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RESEARCH ARTICLE

Technology-Enhanced Teacher Assessment: Data-Driven Insights from Greece's Emerging Digital Evaluation Framework

Konstantinos Zacharis[1] **Antonios Neiros**[2*]

[1] Informatics Education Consultant -– Quality Supervisor, Karditsa, Greece
[2] Model Senior High School of Mytilene, University of the Aegean, Mytilene, Greece

Correspondence to: Antonios Neiros, Principal of Model Senior High School of Mytilene, University of the Aegean, Mytilene, Greece; Email: aniros@sch.gr

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Abstract: The digital transformation of teacher evaluation is reshaping how educational quality is documented, analyzed, and improved. This study examines Greece's emerging digital teacher assessment framework, focusing on three interconnected governmental platforms that support administrative data, external teacher evaluation, and internal school self-evaluation. Drawing on 117 individual evaluation reports submitted across multiple secondary schools during the 2024–2025 academic year, we conducted a qualitative thematic analysis to explore how technology mediates teacher reflection, pedagogical documentation, and feedback exchange. Results demonstrate strong teacher performance in pedagogical climate and classroom management but reveal substantial underutilization of the digital affordances offered by the platforms, particularly regarding mobile responsiveness, data analytics, and interactive feedback mechanisms. Many evaluators relied on static text entry rather than exploiting features such as evidence uploads, metadata structuring, or longitudinal comparison tools. We argue that the current system functions primarily as a digital repository of documents, rather than a dynamic learning analytics environment. The study proposes a roadmap for enhancing the platforms through mobile dashboards, real-time feedback loops, automated analytics, and AI-assisted reflective prompts. By linking evaluation data with teachers' digital portfolios, Greece's educational system can move from digitized bureaucracy towards a participatory, data-driven and mobile-enabled evaluation ecosystem. Finally, implications for policy, platform design, and professional development are discussed within the broader literature on mobile learning and technology-supported teacher assessment.

Keywords: mobile learning, digital evaluation, teacher assessment, learning analytics, UX design, reflective practice, educational technology

1 Introduction

Digital transformation has become one of the most significant forces shaping educational systems worldwide (Yirci et al., 2023). As schools integrate mobile devices, digital platforms, and data-driven decision-making into daily practice, teacher assessment undergoes profound restructuring. Traditional evaluation models–paper-based, episodic, and hierarchical–are increasingly replaced by technology-enhanced systems that promise greater transparency, improved documentation, and richer feedback for continuous professional growth (Lavidas et al., 2022).

The background theory lies on TPACK framework model (Mishra & Koehler, 2006). It provides a lens for understanding how evaluators' technological knowledge interacts with their pedagogical expertise. When platform UX is poor, evaluators cannot effectively integrate technology into their assessment practices, leading to digital friction and reliance on offline documentation.

In Greece, teacher evaluation historically evolved through legislative cycles, reform efforts, and debates within the educational community (Karakose et al., 2023). Recent reforms have introduced a digital ecosystem of interconnected platforms enabling teachers, school administrators, and external evaluators to document and review professional practices. Despite this progress, research on how teachers and evaluators actually use the digital tools, and on how effectively the platforms support reflection and learning, remains limited (Barth, 1990).

Building on this theoretical foundation, the present study addresses three specific research questions:

(1) How do the design affordances and constraints of digital teacher evaluation platforms shape evaluators' documentation practices and narrative reporting styles?
(2) What specific technological barriers (mobile responsiveness, UX design, data analytics) limit the transformative potential of digital platforms in supporting reflective teacher assessment?
(3) To what extent does platform architecture contribute to the observed "ceiling effect" in teacher ratings, and how does digital friction mediate evaluation quality and differentiation?

To address these questions, the study examines 117 individual digital evaluation reports, submitted through Greece's new online framework, during the 2024–2025 school year. Rather than analyzing pedagogical performance alone, we investigate how the digital environment itself shapes documentation, reflection, and evaluation processes.

The paper contributes to international discussions on mobile-supported teacher evaluation, digital portfolios, learning analytics and the human-technological interaction that influences professional development (Clow, 2013). It argues that Greece's platforms have strong foundational potential but currently operate far below their technological capacity. Strengthening mobile responsiveness, enhancing user experience (UX) design and integrating analytics could transform teacher evaluation into a meaningful mobile learning experience.

2 Background and Related Work

Teacher evaluation has traditionally relied on classroom observations, narrative reports and paper-based records (Bollington et al., 1990). Internationally, digital systems are increasingly used to support evidence collection, reflective writing, and sharing of instructional artifacts. Studies highlight the potential of: a) digital portfolios to enhance reflection (Khalil & Belal, 2023) b) mobile apps to increase immediacy in feedback (Lu & Churchill, 2014) and c) learning analytics to provide personalized insights for professional development (Ifenthaler & Yaman, 2020).

Mobile learning emphasizes accessibility, ubiquitous interaction, and real-time engagement (Traxler, 2018). For teachers, mobile interfaces can support "on-the-go" reflection, immediate documentation of pedagogical evidence and just-in-time professional learning resources (Karakose et al., 2022). Studies show that mobile-accessible evaluation tools enhance teacher engagement and data completeness (Park & Kim, 2020) provided that UX design is intuitive and responsive.

Greek Ministry of Education recently implemented and currently operates three key platforms:

(1) myschool.sch.gr – administrative and institutional data
(2) axiologisi-minedu.gov.gr – external/individual teacher evaluation
(3) sch-eval.iep.edu.gr – collective planning and internal self-evaluation

Although technologically robust at the backend, these systems exhibit limitations in mobile responsiveness, analytics dashboards, and user-centered design–issues echoed in international literature on digital assessment platforms (Kearney et al., 2020).

3 Materials and Methods

3.1 Research Design

This study employed a qualitative thematic analysis of 117 individual teacher evaluation reports submitted digitally through Greece's online teacher assessment platforms in Thessaly Region during the 2024–2025 academic year. This approach was chosen as the most appropriate for three main reasons:

(1) Platform affordance exploration: Digital evaluation reports are multi-modal artifacts containing both structured ratings (aligned to predefined evaluation rubrics) but also unstructured narrative text. Qualitative analysis uniquely captures how these individual traits shape evaluator language and documentation practices–patterns invisible to quantitative content analysis alone
(2) Contextual richness: Greek digital education ecosystem represents a unique natural experiment in technology-mediated assessment. Thematic analysis preserves contextual nuances of evaluator reasoning, personal experiences and pedagogical descriptors that

quantitative coding would oversimplify
(3) Methodological rigor: while quantitative metrics complement the analysis with statistical features, the core interpretive contribution requires qualitative depth to reveal digital friction as a mediating factor in teacher assessment quality. Furthermore the criteria of credibility, transferability and reliability remain strongly valid

The analysis explores not only the pedagogical judgments contained within the reports, but also how the digital environment itself shapes evaluator behavior, teacher reflection and the structuring of evidence.

3.2 Data Source

The dataset consists of 117 evaluation reports collected from multiple secondary schools (38 urban school units) within Thessaly Regional Directorate of Secondary Education (longitudinal multi-school sample). Each report was:

(1) completed electronically by advisors–evaluators and school directors,
(2) submitted via the national digital evaluation system,
(3) accompanied by teachers' digital self-reflection statements and portfolio elements.

Participation was mandatory for all public secondary schools for 2024-2025 school year, under the national evaluation framework, ensuring no self-selection bias at the school level. However, schools were selected based on data availability (complete digital submissions) and geographical diversity (within area of jurisdiction), in order to maximize variation in platform usage patterns

3.3 Coding and Thematic Analysis

We followed a structured approach:

(1) Initial document review to familiarize with the digital format and structure of reports.
(2) Open coding to identify recurring patterns.
(3) Axial coding to cluster themes (e.g., reflective competence, digital documentation quality, pedagogical climate descriptors).
(4) Selective coding to generate overarching themes linking digital platform use with evaluation content.

Table 1 shows that external evaluation is rather a process of quality assurance, while internal evaluation is more of an improvement process. Of course, these concepts are not precisely defined and contain accepted margins of ambiguity. The properties mentioned in Table 1 are evident throughout the scope of this work.

Table 1 Distinct elements of quality of educational work

Quality Assessment	Quality Enhancement
top – down	bottom – up
quantitative assessment – certification	qualitative assessment
Benchmarking	non-measurable characteristics of teaching and learning
Metacognitive	transformative
external assessment	internal assessment
adaptation to standards	cultivation of a quality culture
Inflexible	negotiated
Reactive	proactive
adherence to rules	adaptation to needs
determined by management	formed in the academic - research environment
Systematic	systemic

Coding was performed manually by both authors across two rounds. In the first round, both coders independently analyzed a randomly selected subset of 25 reports (21.4%) in order to establish an initial coding scheme. Cohen's Kappa was calculated at $\kappa = 0.83$ (95% CI: 0.76–0.88, $p < .001$), indicating substantial agreement (Landis & Koch, 1977). Disagreements (N = 7 instances, 2.8%) were resolved through consensus meetings where coders discussed conflicting interpretations until agreement was reached. In the second round, the refined codebook was applied to the full dataset, with periodic intercoder reliability checks every 30 reports. Selected features related to mobile access, UX experience, and platform limitations were added as analytical categories. No personal data were collected, and all reports were anonymized before analysis.

4 Results

4.1 Overview of Ratings and the "Ceiling Effect"

A striking finding was that 98% of teachers were rated "Excellent" and **2%** "Very Good". This suggests a "ceiling effect" in the digital evaluation tool merely because:

(1) the platform's design allows evaluators to quickly select high ratings from dropdown menus,
(2) the descriptive text fields often follow formulaic language,
(3) the digital interface does not prompt evaluators to differentiate performance levels,
(4) evaluated teachers are not compared in efficiency among each other; it is mainly a self-reflective discussion between them and the evaluators that leads to good classroom practices, rather than a competition

This confirms international concerns that digital evaluation systems can inadvertently encourage inflationary scoring when UX design does not promote nuanced reflection.

4.2 Key Pedagogical Themes in Field A2 (Pedagogical Climate)

4.2.1 Climate, Relationships, and the Template Effect

The thematic analysis of the narrative sections revealed a consistent emphasis on a positive pedagogical climate. Teachers were frequently described as establishing safe, supportive environments characterized by mutual trust and respect among them and students (Broadfoot, 1996). However, the textual analysis suggests that these positive evaluations are often mediated by the platform's design constraints. The recurrence of identical descriptors and template-like phrases across multiple reports indicates that evaluators heavily rely on pre-formulated patterns. This suggests that the current digital affordances may discourage nuanced, individualized documentation of complex classroom relationships in favor of convenient, static text.

4.2.2 Classroom Management and Structural Uniformity

A similar pattern emerged regarding classroom management and conflict prevention. While reports consistently described classroom flow, organization, and discipline as exemplary, the narrative repetition points to a structural issue within the platform (Darwin, 2017). The interface appears to encourage uniform commentary, leading evaluators to select or type generic praise rather than capturing the specific, contextual strategies teachers use to manage their classrooms.

4.2.3 Evidence of Engagement and Inclusion

Finally, while evaluators acknowledged teachers' efforts in fostering student engagement–citing collaborative learning, experiential activities and differentiation–the reporting was limited by the system's lack of multimedia capabilities. Without the option to upload video or audio evidence, evaluators could not present authentic proof of student participation. Similarly, although teachers demonstrated strong adaptability for students with diverse learning needs, the platform's lack of structured fields for inclusive education evidence resulted in descriptions that often lacked analytical depth.

4.3 Technology-Related Findings

4.3.1 Underutilization of Digital and Mobile Features

The analysis revealed that while the platforms support basic digital submission, they significantly underutilize their potential as dynamic tools. Specifically, the systems lack mobile-friendly interfaces, real-time feedback mechanisms, and advanced features such as evidence tagging or cross-referencing. Consequently, because the interface is not responsive to mobile devices, the vast majority of evaluators were forced to complete reports on desktop computers. This logistical constraint effectively eliminated opportunities for "on-the-go" mobile-supported observation or immediate pedagogical reflection.

4.3.2 Limited Use of Data Analytics

A critical gap was observed regarding data utilization; in fact, none of the analyzed reports referenced platform-generated analytics. This absence is structural rather than behavioral: the system currently provides no visual dashboards, offers no performance trends across observations, and does not allow evaluators to compare a teacher's current performance with previous years. The lack of these features significantly reduces the system's capacity to support

longitudinal professional development tracking, which is considered a key affordance of digital learning environments.

4.3.3 UX and Interface Constraints

UX flaws further hindered the evaluation process. Reports frequently cited technical frictions such as slow loading times, complex navigation through multi-page forms, and the critical lack of an autosave function during report writing. Additionally, the inability to upload video or audio evidence limits the richness of the documentation. Together, these constraints prevent the system from functioning as a modern, multimedia-rich tool for reflection.

4.3.4 Digital Friction

Finally, the study identified substantial "digital friction" affecting user behavior. Teachers reported difficulties accessing their reports via mobile devices, while evaluators struggled to retrieve self-assessment portfolios that were fragmented across different platforms. This friction often led to ad hoc, non-systematic use of the digital features. Instead of engaging directly with the platform, many users preferred to draft reflections offline and merely copy-paste text into the system, a practice that reduces the potential for genuine, interactive feedback. Table 2 shows the summary of the Thematic Analysis.

Table 2 A summary of the Thematic Analysis

Theme	Key Findings	Identified Technological Barrier
Pedagogical Climate	Teachers were consistently described as fostering positive, safe, and supportive classroom environments characterized by trust and respect.	Repetitive, template-driven text fields encourage generic descriptions rather than nuanced, contextualized accounts.
Classroom Management	Classroom organization, discipline, and flow were almost universally rated as exemplary across reports.	Interface design promotes uniform commentary, limiting differentiation of specific management strategies.
Student Engagement	Evaluators frequently referenced collaborative learning, experiential activities, and differentiation practices.	Absence of multimedia upload options prevents documentation of authentic engagement evidence (e.g., video, audio, artifacts).
Inclusion and Adaptation	Teachers demonstrated responsiveness to diverse learner needs and inclusive pedagogical approaches.	Lack of structured fields for inclusive education results in analytically shallow descriptions.
Rating Distribution (Ceiling Effect)	98% of teachers received an “Excellent” rating, with minimal variation across reports.	Dropdown-based rating system and absence of rubric scaffolding reduce discriminatory capacity.
Reflective Depth	Teacher self-reflections were generally positive but often brief and formulaic.	Poor UX (non-mobile access, lack of autosave) encourages offline drafting and copy-paste practices.
Use of Digital Features	Platforms were primarily used for text submission rather than interactive evaluation.	Limited mobile responsiveness, no real-time feedback, and fragmented platform integration.
Data Analytics Use	No reports referenced longitudinal trends or performance analytics.	Absence of dashboards, visualization tools, and cross-year comparison functions.

5 Discussion

This study examined not only the pedagogical outcomes reflected in Greece’s teacher evaluations but, critically, the digital ecosystem through which these evaluations were created, documented, and submitted. The results suggest that while teachers demonstrate strong pedagogical performance–particularly in classroom climate, management, and inclusive practice–the technology-enabled evaluation environment is not yet fulfilling its potential (Kellaghan & Stufflebeam, 2003).

5.1 Digital Platforms as Administrative Tools, Not Learning Tools

The current evaluation platforms operate primarily as digital document repositories, where evaluators upload text-based reports. This aligns with findings from international studies indicating that when digital assessment systems lack interactivity or analytics, they tend to replicate traditional paper-based practices (Kearney et al., 2020).

Despite being labeled “technology-enhanced,” Greece’s system lacks:

(1) mobile optimization**,**
(2) analytics dashboards**,**
(3) automated feedback loops**,**

(4) integration among platforms,
(5) multimedia or evidence-based documentation streams,
(6) AI prompts for reflection,
(7) real-time communication channels.

Consequently, evaluators tend to reproduce formulaic narratives and default to high ratings, contributing to a ceiling effect.

5.2 The Ceiling Effect and Digital Affordances

The near-universal "Excellent" ratings raise concerns about the discriminatory capacity of the evaluation tool. International literature shows similar patterns when assessment systems rely heavily on dropdown menus and text-entry boxes without structured frameworks encouraging nuance (Ifenthaler, 2021).

Several digital design factors contribute:

(1) Uniform text templates encourage repetitive language.
(2) No prompt for evidence uploads discourages differentiation between strong and average performances.
(3) Lack of structured rubrics in the interface flattens evaluator interpretation.
(4) Time pressure compounded by a non-mobile-responsive UI leads to brief, generic comments.

Thus, technological constraints are directly shaping evaluative behavior.

5.3 The Missed Opportunity of Mobile Learning

Teacher evaluation could be a powerful arena for mobile-supported professional learning (Akour et al., 2021) yet the current system misses this opportunity.

Mobile-enabled evaluation could allow:

(1) teachers to upload photos, video clips, or notes during or after lessons,
(2) evaluators to provide instant, micro-feedback,
(3) dashboards to visualize progress over time,
(4) advisors to share personalized resources linked to evaluation criteria,
(5) AI tools to recommend training modules based on identified needs.

These features are common in modern professional learning platforms (Lu & Churchill, 2014; Park & Kim, 2020), but absent in Greece's framework.

5.4 UX Limitations Undermine Reflective Practice

Poor UX–slow loading times, non-intuitive navigation, lack of autosave–discourages detailed reflective work. Teachers often draft reflections offline and copy-paste them in bulk. Evaluators similarly rely on pre-written templates.This aligns with literature showing that digital friction reduces engagement and depth of reflection (Khalil & Belal, 2023; Timmis et al., 2016).

5.5 Toward a Data-Driven, Mobile-Enabled Future

Based on our analysis, several practical enhancements could align Greece's evaluation framework more closely with international standards for mobile-supported professional learning. First and foremost, the system requires a shift from static data entry to dynamic learning analytics. This would involve implementing dashboards that visualize teacher progress over time, perhaps using heat maps to highlight strengths and areas for growth, rather than relying on simple pass/fail metrics.

To address the connectivity issues noted in the reports, the development of a dedicated mobile interface is essential. A mobile-responsive design would allow teachers and evaluators to interact with the system in real time–uploading evidence, receiving notifications, and exchanging feedback immediately after a lesson–rather than waiting to access a desktop computer. This immediacy could be further enriched by supporting multimedia portfolios, enabling educators to document their practice with authentic audio, video, and classroom artifacts instead of relying solely on text descriptions (Figure 1).

Finally, the ecosystem needs further integration. Currently, data are fragmented across distinct official platforms (like myschool and axiologisi). Creating interoperability between those systems would allow for a unified user experience where administrative and evaluative

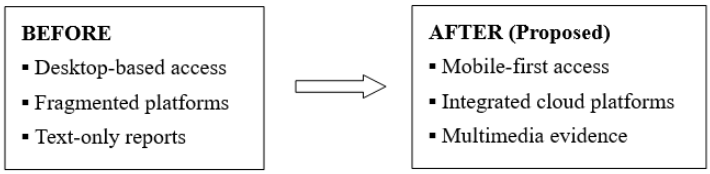

Figure 1 Our Proposal

data inform one another (Zacharis, 2016). Future iterations could also explore AI-assisted features, such as natural language processing prompts that encourage teachers to expand on brief reflective entries, helping to move the process from bureaucratic compliance to deep pedagogical critique.

6 Conclusion

This study analyzed 117 digital teacher evaluation reports to understand how Greece's new digital framework supports–or fails to support–effective teacher assessment. The findings demonstrate strong pedagogical performance but highlight major technological limitations in UX design, mobile access, analytics, and interactivity. The Greek digital evaluation ecosystem is currently functional, but not yet transformational. It performs administrative duties but does not facilitate continuous professional growth, mobile learning, or data-driven insights.

For Greece to realize a modern, technology-enhanced teacher evaluation system, the platforms must evolve beyond document submission toward integrated mobile learning ecosystems. Implementing mobile dashboards, analytics, multimedia portfolios, and AI-supported tools would significantly enrich teacher reflection, evaluator feedback, and professional development (Lavidas et al., 2022).

In short, Greece stands at a pivotal moment: with targeted technological improvements, its evaluation system could become a model of digital and mobile-enhanced teacher assessment that would sustainably elevate overall functionality and efficiency.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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