

# TECHNOLOGICAL PEDAGOGICAL AND CONTENT KNOWLEDGE (TPACK) COMPETENCY AND INSTRUCTIONAL PRACTICES OF ELEMENTARY TEACHERS

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**Abstract:** This study examined the Technological Pedagogical and Content Knowledge (TPACK) competency and instructional practices of elementary teachers in the District of Amadeo, Division of Cavite. Using a descriptive research design, data were gathered from 98 teachers through a validated questionnaire. Results revealed that teachers demonstrated a generally high level of pedagogical and content knowledge, while technological knowledge was moderately developed. Instructional practices were found to be effective, particularly in classroom management and lesson delivery, but areas such as inquiry-based learning and formative assessment need further enhancement. Significant challenges identified include limited access to resources, insufficient training, and technical difficulties. The study concludes that strengthening TPACK competencies through continuous professional development can significantly improve instructional effectiveness. A capability enhancement program is recommended.

Index Terms - TPACK, Instructional Practices, Technology Integration, Elementary Education

## INTRODUCTION

The rapid advancement of technology has significantly transformed the educational landscape, requiring teachers to adapt and integrate digital tools into their instructional practices. In the 21st century, effective teaching goes beyond mastery of subject content and pedagogy; it also demands technological competence. The Technological Pedagogical and Content Knowledge (TPACK) framework provides a comprehensive model that integrates these domains to support effective teaching and meaningful learning experiences.

Elementary teachers play a vital role in establishing foundational knowledge and skills among learners. Their ability to integrate technology effectively can enhance student engagement, promote critical thinking, and improve academic performance. However, despite the availability of digital tools, many teachers face challenges in integrating technology due to limited training and resources.

This study focuses on assessing the TPACK competency and instructional practices of elementary teachers and identifying areas that require improvement to enhance teaching effectiveness.

## NEED OF THE STUDY

The increasing demand for technology integration in education highlights the need to evaluate teachers' readiness and capability to implement innovative instructional strategies. While many schools promote digital learning, gaps still exist in teachers' technological competencies and instructional adaptability.

This study is essential in identifying the strengths and weaknesses of teachers in terms of TPACK. It also aims to determine the challenges they encounter in integrating technology into their teaching. The results of this study will serve as a basis for developing a capability enhancement program that can improve teachers' instructional practices and ultimately benefit student learning.

### 3.1 Population and Sample

The study involved elementary teachers from the District of Amadeo, Division of Cavite. Out of the total population of 130 teachers, 98 respondents were selected using purposive sampling to ensure adequate representation across different grade levels.

### 3.2 Data and Sources of Data

Data were gathered using a structured questionnaire consisting of four parts: (1) demographic profile, (2) TPACK competency, (3) instructional practices, and (4) challenges encountered. The instrument was validated by experts and subjected to reliability testing to ensure accuracy and consistency.

### 3.3 Theoretical Framework

This study is anchored on the TPACK framework developed by Koehler and Mishra, which emphasizes the integration of technological, pedagogical, and content knowledge in effective teaching. It is also supported by constructivist learning theory, which highlights active learning, student engagement, and knowledge construction.

### 3.4 Statistical Tools and Models

Descriptive statistical tools such as frequency, percentage, and weighted mean were used to analyze the data. These tools helped determine the level of teachers' competencies and the effectiveness of their instructional practices.

## RESULTS AND DISCUSSION

**Table 1**  
*TPACK Competency of Elementary Teachers*

Indicator	Mean	Interpretation
Technological Knowledge	3.20	Moderate
Pedagogical Knowledge	3.80	High
Content Knowledge	3.90	High

The results indicate that teachers possess strong pedagogical and content knowledge, enabling them to effectively deliver lessons and manage classroom activities. However, technological knowledge is moderately developed, suggesting the need for further training in the use of digital tools and troubleshooting technical issues.

In terms of instructional practices, teachers demonstrated effectiveness in lesson delivery and classroom management. However, there is a need to enhance the use of inquiry-based learning strategies and formative assessment techniques to promote deeper understanding and student engagement.

The challenges identified by the respondents include limited access to technological resources, insufficient training opportunities, and difficulties in integrating technology into lesson planning. These findings highlight the importance of continuous professional development and institutional support.

## ACKNOWLEDGMENT

The researcher expresses sincere gratitude to the adviser, panel members, respondents, and the institution for their invaluable support and contributions to the successful completion of this study.

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