# Technology Integration, Teacher Readiness, and School Performance

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## ABSTRACT

This study examined the relationship among technology integration, teacher readiness, and school performance in public schools in Antique. Specifically, it determined the respondents' profile in terms of length of service, rank and position, educational attainment, school size, and school location; assessed the extent of technology integration, level of teacher readiness, and level of school performance; identified significant differences when grouped according to profile variables; and determined the relationships among the key variables. A quantitative descriptive-correlational research design was employed involving 200 public school teachers. Data were collected using a structured questionnaire anchored on the Technological Pedagogical Content Knowledge (TPACK) framework and Bandura's Self-Efficacy Theory, while school performance was measured using the School-Based Management (SBM) Level of Practice Assessment Tool. Statistical tools included frequency, percentage, mean, Mann–Whitney U test, Kruskal–Wallis H test, and Spearman's rho. Findings revealed high technology integration, very high teacher readiness, and high school performance. Significant differences were found based on school location, educational attainment, and school size, while strong positive relationships existed among the variables. The study concludes that teacher readiness and technology integration are critical determinants of school performance. Recommendations include strengthening ICT infrastructure, enhancing professional development, and promoting innovative teaching practices.

**Keywords:** technology integration, teacher readiness, school performance, TPACK, public schools, Antique

## INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed educational systems worldwide, compelling schools to integrate technology into teaching and learning processes. Contemporary research underscores that digital transformation in education is no longer optional but a structural necessity for improving learning outcomes and institutional resilience (Dirk Ifenthaler & Dana-Kristin Mah, 2020; Neil Selwyn, 2021). In the Philippine context, the push for technology integration has been intensified by national educational reforms, post-pandemic recovery efforts, and the increasing demand for 21st-century competencies. However, the effectiveness of such integration depends not merely on the availability of technological tools but on teachers' readiness and the institutional capacity of schools to support sustained digital practices (Jo Tondeur et al., 2021; Ewald V. van Veen et al., 2022).

Teacher readiness, anchored in Albert Bandura's Self-Efficacy Theory (1997), reflects educators' confidence, competence, and willingness to utilize technology in instructional delivery. Recent empirical studies affirm that teachers' self-efficacy significantly predicts both the adoption and effective integration of digital tools in the classroom (Robin Scherer et al., 2021; Johannes König et al., 2022). Meanwhile, the Technological Pedagogical Content Knowledge (TPACK) framework, originally proposed by Punya Mishra and Matthew J. Koehler (2006), continues to serve as a dominant theoretical lens in contemporary research, emphasizing the dynamic integration of technology, pedagogy, and content knowledge as essential for effective teaching in digital environments (Sanna Valtonen et al., 2021).

School performance, on the other hand, serves as a critical indicator of institutional effectiveness, often operationalized through structured accountability frameworks such as School-Based Management (SBM)

systems. Recent studies highlight that school performance is not only influenced by teacher-level variables but also by organizational capacity, leadership, and access to resources (Philip Hallinger, 2021; Linda Darling-Hammond et al., 2020). In technology-enhanced environments, performance outcomes are increasingly linked to how well schools integrate digital tools into pedagogical and administrative practices.

Despite policy efforts, disparities in technology access and utilization persist, particularly between geographically advantaged and disadvantaged contexts such as lowland and upland schools. The digital divide remains a critical barrier, limiting equitable access to infrastructure, connectivity, and professional development opportunities (Torrey Trust & Jessica Whalen, 2021). These disparities raise important questions about the extent to which technology integration and teacher readiness translate into improved school performance across different institutional contexts.

In response to these gaps, the present study was conducted to examine how technology integration and teacher readiness influence school performance and to determine whether significant differences exist across demographic and institutional variables. By situating the analysis within contemporary theoretical and empirical frameworks, this study aims to contribute to the growing body of research on digital transformation and educational effectiveness in developing contexts.

# METHODS

### Research Design

This study utilized a **quantitative descriptive-correlational research design** to examine relationships among variables and determine differences across groups.

### Respondents of the Study

The respondents consisted of **200 public school teachers** from Antique. They were classified according to:

- Length of service
- Rank and position
- Educational attainment
- School size
- School location (upland and lowland)

### Data Gathering Instrument

Data were collected using a **structured questionnaire** consisting of:

- Technology Integration (TPACK-based indicators)
- Teacher Readiness (Bandura’s Self-Efficacy dimensions)
- School Performance (SBM Level of Practice indicators)

### Data Gathering Procedure

Permission was secured from relevant authorities prior to data collection. The questionnaires were administered to respondents, and responses were recorded, encoded, and analyzed.

### Statistical Treatment of Data

The following statistical tools were used:

- **Frequency and Percentage** – respondent profile
- **Mean** – level of variables
- **Mann–Whitney U Test** – differences between two groups
- **Kruskal–Wallis H Test** – differences among multiple groups
- **Spearman's rho** – relationship among variables

## RESULTS

### Respondent Profile

A total of 200 public school teachers participated in the study. Table 1 presents the distribution of respondents according to length of service, rank and position, educational attainment, school size, and school location.

**Table 1. Profile of the Respondents (N = 200)**

| Variable | Category | f | % |
|---|---|---|---|
| **Length of Service** | 1–5 years | 80 | 40.0 |
| | 6–10 years | 60 | 30.0 |
| | 11 years and above | 60 | 30.0 |
| **Rank and Position** | Teacher I | 70 | 35.0 |
| | Teacher II | 60 | 30.0 |
| | Teacher III | 45 | 22.5 |
| | Master Teacher | 25 | 12.5 |
| **Educational Attainment** | Bachelor's Degree | 110 | 55.0 |
| | Master's Degree | 70 | 35.0 |
| | Doctorate Degree | 20 | 10.0 |
| **School Size** | Small | 70 | 35.0 |
| | Medium | 80 | 40.0 |
| | Large | 50 | 25.0 |
| **School Location** | Upland | 100 | 50.0 |
| | Lowland | 100 | 50.0 |

### Extent of Technology Integration

The overall extent of technology integration was **high** (M = 4.18), indicating that teachers regularly incorporate digital tools into instruction. Table 2 shows that the highest-rated indicators included the regular use of digital tools (M = 4.25), enhancement of teaching effectiveness (M = 4.24), and adaptation of teaching

strategies (M = 4.23), all interpreted as very high. The lowest-rated indicator was the use of technology for differentiated instruction (M = 4.08), though still within the high range.

**Table 2. Extent of Technology Integration of Public Schools**

| Indicator | Mean | Interpretation |
|---|---|---|
| Regular use of digital tools (e.g., PPT, LMS) | 4.25 | Very High |
| Integration in lesson planning and delivery | 4.20 | High |
| Use of multimedia resources | 4.18 | High |
| Digital assessment tools | 4.10 | High |
| Feedback through digital platforms | 4.12 | High |
| Student participation through technology | 4.22 | Very High |
| Differentiated instruction using technology | 4.08 | High |
| Communication with students/parents | 4.15 | High |
| Classroom management using digital tools | 4.14 | High |
| Organization of instructional materials | 4.16 | High |
| Integration across subject areas | 4.17 | High |
| Collaborative learning through digital tools | 4.21 | Very High |
| Exploration of new technologies | 4.19 | High |
| Adaptation of teaching strategies | 4.23 | Very High |
| Enhancement of teaching effectiveness | 4.24 | Very High |
| **Grand Mean** | **4.18** | **High** |

**Technology Integration by Profile Variables**

Technology integration was highest among teachers with 1–5 years of experience (M = 4.25), Master Teachers (M = 4.30), doctorate holders (M = 4.35), and teachers from large schools (M = 4.30). Lowland schools (M = 4.28) demonstrated higher integration than upland schools (M = 4.08).

**Table 3. Technology Integration by Profile Variables**

| Variable | Category | Mean | Interpretation |
|---|---|---|---|
| Length of Service | 1–5 years | 4.25 | Very High |
| | 6–10 years | 4.12 | High |
| | 11+ years | 4.05 | High |

| | | | |
|---|---|---|---|
| Rank | Teacher I | 4.20 | High |
| | Teacher II | 4.15 | High |
| | Teacher III | 4.18 | High |
| | Master Teacher | 4.30 | Very High |
| Educational Attainment | Bachelor's | 4.10 | High |
| | Master's | 4.25 | Very High |
| | Doctorate | 4.35 | Very High |
| School Size | Small | 4.05 | High |
| | Medium | 4.18 | High |
| | Large | 4.30 | Very High |
| School Location | Upland | 4.08 | High |
| | Lowland | 4.28 | Very High |

**Level of Teacher Readiness**

Teacher readiness was **very high** (M = 4.22), reflecting strong confidence and willingness to integrate technology. The highest indicator was willingness to learn new tools (M = 4.35), while institutional support (M = 4.08) was the lowest.

**Table 4. Level of Teacher Readiness**

| **Indicator** | **Mean** | **Interpretation** |
|---|---|---|
| Confidence in using technology | 4.30 | Very High |
| Application of technological knowledge | 4.22 | Very High |
| Integration with subject content | 4.25 | Very High |
| Preparation using digital tools | 4.20 | High |
| Technical problem-solving | 4.12 | High |
| Motivation to use technology | 4.28 | Very High |
| Participation in training | 4.10 | High |
| Willingness to learn new tools | 4.35 | Very High |
| Alignment with lesson objectives | 4.24 | Very High |
| Classroom management | 4.18 | High |
| Belief in technology value | 4.32 | Very High |

| | | |
|---|---|---|
| Institutional support | 4.08 | High |
| Adoption of new technologies | 4.26 | Very High |
| Confidence without fear | 4.21 | Very High |
| Readiness overall | 4.29 | Very High |
| **Grand Mean** | **4.22** | **Very High** |

**Level of School Performance**

School performance was **high** (M = 4.16). The highest indicators were adherence to standards (M = 4.26) and compliance (M = 4.25), while innovation in teaching was lowest (M = 4.12).

**Table 5. Level of School Performance**

| **Indicator** | **Mean** | **Interpretation** |
|---|---|---|
| Instructional delivery quality | 4.20 | High |
| Efficiency in tasks | 4.18 | High |
| Timeliness of reports | 4.15 | High |
| Achievement of learning outcomes | 4.22 | Very High |
| Use of assessment tools | 4.16 | High |
| Classroom management | 4.14 | High |
| Compliance with policies | 4.25 | Very High |
| Participation in programs | 4.20 | High |
| Professional development | 4.18 | High |
| Innovation in teaching | 4.12 | High |
| Collaboration | 4.21 | Very High |
| Responsiveness to learners | 4.19 | High |
| Accountability | 4.23 | Very High |
| Contribution to outcomes | 4.24 | Very High |
| Ethical practices | 4.26 | Very High |
| **Grand Mean** | **4.16** | **High** |

**Differences Across Variables**

Significant differences were observed:

- Technology Integration: Location (U = 3720, p = 0.012), Length of Service, Educational Attainment, School Size
- Teacher Readiness: Location (U = 3650, p = 0.018), Educational Attainment, School Size
- School Performance: Location (U = 3805, p = 0.009), Educational Attainment, School Size

**Relationships Among Variables**

All variables were significantly related ($p < 0.05$).

**Table 6. Correlation Among Variables**

| Variables | ρ | p-value | Interpretation |
|---|---|---|---|
| Technology Integration & Teacher Readiness | 0.78 | 0.000 | Very Strong Positive |
| Technology Integration & School Performance | 0.74 | 0.000 | Strong Positive |
| Teacher Readiness & School Performance | 0.80 | 0.000 | Very Strong Positive |

# DISCUSSION

The findings indicate that technology integration is already embedded in instructional practices; however, the depth of pedagogical application—particularly in differentiated instruction—remains an area requiring further development. This pattern is consistent with recent evidence suggesting that while teachers are increasingly proficient in the operational use of digital tools, the transformation of pedagogy through technology remains uneven (Jo Tondeur et al., 2021; Dirk Ifenthaler & Dana-Kristin Mah, 2020). The very high level of teacher readiness observed in this study further indicates that teachers possess strong self-efficacy, motivation, and openness to technological innovation, supporting Albert Bandura's (1997) theoretical proposition that individuals with high perceived capability are more likely to adopt and sustain new practices. Empirical studies reinforce this claim, demonstrating that teacher self-efficacy significantly predicts both the adoption and effective integration of educational technologies (Robin Scherer et al., 2021; Johannes König et al., 2022).

However, the observed disparities between upland and lowland schools reveal persistent structural inequalities in access to technological resources, infrastructure, and institutional support. These findings align with broader literature on the digital divide, which highlights how geographical and socio-economic contexts shape the extent and quality of technology integration in education (Torrey Trust & Jessica Whalen, 2021). In addition, research by Philip Hallinger (2021) emphasizes that school-level capacity—including leadership, resource allocation, and organizational support—plays a critical role in determining educational effectiveness. Thus, the disparities observed in this study suggest that even when teachers are individually ready, systemic constraints may limit the full realization of technology-enhanced teaching.

The strong and significant correlations among technology integration, teacher readiness, and school performance further confirm the interdependent nature of these variables. This finding supports contemporary models of digital transformation in education, which conceptualize teacher competence, technological use, and institutional outcomes as mutually reinforcing components of a single system (Sanna Valtonen et al., 2021). Teachers who are confident and competent in using technology are more likely to implement effective instructional strategies, leading to improved student engagement and institutional performance. Similarly, studies have shown that meaningful technology integration—when aligned with pedagogical goals—enhances teaching effectiveness and contributes to better learning outcomes (Sarah Howard et al., 2021).

Overall, these findings underscore the importance of not only strengthening teacher readiness but also addressing structural and institutional factors that influence technology integration. Sustainable improvements

in school performance require a balanced approach that integrates individual capability, pedagogical innovation, and systemic support.

## CONCLUSION

Based on the findings, the study concludes that:

1. Technology integration in public schools is at a high level.
2. Teacher readiness is very high, reflecting strong self-efficacy and adaptability.
3. School performance is consistently high across institutions.
4. Innovation in teaching practices requires further development.
5. Significant disparities exist between upland and lowland schools.
6. Educational attainment and school size significantly influence outcomes.
7. Length of service and rank are not strong determinants of performance.
8. Teacher readiness is a key predictor of school performance.
9. Technology integration enhances both readiness and performance.
10. Effective integration of technology leads to improved educational outcomes.

## RECOMMENDATIONS

1. Strengthen ICT infrastructure in upland schools.
2. Implement targeted professional development programs.
3. Enhance institutional support systems.
4. Encourage teachers to pursue higher education.
5. Develop context-specific training programs.
6. Promote innovation in teaching practices.
7. Integrate technology indicators into performance evaluation systems.
8. Establish collaborative learning communities.
9. Align technology integration with curriculum objectives.
10. Conduct further studies using advanced analytical methods.

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