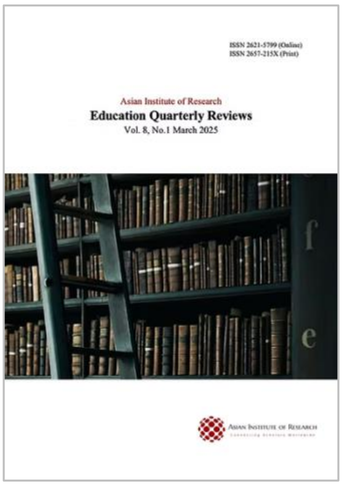


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# Using of Technology Digital for Learning Management of Teacher at School under the 30th Network School Group, Prawet District Office Bangkok

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**Abstract**
This research on the use of digital technology for instructional management by teachers in Network Schools Group 30, Prawet District Office, Bangkok, aims to: 1) study the use of digital technology in instructional management, 2) compare the use of digital technology based on educational qualifications, teaching experience, and school size, and 3) explore guidelines for the effective use of digital technology. The research was conducted in two phases. In the first phase, data were collected from 125 teachers, selected through stratified sampling. A questionnaire using a 5-point Likert scale was employed, and data were analyzed using means and standard deviations. In the second phase, interviews were conducted with three experts, selected through purposive sampling, using a structured interview format. Data were analyzed using content analysis. The findings revealed that: Overall, the use of digital technology for instructional management was at a high level, with the highest mean score in the aspect of using digital tools. There were no significant differences in the use of digital technology based on educational qualifications, teaching experience, or school size. The proposed guidelines suggest teachers use online platforms (e.g., Google Classroom, Zoom) and applications (e.g., Kahoot, Quizizz) to enhance student engagement and enable real-time assessment. Teachers should also develop skills in programming, creating digital learning materials, and utilizing basic digital tools, with an emphasis on digital safety.

**Keywords:** Digital Technology Use, Instructional Management, 30th Network School Group

## 1. Introduction

The Ministry of Education, under the 20-Year National Strategy Master Plan (2018-2037), emphasizes lifelong learning and the development of Thai people's potential at all life stages. This reform aims to prepare learners for the 21st century by fostering well-rounded individuals who are morally sound, skilled, and capable of driving the country toward long-term stability, prosperity, and sustainability. The policy for the fiscal year 2021 focuses on building trust in society and improving educational quality through digital government transformation and education system reform, aligning with lifelong learning needs in the 21st century. The objective is to establish an efficient and inclusive education system that empowers all Thais to contribute effectively to national development (Ministry of Education, 2021: 1-2). Thailand places significant importance on educational technology as outlined in Section 9 of the National Education Act of 1999 (amended in 2002). This section highlights the need to develop personnel who can produce and utilize digital technology for education, enhancing knowledge, skills, and the efficient use of appropriate tools. Learners have the right to develop digital literacy and technological skills, enabling lifelong self-directed learning (Office of the Education Council, 2019: 15-16). To maximize educational benefits, the government promotes research, monitors digital technology usage, and evaluates its efficiency in enhancing learning processes. Thailand's drive toward "Thailand 4.0" highlights the role of digital innovation and creativity in education. The adoption of digital technology in school management, classrooms, and teaching enhances efficiency and flexibility. School administrators must integrate digital tools across academic, budget, personnel, and general management domains to foster effective educational administration. Teachers can innovate teaching practices using computers, digital learning platforms, and management tools to optimize learning outcomes (Jeeranan Moolmatra, 2021: 24-25). Given the significance of integrating digital technology into education, this study explores the use of digital technology for instructional management among teachers in Network Schools Group 30, Prawet District Office, Bangkok. The study aims to assess the current level of digital technology utilization and propose guidelines for its effective integration into instructional practices.

## 2. Research Objectives

1. To study the use of digital technology for instructional management among teachers in Network Schools Group 30, Prawet District Office, Bangkok.
2. To compare the use of digital technology for instructional management among teachers in Network Schools Group 30, Prawet District Office, Bangkok, categorized by educational qualifications, work experience, and school size.
3. To identify guidelines for the use of digital technology for instructional management among teachers in Network Schools Group 30, Prawet District Office, Bangkok.

## 3. Research Hypotheses

1. The use of digital technology for instructional management among teachers in Network Schools Group 30, Prawet District Office, Bangkok, is at a moderate level or higher.
2. The use of digital technology for instructional management among teachers in Network Schools Group 30, Prawet District Office, Bangkok, differs significantly based on teachers' educational qualifications, work experience, and school size.

## 4. Literature Review

The research on "The Use of Digital Technology for Instructional Management of Teachers in Network Schools Group 30, Prawet District Office, Bangkok" involved studying related documents, theories, and research findings as follows: 1. Definitions and Concepts of Digital Technology Use.

Boonchu Jaisai (2021: 51) stated that the use of digital technology involves processing information to support work activities, including data input, storage, management, protection, communication, and retrieval. It requires integrating various technologies seamlessly. Digital skills are essential for achieving work efficiency.

Waritsorn Phaowanich (2021) described digital technology use as encompassing basic to advanced competencies in using digital devices and software. This includes knowledge and the ability to effectively utilize digital tools, develop software, and apply applications to enhance performance.

Anthika Prinnyanilkul et al. (2020: 8) highlighted that digital technology use involves effectively operating computers, mobile devices, and digital tools for searching, collecting, processing, using, and systematically storing data. It also includes the ability to present work skillfully, understand complex information, and utilize the internet for critical thinking, creativity, and collaboration.

Sopita Sawangleartkul (2017) emphasized that digital technology use refers to expertise in using computers, digital devices, and internet connectivity. It also involves software creation, making informed decisions in online activities, ensuring safety, and avoiding negative impacts.

Salesforce (2021) stated that digital technology includes communication applications and devices, such as networks, for efficiently managing data. It involves online searches, email, programming, and specialized development, which are essential for effective communication and collaboration.

University of Nevada, Las Vegas (UNLV) (2021) described digital technology use as utilizing the internet, computers, and mobile devices to perform tasks like searching, processing, creating content, sharing work, and using digital media.

The use of digital technology for instructional management by teachers can be summarized as the ability to utilize relevant digital tools for searching, collecting, processing, and accessing data networks. It also includes systematically managing and storing data, promoting critical thinking and creativity, and developing advanced skills for creating media or software. Moreover, it involves impressive presentation skills, understanding complex information, distinguishing real from virtual environments, and collaborating effectively.

These digital skills support teachers in enhancing instructional management efficiency, enabling them to utilize technology to optimize classroom learning, data management, and collaboration.

## 5. Research Methodology

Step 1: Study and Comparison of Teachers' Use of Digital Technology for Teaching Management Based on Educational Background, Work Experience, and School Size

1. Population and Sample
    - Population: 185 teachers from Network Schools Group 30, Prawet District, Bangkok.
    - Sample: 125 teachers, selected using G*Power software for sample size calculation with a power of 0.99, significance level of 0.01, and an effect size of 0.3. The sampling was done using Stratified Random Sampling and further refined by Simple Random Sampling based on school size.
2. Research Instruments
    - A questionnaire consisting of:
        - Part 1: Demographic data (Check-list format).
        - Part 2: Teachers' use of digital technology (5-point Likert scale):
          1 = Very Low, 2 = Low, 3 = Moderate, 4 = High, 5 = Very High.
3. Development of Research Instruments
    - Review relevant literature and theories to design the questionnaire.
    - Submit the draft to an advisor and revise based on feedback.
    - Validate content with 3 experts using the Index of Item-Objective Congruence (IOC), selecting items with scores between 0.60–1.00.
    - Conduct a pilot test with 30 non-sample teachers to assess reliability using Cronbach's Alpha Coefficient.
    - Finalize and distribute the questionnaire.
4. Data Collection
    - Coordinate with relevant institutions to request cooperation.
    - Distribute and collect the questionnaires.
    - Verify and analyze the collected data.
5. Data Analysis
    - General information: Frequency and percentage.
    - Level of digital technology use: Mean and standard deviation (S.D.).
    - Comparisons based on education, work experience, and school size:

        - One-Way ANOVA and pairwise comparison using Scheffe's method for significant differences.
6. Statistical Tools
    - Descriptive statistics: Percentage, mean, and S.D.
    - Reliability test: Cronbach's Alpha.
    - Hypothesis testing: One-Way ANOVA and Scheffe’s method.

Step 2: Study of Guidelines for Using Digital Technology in Teaching Management
1. Informants
    - 2 experts selected via Purposive Sampling:
        - 1 Educational Administrator (Doctorate level, ≥5 years of experience).
        - 1 School Administrator (Master’s level, ≥5 years of experience, expertise in educational technology).
2. Research Instrument
    - Structured Interview divided into:
        - Part 1: General information of informants.
        - Part 2: Guidelines for using digital technology in teaching.
        - Part 3: Recommendations for effective implementation.
3. Data Collection
    - Conduct structured interviews with selected experts.
4. Data Analysis
    - Analyze interview data qualitatively to identify themes and practical guidelines for using digital technology.

**6. Research Results**

Table 1: Mean, Standard Deviation, and Interpretation of Teachers' Use of Digital Technology for Teaching Management in Network Schools Group 30, Prawet District, Bangkok (n = 125).

| | Digital Technology for Teaching Management | Level of Performance | | Interpretation |
|---|---|---|---|---|
| | | $\bar{x}$ | S.D. | |
| 1 | Use of Digital Technology | 4.32 | 0.60 | High |
| 2 | Understanding Digital Technology | 4.21 | 0.67 | High |
| 3 | Evaluating Digital Technology | 4.14 | 0.72 | High |
| 4 | Creating Digital Technology | 4.12 | 0.68 | High |
| | Overall ($X_{tot}$) | 4.20 | 0.60 | High |

**7. Summary of Results**

From Table 1, the overall use of digital technology for teaching management among teachers in Network Schools Group 30, Prawet District, Bangkok, is at a high level ($\bar{x}$ = 4.20, S.D. = 0.60).
When considering each aspect, the mean scores from highest to lowest are as follows:
1. Use of Digital Technology: High ($\bar{x}$ = 4.32, S.D. = 0.60)
2. Understanding Digital Technology: High ($\bar{x}$ = 4.21, S.D. = 0.67)
3. Evaluating Digital Technology: High ($\bar{x}$ = 4.14, S.D. = 0.72)
4. Creating Digital Technology: High ($\bar{x}$ = 4.12, S.D. = 0.68)

Table 2: Comparison of the Use of Digital Technology for Teaching Management of Teachers in Network School Group 30, Prawet District Office, Bangkok, Classified by Education Level

| Digital Technology for Teaching Management | | Bachelor's Degree (n=93) | | Above Bachelor's Degree (n=32) | | | |
|---|---|---|---|---|---|---|---|
| | | $\bar{x}$ | S.D. | $\bar{x}$ | S.D. | t | p |
| 1 | Use of Digital Technology | 4.34 | 0.54 | 4.26 | 0.75 | 0.59 | 0.55 |
| 2 | Understanding Digital Technology | 4.18 | 0.62 | 3.95 | 0.81 | 1.50 | 0.13 |
| 3 | Evaluating Digital Technology | 4.25 | 0.63 | 4.25 | 0.63 | 1.05 | 0.29 |
| 4 | Creating Digital Technology | 4.20 | 0.68 | 3.98 | 0.82 | 1.36 | 0.18 |
| Overall ($X_{tot}$) | | 4.24 | 0.54 | 4.07 | 0.75 | 1.21 | 0.23 |

*p < .05

Analysis Result: The use of digital technology for teaching management does not significantly differ based on education level.

Table 3: Comparison of the Use of Digital Technology for Teaching Management of Teachers in Network School Group 30, Prawet District Office, Bangkok, Classified by Work Experience

| Digital Technology for Teaching Management | | Less than 10 Years (n=34) | | 10 Years and Above (n=91) | | | |
|---|---|---|---|---|---|---|---|
| | | $\bar{x}$ | S.D. | $\bar{x}$ | S.D. | t | p |
| 1 | Use of Digital Technology | 4.08 | 0.43 | 4.41 | 0.63 | -3.34* | 0.01 |
| 2 | Understanding Digital Technology | 4.17 | 0.75 | 4.11 | 0.75 | 0.50 | 0.61 |
| 3 | Evaluating Digital Technology | 4.14 | 0.72 | 4.23 | 0.72 | -0.77 | 0.43 |
| 4 | Creating Digital Technology | 4.21 | 0.51 | 4.12 | 0.79 | 0.81 | 0.41 |
| Overall ($X_{tot}$) | | 4.15 | 0.39 | 4.22 | 0.66 | -0.69 | 0.49 |

*p < .05

Analysis Result: Overall, there is no significant difference. However, there is a significant difference in the use of digital technology between teachers with less than 10 years of experience and those with 10 or more years of experience.

Table 4: Comparison of the Use of Digital Technology for Teaching Management of Teachers in Network School Group 30, Prawet District Office, Bangkok, Classified by School Size

| Digital Technology for Teaching Management | Source of Variance | df | ss | ms | f | p |
|---|---|---|---|---|---|---|
| 1 Use of Digital Technology | Between Groups | 2 | 5.30 | 2.65 | 8.03* | 0.01 |
| | Within Groups | 122 | 40.26 | 0.33 | | |
| | Total | 124 | 45.56 | | | |
| 2 Understanding Digital Technology | Between Groups | 2 | 1.07 | 0.53 | 1.14 | 0.32 |
| | Within Groups | 122 | 57.59 | 0.47 | | |
| | Total | 124 | 58.67 | | | |
| 3 Evaluating Digital Technology | Between Groups | 2 | 1.49 | 0.74 | 1.67 | 0.19 |
| | Within Groups | 122 | 54.64 | 0.44 | | |
| | Total | 124 | 56.14 | | | |
| 4 Creating Digital Technology | Between Groups | 2 | 0.49 | 0.24 | 0.46 | 0.62 |
| | Within Groups | 122 | 64.97 | 0.53 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total | 124 | 65.47 | | | |
| Overall | Between Groups | 2 | 1.53 | 0.76 | 2.13 | 0.12 |
| | Within Groups | 122 | 43.92 | 0.36 | | |
| | Total | 124 | 45.46 | | | |

$p < .05$

Analysis Result: Overall, there is no significant difference based on school size. However, there is a significant difference in the use of digital technology at the $p < .05$ level.

**8. Summary of Findings**

1. Education Level: No significant differences in the use of digital technology for teaching management.
2. Work Experience: Significant differences in the use of digital technology between teachers with less than 10 years and 10 or more years of experience.
3. School Size: Significant differences in the use of digital technology by school size.

Analysis Results of the Use of Digital Technology for Teaching Management of Teachers in Network School Group 30, Prawet District Office, Bangkok from the synthesis of interviews with 3 experts, the researcher applied content analysis and summarized the findings as follows:
Use of Digital Technology: It is recommended to use online learning platforms such as Google Classroom, Microsoft Teams, or Zoom. These platforms enable students to access learning materials anywhere and anytime. Teachers can create content in various formats, enhancing student engagement.
Creation of Digital Technology: The development of digital learning media, such as instructional videos, infographics, and websites, is essential. These resources help increase students' interest and participation in learning. The use of AI in adaptive learning systems enables students to receive lessons tailored to their abilities, enhancing the effectiveness of learning.
Understanding Digital Technology: Teachers should utilize online teaching tools such as Moodle, Canvas, or Blackboard. These tools help teachers manage virtual classrooms and create accessible learning environments.
Evaluation of Technology: It is recommended to evaluate new technologies by testing them in classrooms and using shared evaluation data to assist in long-term decisions regarding technology adoption.

**9. Discussion of the Research Results**

The research results on the opinions of teachers in the Network School Group 30, Prawet District, Bangkok, reveal significant points to discuss as follows:

1. Use of Digital Technology for Learning Management:
   The overall ability and performance of teachers in using digital technology are found to be at a high level across four main areas: the use of digital technology, understanding digital technology, evaluating digital technology, and creating digital technology. Teachers are able to use various forms of technology such as internet communication, document management (Microsoft Word), basic application usage, and online collaboration via programs like Zoom, which enhances practical work and improves teaching quality. The research aligns with the approach of the Office of the Civil Service Commission (2018), which emphasizes the use of digital technology in government work to increase efficiency and value, as well as developing organizational systems to support Thailand 4.0 policies. Additionally, this is consistent with research by Amnat Chaisong (2021) and Kanat Thitakornphongstit (2022), who found that teachers' digital skills across different areas were at a high level. Therefore, digital skills are important both personally and professionally, as they promote learning, the development of learning materials, and effective collaboration in the digital age.
2. Comparison of Digital Technology Usage Based on Educational Qualifications, Work Experience, and School Size:
   The research reveals interesting differences among variables:
   - Educational Qualifications: There is no significant difference in the overall and detailed use of digital technology between teachers with different educational qualifications (bachelor’s

degree and higher). This is consistent with the research of Anthika Amnat Chaisong (2021), who found that digital skills among teachers with varying educational qualifications did not affect classroom management in the 21st century.
    - Work Experience: Overall, there is no difference in the use of digital technology among teachers with varying levels of experience. However, when considering specific areas, there are statistically significant differences at the 0.05 level. This aligns with the research of Phisutthipa Metheekul (2018), which found that digital literacy development among teachers in the 21st century did not differ overall, but specific details might vary with experience.
    - School Size: The overall use of digital technology by teachers in different-sized schools shows no difference. However, when examining specific aspects of digital technology use, there are statistically significant differences at the 0.05 level. This is likely due to varying levels of readiness, such as the availability of technology resources, personnel, and budget. Larger schools tend to have more resources than smaller or medium-sized ones. This finding aligns with research by Jarunan Phiewphang (2021), which indicates that digital leadership impacts differences in technology usage in schools of various sizes.

   In summary, the overall use of digital technology by teachers in Network School Group 30 does not differ significantly when considering educational qualifications, experience, and school size. However, specific aspects may vary due to structural factors and the readiness of schools.
3. Interviews on Approaches to Using Digital Technology for Learning Management:
    - Use of Digital Technology: Teachers use online learning platforms like Google Classroom, Microsoft Teams, and Zoom to enhance accessibility to content, create diverse learning materials, and increase student participation. Applications like Kahoot, Quizizz, or Socrative are used for real-time assessment, and VR technology is employed to create immersive learning experiences that enhance long-term understanding and retention.
    - Creation of Digital Technology: Teachers develop programming skills to create specialized learning apps and digital learning materials, such as instructional videos, infographics, and websites, to make learning more engaging. AI is used in adaptive learning systems to tailor teaching to students' abilities.
    - Understanding Digital Technology: Teachers learn the basic use of technologies such as Microsoft Office and Google Workspace, and use online platforms like Moodle, Canvas, or Blackboard to manage virtual classrooms. They also study digital safety to protect data and ensure safe usage for students.
    - Evaluation of Digital Technology: Teachers gather student feedback to improve technology usage, analyze the impact of technology on learning outcomes (comparing pre- and post-usage results), and test new technologies in classrooms. They also share evaluation results to guide long-term technology adoption.

   In conclusion, teachers should continuously develop their digital skills in all dimensions to enhance teaching effectiveness, promote learning, and modernize learning processes to meet the needs of 21st-century students.

## 10. Suggestions

### *10.1. From the Research*

1. Schools should organize activities or projects to encourage teachers to create digital technologies, focusing on digital media creation such as blogs, image and video sharing, and social media to support problem-solving.
2. Schools should implement the use of digital technology to assess the ability to distinguish reliable sources and appropriate referencing, which is an essential skill in digital evaluation.
3. Schools should provide more training or projects for teachers with less than 10 years of work experience in using digital technology.
4. Small schools should receive training on creating digital media, using technologies like Google Classroom, Microsoft Teams, Zoom, or apps such as Kahoot, Quizizz, or Socrative.

5. The relevant authorities should organize training or activities to help schools with lower digital technology usage improve their digital learning management.
6. Teachers with less than 10 years of experience should receive training on using digital technology for teaching, while those with 10 or more years of experience should focus on training in creating digital technologies for learning management.
7. The development of digital technology for learning management should prioritize smaller schools, followed by medium-sized schools and larger schools.

*10.2. Suggestions for Future Research*

1. Further studies should explore factors that affect teachers' digital skills, providing data to guide policy decisions or strategies for improving teachers' digital competence effectively.
2. Future research should focus on developing models to promote teachers' digital skills, serving as a guide for enhancing their proficiency in digital teaching methods.

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