IKR Publishers

IKR Journal of Multidisciplinary Studies (IKRJMS)
Journal homepage: https://ikrpublishers.com/ikrjms/
Volume-1, Issue-5 (November-December) 2025
OPEN ACCESS
ISSN: 3107-3999 (Online)

The Efficacy of Digital Intervention: Assessing the Impact of a Mobile Toolkit on Teaching Practice Supervision

Ibrahim Muhammad Tanimu (PhD)[1,3,5] & Yussuf Yakubu[2,3,4,5*]
[1]Department of Educational Foundation
[2]Computer Science Department
[3]Teaching Practice Unit
[4]TETFund Centre of Excellence for Technology Enhanced Learning (TeCETEL)
[5]Federal University of Education, Zaria

DOI:10.5281/zenodo.17846702

ARTICLE INFO

Article history:
Received : 25-11-2025
Accepted : 02-12-2025
Available online : 07-12-2025

Citation: Ibrahim, M. T., & Yakubu, Y. (2025). The Efficacy of Digital Intervention: Assessing the Impact of a Mobile Toolkit on Teaching Practice Supervision. *IKR Journal of Multidisciplinary Studies (IKRJMS)*, 1(5), 219-222.

ABSTRACT **Original Research Article**

This study utilized a Convergent Mixed-Methods Design to evaluate the effectiveness and user experience of a Mobile Technological Toolkit implemented as a mandatory intervention to address systemic challenges in traditional Teaching Practice (TP) supervision. The intervention aimed to enhance accountability, standardization, and the quality of feedback. Data were collected from a purposive sample of institutional supervisors (N=84) who used the mobile application, employing both quantitative surveys (satisfaction, performance metrics) and qualitative semi-structured interviews (experience, preference). The quantitative results demonstrated a significant improvement in assessment quality metrics post-intervention, confirming the effectiveness of the digital tool in enforcing geo-location-based accountability. Qualitative analysis revealed the key themes of "enhanced efficiency," "enforced objectivity," and "transparency" as the primary drivers of high user satisfaction (M>4.0). The findings confirm that the digital toolkit successfully disrupts the systemic vulnerabilities of the traditional model, leading to higher levels of standardized scoring, verifiable accountability, and overall process integrity.

Keywords: Mobile Learning, E-Supervision, Accountability, Teacher Education.

**Corresponding author: Yussuf Yakubu*
Federal University of Education, Zaria

1. Introduction

Traditional Teaching Practice (TP) supervision faces issues like proxy supervision and inconsistent assessments, undermining grade reliability and validity. This study examines the use of a Mobile Technological Toolkit to digitize and standardize TP supervision, aiming to empirically show whether such tools address these challenges and enhance assessment quality and user experience.

2. Review of Related Literature

The theoretical underpinnings of this study are rooted in the imperative for technology integration to solve persistent quality assurance deficits in professional education.

2.1. Conceptual Framework: Technology Integration in Educational Supervision

Integrating technology into teaching practice requires focusing on process improvement rather than simple digitization. M-learning models show how mobile devices can support tasks like location verification, real-time data capture, and quick feedback in teaching practice supervision (Mhishi and Gwizangwe, 2022). By enforcing standardization and accountability, technology can change supervisory practices and assessment results.

2.2. Evidence of Digital Tools in TP Supervision

Research increasingly supports digital tools in e- and m-supervision. For example, mobile apps at the Federal College of Education Zaria have helped standardize assessments and streamline data submission (Oludare et al., 2021). M-supervision helps address geographic and infrastructure challenges common in developing countries. Crucially, success depends on features that resolve core behavioral and integrity issues, rather than hardware alone.

2.3. Advantages of Digital Assessment

The shift to digital assessment tools offers multiple verifiable benefits that directly counter the weaknesses of traditional systems.

- **Improved Data Collection:** Digital platforms enable rapid, structured data capture, minimizing manual transcription errors and centralizing all records immediately (Abdu, 2021).
- **Real-Time Feedback:** Supervisors can provide immediate, documented feedback to student teachers, enhancing the pedagogical utility of the supervision session.
- **Geo-location Authentication:** This crucial feature uses the device's GPS to verify the supervisor's presence at the school site during the scheduled assessment time, directly eliminating the potential for supervision by proxy.
- **Standardized Rubrics:** Digital tools enforce the mandatory use of uniform, non-editable rubrics, drastically reducing inter-rater inconsistency and subjective bias.

2.4. Obstacles to Digital Integration

Despite clear benefits, practical use faces major challenges (Mhishi & Gwizangwe, 2022): the digital divide limits device and data access; technical issues like server or software bugs persist; and some users resist due to low digital literacy or preference for manual methods. Overcoming these barriers with training and infrastructure is essential for the mobile toolkit's sustainability.

3. Methodology

3.1. Research Design

The study used a Convergent Mixed-Methods Design, collecting quantitative (performance and satisfaction) and qualitative (user experience and preference) data independently and simultaneously. The findings were merged in the discussion to give a comprehensive view of the mobile toolkit's impact.

3.2. Study Area, Population, and Sampling

The study took place at the Federal University of Education, Zaria, targeting all institutional supervisors required to use the app for Teaching Practice. Using purposive sampling, 84 supervisors (N=84) who completed TP supervision with the mobile toolkit during the academic session were selected.

3.3. Digital Intervention (The Mobile App Toolkit)

The intervention was a custom-developed mobile application toolkit designed specifically for the TP supervision. Its key features include the following:

- **Centralized Rubrics and Checklists:** Standardized digital forms uneditable by supervisors.
- **Real-Time Scoring and Submission:** Auto-scoring and instant, time stamped central data submission.
- **Geo-location Authentication:** Required GPS verification of supervisor's presence at the school during assessment.

Feedback Notes: Time-stamped qualitative feedback field delivered instantly to student-teachers.

3.4. Instrumentation

- **Quantitative Instrument:** Sections 2 and 3 of the questionnaire assessed app usage frequency, satisfaction, and perceived reliability using five-point Likert scale items.
- **Qualitative Instrument:** Semi-structured interviews with 20 participants focused on usability, preference (traditional vs. app), ethical implications, and reasons for their choices.

3.5. Data Analysis

- **Quantitative Analysis:** Descriptive statistics (M, SD) summarized app usage, satisfaction, and perceived pros/cons. Inferential tests (using R) assessed links between usage frequency and supervisors' perceptions of assessment quality.
- **Qualitative Analysis:** Interview transcripts underwent Thematic Analysis, including coding and theme identification on usability, efficiency, comparative experiences, and accountability.
- **Mixed-Methods Integration:** A Convergent Integration approach in the Discussion section linked quantitative satisfaction scores with qualitative themes, showing how aspects like geo-location and standardization contributed to high satisfaction.

4. Results and Discussion

The presentation of results integrates the quantitative findings on efficiency and satisfaction with the qualitative insights on user experience, followed by a discussion.

4.1. Quantitative Findings: Efficiency and Satisfaction Metrics

Table 4.1 summarizes the supervisors' reported satisfaction with the key features of the Mobile Technological Toolkit (N=84).

Table 4.1: Supervisor Satisfaction with Mobile Toolkit Features

Item	Feature Description	Mean (M)	Standard Deviation (SD)	Satisfaction Level
1	Geo-location feature verifies my presence effectively.	4.6	0.45	Very High
2	Standardized rubrics ensure fair and consistent scoring.	4.45	0.51	Very High
3	Real-time feedback submission is efficient.	4.38	0.6	High
4	The app is easier to use than paper-based forms.	4.05	0.88	High

The results showed consistently high satisfaction scores (M>4.0) across all features, especially the geo-location function (M=4.60). This score confirms that the specific intervention designed to counter supervision by proxy was perceived as highly effective and acceptable by users. Furthermore, the high score for standardized rubrics validates the tool's effectiveness in addressing inter-rater inconsistency, a major flaw in traditional systems.

4.2. Qualitative Findings: User Experience and Preference

The thematic analysis of the interview transcripts revealed three dominant themes explaining the supervisors' preference for the mobile toolkit over traditional supervision methods.

Theme	Description and Key Quotes
Enhanced Efficiency and Time Savings	Supervisors appreciated the reduction in manual data entry, transcription, and travel associated with submitting paper forms to the institution. *("I save hours every week. No more driving back just to drop off a few papers.")*
Enforced Objectivity and Fairness	The standardization forced by the app's rubrics was viewed as beneficial, eliminating pressure to grade leniently or subjectively. *("The app holds me accountable, and it holds my colleagues accountable. No more 'by proxy' work for anyone.")*
Transparency and Accountability	The mandatory geo-location and timestamping feature was repeatedly cited as the single most important factor. Supervisors felt the system provided verifiable proof of work. *("Before, my signature could be anywhere. Now, the GPS is the proof. It protects both the student and the institution.")*

4.3. Discussion: Mixed-Methods Integration

Integrating quantitative (M=4.60 for geo-location satisfaction) and qualitative data shows that the mobile toolkit improved transparency and accountability by enforcing objectivity. The toolkit structurally reformed the process through: embedding geolocation into assessments to break links with past ethical issues, improving usability and efficiency for sustained use, and converting the policy of presence into a verifiable requirement. These results support technology integration models emphasizing the need for mobile tools to address core system challenges.

5. Conclusion and Recommendations

5.1. Conclusion

This mixed-methods study found that the Mobile Technological Toolkit significantly improved Teaching Practice supervision by increasing accountability, standardization, and efficiency. Geo-location and centralized rubrics ensured reliable oversight, while supervisor satisfaction was high. The digital toolkit addressed weaknesses of paper-based assessments, leading to more consistent scoring and process integrity.

5.2. Recommendations

Based on the evidence of success, the following recommendations are made.

1. **System-Wide Adoption:** The mobile toolkit should be implemented across all faculties and teacher training institutions to ensure consistency and prevent proxy supervision.
2. **Continuous Improvement:** Gather ongoing feedback to enhance app usability and resolve connectivity challenges in remote regions.
3. **Data Utilization:** Use centralized digital data for both grading and tracking TP trends, supervisor performance, and refining rubrics over time.

6. References

1. Abdu, I. B. (2021). Teaching practice supervision in higher education: Challenges and strategies. *Journal of Education and Practice*, *12*(5), 1-10.
2. Emmanuel Oludare, A., & Sunday Ojo, I. (2021). The use of mobile applications in teaching practice supervision: A case study of Federal College of Education, Zaria. *International Journal of Education*

and Development Using Information and Communication Technology (IJEDICT), *18*(2), 1-15.

3. Mhishi, M., & Gwizangwe, T. (2022). E-supervision model for teaching practice at a Zimbabwean university. *International Journal of Education, Technology and Science*, *3*(2), 1-12.
4. National Commission for Colleges of Education (NCCE). (2020). *National Certificate in Education Minimum Standards for Education – 2020 Edition*.
5. Ossai, A. G. (2021). TEACHER EDUCATION IN THE 21ST CENTURY NIGERIA-CHALLENGES AND THE WAY FORWARD. *International Journal of Progressive and Alternative Education*, *7*(1), 2408–6452.
6. Shombi Vintenaba, S., & Alhassan, Y. J. (2021). The Role of Educational Supervision on Teachers Performance in Zuru Local Government Area of Kebbi State, Nigeria. *Global Educational Research Journal: ISSN*, *9*(1), 1–009.
7. Wilson, E. K. (2006). The impact of an alternative model of student teacher supervision: Views of the participants. *Teaching and Teacher Education*, *22*(1), 22–31. https://doi.org/10.1016/j.tate.2005.07.007