



## Article

# Teachers' Instructional Practices and the Teaching-Learning Process: A Qualitative Study in General Science at Tejeros Convention Elementary School

<sup>1</sup> Dennis Ason Liglig

Northeastern College, Santiago City

Tejeros Convention Elementary School

Correspondence: [dennis.liglig@deped.gov.ph](mailto:dennis.liglig@deped.gov.ph)

### Abstract

*Teachers' instructional practices play a pivotal role in shaping the quality of the teaching-learning process, particularly in foundational subjects such as General Science at the elementary level. This qualitative study explored the instructional practices employed by General Science teachers at Tejeros Convention Elementary School and examined how these practices influence learners' engagement, understanding, and classroom experiences. Using a qualitative case study design, data were gathered through semi-structured interviews, classroom observations, and document analysis involving selected General Science teachers and learners. Thematic analysis revealed four major themes: (1) learner-centered instructional strategies, (2) contextualized and experiential science teaching, (3) classroom interaction and learner engagement, and (4) assessment practices supporting learning. Findings indicate that teachers' use of interactive strategies, real-life contexts, and formative assessments significantly enhanced learners' participation and conceptual understanding. However, challenges such as limited instructional materials and time constraints affected the consistent implementation of innovative practices. The study underscores the importance of reflective, learner-centered, and context-responsive instructional approaches in improving the teaching-learning process in elementary science education. Implications for teachers, school leaders, and curriculum planners are discussed.*

**Keywords:** instructional practices, teaching-learning process, General Science, qualitative study, elementary education

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## **Introduction**

Effective instructional practices are widely recognized as a critical determinant of successful teaching–learning processes, particularly in science education where abstract concepts and inquiry skills must be developed at an early age. In elementary General Science, teachers are expected not only to transmit scientific knowledge but also to cultivate curiosity, critical thinking, and positive attitudes toward science. Research suggests that instructional practices grounded in learner-centered and inquiry-based approaches contribute significantly to learners’ conceptual understanding and engagement (Bybee, 2015; Hattie, 2009).

Recent studies emphasize that traditional teacher-centered instruction, characterized by lecture-dominated lessons and rote memorization, often limits learners’ active participation and deeper understanding of scientific concepts (Prince & Felder, 2006). In contrast, learner-centered instructional practices such as hands-on activities, collaborative learning, and contextualized examples have been shown to enhance students’ motivation, scientific reasoning, and long-term retention of knowledge (Bransford, Brown, & Cocking, 2000). These approaches align with contemporary educational frameworks that advocate meaningful, inquiry-driven science instruction in the elementary grades.

In the Philippine basic education context, science instruction faces challenges related to resource availability, class size, and teachers’ preparedness to implement innovative strategies (Bernardo et al., 2018). While policy reforms encourage contextualized and learner-centered pedagogy, classroom realities often influence how instructional practices are enacted. Understanding how teachers actually implement instructional strategies in real classroom settings is therefore essential in bridging policy and practice.

Despite growing interest in instructional effectiveness, there remains limited qualitative research examining how teachers’ instructional practices shape the teaching–learning process in elementary General Science classrooms at the school level. This study addresses this gap by exploring the instructional practices of teachers at Tejeros Convention Elementary School and examining their perceived influence on learners’ engagement and learning experiences.

## **Research Objectives**

This study aimed to explore teachers’ instructional practices in teaching General Science and their influence on the teaching–learning process at Tejeros Convention Elementary School. Specifically, it sought to describe the instructional strategies employed by General Science teachers, examine how these practices shape learner engagement and participation, and analyze teachers’ and learners’ perceptions of the effectiveness of these practices in facilitating understanding and meaningful learning.

## **Methodology**

This study employed a qualitative case study research design to gain an in-depth understanding of teachers’ instructional practices and their influence on the teaching–learning process in General Science. The research was conducted at Tejeros Convention Elementary School, involving purposively selected General Science teachers and learners who were directly engaged in science instruction. Purposive sampling was used to ensure that participants possessed rich experiences relevant to the phenomenon under investigation.

Data were collected using three primary methods: semi-structured interviews, classroom observations, and document analysis. Teacher interviews focused on instructional strategies, classroom challenges, and perceptions of learner engagement, while learner interviews explored classroom experiences and learning perceptions. Classroom observations provided firsthand insights into actual teaching practices, interactions, and learning activities. Document analysis of lesson plans and instructional materials supported data triangulation. Thematic analysis was employed to analyze the data, following systematic coding, categorization, and theme development to ensure credibility and trustworthiness of findings.

## **Results/Findings**

### **Theme 1: Learner-Centered Instructional Strategies**

Teachers consistently emphasized the use of learner-centered strategies such as group work, questioning, and hands-on activities to promote active learning. Classroom observations revealed frequent use of collaborative tasks where learners discussed scientific concepts and shared ideas.

One teacher shared, *"I try to let the pupils discover the answers on their own by asking guiding questions instead of directly giving the explanation."* Learners also noted increased participation, with one student stating, *"It is easier to understand science when we work in groups and explain ideas to each other."*

These practices suggest that learner-centered instruction encouraged active engagement and a heightened sense of responsibility for learning by positioning students as active participants rather than passive recipients of information. Through collaborative activities, guided questioning, and hands-on tasks, learners were given opportunities to construct knowledge, articulate ideas, and reflect on their understanding. This instructional orientation promoted autonomy, critical thinking, and shared accountability within the classroom, as learners became more involved in decision-making and problem-solving processes. Consequently, the teaching-learning environment became more interactive and dynamic, characterized by meaningful dialogue, peer collaboration, and sustained engagement. Such an environment not only enhanced learners' cognitive involvement but also supported the development of positive learning dispositions essential for effective science learning.

### **Theme 2: Contextualized and Experiential Science Teaching**

Teachers highlighted the importance of relating science lessons to learners' real-life experiences. Lessons often incorporated examples from the community, daily routines, and familiar environmental phenomena.

A teacher explained, *"When I connect the lesson to what they see at home or in the community, they become more interested and attentive."* Learners echoed this sentiment, noting that contextualized examples made science lessons more meaningful and easier to remember.

This theme indicates that contextualization enhanced learners' comprehension by effectively bridging abstract scientific concepts with concrete, real-life experiences familiar to the learners. By anchoring lessons in everyday situations, community practices, and observable phenomena, teachers enabled students to make meaningful connections between new scientific ideas and their prior knowledge. This approach reduced the cognitive complexity of abstract concepts, allowing learners to visualize, relate to, and internalize scientific principles more effectively. Contextualized instruction

also increased learners' interest and motivation, as lessons were perceived as relevant and applicable to their daily lives. As a result, learners demonstrated improved understanding, active engagement, and greater retention of scientific concepts, highlighting the value of contextualization as a pedagogical strategy in elementary science education.

### **Theme 3: Classroom Interaction and Learner Engagement**

Positive teacher–learner interaction emerged as a key element of the teaching–learning process. Teachers fostered an environment where learners felt comfortable asking questions and expressing ideas.

One learner remarked, *“Our teacher encourages us to ask questions, and we are not afraid to make mistakes.”* Observations confirmed that such interactions promoted active participation and sustained attention during lessons.

These findings suggest that supportive classroom interaction contributed significantly to the creation of a positive learning climate conducive to scientific inquiry by fostering an environment characterized by trust, openness, and mutual respect. When teachers encouraged learners to ask questions, express ideas freely, and view mistakes as part of the learning process, students demonstrated greater confidence and willingness to engage in scientific discussions and exploratory activities. Such interactions promoted active participation, sustained attention, and collaborative problem-solving, which are essential elements of inquiry-based science learning. A supportive classroom climate also reduced learners' anxiety and fear of failure, enabling them to experiment, hypothesize, and reflect on scientific concepts more deeply. Consequently, teacher-learner interactions functioned as a catalyst for meaningful inquiry, enhancing both cognitive engagement and positive attitudes toward science learning.

### **Theme 4: Assessment Practices Supporting Learning**

Teachers primarily used formative assessment techniques such as oral questioning, short quizzes, and performance-based tasks to monitor learning progress. Assessment was viewed as part of the learning process rather than merely a grading tool.

A teacher stated, *“I use questions during the lesson to check if they understand so I can adjust my teaching.”* Learners reported that immediate feedback helped them correct misconceptions and improve understanding.

This theme highlights the role of assessment in reinforcing learning and guiding instructional decisions by positioning assessment as an integral component of the teaching–learning process rather than a mere evaluative endpoint. Teachers' consistent use of formative assessment strategies such as oral questioning, short quizzes, performance tasks, and immediate feedback enabled them to monitor learners' understanding in real time and identify misconceptions as they emerged. These practices allowed teachers to adjust the pacing of lessons, revisit difficult concepts, and modify instructional strategies to better meet learners' needs. From the learners' perspective, ongoing assessment provided clear indicators of their learning progress and helped them recognize areas requiring improvement, thereby fostering self-awareness and accountability for learning. Overall, assessment functioned as a feedback-driven mechanism that supported continuous learning, informed instructional planning, and strengthened the alignment between teaching strategies and learner outcomes.

## **Discussions**

The findings of this study align with existing literature emphasizing the effectiveness of learner-centered instructional practices in science education. The use of collaborative learning and guided inquiry reflects principles of constructivist learning theory, which posits that learners actively construct knowledge through interaction and experience (Bransford et al., 2000). Similar studies have shown that learner-centered approaches enhance engagement and conceptual understanding in elementary science classrooms (Prince & Felder, 2006).

The emphasis on contextualized teaching supports previous research indicating that connecting science content to learners' real-life experiences increases relevance and motivation (Gay, 2018; Bernardo et al., 2018). By situating learning within familiar contexts, teachers helped learners make sense of scientific concepts, reinforcing meaningful learning.

Furthermore, the study's findings on positive classroom interaction resonate with Hattie's (2009) assertion that teacher-student relationships significantly influence learning outcomes. Supportive interactions foster a safe learning environment where learners are more willing to participate and explore ideas. The use of formative assessment as a learning tool also reflects best practices in science education, where ongoing feedback supports learner progress and instructional adjustment (Black & Wiliam, 2009).

## **Conclusions and Implications**

This study concludes that teachers' instructional practices play a crucial role in shaping the teaching-learning process in General Science at the elementary level. Learner-centered strategies, contextualized instruction, positive classroom interaction, and formative assessment collectively enhanced learner engagement and understanding. Despite challenges related to resources and time constraints, teachers demonstrated commitment to effective science teaching.

The findings imply that professional development programs should focus on strengthening teachers' capacity to implement learner-centered and contextualized instructional practices. School administrators are encouraged to provide instructional support and resources that facilitate innovative science teaching. For curriculum planners, integrating flexible and context-responsive guidelines may further enhance the effectiveness of General Science instruction. Future research may expand this study by including multiple schools or employing mixed-methods approaches to deepen understanding of instructional practices and learning outcomes.

## **Funding**

This research received no external funding

## **Acknowledgment**

The researcher would like to express their sincere gratitude to all individuals and institutions who contributed to the successful completion of this study. Special appreciation is extended to the research participants for their time, cooperation, and valuable insights, which greatly enriched the findings of this research. The authors also acknowledge the guidance and support of mentors, advisers, and colleagues whose expertise and encouragement were instrumental throughout the research process. Furthermore, appreciation is given to the institution that provided the necessary resources and academic environment conducive to the conduct of this study. Above all, the researchers are deeply thankful for the perseverance, commitment, and collective effort that made this research possible.

### **Conflicts of Interests**

The author declares no conflict of interest.

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