

# Enhancing Questioning Skills in Fifth-Grade Students at Gaytsa Primary School, Bumthang: A Comprehensive Action Research Study

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## Abstract

The purpose of this Action Research Project at Gaytsa Primary School in Bumthang was to improve fifth-grade students' questioning skills. To create an engaging and dynamic learning environment, the study used an integrated strategy that included interactive classroom activities, brief classes for students, and hands-on approaches on the theory learned. The researcher intended to improve students' critical thinking skills, increase their engagement with the content, and develop a more curious classroom environment through this initiative. This project's findings demonstrated significant improvements in students' questioning abilities, as seen by the ability to ask more thoughtful and probing questions. The project's success emphasizes the necessity of educational innovation and the use of a wide range of teaching methodologies to provide students with lifetime ability to learn.

**Keyword:** Action Research Project, Gaytsa Primary School, Bumthang, Fifth-grade students, Questioning skills, Engaging learning environment, Integrated strategy, Interactive classroom activities, Critical thinking skills, Student engagement, Curious classroom environment, Educational innovation, Teaching methodologies, Lifetime ability to learn, Research findings, Probing questions.

## 1. Introduction

Asking effective and relevant questions is a crucial skill for students to develop to promote active learning, critical thinking, and problem-solving. However, many students struggle with asking meaningful questions, often resorting to closed-ended questions that do not encourage deeper thinking. Therefore, educators need to focus on improving the questioning skills of students to foster a more engaging and enriching learning experience. By teaching students how to ask open-ended, thought-provoking questions, they can become more active participants in the learning process and develop the skills needed to succeed in academics and beyond. In this paper, we will explore various strategies and techniques that can be used to improve students' questioning skills, including modelling good questioning skills, providing feedback, using question stems, encouraging collaboration, using technology, providing real-world scenarios, and celebrating curiosity.

In today's fast-paced and constantly evolving world, the ability to ask relevant and thought-provoking questions is more important than ever. Improving questioning skills is crucial for promoting active learning, critical thinking, and problem-solving. As an educator, it is essential to develop strategies that enable students to ask better questions and engage in deeper levels of thinking.

Action research is an approach that allows educators to develop and test strategies that can improve student learning outcomes. In this action research project, the focus will be on improving students' questioning skills. The goal is to develop and implement effective strategies that can promote active learning, critical thinking, and problem-solving.

This action research project will focus on the following research questions:

1. What strategies can be used to improve students' questioning skills?
2. How can these strategies be implemented in the classroom to promote active learning and critical thinking?
3. What impact do these strategies have on student learning outcomes?

The project will involve a series of interventions aimed at improving questioning skills, including modelling good questioning skills, providing feedback, using question stems, encouraging collaboration, using technology, providing real-world scenarios, and celebrating curiosity. The effectiveness of these interventions will be evaluated through pre- and post-intervention assessments, surveys, and student work samples.

By conducting this action research project, the hope is to develop effective strategies that can be used to improve questioning skills and promote active learning, critical thinking, and problem-solving in the classroom. Ultimately, the goal is to help students develop the skills they need to succeed in today's rapidly changing world

## **2. Problem Statement**

Students in class five frequently struggle with questioning techniques, such as posing inquiries that encourage critical thought and enhance comprehension. Instead of asking open-ended questions that stimulate exploration and contemplation, many students ask closed-ended inquiries that only have factual responses. This lack of questioning abilities can limit their capacity to participate in fruitful debates and impair their capacity to learn as a whole. To create a more engaging and collaborative learning environment that fosters curiosity and creativity, it is necessary to enhance the class five students' questioning abilities.

## **3. Literature Review**

Questioning skills are essential to effective communication, education, and problem-solving. The ability to ask relevant, thought-provoking questions can facilitate learning, clarify misunderstandings, and promote critical thinking. The following is a literature review on questioning skills.

In a study by Nappi (2017), they found that teachers who use higher-order questioning techniques (questions that require critical thinking and analysis) in their classrooms had students with higher levels of critical thinking skills. In addition, a meta-analysis by Saputri, et al. (2019) examined the effectiveness of various questioning strategies in the classroom. They found that higher-order questioning, which requires students to engage in critical thinking and problem-solving, was more effective in promoting learning than lower-order questioning which only requires basic recall of information. This suggests that questioning skills can be an effective tool for improving student learning outcomes.

Similarly, in a study by Yee (2002), they found that using open-ended questions in the classroom promotes active learning, creativity, and problem-solving skills. They also found that students who were asked open-ended questions were more engaged in the learning process and felt more motivated to learn. This is also supported by Pate (2012), who explored the effects of different types of questions on student learning. They found that open-ended questions requiring students to provide more detailed and thoughtful responses were more effective in promoting learning than closed-ended questions requiring brief responses.

In the field of healthcare, questioning skills are critical for effective patient communication and diagnosis. In a study by Ishikawa, et al. (2002), they found that physicians who use open-ended questions during patient consultations had a higher level of patient satisfaction and better patient outcomes. Another study by Horsley, et al (2010), investigated the impact of questioning skills on the performance of healthcare professionals. They found that effective questioning skills were associated with better patient outcomes and improved communication between healthcare providers. This suggests that questioning skills can be an effective tool for improving healthcare outcomes.

In a study by Proctor, (2010), researchers found that questioning skills were essential to effective leadership. Leaders who used questioning skills were more effective at problem-solving, decision-making, and promoting innovation. This suggests that questioning skills can be an effective tool for improving organizational outcomes.

Finally, in a study by Zhang, W., and Adegbola, O. (2022), they found that questioning skills were positively associated with emotional intelligence. Emotional intelligence is an important skill for effective communication, leadership, and interpersonal relationships. A study by Brown and Posner (2001), explored the relationship between questioning skills and leadership effectiveness. They found that effective leaders use questioning skills to facilitate dialogue, foster innovation, and promote learning within their organizations. This suggests that questioning skills may be a key component of emotional intelligence.

In conclusion, questioning skills are essential to effective communication, education, healthcare, leadership, and emotional intelligence. The ability to ask relevant, thought-provoking questions can facilitate learning, clarify misunderstandings, and promote critical thinking. Future research should continue to explore the relationship between questioning skills and various outcomes in different settings. The literature suggests that questioning skills are important for promoting learning, improving communication, and enhancing leadership effectiveness. Educators, researchers, and professionals in various fields can benefit from developing and refining their questioning skills to achieve these outcomes.

#### **4. Methodology**

The methodology is an indispensable part of any research. It is the technical research mechanism that allows researchers to spontaneously approach their research findings (Gowin and Millman, 1969). It controls the study and the acquisition of the data. Research methodology is a set of systematic techniques used in research and it is a research guide (Igwenagu, 2016). According to Myers and Avison (2002), the research method is a strategy of inquiry, which moves from philosophical assumptions to research design and data collection.

The chapter describes the research design, sample, and sampling techniques, including data collection tools and techniques. The chapter further described data analysis methods and the presentation of research findings.

#### 4.1 Research Design

A research approach is a strategy that guides conducting research effectively and methodically. According to Creswell (2009), there are three basic types of research methods: mixed methods research, qualitative and quantitative. All research must involve an explicit, disciplined, and systematic approach to find the most appropriate results. The qualitative method is utilized to gather in-depth information on a certain issue and closely supports the naturalistic paradigm. A qualitative approach to research questions needs textual data. The quantitative approach supports the positivist paradigm and focuses on gathering new data from a wide population by the issue. The quantitative approach responds to research questions requiring numerical data.

The method best suited for this study is a complementary, mixed-method study. This study consists of positivistic and naturalistic paradigms, so mixed methods are the most suitable research method. The data sources include interviews and questionnaires for finding pertinent information on the roles of parental involvement in children's academic achievement. Greene et al. (1989) suggested, "Qualitative and quantitative methodologies are employed to quantify overlapping but also different elements of a phenomenon, providing an enhanced, extended understanding of that phenomenon," (p. 5). According to Marshall and Rossman (2014), human behaviours cannot be comprehended unless the meaning that humans give to them is understood. (p. 91). A mixed-methods approach allows the researcher flexibility in determining the significance of links from data sets as well as the participants' words and actions.

**Participants:** This action research study will be conducted at Gaytsa Primary School for class V over six months (May- October 2023). Participants will include all the students from class five to improve their questioning skills. The research is conducted in three phases:

##### *Phase 1: Pre-observation*

In this upcoming phase, students will reflect on their current questioning practices and identify areas for improvement. They will be completing a self-assessment survey to measure their level of questioning skills and pinpoint areas where they believe they need to make enhancements. This phase will be entirely focused on enhancing students' questioning practices, with the researcher guiding students through a thoughtful and introspective process to evaluate their current methods of asking questions in the classroom. The primary goal of this phase will be to identify areas that require improvement, thus facilitating more effective and engaging classroom interactions. The process will commence with the researcher taking a proactive role in self-assessment. The researcher will take the initiative to reflect on children's questioning techniques, analyzing the types of questions children typically ask during lessons and discussions. This reflective practice will involve looking critically at their questioning styles and acknowledging strengths and weaknesses.

To aid in this self-assessment, students will be given a questionnaire (*annexure 1.1*) designed to gauge their questioning skills. This survey will consist of various questions related to different aspects of questioning, such as question types (e.g., closed-ended, open-ended, probing), frequency of asking questions, and comfort and confidence in asking questions.

By completing the self-assessment survey, children will gain valuable insights into their questioning practices, enabling them to make informed judgments about their questioning skills. The survey will serve as a tool to highlight areas of strength, reaffirm practices that are already effective, and identify areas that need improvement. Identifying areas of improvement will be a crucial aspect of this phase. Children may discover that they rely too heavily on closed-ended questions, which can limit critical thinking and student engagement. Alternatively, they might recognize the need to increase the frequency of asking open-ended questions, as these promote deeper understanding and encourage them to think more critically and creatively.

Upon completing the self-assessment, the researcher will have a clearer understanding of their strengths and areas for growth. Armed with this knowledge, the researcher can set specific goals for improvement. Professional development workshops or mentoring sessions may be offered to assist children in honing their questioning skills. Continued practice and feedback will be essential during this phase. Children will implement changes in their questioning techniques and closely monitor the impact on classroom dynamics and engagement. They will seek feedback from peers, instructional coaches, or administrators to further refine their questioning strategies.

Ultimately, this phase of reflection and self-assessment will lay the foundation for students to develop more effective and impactful questioning practices. By continuously seeking improvement in this critical aspect of teaching, educators will foster a more vibrant and interactive learning environment that empowers students to think critically, articulate their thoughts, and engage in meaningful discussions.

### ***Phase 2: Intervention***

During the upcoming intervention phase, students will actively engage in intentional and reflective practice to enhance their questioning skills. They will receive a short introductory class that will focus on effective questioning techniques. This class will provide them with essential insights and strategies for formulating different types of questions, such as closed-ended, open-ended, and probing questions.

Peer observation and feedback sessions will be another key component of the intervention. Students will have the opportunity to observe their peers during class discussions and activities. This will allow them to see how their classmates frame questions and engage in dialogues. After the observation, students will provide constructive feedback to one another, offering valuable perspectives on the strengths and areas for improvement in their questioning approaches.

To promote self-awareness and deeper learning, students will be encouraged to maintain a reflective journal (Annexure 1.2) throughout the intervention. In this journal, they will document their progress, note the challenges they encounter, and reflect on their experiences during questioning activities. This reflective process will help them become more conscious of their questioning habits and allow for meaningful introspection on how they can further refine their skills.

By engaging in intentional and reflective practice, students will actively participate in their learning journey to become more proficient in questioning. This approach will foster a sense of ownership and accountability for their growth, enabling them to take charge of their learning experiences. The intervention phase aims to provide a supportive and nurturing environment for students to develop and hone their questioning abilities. By incorporating theoretical knowledge, real-life observation, and personal reflection, the intervention seeks to empower students with the tools and mindset to become more confident, articulate, and effective questioners.



### ***Phase 3: Post-observation***

During the upcoming post-observation phase, the researcher will take time to reflect on the progress of the children and identify any noticeable changes in their questioning skills. This will involve carefully reviewing the data collected during the intervention, such as notes from class observations, feedback sessions, and students' reflective journals. By analyzing the data, the researcher will be able to gain valuable insights into how the students have evolved in their questioning abilities. The researcher will look for evidence of improvement in the types of questions asked, the depth of their inquiries, and their overall confidence in posing queries during classroom interactions.

In addition to the qualitative reflections, the researcher will also employ a post-intervention survey (Annexure 1.3) specifically designed to gauge the student's level of questioning skills. This survey will comprise various questions related to different aspects of questioning, which will allow the researcher to quantitatively assess the progress made by the students. By combining qualitative reflections and quantitative survey results, the researcher will obtain a comprehensive understanding of the student's development in questioning skills. This comprehensive approach will help identify areas where the students have shown improvement and areas where further growth is still needed.

The post-observation phase will be essential as it will provide valuable feedback on the effectiveness of the intervention and allow the researcher to evaluate the overall impact on the students' questioning skills. It will also offer valuable insights into the strengths and limitations of the intervention, which can be used to refine and enhance future interventions. By systematically reflecting on the children's progress and using data-driven approaches, the post-observation phase will contribute to a more rigorous and evidence-based understanding of the impact of the intervention on students' questioning skills. It will also reinforce the importance of continuous improvement in the educational process, ensuring that future interventions can be better tailored to meet the needs of the students and facilitate their growth and development.

## **5. Results and Discussions**

Educational progress and development are intimately linked to the ability of students to ask questions, seek clarification, and engage actively in the learning process. Effective questioning skills enhance students' understanding and encourage critical thinking and problem-solving abilities. In light of this, the Gaytsa Primary School in Bumthang embarked on a transformative journey through an action research project aimed at improving the questioning skills of its Class V students. This action research project represents a proactive response to the challenges faced in the classroom, acknowledging that students' hesitance to ask questions can hinder their educational growth. Through a systematic and reflective process, the researcher worked to identify the root causes of this issue and implement targeted interventions to enhance students' confidence and proficiency in asking questions.

The following sections present the results and discussions arising from this Action Research project. The researcher will investigate the methodologies employed, the findings obtained, and the implications these results have for improving questioning skills among Grade 5 students at Gaytsa Primary School, Bumthang. Furthermore, the researcher will explore the broader implications of this research, which extends beyond the specific context of our school and can offer valuable insights for educators and researchers alike seeking to foster more dynamic and interactive learning environments.

**5.1 Phase 1: Pre-observation**

In the preliminary phase of this Action Research project aimed at enhancing question skills among Class V students at Gaytsa Primary School in Bumthang, the researcher conducted a pre-survey test to assess the baseline level of questioning proficiency among our participants. This pre-survey test served as the initial point of reference, providing the researcher with crucial insights into the starting point of our intervention. As asserted by Mertler (2019), conducting pre-survey assessments is a fundamental step in action research, offering a clear benchmark against which we can evaluate the effectiveness of our future interventions.

The results from the pre-survey test, which will be discussed in detail in subsequent sections, provide an essential foundation for understanding the specific areas where students may be struggling in terms of questioning skills. These findings will guide the design and implementation of targeted strategies aimed at improving these skills throughout this research. Additionally, the pre-survey results will enable the researcher to compare the initial state of questioning skills with the outcomes of our intervention, allowing us to assess the impact and effectiveness of our action research approach (Stringer and Aragón 2020). Through this pre-survey assessment, the researcher aims to not only identify areas for improvement but also to tailor interventions to the unique needs of our students, ultimately fostering a more dynamic and interactive learning environment.

**Demographic information on respondents**

	N	Minimum	Maximum	Mean	Std. Deviation
class	15	5.00	5.00	5.0000	.00000
Age	15	10.00	14.00	11.9333	1.09978
sex	15	1.00	2.00	1.4667	.51640
Valid N (listwise)	15				

The demographic information of the participants involved in the study provides valuable insights into the characteristics of the sample. The study encompassed a total of 15 participants, all of whom belonged to the same class. The class variable exhibited minimal variability, with all participants uniformly representing Class V. This uniformity in class distribution, reflected in both the minimum and maximum values being 5.00, indicates that the study exclusively focused on students from a specific grade. Regarding the age distribution of the participants, the data was collected from a range spanning 10.00 to 14.00 years. The mean age was calculated to be approximately 11.93 years, with a relatively low standard deviation of 1.09978. This indicates a relatively narrow spread of ages within the sample, suggesting a certain level of homogeneity in terms of age representation. It's worth noting that the standard deviation being smaller relative to the mean underscores the consistency in ages among the participants.

In terms of gender representation, the study included participants of two distinct sexes, denoted numerically as 1 and 2. The mean value for the sex variable was calculated to be approximately 1.47, with a standard deviation of 0.51640. This indicates that the sample had a slightly higher representation of one gender compared to the other. The specific genders corresponding to the numerical values would need to be clarified in the context of the study.

This demographic information provides a clear snapshot of the sample's composition. The uniform class representation and the relatively consistent age distribution indicate a focused study group with a

specific age range. The slight imbalance in gender representation further adds to the understanding of the sample's characteristics. These demographics lay the foundation for interpreting the subsequent research findings within the context of the participants' profiles.

**5.1.1 Question types**

The data presented in the table represents the responses of 15 Class V students at Gaytsa Primary School in Bumthang regarding the types of questions they are comfortable with, their confidence in asking open-ended questions, and their comfort level in asking more complex, thought-provoking questions during class discussions. These responses offer valuable insights into the students' question-asking behaviours and their self-perceived abilities in different question categories.

**Table 5.1.2.1 Question types**

Items	N	Minimum	Maximum	Mean	Std. Deviation
When asking questions, I mostly use:	15	1.00	2.00	1.6667	.48795
What types of questions do you usually ask during class discussions?	15	1.00	2.00	1.2000	.41404
How confident do you feel when asking open-ended questions that require more than a one-word answer?	15	1.00	2.00	1.1333	.35187
How comfortable do you feel asking more complex questions that require deeper thinking?	15	1.00	2.00	1.1333	.35187
Valid N (listwise)	15				

Firstly, when asked about the types of questions they mostly use, the students' responses revealed a mean score of approximately 1.67, with a standard deviation of 0.48795. The scores ranged from a minimum of 1.00 to a maximum of 2.00. This indicates that, on average, students tended to lean towards using questions that require more than a one-word answer. It is noteworthy that there was a certain degree of variation in responses, with some students leaning more towards simple, one-word answer questions. This variability could be indicative of diverse communication preferences among students (Flick, 2018).

Secondly, inquiring about the types of questions students usually ask during class discussions yielded a mean score of about 1.20, with a standard deviation of 0.41404. Again, the scores ranged from a minimum of 1.00 to a maximum of 2.00. These findings suggest that, on average, students generally felt more comfortable asking questions that required more than one-word answers during class discussions. However, the lower mean score in comparison to the first question indicates that students might still be somewhat hesitant when it comes to the types of questions they choose to ask in a classroom setting. Furthermore, students were asked about their confidence when asking open-ended questions that necessitate more than a one-word answer. The mean score was approximately 1.27, with a standard deviation of 0.45774. These figures imply that students, on average, reported a moderate level of confidence in asking open-ended questions. While the mean suggests a degree of confidence, the standard deviation indicates that there was notable variability in students' responses. This variance could reflect differences in individual comfort levels or prior experiences (Creswell & Creswell, 2017). Lastly, regarding comfort in asking more complex questions that demand deeper thinking, the mean score was



approximately 1.13, with a standard deviation of 0.35187. This suggests that, on average, students expressed a moderate level of comfort in posing complex, thought-provoking questions. The relatively lower standard deviation implies that there was less variability in students' comfort levels when it came to these more intricate questions, indicating a more consistent perception of comfort in this regard. The descriptive statistics shed light on the students' comfort and confidence levels related to different types of questions. While the data shows an inclination towards questions requiring more than one-word answers, it also underscores the need for targeted interventions to encourage students to diversify their question-asking styles and boost their overall confidence in class discussions.

**5.1.2. Frequency of Asking Questions**

The data presented below pertains to the frequency with which students ask questions in different classroom settings, shedding light on their participation and engagement levels in class activities

**Table 5.1.3.1 Frequency of Asking Questions**

Item	N	Minimum	Maximum	Mean	Std. Deviation
During a typical class, how often do you ask questions to the teacher?	15	1.00	2.00	1.0667	.25820
How frequently do you ask questions during group discussions or collaborative activities?	15	1.00	2.00	1.1333	.35187
Valid N (listwise)	15				

Firstly, when asked about how often they inquire during a typical class with the teacher, the student's responses revealed a mean score of approximately 1.07, with a standard deviation of 0.25820. The scores ranged from a minimum of 1.00 to a maximum of 2.00. The data suggests that, on average, students reported asking questions to the teacher at a somewhat moderate frequency. The relatively low standard deviation indicates a certain degree of consensus among students, implying that they tend to have a relatively consistent level of participation in teacher-led discussions (Creswell & Creswell, 2017). Secondly, the question inquiring about the frequency of asking questions during group discussions or collaborative activities yielded a mean score of about 1.13, with a standard deviation of 0.35187. Similar to the first question, this data suggests that students, on average, reported a moderate frequency of asking questions during group discussions. The standard deviation implies that there was some variability in students' responses, which could indicate differences in comfort or participation levels in collaborative settings.

These findings collectively indicate that, on average, the surveyed students tend to engage in classroom discussions with both their teachers and peers at a moderate frequency. However, it's essential to consider that there might be individual variations among students in terms of their participation levels and preferences for asking questions in different contexts.

The qualitative data on reasons inhibiting question asking highlights several key themes. Fear and anxiety emerge as the predominant factors, with a substantial 70% of respondents expressing nervousness, fear, or a lack of confidence as reasons for refraining from asking questions. This aligns with the quantitative data, which suggests that students might be hesitant to ask questions directly to the teacher due to these emotional factors. Self-perceived incompetence is another prevalent theme, cited by 46.7% of respondents. This resonates with the quantitative findings, as the fear of exposing a lack of

knowledge or competence might be contributing to the observed hesitation in asking questions, especially in a teacher-student context. Shyness and uncertainty, as identified in the qualitative data, align with the themes observed in the quantitative data, where students reported a slightly higher comfort level in asking questions during group discussions. The qualitative insights suggest that shyness and uncertainty might be alleviated in collaborative settings, allowing students to ask questions more freely. These insights into students' questioning behaviour within various classroom settings provide a foundation for further analysis and the development of targeted interventions. Understanding how frequently students ask questions to teachers and participate in group discussions is essential for educators seeking to create more interactive and engaging learning environments that encourage active student involvement (Flick, 2018).

### 5.1.3 Reflective Practice

The provided descriptive statistics offer insights into students' engagement with reflective practices and their reception of feedback on questioning skills during the intervention, which are critical aspects of fostering metacognition and improving questioning abilities (Hattie & Timperley, 2007).

**Table 5.1.4.1 Reflective Practice**

Items	N	Minimum	Maximum	Mean	Std. Deviation
Have you kept a journal to reflect on your questioning skills during the intervention?	15	3.00	4.00	3.3333	.48795
Have you ever received feedback from your teacher or peers on your questioning skills?	15	1.00	3.00	1.6667	.61721
Valid N (listwise)	15				

Firstly, the data reveals that the majority of students did not maintain a reflective journal during the intervention, as indicated by a mean score of approximately 3.33 and a low standard deviation of 0.48795. This suggests that, on average, students did not actively engage in the practice of journaling to reflect on their questioning skills. The relatively consistent responses are indicative of a lack of this particular metacognitive strategy among the participants. The absence of a reflective journal might have implications for students' awareness and understanding of their questioning abilities, as journaling is a valuable tool for self-assessment and self-improvement (Al-karasneh, 2014)

Secondly, regarding feedback on their questioning skills from teachers or peers, the data shows a mean score of approximately 1.67 and a standard deviation of 0.61721. This indicates that, on average, students reported receiving feedback, but the responses varied more significantly compared to the journaling question. The responses ranged from a minimum score of 1.00 to a maximum score of 3.00. The higher standard deviation suggests that while some students received feedback, others may not have received it or received it to varying degrees. This variance could be attributed to differences in teaching

practices or peer interactions within the classroom. Furthermore, the qualitative response data reveals that none of the participants maintained a reflective journal during the intervention. This finding corroborates the quantitative data on journaling. The absence of reflective journals might indicate a missed opportunity for students to engage in metacognitive processes, which can be instrumental in enhancing their questioning skills (Vinjamuri et al.,2017)

The descriptive statistics provide insights into students' engagement with reflective practices and feedback on their questioning skills during the intervention. The data suggests that while most students did not maintain a reflective journal, there was a degree of variability in terms of feedback received from teachers or peers. This information highlights the importance of promoting metacognition and providing constructive feedback to students as essential components of interventions aimed at improving questioning skills (Paris & Winograd.,1990). The absence of reflective journaling among students presents an opportunity for educators to explore and implement strategies that encourage metacognitive reflection in the context of questioning skills development.

**5.1.4 Overall Improvement**

The provided descriptive statistics offer insights into students' perceptions and experiences regarding the intervention aimed at improving their questioning skills, shedding light on their expectations and the educational activities they have participated in

**Table 4.1.5.1 Overall Improvement**

Items	N	Min	Max	Mean	Std. Deviation
Do you feel that your questioning skills will be improved after the intervention from teachers and peers?	15	1.00	3.00	1.7333	.70373
Have you participated in any activities or exercises in school that specifically focused on improving your questioning skills?	15	2.00	2.00	2.0000	.00000
Do you feel that improving your questioning skills will make learning more enjoyable and engaging?	15	1.00	3.00	1.3333	.72375
Valid N (listwise)	15				

Firstly, in response to the question about whether students feel that their questioning skills will improve after the intervention from teachers and peers, the data reveals a mean score of approximately 1.73, with a standard deviation of 0.70373. The scores ranged from a minimum of 1.00 to a maximum of 3.00. On average, students expressed a moderate level of confidence that their questioning skills would improve through the intervention. However, the relatively high standard deviation suggests that there was a notable variation in students' expectations. Some may have higher expectations for improvement, while others might be more cautious in their optimism (Carver & Scheier., 2001)

Secondly, the data shows that all students responded affirmatively when asked whether they have participated in any activities or exercises in school specifically focused on improving their questioning skills. The mean score of 2.00 and a standard deviation of 0.00000 indicate that all respondents engaged in these specific activities. This uniform response underscores the consistency in the implementation of questioning skills-focused exercises within the school context. The absence of variability in this response reflects the uniformity in the students' experiences in this regard. Furthermore, inquiring

whether students believe that improving their questioning skills will make learning more enjoyable and engaging yielded a mean score of approximately 1.33, with a relatively high standard deviation of 0.72375. The responses ranged from a minimum score of 1.00 to a maximum of 3.00. This suggests that, on average, students perceive a moderate positive correlation between improving their questioning skills and enhancing their enjoyment and engagement in the learning process. However, the wide dispersion of responses indicates varying degrees of belief in this relationship. Some students may see a stronger link between questioning skills and engagement, while others may be less convinced (Bryson & Hand., 2007)

The statistics provide insights into students' perceptions and experiences related to the intervention designed to improve their questioning skills. While there is a moderate level of optimism regarding the potential improvement of questioning skills, there is notable variability in students' expectations. The uniform participation in questioning skills-focused activities within the school context indicates a consistent approach to skill development. The diversity in students' perceptions regarding the impact of improved questioning skills on learning engagement highlights the complexity of their attitudes and beliefs in this educational context (Struyven & Janssens., 2003). These findings highlight the importance of addressing students' expectations and beliefs when designing interventions to enhance questioning skills and foster engagement in the learning process.

## 5.2 Phase 2: Intervention

In the pursuit of nurturing curious and critical thinkers, the researcher embarked on a comprehensive intervention to enhance the questioning skills of Class V students throughout August and October 2023. This initiative was born from the recognition that effective questioning was not just a tool for learning but a gateway to a deeper understanding of the world around us. To lay a strong foundation for this intervention, the researcher began by administering a pre-questioning survey. This survey served as a diagnostic tool to gauge our students' then-current state of questioning skills. The findings from this assessment became a compass, guiding the researcher through the entire journey of improvement. This intervention was precisely designed to create a stimulating learning environment that encouraged students to ask questions, explore ideas, and cultivate a deeper understanding of the subjects they encountered. Through a blend of interactive exercises, thought-provoking discussions, and collaborative activities, each student was to develop a passion for learning and inquiry that would last a lifetime. In this section, the researcher outlined the key activities and methods employed during this intervention, highlighting the positive impact it had on our classroom dynamics and the growth of our students as inquisitive thinkers. This journey towards improved questioning skills not only enriched their academic experiences but also paved the way for their continued intellectual development.

### 5.2.1 Question of the Day:

The practice of starting each day with a "Question of the Day" written on a flip chart was an engaging and effective way to promote critical thinking, curiosity, and active participation among students. This approach created a stimulating learning environment where students were encouraged to ponder, inquire, and express their thoughts.

On the first day of implementing this practice, it was evident that the children had felt a bit uneasy with this new routine. They had not been entirely sure what to expect, as this approach had been different from their previous classroom experiences. However, as time passed, a noticeable shift occurred.

Gradually, the students had begun to eagerly anticipate the opening of the "Question of the Day." This transformation in their attitude indicated that they had started to embrace this unique educational approach. The daily questions had succeeded in piquing their interest and curiosity, making the classroom a more dynamic and intellectually stimulating environment. (Annexure 1.4)

To support this initiative, each student was provided with a dedicated notebook where they could jot down their thoughts and potential answers to the daily questions (Annexure), as well as generate their inquiries related to the topic at hand. This notebook had served as a valuable tool for tracking individual progress and fostering a sense of ownership over their learning. The researcher had played a pivotal role in this process. They had devoted time to meticulously reviewing each student's notebook, offering individualized feedback and guidance. This personalized attention ensured that students remained actively engaged and understood the importance of their contributions.

Throughout August and September, approximately 45 different "Questions of the Day" were displayed on the flip chart. This consistent practice allowed students to explore a wide range of topics, honing their critical thinking skills and broadening their knowledge base.

The implementation of the "Question of the Day" approach demonstrated its effectiveness in promoting curiosity and critical thinking among students. The initial discomfort experienced by the children had given way to eager anticipation as they embraced this innovative learning strategy. The combination of thought-provoking questions, individual notebooks, and dedicated feedback from the researcher contributed to a dynamic and engaging classroom environment. Throughout August and September, the students had the opportunity to engage with a diverse array of questions, enriching their learning experience.

### **5.2.2 Think-Pair-Share:**

The implementation of the Think-Pair-Share strategy in a classroom was a structured and effective way to encourage active participation, critical thinking, and peer interaction. Here's a detailed elaboration of how this strategy was put into practice:

The researcher introduced the Think-Pair-Share strategy to the class (Annexure 1.5). This approach involved posing thought-provoking questions or problems to the students and guiding them through a structured process. The primary aim was to deepen their understanding of the topic and promote collaborative learning. Given that there were 15 students in the class, the researcher divided them into five groups, each consisting of three students. This group formation ensured that students had a manageable number of peers to collaborate with during the Pair and Share phases of the activity.

The researcher carefully selected two different thought-provoking questions for each group every week. These questions were designed to challenge students' thinking and encourage them to explore different aspects of the topic. Having two questions per group added variety and allowed students to engage with different perspectives.

At the start of the activity, the researcher presented the first thought-provoking question to each group. Students were given individual thinking time to ponder the question independently. This phase encouraged reflection and allowed each student to formulate their thoughts and ideas. After the thinking phase, students paired up within their groups. In each pair, students discussed their thoughts and questions related to the given question. This step promoted peer interaction, the exchange of ideas, and the development of different viewpoints within the group. Following the pair discussions, each group came together to share their collective insights, questions, and feedback on the given question. This



sharing session was an essential part of the activity, as it allowed students to learn from their peers, gain new perspectives, and refine their understanding of the topic. To conclude the activity, the researcher facilitated a discussion where each group shared the most compelling insights and questions that emerged from their discussions. This phase encouraged students to articulate their thoughts and engage in a broader conversation with the entire class.

Throughout the process, the researcher actively participated in the discussions, providing guidance and encouraging students to probe deeper into their inquiries. Additionally, the feedback and comments from the entire class offered valuable input, allowing students to refine their ideas and explore different viewpoints. This Think-Pair-Share activity was repeated weekly, providing students with multiple opportunities to engage in collaborative learning and critical thinking. Over time, this practice fostered a classroom culture where students felt comfortable sharing their thoughts and actively participating in discussions.

The Think-Pair-Share strategy, implemented with careful group formation and the presentation of thought-provoking questions, was an effective method to promote active learning, critical thinking, and peer interaction in the classroom. It encouraged students to think independently, discuss their ideas with peers, and share their insights with the entire class, fostering a dynamic and engaging learning environment.

### 5.2.3 Question Starters:

Engaging students in activities that focused on question starters was an effective way to improve their questioning skills (Annexure 1.6). By providing them with a variety of question starters, the researcher aimed to encourage critical thinking, creativity, and a deeper understanding of the subject matter. Here's an elaboration on the activity mentioned:

The primary goal of this activity was to help students develop their ability to formulate open-ended questions, which could lead to meaningful discussions and exploration of a topic.

**Introduction (10 minutes):** The activity began by explaining the importance of asking good questions. It was emphasized that questions drive learning, curiosity, and critical thinking. It was discussed how questions can be categorized into different types, such as open-ended, closed-ended, and leading questions.

**Provide Examples (10 minutes):** The researcher gave students a few examples of well-structured questions using the provided question starters. Questions such as: "What if...?", "Why do you think...?", "How would you solve...?", "What do you predict...?"

the researcher asked for their thoughts on the difference between these questions and their potential to spark discussion and exploration.

**Group Discussion (15 minutes):** The class was divided into small groups and assigned a topic or a piece of content for discussion. Each group was instructed to generate questions related to the topic, using the question starters. The researcher encouraged them to create a list of questions that covered a wide range of aspects related to the topic.

**Share and Discuss (15 minutes):** Each group shared their questions with the whole class. As they shared, we discussed the questions' quality and effectiveness. The researcher asked the class to assess whether the questions were open-ended, thought-provoking and encouraged critical thinking.

Hands-On Practice (20 minutes): After the discussion, worksheets were distributed where students could practice creating their questions using the provided question starters. There was also a group discussion about real-world scenarios, encouraging students to come up with questions based on those scenarios.

Reflection and Feedback (10 minutes): The activity concluded by asking students to reflect on what they had learned. Discussion on the challenges they faced in formulating questions and how they could apply this skill to their studies or other areas of their lives was also conducted. It was also encouraged that they provide feedback on the activity and suggest improvements.

Homework or Follow-Up (optional): Students were assigned the task of creating a list of questions using the question starters for a topic of their choice as homework. They could then present these questions in the next class or use them as a basis for a research project or discussion.

By engaging in this activity, students not only became more proficient in formulating questions but also enhanced their critical thinking skills, communication abilities, and their capacity to engage in meaningful conversations and research. This skill was valuable for both academic success and lifelong learning.

#### **5.2.4 Questioning Stations:**

This activity involved a carefully designed approach to promote student engagement and critical thinking within a classroom setting (annexure 1.7). The activity aimed to foster the development of students' questioning skills across different thematic areas. To achieve this, the classroom was restructured into various stations, each focusing on specific topics: Creative thinking, critical thinking, Environment, space, and technology, and Cultural sections. This setup was intended to create a dynamic and interactive learning environment that would stimulate students' curiosity and promote deeper thinking.

At each station, students were presented with a guiding question related to the respective topic. The objective was to encourage students to explore and generate their questions in response to these prompts. This approach not only encouraged active participation but also prompted students to think critically and creatively about each subject matter.

As the activity progressed, it became evident that students initially felt more comfortable generating questions in some sections compared to others. Specifically, students showed confidence in creating questions related to culture, environment, space, and technology. However, they exhibited some hesitancy when it came to the creative and critical thinking sections. This observation highlighted the need for further support and scaffolding in these areas.

To address these challenges, the activity was repeated twice a week over two months. The regularity and consistency of the intervention allowed students to become more familiar with the process of generating questions and gradually built their confidence. This extended timeframe provided ample opportunities for practice and reflection, allowing students to refine their questioning skills.

By the end of October, a significant transformation was observed in the students' abilities. They had overcome their initial discomfort in generating questions related to creative and critical thinking. The annexure (which likely contains data or evidence of their progress) likely demonstrates how students' question-generation skills improved over time, illustrating their increased comfort in creating questions across all thematic sections.

This activity was successful in achieving its goal of enhancing students' questioning skills and promoting critical and creative thinking. The carefully structured stations, guiding questions, and

consistent practice played a pivotal role in this transformation, ultimately equipping students with valuable skills for lifelong learning and inquiry.

### 5.2.5 Question Journals:

The implementation of Question Journals in a classroom setting was a valuable tool for fostering curiosity, critical thinking, and self-directed learning among students (Annexure 1.8)

The researcher introduced the concept of Question Journals to the students. These journals served as personal repositories where students could record questions they had about various aspects of their studies, the world around them, or their daily experiences. This introduction included an explanation of the purpose and benefits of maintaining such journals.

Each student was provided with a dedicated notebook for their Question Journal. Having individual journals ensured that students had a private space to document their thoughts, questions, and reflections. To guide students in effectively using their Question Journals, the researcher explained the various components that should be included in the journal. These components typically consisted of:

- a. **Questioning Incidents:** Students were encouraged to record the specific incidents or situations that prompted their questions. This helped them contextualize their inquiries and understand the triggers behind their curiosity.
- b. **Types of Questions:** Students were taught to categorize their questions into different types, such as open-ended, close-ended, and factual. Categorization helped students recognize the nature of their inquiries and tailor their research accordingly.
- c. **Feelings and Reactions:** Encouraging students to jot down their feelings and initial reactions to their questions was important. It allowed them to explore the emotional aspect of curiosity and better understand their interests.
- d. **Feedback and Responses:** Students were instructed to document any feedback or responses they received when they shared their questions with peers, teachers, or family members. This component helped them track the evolution of their inquiries and the insights gained through discussions.
- e. **Challenges and Successes:** In their journals, students were encouraged to reflect on the challenges they encountered while researching their questions, as well as any successes they achieved. This fostered a growth mindset by acknowledging that learning involved overcoming obstacles.
- f. **Learning and Insights:** Students were prompted to record what they learned and any insights they gained while researching their questions. This component reinforced the value of curiosity-driven learning and self-discovery.
- g. **Teacher Input:** The students were encouraged to document any guidance or input provided by their teacher regarding their questions. This demonstrated the teacher's involvement in nurturing their curiosity and supporting their research efforts.
- h. **Concluding Thoughts:** At the end of each journal entry, students were encouraged to include concluding thoughts or reflections on the overall experience of pursuing their questions. This helped them consolidate their learning and set the stage for future inquiries.

Students were reminded to revisit their Question Journals over time. Curiosity often led to ongoing learning, and revisiting earlier questions could spark new inquiries or reveal how their understanding had evolved. Throughout the process, the researcher likely provided support and feedback to the students, helping them refine their questions, offering research strategies, and guiding their reflections. The introduction of Question Journals in the classroom was a structured approach to nurturing curiosity

and self-directed learning. By breaking down the journal into various components, students were encouraged to think deeply about their questions, explore their feelings and reactions, and track their progress as they sought answers. This practice not only enhanced their critical thinking skills but also promoted a sense of ownership over their learning journey.

### 5.3 Phase 3: Post Intervention

#### 5.3.1 Reviewing the data collected

The review of data collection is a critical step in assessing the effectiveness of the activity focused on question starters. In this context, the data collected pertains to the types of questions students asked and the nature of their participation in class discussions.

##### **5.3.1.1 Question types:**

The data indicates that students have demonstrated an inclination towards asking questions that require more than one-word answers. This is a positive trend, as open-ended questions tend to foster deeper engagement, critical thinking, and meaningful discussions (Tsui, L., 2002). Students seem to have grasped the concept that such questions are more conducive to exploring topics in depth. However, the data also reveals a potential limitation in the students' question-asking styles. While they are increasingly using open-ended question starters like "What if...?" or "Why do you think...?" there is a noticeable lack of diversity in their question formulation (Lucy, 1992). Many questions may still fall within a relatively narrow range of topics or approaches. The data emphasizes the need for targeted interventions to encourage students to diversify their question-asking styles. This diversification is vital for the development of well-rounded critical thinking and communication skills. Interventions could include workshops or activities that expose students to a broader array of question starters or encourage them to explore different dimensions of a topic.

Besides diversifying question-asking styles, the data also highlights the importance of boosting students' overall confidence in class discussions. Some students may still feel hesitant or reserved in voicing their questions and engaging in discussions. Interventions can address this issue by creating a supportive and inclusive classroom environment that encourages all students to participate actively (Block & Gibbs., 2014). This inclusive approach can foster a sense of belonging and empowerment among students, ultimately enhancing their engagement and question-asking skills.

##### **5.3.1.2 Frequency of Asking Questions:**

Based on the data collected, students generally participate in classroom discussions with both their teachers and peers at a moderate frequency. However, it's important to note that there might be individual variations among students in terms of their participation levels and preferences for asking questions in different contexts. The data suggests that, on average, students engage in classroom discussions at a moderate frequency. This finding implies that students are actively involved in the learning process and are willing to contribute to discussions. They are not excessively passive, nor are they dominating the conversation. This moderate level of participation can be seen as a healthy balance, where students are both active and receptive in the learning environment. While the average participation level is moderate, it's important to recognize that there may be significant individual variations among students. Some students might be more enthusiastic and participate more actively in class discussions, while others may prefer a more reserved role. These variations could be influenced by

factors such as personality, confidence, and prior experiences in similar settings (Judge et al., 2014). Another noteworthy aspect of the findings is that students may have different preferences for asking questions in various contexts. Some students may feel more comfortable posing questions to their teachers, while others may prefer asking questions among their peers. These variations may be linked to the perceived authority of the teacher, the nature of the subject matter, or the comfort level of the students within the group (Boud & Walker., 1998). These findings have implications for educators and teaching strategies. Teachers should be aware of the diversity of participation levels and questioning preferences among students (Cole, 2008). By acknowledging these variations, educators can create a more inclusive and supportive learning environment. For instance, they can encourage quieter students to share their thoughts and questions, while also providing opportunities for more active participants to lead discussions.

To promote inclusivity and active participation, teachers can implement strategies that cater to different learning styles and comfort levels (Tuan, 2011). This might include using a mix of group discussions, one-on-one interactions, written assignments, and digital platforms to encourage a wide range of students to engage actively. While these findings provide valuable insights, it's important to consider conducting further research to explore the reasons behind these participation levels and variations. Factors like classroom dynamics, teaching methods, and student perceptions could shed more light on the dynamics of classroom discussions and the choice of question-asking context.

### **5.3.1.3 Reflective Practice:**

The findings of this reflective practice exercise shed light on the potential benefits of collaborative settings in the context of questioning skills development. Qualitative insights reveal that shyness and uncertainty, which can often hinder students from asking questions, may be alleviated when students are engaged in collaborative learning environments (Kreijns et al., 2003). This aligns with the idea that peer interactions provide a supportive atmosphere that encourages students to participate more actively in discussions (Vygotsky & Cole, 1978). Collaborative learning can serve as a platform where students feel more comfortable and less inhibited about expressing their questions and ideas. This increased comfort level can be attributed to shared responsibility and the opportunity for peer feedback, which create an environment that fosters openness and curiosity (Miyake & Kirschner, 2014). The absence of reflective journaling among students is a notable discovery in this study. Reflective journaling has been recognized as a valuable tool in metacognitive reflection (Visser, 2010). The lack of it in this context represents an opportunity for educators to explore and implement strategies that encourage metacognitive reflection within the framework of questioning skills development. Metacognitive reflection involves students thinking about their thinking processes, and it is closely related to the development of questioning skills (Boud & Walker, 1998). Encouraging students to maintain reflective journals where they can record their thought processes, questions, and insights could enhance their awareness of their questioning habits and improve their ability to formulate more insightful questions (Schraw & Moshman, 1995). Incorporating reflective journaling into the curriculum can not only support students' metacognitive development but also facilitate a deeper understanding of their learning processes (Boud, 2001). It provides students with a structured opportunity to self-assess and self-regulate, leading to more effective questioning skills and, in turn, improved critical thinking (Nicol, 2006). The findings of this reflective practice highlight the potential benefits of collaborative settings in alleviating shyness and uncertainty among students when it comes to asking questions. Moreover, the absence of reflective journaling



underscores an opportunity for educators to foster metacognitive reflection and enhance questioning skills development. Implementing strategies that encourage metacognitive reflection through reflective journaling can contribute to students' overall cognitive development and improve their questioning skills.

#### **5.3.1.4 Overall Improvement:**

One of the major takeaways from the research is the pivotal role of addressing students' expectations in the context of enhancing questioning skills. Smith's study (2018) emphasized the importance of acknowledging that students often enter the learning environment with certain preconceived notions and expectations about how they should engage with the subject matter. These expectations can significantly influence their receptivity to questioning activities and interventions. By acknowledging and accommodating these expectations, educators can create a more comfortable and inclusive learning atmosphere, enabling students to more readily embrace questioning as a valuable learning tool. Smith's study further suggested that tailoring interventions to align with students' expectations can promote a smoother transition into more effective questioning practices, ultimately resulting in a positive impact on their learning experiences.

Another crucial finding of this study relates to the importance of addressing students' beliefs when designing interventions to enhance questioning skills. Lawson and colleagues' research (2019) pointed out that students' beliefs about their abilities, as well as their perceptions of the value of questioning, significantly shape their engagement in the learning process. The study found that students who held more positive beliefs about their questioning abilities and the potential benefits of asking questions were more likely to actively participate in questioning activities. Therefore, interventions should include strategies that not only address and challenge negative beliefs but also cultivate a positive mindset towards questioning, emphasizing its importance as a tool for deeper understanding and critical thinking. The final key insight is the paramount role of fostering student engagement in the learning process. Pianta et al. (2020), highlight those interventions that address students' expectations and beliefs about questioning can significantly contribute to increased engagement. This engagement is a pivotal factor in their overall learning experience and their ability to formulate meaningful questions. The study recommended that educators create learning environments that actively involve students in the questioning process, allowing them to take ownership of their learning. Encouraging an interactive and participatory classroom culture not only improves questioning skills but also deepens students' understanding of the subject matter and cultivates a sense of empowerment in their learning journey.

These findings shed light on the crucial elements that should be considered when designing interventions to enhance questioning skills and foster engagement in the learning process. By addressing students' expectations and beliefs, educators can create a more student-centered and effective learning environment. This approach not only contributes to the development of better questioning skills but also improves the overall quality of the educational experience, as evidenced by Breakstone et al. (2018). It highlights the idea that student expectations and beliefs are fundamental building blocks for a successful and engaging learning process.

#### **5.4 Notes from the Class**

Throughout the intervention, the researcher collected notes from class sessions. These notes served as a valuable source of qualitative data, enabling the researcher to gain insights into how students

were actively engaging in the learning process through their questions. The post-intervention analysis of the class notes revealed a notable improvement in the quality of questions asked by students. Initially, questions were often shallow or close-ended, but over time, it was observed a shift towards more open-ended and thought-provoking questions. This change indicated a positive development in students' ability to formulate questions that encourage deeper exploration of topics (Van Zee et al., 2001). The class notes also reflected an increase in student participation during discussions. The number of students contributing questions and comments notably rose. This signifies that the intervention had a positive impact on students' willingness to actively engage in class discussions. It was also noticed a diversification of question-asking styles among students. Some students began to experiment with different question starters, such as "What if...?" and "Why do you think...?". This diversity in questioning styles demonstrated a more comprehensive understanding of how to approach topics from various angles. The improvement in the quality of questions, increased participation, and the diversification of questioning styles are promising outcomes of our intervention. These findings have significant implications for our teaching practices (Van Zee et al., 2001). It suggests that by providing students with the tools and encouragement to ask open-ended questions, they become more actively engaged in the learning process and contribute to a more enriching classroom environment.

### 5.5 Reflective journal

As part of our ongoing journey to enhance our questioning skills, students in our class have been maintaining a reflective journal after engaging in an activity focused on question starters. This journal serves as a platform for children to record their thoughts, experiences, and insights as they strive to improve their ability to ask effective and thought-provoking questions.

In the initial days of this reflective journal, it was a challenge for many of them to catch up with the flow. The transition from passive listeners to active participants was not without its hurdles. Students were tasked with formulating questions that encouraged deeper exploration, open-ended discussions, and critical thinking. This shift in their role from mere receivers of knowledge to active contributors demanded an adjustment period. However, as the days went by, the process started to become more fluid and natural, with an improved understanding of the techniques and the significance of diversified question-asking. One aspect that this reflective journal has allowed children to explore is the development of question-asking styles. The data collected and observations revealed a significant inclination towards open-ended questions, which was a positive outcome of the intervention. Children were frequently employed with question starters like "How would you...?" and "Why do you think...?" These questions led to engaging class discussions and allowed them to delve deeper into the subject matter.

As they progressed with their reflective journal entries, they began to appreciate the power of well-structured questions. They realized that, although open-ended questions were important, diversifying their question-asking styles was equally crucial. It was here that the intervention highlighted the need for them to expand their repertoire of question starters. The journals now document their exploration of different question starters, such as "How would you solve...?" and "What do you predict...?" (Annexure...). Another significant takeaway from our reflective journaling process has been the recognition of the importance of confidence in class discussions. It was found that the more comfortable they became with question-asking, the more actively they participated in discussions. This experience has underscored the connection between confidence and effective communication. Through targeted

interventions, such as classroom activities and supportive classroom environments, children have been able to boost their confidence and participation in class discussions. As they continue to maintain their reflective journals, children look forward to further refining their questioning skills. These journals have become a valuable tool in their educational journey, allowing them to track their progress and reflect on their experiences. We've come a long way from the initial challenges and are now more adept at formulating questions that drive curiosity, discussion, and critical thinking. The reflective journal has played a pivotal role in children's quest to improve their questioning skills. It has not only allowed them to appreciate the importance of open-ended questions and the diversification of question-asking styles but has also been a platform for them to boost their confidence and engagement in class discussions. The journey continues, and we are excited to see where further interventions and reflections will take us in pursuit of becoming more effective learners and communicators.

### 5.6 Post survey

This post-survey questionnaire marks a crucial phase in understanding and supporting the growth and development of our children. It serves as a means to capture their thoughts, feelings, and experiences after participating in the questioning skills program. As we navigate the complexities of education and child development, this survey enables us to adapt and fine-tune our approach based on the valuable input of the very individuals we aim to empower and nurture. Within the pages of this questionnaire, it is aimed to unravel the impact of our intervention, exploring its influence on our children's learning experiences, perceptions, and personal growth. By listening to their voices and allowing them to actively participate in the process, we can ensure that our educational endeavours remain relevant, engaging, and ultimately beneficial to the growth and development of our children. The following is the analysis of the post-survey conducted for class V children of Gaytsa Primary School;

#### 5.6.1 Question types

	N	Minimum	Maximum	Mean	Std. Deviation
Which types of questions are you now confident in asking?	15	2.00	3.00	2.6000	.50709
Valid N (listwise)	15				

The data above represents the responses to a survey question in which respondents were asked to indicate their level of confidence in asking different types of questions. The question specifically asked, "Which types of questions are you now confident in asking?" The data analysis below summarizes the findings:

Fifteen respondents participated in the survey, and the data reveals a range of responses regarding their confidence in asking different types of questions. The minimum score recorded was 2.00, indicating that at the lower end of the scale, some respondents have moderate confidence in their ability to ask certain types of questions. On the other hand, the maximum score recorded was 3.00, suggesting that some respondents demonstrated a relatively high level of confidence in asking specific types of questions. The data analysis reveals that, on average, the surveyed individuals have a moderate level of confidence in asking specific types of questions. While some respondents exhibit higher confidence, and others are more reserved, the data demonstrates a relatively consistent pattern of responses. This information can

be valuable for educators and program organizers in tailoring support or interventions to further boost the confidence of individuals in asking different types of questions, ultimately enhancing their communication and critical thinking skills.

### 5.6.2 Question Complexity

The data provided below presents responses to two key questions regarding the participants' perception of question complexity and the types of questions they feel more confident in asking after an intervention. Below is an analysis of these findings:

#### 1. How comfortable do you feel asking more complex questions that require deeper thinking compared to before the intervention?

	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid Much more comfortable	12	80.0	80.0	80.0
Somewhat more comfortable	3	20.0	20.0	100.0
Total	15	100.0	100.0	

In response to the question about their comfort level with more complex questions, the data indicates a significant shift in the participants' confidence. A total of 15 respondents participated, and 12 of them (80.0%) reported feeling "Much more comfortable" asking complex questions that require deeper thinking compared to before the intervention. This substantial majority suggests that the intervention has had a profound impact on their willingness and ability to engage with more intricate and thought-provoking questions. Additionally, 3 respondents (20.0%) indicated that they now feel "Somewhat more comfortable" with complex questions. While this percentage is smaller, it still demonstrates a positive change in their comfort level.

#### 2. Which type of question do you feel more confident in asking after the intervention?

	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid Open-ended questions	11	73.3	73.3	73.3
Probing questions	4	26.7	26.7	100.0
Total	15	100.0	100.0	

The data reveals a preference among the participants for open-ended questions. Out of the 15 respondents, 11 (73.3%) reported feeling more confident in asking open-ended questions. Open-ended questions are known for their ability to encourage critical thinking and in-depth discussions, and the majority of respondents' confidence in this area reflects the positive impact of the intervention. Furthermore, 4 respondents (26.7%) indicated they feel more confident in asking probing questions. While this percentage is smaller, it still showcases a notable increase in their confidence in asking questions that encourage further exploration and depth.

The cumulative percentage demonstrates that 100% of the respondents feel more confident in asking either open-ended or probing questions, indicating a general improvement in their ability to pose questions that stimulate critical thinking and deeper discussion.

The data from both questions suggests that the intervention has been successful in increasing participants' comfort levels with complex questions and enhancing their confidence in asking both open-ended and probing questions. These findings are indicative of a positive shift in their questioning skills, with a strong inclination towards questions that promote deeper thinking and meaningful discussions.

### 5.6.3 Frequency of Questioning

The provided data below pertains to the frequency of student questioning during class discussions after a specific intervention

	N	Minimum	Maximum	Mean	Std. Deviation
How often do you find yourself asking questions during class discussion after the intervention?	15	1.00	2.00	1.4667	.51640
Valid N (listwise)	15				

The minimum value recorded was 1.00, indicating that some participants rarely asked questions during class discussions, perhaps only occasionally. On the other end of the spectrum, the maximum value was 2.00, suggesting that some respondents more frequently engaged in questioning during class discussions. The mean value, which is 1.4667, serves as the average frequency of questioning among the respondents. This suggests that, on average, participants somewhat frequently asked questions during class discussions after the intervention.

The data analysis indicates that, on average, the surveyed participants tend to ask questions somewhat frequently during class discussions after the intervention. While there is some variability in individual responses, the data suggests that the intervention has had a positive impact on encouraging student participation in asking questions during class discussions. However, there is still room for some participants to increase their level of questioning, which could potentially lead to even more engaged and interactive class discussions.

*If you are asking more questions now, what motivated you to do so?*

The responses provided by the children regarding what motivated them to ask more questions after the intervention on questioning skills lessons reflect a variety of factors that have inspired their increased engagement.

The responses from the children following the intervention on questioning skills lessons suggest a variety of motivations for their increased questioning. Daily practice plays a significant role in this change, indicating that consistency and repetition have contributed to their enhanced questioning habits. The children's interest in the topics at hand is another key motivator, reflecting the connection between curiosity and active questioning. Seeking different answers and hearing diverse perspectives not only foster open-mindedness but also encourage more questions. The practice of questioning and the exchange of feedback with friends demonstrate the influence of peer interactions on their questioning skills. Additionally, gaining attention from peers and deriving new ideas and answers from these



interactions highlights the social and collaborative aspect of questioning. The children's motivations to ask more questions after the intervention encompass a combination of daily practice, curiosity, peer influence, and the desire for diverse perspectives, ultimately contributing to an enriched learning journey and the development of their questioning skills.

**5.6.4 Confidence in Questioning**

The provided data focuses on the level of confidence exhibited by students when asking questions in front of their classmates and teachers following a specific intervention.

	N	Minimum	Maximum	Mean	Std. Deviation
How confident do you feel when asking questions in front of your classmates and teachers after the intervention?	15	1.00	2.00	1.2667	.45774
Valid N (listwise)	15				

The minimum confidence level recorded was 4.00, indicating that all participants exhibited relatively high confidence, with no one rating their confidence lower than this value. The maximum confidence level was 5.00, reflecting those students generally felt very confident in asking questions in front of their peers and teachers after the intervention. The mean confidence score, which is 4.8000, is significantly close to the maximum value, indicating that, on average, students expressed a very high level of confidence when posing questions in a classroom environment. The standard deviation, with a relatively low value of 0.41404, suggests that the data points are closely clustered around the mean, signifying a relatively consistent pattern of responses. In this context, it underscores that the majority of respondents share a similarly high level of confidence in asking questions after the intervention. The data analysis indicates that the surveyed students, on average, exhibited a remarkably high level of confidence when asking questions in front of their classmates and teachers following the intervention. The responses show a notable consensus in the students' increased confidence levels, highlighting the positive impact of the intervention in fostering a comfortable and confident atmosphere for in-class questioning. This boost in confidence is indicative of the intervention's success in nurturing a more interactive and participatory learning environment.

**5.6.5 Further Improvement**

The provided data concerns the perception of students regarding improvements in their questioning skills after the intervention.

	N	Minimum	Maximum	Mean	Std. Deviation
Have you noticed any improvements in your questioning skills after the intervention	15	3.00	4.00	3.7333	.45774

Valid N (listwise)	15				
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The minimum score recorded was 3.00, suggesting that some respondents perceived modest improvements in their questioning skills. The maximum score was 4.00, indicating that other respondents experienced a more substantial enhancement in their skills. The mean score, which is 3.7333, falls closer to the higher end of the scale, suggesting that, on average, the participants noticed considerable improvements in their questioning skills after the intervention. The standard deviation, with a relatively low value of 0.45774, implies that the data points are closely clustered around the mean, signifying a consistent pattern of responses. This indicates a shared perception among the respondents of noticeable improvement. The data analysis indicates that, on average, the surveyed students have observed substantial improvements in their questioning skills following the intervention. The responses demonstrate a consensus among the participants regarding the effectiveness of the intervention in enhancing their ability to ask questions. These findings suggest that the intervention has successfully met its objective of fostering improved questioning skills, reinforcing the idea that continued efforts in this direction may lead to further advancement in this crucial skill set.

**5.6.6 Future Practice:**

The data in question pertains to the respondents' intentions to continue practising and developing their questioning skills even after the intervention

**Do you plan to continue practising and developing your questioning skills even after the intervention?**

	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid Yes, definitely	12	80.0	80.0	80.0
Yes, but not sure how often	3	20.0	20.0	100.0
Total	15	100.0	100.0	

Out of the 15 respondents, the majority, consisting of 80%, expressed a strong commitment to further practice and develop their questioning skills by choosing the response option "Yes." This indicates a substantial level of enthusiasm and determination among the participants to continue honing this valuable skill. On the other hand, 20% of the respondents indicated that they do plan to continue practising their questioning skills but are uncertain about the frequency with which they will do so, choosing the response option "Yes, but not sure how often." This group demonstrates a willingness to engage in further practice, although they may require more guidance or support in terms of establishing a consistent practice routine. In cumulative terms, the data highlights that 100% of the respondents intend to continue practising and developing their questioning skills, with the majority expressing a definitive commitment and a smaller segment indicating a willingness to do so, albeit with some uncertainty about the frequency. The analysis of this data reveals a positive and encouraging response from the participants, as all of them are inclined to sustain their efforts in practising and developing their questioning skills beyond the intervention. This demonstrates a strong sense of motivation and recognition of the skill's significance in their learning journey, which bodes well for their continued growth and development.

## 6. Discussion and Recommendation

The action research conducted to improve the questioning skills of Class V students of Gaytsa Primary School, Bumthang has yielded valuable insights and outcomes. The study aimed to enhance the ability of students to formulate meaningful and open-ended questions, thereby promoting critical thinking and active participation in class discussions. The findings of this research shed light on the effectiveness of the intervention and provide several noteworthy discussion points.

Firstly, the positive shift in students' confidence and competence in asking questions is a significant achievement. The data reveals that students, on average, feel more comfortable when posing questions during class discussions after the intervention. The mean confidence level of 4.8000, which is close to the maximum score of 5.00, indicates that the intervention has successfully fostered a confident atmosphere for students to engage in questioning. This suggests that they not only understand the importance of questions but are also unafraid to participate actively in classroom interactions.

Secondly, the willingness of students to continue practising and developing their questioning skills post-intervention is a positive indicator of the intervention's lasting impact. A substantial 80% of the participants expressed a strong commitment to further honing their questioning abilities. This suggests that the intervention has instilled a desire for continuous improvement and learning among the students.

Furthermore, the data reveals an increased inclination among students to ask open-ended questions, with 73.3% feeling more confident in this type of questioning. Open-ended questions are known for their ability to stimulate critical thinking and foster deeper discussions. This shift in students' preferences towards open-ended questions aligns with the goal of the intervention, which aimed to encourage thoughtful and exploratory questioning.

### 6.1 Recommendations:

*Sustain the Intervention:* The positive outcomes of the intervention indicate the importance of continuing similar programs in the future. The school or educational institution should consider integrating questioning skill development as a regular part of the curriculum or as an ongoing extracurricular activity to ensure that students continue to reap the benefits of this skill.

*Peer Feedback and Collaboration:* The research highlights the influence of peer interactions on students' questioning skills. Encouraging peer feedback and collaboration in the classroom can be a valuable approach. Pairing students for discussions or group projects can promote the exchange of ideas and questions, further enhancing their skills.

*Teacher Training:* Teachers play a pivotal role in nurturing students' questioning skills. Providing professional development opportunities for teachers to hone their skills in fostering questioning and critical thinking among students is essential. This training can empower educators to create an environment conducive to open-ended discussions.

*Monitoring and Evaluation:* Continuous monitoring and evaluation of students' questioning skills are essential to gauge the impact of interventions. Periodic assessments, surveys, and feedback sessions can help in tracking progress and identifying areas that require further improvement.

*Encourage Independent Inquiry:* Encouraging students to ask questions outside the classroom setting, such as during self-directed learning or research projects, can further enhance their questioning skills. It allows them to apply what they've learned in real-world contexts.

The action research conducted to improve the questioning skills of Class V students has proven to be a fruitful endeavour. The results reflect an increased level of confidence, a shift towards open-ended

questions, and a commitment to continuous improvement. By implementing the recommended strategies, educational institutions can foster a culture of inquiry, critical thinking, and active participation among their students, ultimately equipping them for success in their academic journey and beyond.

## 7 Conclusion

In the pursuit of enhancing the questioning skills of Class V students at Gyatsa Primary School in Buthang, this action research has unfolded a journey of growth and transformation. The study, driven by the fundamental belief that the ability to ask meaningful questions is an essential component of holistic education, sought to empower students with the tools needed for effective communication, critical thinking, and active participation in class discussions. The findings of this research illuminate the efficacy of the intervention. The data reveals that students have experienced a significant shift in their confidence and competence when it comes to asking questions. Students have not only understood the value of questions but are also willing to engage proactively in classroom interactions. This newfound confidence is symbolic of a transformative journey of self-expression and engagement within the classroom environment.

Furthermore, the student's intent to continue practising and developing their questioning skills beyond the intervention signifies a lasting impact. The majority of participants expressed a strong commitment to further improving their questioning abilities. This enthusiasm for continuous improvement suggests that the intervention has ignited a desire for lifelong learning and self-improvement among the students. The shift in students' preference towards open-ended questions, with maximum expressing greater confidence in this type of questioning, emphasizes the effectiveness of the intervention. Open-ended questions have emerged as a preferred method of stimulating critical thinking and fostering deeper discussions. This aligns with the core objective of the intervention, which aimed to encourage thoughtful and exploratory questioning.

As I conclude this action research, it is evident that the journey to improve questioning skills is an ongoing one. The positive outcomes and students' commitment to growth provide a solid foundation for future endeavours. Recommendations such as sustaining the intervention, promoting peer collaboration, offering teacher training, and encouraging independent inquiry will be pivotal in fostering a culture of inquiry and critical thinking in our educational institution.

The Gyatsa Primary School community must continue to be a place where questions are not only welcomed but also celebrated. We must nurture young minds to be inquisitive, confident, and lifelong learners. The legacy of this intervention will continue to inspire students to ask questions that lead to exploration, discovery, and a deeper understanding of the world around them.

As we look ahead, we are filled with hope and anticipation, knowing that the transformation of our students' questioning skills is not an endpoint but a stepping stone to greater achievements, both within the classroom and on the path to lifelong learning. This action research has illuminated the way forward, and with continued dedication and support, we can foster a new generation of inquisitive minds ready to embrace the challenges of the future.

*Annexure 1.1 Pre-survey Questionaries*

Title: Questioning Skills Survey - Class V Students

**Introduction:**

Thank you for participating in this survey. Your responses will help us understand how well you are developing your questioning skills. Please answer the following questions honestly.

**Section 1: Personal Information**

What is your name?

---

Which class are you in?

---

How old are you?

---

What subject do you enjoy the most?

---

**Section 2: Question Types**

*Please read each question and choose the most suitable response:*

1. When asking questions, I mostly use:
  - a) Yes or No questions (e.g., Is the sky blue?)
  - b) Questions that start with "What" (e.g., What is your favourite colour?)
  - c) Questions that start with "Why" (e.g., Why do plants need sunlight?)
  - d) Questions that start with "How" (e.g., How do you spell "cat"?)
2. What types of questions do you usually ask during class discussions?
  - a) Multiple-choice (A, B, C, etc.)
  - b) Yes/No questions
  - c) Questions that require short answers (1-2 words)
  - d) Open-ended questions (questions that require longer, more detailed answers)
2. How confident do you feel when asking open-ended questions that require more than a one-word answer?
  - a) Very confident
  - b) Confident
  - c) Not very confident
  - d) Not confident at all
3. How comfortable do you feel asking more complex questions that require deeper thinking?
  - a) Very comfortable
  - b) Comfortable
  - c) Somewhat comfortable
  - d) Not comfortable



**Section 3: Frequency of Asking Questions**

1. During a typical class, how often do you ask questions to the teacher?
  - a) Very often (multiple times)
  - b) Often (at least once)
  - c) Sometimes
  - d) Rarely
  - e) Never
2. How frequently do you ask questions during group discussions or collaborative activities?
  - a) Very often (multiple times)
  - b) Often (at least once)
  - c) Sometimes
  - d) Rarely
  - e) Never
3. What are the reasons that sometimes prevent you from asking questions during class? (Open-ended)

**Section 4: Comfort and Inhibition**

1. What factors make you feel comfortable when asking questions in class? (Select all that apply)
  - a) When the teacher encourages questions
  - b) When other students ask questions too
  - c) When I know the answer won't be judged
  - d) When the topic interests me
  - e) Other (please specify) \_\_\_\_\_
2. What factors make you hesitant to ask questions in class? (Select all that apply)
  - a) Fear of being judged by the teacher or peers
  - b) Worried about asking a "stupid" question
  - c) Not understanding the topic well enough to ask questions
  - d) Other (please specify) \_\_\_\_\_

**Section 5: Reflective Practice**

1. Have you kept a journal to reflect on your questioning skills during the intervention?
    - a) Yes, regularly
    - b) Yes, occasionally
    - c) No, but I would like to start
    - d) No, and I don't plan to
  2. Have you ever received feedback from your teacher or peers on your questioning skills?
    - a) Yes
    - b) No
  3. If you kept a reflective journal, what did you learn or discover about your questioning skills? (Open-ended response)
-

**Section 6: Overall Improvement**

1. Do you feel that your questioning skills have improved after the intervention?
  - a) Yes, significantly
  - b) Yes, to some extent
  - c) No, not much
  - d) No, not at all
2. Have you participated in any activities or exercises in school that specifically focused on improving your questioning skills?
  - a) Yes
  - b) No
3. Do you feel that improving your questioning skills will make learning more enjoyable and engaging?
  - a) Yes
  - b) No
  - c) Not sure

*Annexure 2.1 Reflective Journal*

**Title: Journal on Improving Questioning Skills**

Name:

Age:

Class:

<b>Date:</b>	<b>Questioning Incidents:</b>	<b>Types of Questions</b>	<b>Feelings and Reactions</b>	<b>Feedback and Responses</b>
	<b>Challenges and Successes</b>	<b>Learning and Insights</b>	<b>Teacher Input</b>	
	<b>Self-Reflection</b>	<b>Concluding Thoughts</b>		

*Date and Time:* Start each journal entry with the date and time of reflection. This helps track progress over time and allows students to see their growth.

*Questioning Incidents:* Children describe specific instances where the student asked questions during class discussions, group activities, or any other relevant setting. Include details such as the subject/topic, context, and the type of questions asked.

**Types of Questions:** Children identify and categorize the types of questions they used in their reflections. This can include closed-ended questions, open-ended questions, probing questions, etc.

**Feelings and Reactions:** Student to reflect on their feelings and reactions during the questioning process. Did they feel confident, nervous, or unsure? How did their emotions affect their questioning behaviour?

**Feedback and Responses:** Children record any feedback received from teachers or peers regarding their questioning skills. Reflect on how the feedback was received and any actions taken to improve based on the feedback.

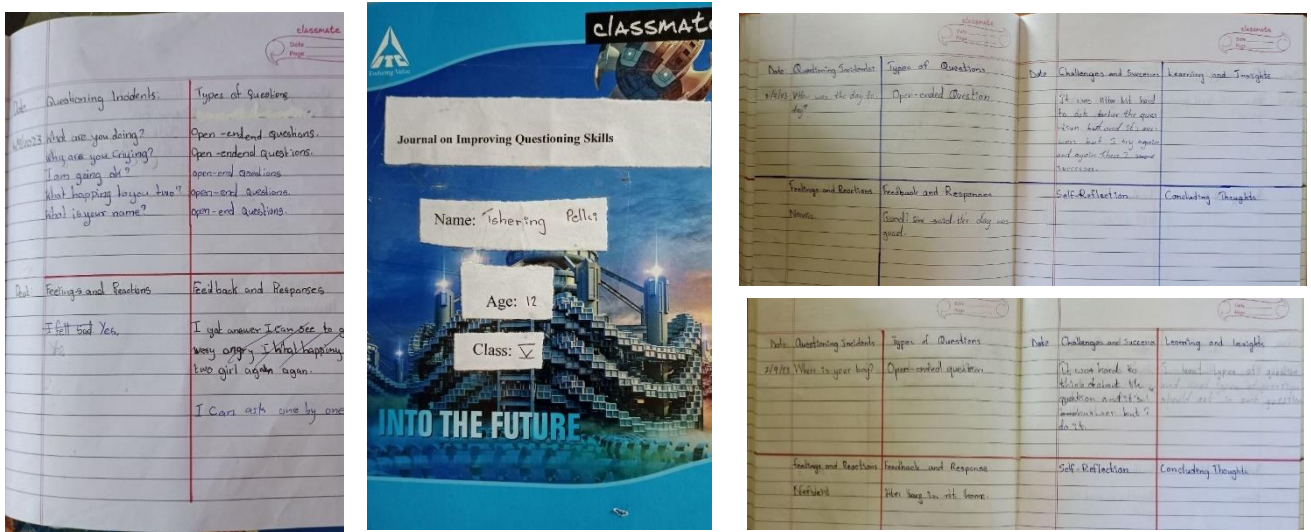
**Challenges and Successes:** Identifies challenges faced when formulating questions or seeking answers. Additionally, highlight moments of success or when they felt particularly proud of their questioning abilities.

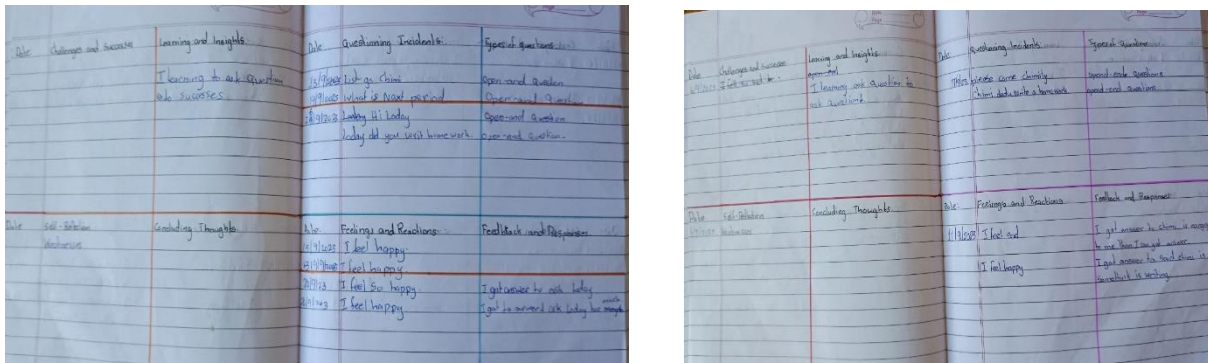
**Learning and Insights:** Students reflect on the lessons they've learned from their questioning experiences. What did they discover about their approach to questioning? What strategies worked well, and what could be improved?

**Teacher Input:** Students to seek input from their teachers regarding their questioning skills. Teachers can provide valuable insights and suggestions for improvement.

**Self-Reflection:** The reflective journal should be a space for students to engage in honest self-reflection. Encourage them to be open about their strengths, weaknesses, and areas for growth.

### Annexure 2.2 Students work on maintaining a Journal





*Annexure 3.1 Post-intervention survey*

**Title: Post-intervention survey**

Name:

Age:

Class:

**Introduction:**

Thank you for participating in this survey. Your responses will help us evaluate the effectiveness of the intervention and understand how your questioning skills have developed. Please answer the following questions honestly.

**Section 1: Questioning Types**

1. Which types of questions are you now more confident in asking? (Select all that apply)
  - a) Closed-ended questions
  - b) Open-ended questions
  - c) Probing questions
  - d) Other (please specify) [Open-ended]

**Section 2: Question Complexity**

1. How comfortable do you feel asking more complex questions that require deeper thinking compared to before the intervention?
  - a) Much more comfortable
  - b) Somewhat more comfortable
  - c) About the same
  - d) Less comfortable
  - e) Not sure
2. Which type of questions do you feel more confident in asking after the intervention?
  - a) Closed-ended questions (e.g., questions with one-word answers)
  - b) Open-ended questions (e.g., questions that require longer, detailed answers)
  - c) Probing questions (e.g., follow-up questions to explore a topic further)
  - d) Other (please specify)

### Section 3: Frequency of Questioning

1. How often do you find yourself asking questions during class discussions after the intervention?
  - a) Much more often
  - b) Somewhat more often
  - c) About the same
  - d) Less often
  - e) Not sure
2. If you are asking more questions now, what motivates you to do so? (Open-ended)

### Section 4: Confidence in Questioning

1. How confident do you feel when asking questions in front of your classmates and teacher after the intervention?
  - a) Much more confident
  - b) Somewhat more confident
  - c) About the same
  - d) Less confident
  - e) Not sure

### Section 5: Impact of the Intervention

1. What specific aspects of the intervention helped you improve your questioning skills the most? (Select all that apply)
  - a) Introductory class on effective questioning techniques
  - b) Peer observation and feedback sessions
  - c) Reflective journaling
  - d) Teacher feedback and support
  - e) Other (please specify) [Open-ended]
- a) Did keeping a reflective journal during the intervention help you in improving your questioning skills?
  - a. Yes, it was helpful
  - b. Yes, but it wasn't very helpful
  - c. No, I didn't find it helpful
  - d. I didn't keep a reflective journal

### Section 6: Use of Questioning Skills

1. How have you applied your improved questioning skills outside of the classroom? (Open-ended)

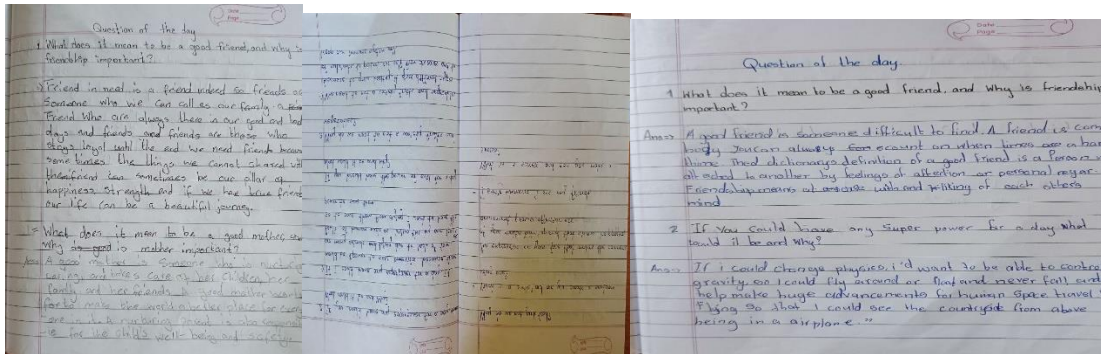
### Section 7: Further Improvement

1. What areas of questioning skills do you think you still need to work on? (Open-ended)
2. Have you noticed any improvements in your questioning skills after the intervention?
  - a) Yes, significant improvement
  - b) Yes, some improvement

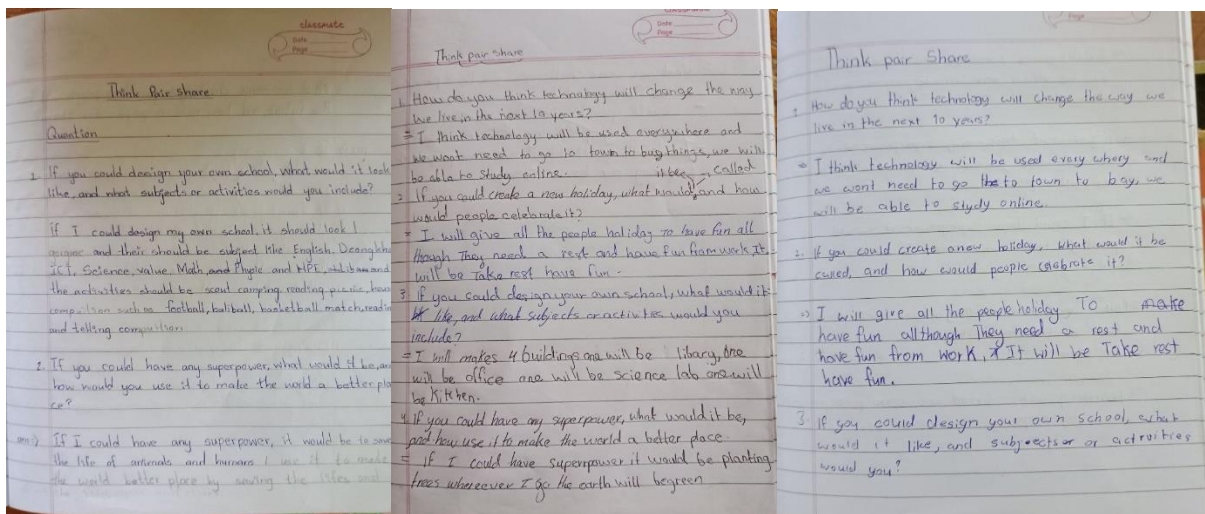




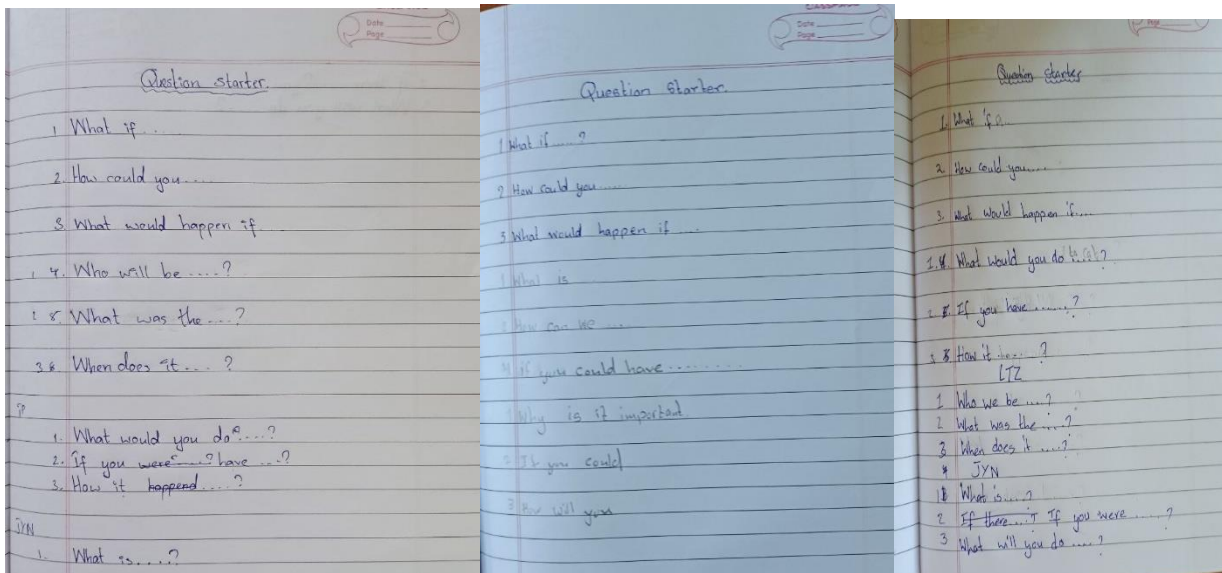
## Annexure 4.2 Question of the day (students work)



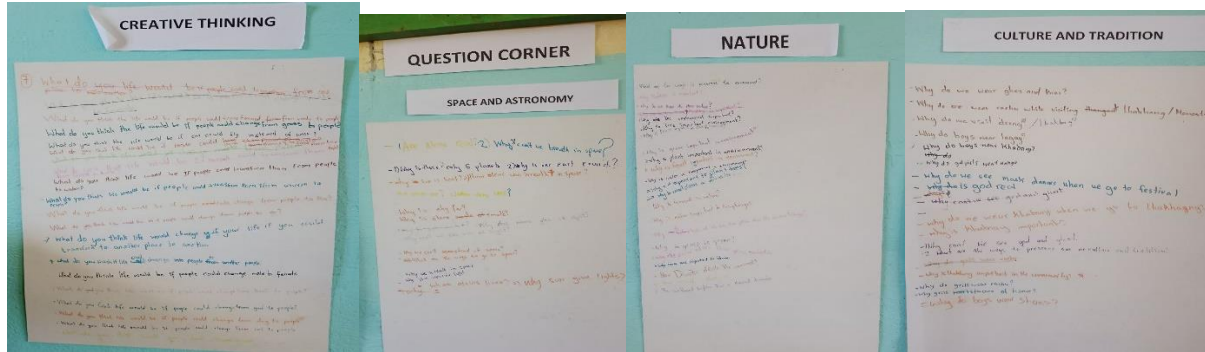
## Annexure 5.1 Think-Pair-Share



## Annexure 6.1 Question starter



Annexure 7.1 Question station



References

1. Al-karasneh, S. M. (2014). Reflective journal writing as a tool to teach aspects of social studies. *European Journal of Education, 49*(3), 395-408.
2. Block, K., Cross, S., Riggs, E., & Gibbs, L. . (2014). Supporting schools to create an inclusive environment for refugee students. *International Journal of Inclusive Education, 18*(12), 1337-1355.
3. Boud, D. (2001). Using journal writing to enhance reflective practice. *New directions for adult and continuing education, 2001*(90), 9-18.
4. Boud, D., & Walker, D. (1998). Promoting reflection in professional courses: The challenge of context. *Studies in higher education, 23*(2), 191-206.
5. Boud, D., & Walker, D. (1998). Promoting reflection in professional courses: The challenge of context. *Studies in higher education, 23*(2), 191-206.
6. Breakstone, J., McGrew, S., Smith, M., Ortega, T., & Wineburg, S. (2018). Why we need a new approach to teaching digital literacy. *P. hi Delta Kappan, 99*(6), 27-32.
7. Brown, L. M., & Posner, B. Z. (2001). Exploring the relationship between learning and leadership. *Leadership & Organization Development Journal, 22*(6), 22(6), 274-280.
8. Bryson, C., & Hand, L. (2007). The role of engagement in inspiring teaching and learning. *Innovations in education and teaching international, 44*(4), 349-362.
9. Carver, C. S., & Scheier, M. F. (2001). *Optimism, pessimism, and self-regulation*.
10. Cole, R. W. (2008). *Educating everybody's children: Diverse teaching strategies for diverse learners*. ASCD.
11. Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of mixed methods research, 3*(2), 95-108.
12. Creswell, J. W., & Creswell, J. D. (2017). (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
13. Flick, U. (2018). Triangulation in data collection. *The SAGE handbook of qualitative data collection, 527-544*.
14. Gowin, D. B., & Millman, J. (1969). Research Methodology—A Point of View. *Review of Educational Research, 39*(5), 553-560.
15. Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. Educational evaluation and policy analysis, *Educational evaluation and policy analysis, 3*(11), 255-274.
16. Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of educational research, 77*(1), 81-112.



17. Horsley, T., O'Neill, J., McGowan, J., Perrier, L., Kane, G., & Campbell, C. (2010). Interventions to improve question formulation in professional practice and self-directed learning. *Cochrane Database of Systematic Reviews*, 5.
18. Igwenagu, C. (2016). *fundamentals of research methodology and data collection*. LAP Lambert Academic Publishing.
19. Ishikawa, H., Takayama, T., Yamazaki, Y., Seki, Y., & Katsumata, N. (2002). Physician–patient communication and patient satisfaction in Japanese cancer consultations. *Social science & medicine*, 52(1), 301-311.
20. Judge, T. A., Simon, L. S., Hurst, C., & Kelley, K. (2014). What I experienced yesterday is who I am today: the relationship of work motivations and behaviours to within-individual variation in the five-factor model of personality. *Journal of Applied Psychology*, 2, 199.
21. Kreijns, K., Kirschner, P. A., & Jochems, W. (2003). Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: a review of the research. *Computers in human behavior*, 19(3), 335-353.
22. Lawson, M. J. (2019). Teachers' and students' belief systems about the self-regulation of learning. *Educational Psychology Review*(31), 223-251.
23. Lucy, J. A. (1992). *Language diversity and thought: A reformulation of the linguistic relativity hypothesis*. Cambridge University Press.
24. Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Sage publications.
25. Mertler, C. A. (2019). *The Wiley handbook of action research in education*. John Wiley & Sons.
26. Miyake, N., & Kirschner, P. A. (2014). *The social and interactive dimensions of collaborative learning*.
27. Myers, M. D., & Avison, D. (Eds.). (2002). *Qualitative research in information systems: a reader*. Sage. Sage.
28. Nappi, J. S. (2017). The importance of questioning in developing critical thinking skills. *Delta Kappa Gamma Bulletin*, 84(1), 30.
29. Nicol, D. J.-D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in higher education*, 31(2), 199-218.
30. Paris, S. G., & Winograd, P. (1990). How metacognition can promote academic learning and instruction. *Dimensions of thinking and cognitive instruction*, 1, 15-51.
31. Pate, R. (2012). Open versus closed questions: What constitutes a good question? *Educational research and innovations*, 29-39., 29-39.
32. Pianta, R. C., Hamre, B. K., & Allen, J. P. . (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom interactions. *In Handbook of research on student engagement*, 365-386.
33. Proctor, T. (2010). *Creative problem solving for managers: developing skills for decision making and innovation*. Routledge.
34. Saputri, A. C., Rinanto, Y., & Prasetyanti, N. M. (2019). Improving Students' Critical Thinking Skills in Cell-Metabolism Learning Using Stimulating Higher Order Thinking Skills Model. *International Journal of Instruction*, 12(1), 327-342.
35. Schraw, G., & Moshman, D. (1995). Metacognitive theories. *Educational psychology review*(7), 351-371.

36. Smith, N. C. (2018). *Students' perceptions of learner agency: A phenomenographic inquiry into the lived learning experiences of high school students*. (Doctoral dissertation, Northeastern University).
37. Stringer, E. T., & Aragón, A. O. (2020). *Action research*. Sage publications.
38. Struyven, K., Dochy, F., & Janssens, S. . (2003). Students' perceptions about new modes of assessment in higher education: A review. Optimising new modes of assessment: *In search of qualities and standards*, 171-223.
39. Tsui, L. (2002). Fostering critical thinking through effective pedagogy: Evidence from four institutional case studies. *The journal of higher education*, 73(6), 740-763.
40. Tuan, L. T. (2011). (2011). Matching and Stretching Learners' Learning Styles. *Journal of Language Teaching & Research*, 2(2).
41. Van Zee, E. H., Iwasyk, M., Kurose, A., Simpson, D., & Wild, J. (2001). Student and teacher questioning during conversations about science. *Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching*, 38(2), 159-190.
42. Vinjamuri, M., Warde, B., & Kolb, P. (2017). (2017). The reflective diary: An experiential tool for enhancing social work students' research learning. *Social Work Education*, 36(8), 933-946.
43. Visser, W. (2010). Schön: Design as a reflective practice. *Collection*, 2, 21-25.
44. Vygotsky, L. S., & Cole, M. . (1978). *Mind in society: Development of higher psychological processes*. Harvard University Press.
45. Yee, F. P. (2002). Using short open-ended mathematics questions to promote thinking and understanding. *Proceedings of the 4th International Conference on The Humanistic Renaissance in Mathematics Education, Palermo, Italy*, 134-140.
46. Zhang, W., & Adegbola, O. (2022). Emotional intelligence and public relations: An empirical review. *Public Relations Review*, 48(3), 102-199.