to adapt the curriculum, change how they tackle different challenges related to the subject, and refine the final result according to students' preparedness levels. They must also determine each student's individual learning curve and level of interest in a given subject. According to some earlier research in the field of education, BS interventions can speed up the idea-generation process by guaranteeing that the best possible combinations of concepts are chosen. For instance, Al-khatib (2012) employed TBS in an effort to develop students' capacity for problem-solving by fostering an environment in the classroom that values learning and critical thought. When it comes to helping people choose ideas, both NBS and EBS can be more successful than TBS (Lynch et al., 2009; Maaravi et al., 2021). According to Johnson and D'Lauro (2017), EBS might provide students with early ideas that they might use to produce situations of higher caliber. Shorter EBS sessions are considered appropriate in this case in order to choose a workable and unoriginal idea.

### **1.4 Teacher's Perception about Brainstorming Strategy**

According to Khan's (2013) study, the majority of teachers indicated in the survey questionnaires they completed that brainstorming sessions aid students in creating assignments for English as a foreign language. The teachers also affirmed that brainstorming facilitates students' ability to consider topics in novel and practical ways. Based on brainstorming techniques, the teachers feel that they have a moderating role in the learning process.

Nearly all educators agree that during a brainstorming session, the instructor should assist in the idea generation process. The learner-centered activity serves as the foundation for the brainstorming session, which results in group learning. It is also confirmed that students typically enjoy and favor brainstorming sessions. Many educators think that brainstorming inspires students' enthusiasm. Instead of providing the solution, the teacher should select the best option among several. In addition to being a process of generation, brainstorming also involves decision-making, which is guided by the teacher-leader (Khan, 2013; Hu et al., 2022). According to Zakaria et al. (2010), instruction should actively involve students as the main participants rather than just providing rules, definitions, and processes for them to memorize. In a study by Unin and Bearing (2016), semi-structured interviews with English teachers revealed that brainstorming increased students' motivation, confidence, and participation, as seen by the students' well-behaved behavior during classroom observations. According to the findings of AL Rababah and Rababah's (2019) study, which involved semi-structured interviews with teachers, brainstorming seemed to be the most popular pre-writing exercise utilized by teachers to help students organize their ideas. In the course of the interview, the teachers expressed a favorable opinion of this method of idea generation; most of them employed brainstorming, which has long been recognized as a crucial technique for improving student learning (Alamelu, 2020). According to one teacher, using this technique helped children write with more inventiveness. In order to foster creativity and generate ideas for problem solving or other creative processes, instructors employed a variety of brainstorming techniques. One key to the success of the process is that no evaluation or judgment is made of the ideas as they are being generated.

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Because adopting a strategy is not enough, it is also important to execute it in order to inform other teachers about its effectiveness. For this reason, the focus of this study is on how elementary school in-service teachers perceive the effectiveness of brainstorming techniques and their own role in implementing them. Thus, following research questions were developed;

- What are the perceptions of in-service teachers about the effectiveness of the brainstorming strategy?
- How do in-service teachers perceive their role in executing brainstorming strategy?

**2. Purpose of Research**

This study aimed to identify the perception of in-service teachers about the effectiveness of brainstorming strategy at elementary level in Rawalpindi City.

**3. Methodology**

In order to select the most suitable approach for this investigation, after examining the literature regarding approaches to fulfill the requirements and respond to the research questions, the study employed a quantitative research design. It ascertain the in-service teachers' opinions regarding the efficacy of the brainstorming technique. In-service teachers in Rawalpindi City completed questionnaires for that purpose and the findings were presented in numerical form.

**4. Participants of the study**

The elementary school teachers of F.G public schools were the participants of the study. Convenient sampling was used to collect data from 100 elementary school teachers of F.G schools in Rawalpindi city.

**5. Finding of the Study**

This section presents quantitative data which was obtained through a questionnaire. It consists of two categories i.e. effectiveness of brainstorming strategy and teacher's role in execution of brainstorming strategy. Under each category there are several items. Quantitative data for each item is represented in the form of tables.

**5.1 Effectiveness of Brainstorming Strategy**

This category focuses on the participants' perception about the effectiveness of the brainstorming strategy. Following tables shows the difference between the perceptions of teachers about the effectiveness of the brainstorming strategy.

No.	STATEMENTS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>Effectiveness of Brainstorming</b>						
1.	Brainstorming activity helps the learner to think about questions in different and useful ways.	0	6%	4%	72%	18%
2.	Brainstorming activity helps the learners in preparing tasks.	4%	4%	6%	72%	14%

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3.	Brainstorming activity leads to group learning.	0	8%	6%	60%	26%
4.	Brainstorming activity is based on learner centered activity.	4%	6%	12%	38%	40%
5.	Brainstorming activity makes the learners enthusiastic.	0	12%	40%	30%	18%
6.	Brainstorming activity is not a generating process, but a decision-making activity.	4%	14%	32%	42%	8%
7.	Brainstorming activity is an effective way of learning.	0	6%	8%	54%	32%
8.	Brainstorming activity enabled in-depth coverage of the topic.	0	12%	16%	58%	14%
9.	Brainstorming activity is useful in comprehending the given topic.	0	4%	30%	52%	14%
10.	Brainstorming activity helps in enhancing communication skills.	0	4%	2%	78%	16%
11.	In brainstorming activity, a thorough discussion on the topics increases analytical ability.	4%	4%	14%	70%	8%
12.	Brainstorming activity helps in overcoming shyness and hesitation in the class.	0	6%	20%	56%	18%
13.	Brainstorming activity is useful for motivating students.	0	4%	10%	70%	16%

This data shows that brainstorming is an effective strategy of teaching as it is a student centered strategy which leads to group learning and makes the learners enthusiastic. 70% of the participants agreed that brainstorming strategy is useful for motivating learners. The participants show that brainstorming strategy is very useful in comprehending topics as it enables in-depth coverage of the topic and also very useful for motivating students. The next category will present teachers' role in execution of brain storming strategy.

**5.2 Teacher's Role in Execution of Brainstorming Strategy**

This category focuses on the perception of teachers about their role in the execution of

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brainstorming strategy, the responses of participants varied. Following tables shows the difference between the perceptions of teachers about their role in the execution of brainstorming strategy.

No.	STATEMENTS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>Teachers' role in execution of brainstorming strategy</b>						
1.	In a brainstorming activity, the teacher is a moderator of the learning process.	2%	8%	30%	58%	2%
2.	In brainstorming activity, the teacher helps in the generation of ideas.	6%	2%	20%	64%	8%
3.	In brainstorming activity teacher usually make the learners to participate enthusiastically in an activity.	2%	24%	30%	30%	14%
4.	In brainstorming activity, teacher do not tell the answer rather choose the best out of many.	4%	6%	36%	60%	18%
5.	The teacher can make brainstorming exercise enjoyable.	2%	4%	36%	36%	22%
6.	Using brainstorming activity teacher can ensure the full attention of the students.	4%	8%	20%	52%	16%
7.	Using brainstorming activity teacher can encourage cooperation among students.	2%	18%	18%	48%	14%
8.	In brainstorming activity, the teacher can help in making the relevance of what is learnt with learners needs.	4%	12%	20%	36%	28%
9.	In brainstorming activity teacher consider the abilities of students and start the lesson according	0	24%	30%	32%	14%

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	to these abilities.					
10.	In brainstorming activity teacher consider the individual differences of students.	2%	12%	16%	62%	8%
11.	In brainstorming activity, the teacher can encourage mutual communication among students.	4%	4%	4%	60%	28%
12.	In brainstorming activity, the teacher can encourage the friendly interaction of students in the learning process.	4%	4%	26%	42%	24%

Given data shows that in the execution of brainstorming strategy the role of the teacher is that of a moderator who helps learners in the process of generation of ideas and make the learners to participate in the activity enthusiastically and encourage mutual communication among students. 60% of the participants agreed with the statement that in brainstorming activity teacher can encourage mutual communication among students. The responses indicate that the role of the teacher in execution of brainstorming strategy is to consider the individual differences of learners and making relevance of what is learnt with learners needs.

## 6. Discussion and Conclusions

Based on quantitative evidence, the majority of participants concur that brainstorming is a useful method for primary school students. According to the results, participants believed that brainstorming exercises assist students in thinking through questions in novel and practical ways as well as in work preparation. According to Baumgartner (2006), brainstorming is one of the best methods for coming up with ideas since it enables students to choose the best concept to use for problem-solving (Rashid, 2020). Several other studies have comparable conclusions to these of this study.

According to the results of this study, the majority of participants believe that brainstorming is a useful technique since it promotes group learning and is an engaging activity for students (Linsenmeyer, 2021). Brainstorming (BS), according to Gogus (2012), is one method for encouraging group creativity in which members exchange ideas and thoughts impromptu in order to come up with solutions to real-world situations.

The majority of study participants, according to this research, think that brainstorming techniques are a useful tool for learning because they involve both idea generation and decision-making. Khan (2013) states that the study's findings demonstrate that brainstorming is a teacher-led process that involves decision-making in addition to generation. Thus, considering the efficacy of the brainstorming process, the findings are corroborated by the theoretical and empirical perspectives of earlier scholars (Baumgartner, 2006; Gogus, 2012; Khan, 2013).

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Additionally, the study's participants felt that brainstorming exercises helped to cover the subject matter thoroughly and were helpful in helping them understand it. Additionally, they contend that by allowing for in-depth discussion of the subjects, the brainstorming technique improves students' analytical skills. According to a study by Owo et al. (2016), brainstorming is a process where a person or group uses critical thinking to come up with a variety of ideas and original solutions for problems. These days, this tactic is frequently used in a variety of human endeavors, including education.

According to this study's participants, brainstorming exercises motivate students and improve their communication abilities while also assisting them in overcoming shyness and hesitancy. Unin and Bearing (2016) found that brainstorming increased students' motivation, confidence, and participation, as seen by their positive behavior during classroom observations. As per Blake and DeVries (2004), brainstorming exercises that offer a purposeful learning setting in a casual setting can be employed as a tactic to enhance speaking abilities. Therefore, several studies have confirmed the findings of this study (Blake & DeVries, 2004; Owo et al., 2016; Unin & Bearing, 2016; PURWANINGSIH, 2022).

The findings of this question reveals that the participants of the study believes that the teacher in the execution of the brainstorming activity plays a role of moderator of the learning process and teacher helps in generation of ideas during execution of brainstorming strategy. According to a study by Qatami (2010), brainstorming is beneficial for teachers because it facilitates the tracking and flow of ideas, helps them observe how students run an idea or ideas through their minds, and gives them an idea of the kinds of situations or problems that children come to them for help when they are unsure of how to handle or have a problem. It also helps teachers understand the levels of mental stock and how to process students' ideas for ideas that are not prepared for or known to them—a process known as mental moments and frequently involves required attitudes that students must adopt in everyday life.

The study's findings also show that participants thought that teachers could make brainstorming exercises fun and encourage students to participate wholeheartedly. They also thought that teachers should choose the best idea from a group of ideas rather than providing an answer during a brainstorming session. Many teachers hold the belief, as per Khan's (2013) study, that while using a brainstorming technique, the teacher should not provide the answer; instead, they should select the best option among several and ensure that the learning process is engaging for the students. As a result, other researchers have confirmed the findings of this study (Khan 2013; Qatami 2010; Anggraini, 2020).

According to the study's findings, teachers think that by utilizing brainstorming activities, they may guarantee that every student has their complete attention and promote cooperation among them. There are many other ways to brainstorm, but the conventional method is usually the most successful since it is the liveliest and most transparent, enabling participants to build on one other's ideas (Humaidan, 2002).

The study's findings also show that teachers think they may assist students in connecting what they have learned to their needs through brainstorming activities. Instructors begin lessons based on students' skills, taking into account each student's unique characteristics. According to Ali (2001), in an individual brainstorming session, each student has their own brainstorming session. The instructor, acting in the role of session facilitator, groups all of the students' ideas and selects the best one to solve the problem. As a result, earlier researchers



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(Ali, 2001; Humaidan 2002) support the findings of this study.

According to the study's findings, teachers think that during brainstorming sessions, they may help students communicate with one another and engage in amicable interactions that will aid in their learning. "Based on the interaction between the teacher and the learner or between the learner and other learner, as this helps in the development of thinking methods or reduce the methods of automation that are given in one direction from the teacher to the learner," states the Husari (2000) study on this teaching methodology. As a result, prior research has validated the findings of this study (Husari, 2000). Therefore, keeping in view the effectiveness of brainstorming strategy, and teachers' role in execution of brainstorming strategy the results are supported by empirical and theoretical view of previous research.

The following conclusions were drawn from the findings of study.

1. The study finds that most teachers are aware of the brainstorming technique, are in agreement with its beneficial benefits, and believe it to be an effective learning tool. Teachers say that brainstorming works well because it is a learner-centered approach that promotes group learning, gets students ready for a variety of activities, and helps them come up with creative and practical answers to questions. According to the research, teachers also think that brainstorming is a useful technique for igniting students' enthusiasm because it involves both idea generation and decision-making.
2. It is determined that the brainstorming technique helps students become more motivated by helping them overcome their shyness and hesitancy in the classroom and by improving their communication abilities. The study's findings also indicate that teachers think brainstorming exercises help students understand the material covered in-depth and improve their analytical skills by allowing for a full debate of the subjects.
3. The study concludes that a teacher's role in implementing the brainstorming technique is that of a moderator. The instructor facilitates a fun brainstorming session, can guarantee that all students are paying attention, can encourage passionate participation, and can assist students in coming up with ideas. Instead of providing the solution, the teacher uses a brainstorming technique to select the best option out of several.
4. It is determined that the teacher's job in a brainstorming session is to take into account each student's unique requirements and talents while also making the material relevant to their learning. The study's participants concurred that teachers can promote student cooperation, communication, and friendliness by utilizing brainstorming activities. Thus, when employing the brainstorming approach, the function that educators play is crucial.

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