

Digital Barriers in Education: The Lived Experiences of Elementary Teachers in the Schools of Botolan, Zambales, Philippines

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Abstract: This study explored the lived experiences of elementary teachers encountering digital barriers in the Eastern Schools of Botolan, Zambales, Philippines. Using qualitative phenomenological research design, in-depth semi-structured interviews were conducted with fourteen public elementary teachers from selected Eastern schools. Thematic analysis revealed five major themes: (1) limited ICT resources and unstable internet connection (2) instructional challenges in technology-integrated teaching, (3) emotional stress in digital instruction, (4) teacher adaptability and resourcefulness, and (5) the need for institutional ICT support. Findings showed that despite technological limitations, teachers remained committed to deliver quality education through improvisation and collaboration. However, inadequate ICT facilities and limited technical assistance negatively affected instructional effectiveness. The study recommends improving ICT infrastructure, providing continuous digital capability training, and strengthening technical support systems geographically isolated areas.

Keywords: Digital Barriers, Teachers Lived Experiences, Instructional Challenges, Phenomenological Study, GIDA Schools.

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I. INTRODUCTION

The integration of Information and Communication Technology (ICT) has become increasingly important in enhancing teaching effectiveness, improving learner engagement, and supporting educational innovation across the world. Globally, educational systems continue to promote digital transformation as part of quality education initiatives.

In the Philippine educational context, the Department of Education continuously encourages the integration of ICT in classroom instruction through digital learning platforms, online resources, and technology-based teaching strategies. Nevertheless, public schools situated in Geographically Isolated and Disadvantaged Areas (GIDA) encounter persistent technological challenges that hinder effective implementation of ICT-integrated instruction.

Teachers in the Eastern Schools of Botolan, Zambales experience significant digital barriers that affect both instructional delivery and professional well-being. The absence

of adequate ICT resources requires teachers to become highly resourceful and adaptive in delivering lessons despite technological limitations.

This study sought to explore and understand the lived experiences of teachers facing digital barriers in the Eastern Schools of Botolan, Zambales. Specifically, it aimed to document the instructional challenges, emotional experiences, coping mechanisms, and perceived institutional support of teachers in geographically isolated schools. The findings of the study may contribute to the development of policies and programs that strengthen ICT infrastructure, improve technical support systems, and enhance teacher capability and well-being in remote educational setting.

II. METHODOLOGY

This study employed a qualitative phenomenological research design to examine the lived experiences of teachers encountering digital barriers in the Eastern Schools of Botolan, Zambales.

➤ *Participants and Research Locale*

The participants consisted of fifteen (15) public school teachers assigned in selected Eastern schools of Botolan, Zambales. Participants were selected through purposive sampling to ensure that individuals had direct experiences related to limited ICT resources and technology-integrated instruction in geographically isolated schools. The selected schools are situated in upland and remote communities where access to stable internet connectivity and technological resources remains limited.

➤ *Data Collection*

Data was gathered through semi-structured, in-depth interviews conducted from January to February 2026. The interviews focused on teachers' experiences regarding ICT resource availability, challenges in technology-integrated instruction, emotional responses to digital barriers, coping strategies, and perceptions of institutional support. All interviews were conducted with informed consent, audio-recorded, and transcribed verbatim to ensure accuracy and completeness of data.

III. DATA ANALYSIS

The study utilized thematic analysis following Braun and Clarke's six-phase framework. The process included familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. To ensure credibility and trustworthiness, member checking was conducted by allowing participants to validate the interpretations of their responses.

IV. RESULTS

Analysis of the interview data yielded five major themes describing the lived experiences of elementary teachers encountering digital barriers in the Eastern Schools of Botolan, Zambales.

➤ *Limited ICT Resources and Unstable Internet Connection*

Teachers experienced inadequate ICT facilities, insufficient digital devices, and unstable internet connectivity, which affected lesson preparation and classroom instruction.

➤ *Instructional Challenges in Technology-Integrated Teaching*

Participants encountered difficulties implementing technology-based instruction due to limited learner access to gadgets, online resources, and digital learning platforms.

➤ *Emotional Stress in Digital Instruction*

Teachers experienced stress, frustration, and exhaustion associated with online reporting requirements, unstable connectivity, and limited technological support.

➤ *Teacher Adaptability and Resourcefulness*

Despite technological limitations, teachers demonstrated resilience through improvisation, collaboration, and utilization of personal resources to sustain instruction.

➤ *Need for Institutional ICT Support*

Participants emphasized the need for stronger institutional support, including improved ICT infrastructure, technical assistance, and continuous digital capability training.

V. DISCUSSION

The findings reveal that digital barriers significantly affect instructional delivery and teachers' emotional well-being in geographically isolated schools. Limited ICT resources and unstable internet connectivity hinder effective technology integration, reflecting the digital inequality experienced in rural educational settings. Despite these challenges, teachers demonstrated resilience and adaptability through collaboration and improvised teaching strategies. However, stronger institutional support, improved ICT infrastructure, and continuous digital training are necessary to enhance teaching effectiveness in remote schools.

VI. CONCLUSIONS

The study concludes that elementary teachers in the Eastern Schools of Botolan, Zambales experience instructional and emotional challenges due to limited ICT resources, unstable internet connectivity, and insufficient technical support. Despite these barriers, teachers remained resilient and committed to delivering quality education. The findings highlight the need for stronger ICT infrastructure, technical assistance, and continuous digital capability training in geographically isolated schools.

RECOMMENDATIONS

- Department of Education – Strengthen ICT infrastructure and provide stable internet connectivity in geographically isolated schools.
- School Heads and Supervisors – Establish technical assistance and continuous digital capability training programs for teachers.
- Teachers – Continue collaborative practices and engage in professional development activities related to ICT integration.
- Local Government Units and Stakeholders – Support ICT-related programs and resource acquisition for remote schools.
- Future Researchers – Conduct similar studies in other geographically isolated areas to further examine digital barriers and teacher experiences in education.

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