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RESEARCH ARTICLE

REVISED Countering the code: Emancipatory teaching and critical digital literacy in platformized schools

[version 2; peer review: 3 approved with reservations]

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Abstract

Background

As learning experiences are increasingly mediated through digital platforms, educational settings are increasingly vulnerable to being drawn into the logic of surveillance, personalization, and exploitation of data. These dynamics impose dominant ideologies on platform technologies, risking the restriction of pedagogical freedom and democratic engagement. Therefore, the need for emancipatory pedagogical practices and critical digital literacies is becoming increasingly urgent.

Methods

Grounded in sociocultural and ecological theoretical frameworks, this study draws on qualitative evidence from interviews with teachers. The analysis explores how educators navigate tensions between pedagogical goals and platform constraints, particularly in relation to resisting algorithmic determinism and reclaiming learner agency.

Results

Findings highlight a range of teacher-initiated interventions that promote transparency, ethical engagement with data, and collective critical examination of digital platforms. Special emphasis is given to how teachers engage students in investigating the socio-political implications of platform use e.g. algorithmic bias, datafication, and commercial exploitation.

Conclusion

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This paper offers theoretical and practical insight into how educators can reclaim digital space as a domain of democratic engagement and critical inquiry. In doing so, this study contributes to broader calls for reimagining the role of education in a platform society from passive adoption to actively transforming technological platform use through critical pedagogical strategies and institutional support.

Plain Language Summary

This study examines how secondary school teachers in Kosovo use digital learning platforms and how these tools impact teaching. While platforms make it easier to share materials and communicate with students, they also collect personal data and can shape the way learning happens in ways that are not always transparent.

Interviews with teachers revealed that most of them use the platforms out of necessity, not because they fully understand how they work. Most of them are concerned about students' privacy, as they do not receive training or guidance from their institutions. Despite this, teachers still take small steps to protect students, such as limiting the data they upload and helping students use the platforms more independently.

The study concludes that teachers want to use technology ethically, but they need stronger institutional support. Schools and policymakers need to help teachers and students understand issues of data privacy and algorithmic bias so that digital tools support safe learning environments.

Keywords

emancipatory pedagogy, platformization, critical digital literacy, bias, datafication, student agency, surveillance, teacher autonomy

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REVISED **Amendments from Version 1**

In the revised version, we have further enriched the manuscript in terms of its analytic and theoretical depth, based on the peer reviewers' suggestions. Specifically, we have further developed the concept of the "awareness-action gap" by conceptualizing it as a structural and ecological phenomenon.

We have also further clarified the role of emancipatory teaching within the framework by differentiating it from the practical application, critical awareness, and emancipatory practice. Finally, in the discussion section, we have further elaborated on the limited presence of emancipatory teaching and the structural conditions necessary to support such a practice.

From a methodological perspective, we have further enriched the manuscript by elaborating on the process of researcher reflexivity, saturation, and coding. Additionally, in the results section, we have further developed the interpretative analysis by considering the tensions and contradictions in the teacher's practice.

Finally, we have further elaborated on the contribution to the research in the area of platformized education, critical digital literacy, and teacher agency.

Any further responses from the reviewers can be found at the end of the article

Introduction

The integration of digital platforms and various learning management systems has transformed secondary education in Kosovo, as in much of the world. This change, accelerated by the COVID-19 pandemic, has promised increased efficiency and connectivity. This is part of a larger movement in education systems facilitated by the emergence of artificial intelligence and technology-driven approaches, which are changing the way education is practiced, governed, and managed (Pireci Sejdiu & Sejdiu, 2025). However, the adoption of these technologies often occurs without critical examination of their underlying implications. In the Kosovar schools where this study is set, teachers are navigating this new digital landscape with varying levels of support and preparation, raising crucial questions about the practical impact of platformization on their daily pedagogical practice. Critical studies have extensively documented the risks associated with the "platformization" of education, where digital tools are not neutral but embody specific values, leading to the datafication of learning, increased surveillance, and the potential strengthening of commercial interests over pedagogical ones (Biesta, 2021; Freire, 1970; Giroux, 2020; Van Dijck *et al.*, 2018; Williamson, 2022). Very little is known about the everyday experiences of educators who are tasked with using these platforms and the specific strategies they develop. For the purposes of this study, we define platformization as the process by which digital platforms, socio-technical systems that facilitate and shape interactions, become central infrastructures in educational settings, influencing pedagogy, assessment, and student-teacher relationships (Kerssens & Kerssens N, 2022). Accordingly, we see critical digital literacy not only as a technical skill, but as the ability of teachers and students to critically investigate these platforms, understanding their political and economic dimensions, including data privacy, algorithmic bias, and commercial motivations (Pangrazio & Sefton-Green, 2022). While there is an expanding body of research on platformization and datafication in the context of education, surprisingly little is known about what teachers actually do about platformization and datafication in their daily work, especially in less represented countries like Kosovo. Much of the research literature on platformization and datafication in the context of education has focused on structural analysis or normative approaches to critical digital literacy, while less attention has been paid to the actual gap between awareness and action in teachers' daily work. This gap resonates with emerging research in sustainability education, in which similar gaps in knowledge and action have been found, emphasizing the challenges in translating knowledge into action without affective and structural support (Sejdiu & Ramadani, 2026). This study aims to address this gap by focusing on teachers' understanding, negotiation, and response to platformization-imposed limitations in their daily work. In so doing, the study introduces the concept of an 'awareness-action gap' as a framework for understanding the gap between teachers' awareness of digital risks and their capacity to act critically or emancipatorily in structurally limited environments.

This qualitative study aims to bridge the gap between high-level critique and classroom-level practice by investigating the following research questions:

1. Q1: What are secondary school teachers' experiences and perceptions of using digital platforms for teaching?

2. Q2: What strategies do teachers use to foster student autonomy and critical awareness regarding digital platforms?

3. Q3: How do teachers understand and manage issues of data privacy and algorithmic governance?

4. Q4: What institutional supports do teachers identify as necessary for the ethical implementation of digital platforms?

The paper is structured as follows. In the first section, we outline our theoretical framework, drawing on sociocultural and ecological perspectives. We then detail our qualitative methodology, based on semi-structured interviews with 14 secondary school teachers in Kosovo. The findings section presents our analysis of teachers' experiences, organised around their tactical responses to platform constraints and their demands for institutional support. Finally, we discuss the implications of our findings for developing a more robust and institutionally supported approach to critical digital literacy and emancipatory teaching in the era of platformisation. The study thus makes a contribution to international scholarship by conceptualizing the agency of the teacher in the context of the platformization of education as not fully transformative, but situated, tactical, and ecological.

Theoretical and empirical background

To analyse how teachers navigate platformised education, this study uses an integrated framework that combines sociocultural, ecological, and critical perspectives on digital literacy, allowing us to situate individual teachers' practices within broader institutional and market structures.

A sociocultural and ecological view of platform mediation

From a sociocultural perspective (Vygotsky, 1978; Wertsch, 1991), digital platforms are not neutral tools but *mediating artifacts* that shape classroom interactions and pedagogical relationships. This aligns with earlier work emphasizing that technologies actively shape human learning processes rather than merely supporting them (Sejdiu, 2018). Platforms like Google Classroom or ClassDojo structure how knowledge is shared, how participation is measured, and how teacher and student roles are defined (Selwyn, 2019). In our analysis, this perspective focused our attention on how teachers described platforms as actively shaping their teaching methods and their relationships with students, for instance, by making student performance constantly visible and quantifiable.

Bronfenbrenner's (1979) ecological systems theory provides a crucial multi-level framework (Bronfenbrenner, 1979; Navarro & Tudge, 2022). It posits that teacher practice (the *microsystem*) is influenced by school-level policies (the *mesosystem*), district or commercial platform mandates (the *exosystem*), and broader cultural ideologies about technology in education (the *macrosystem*). We applied this ecological model to interpret our data, analyzing how teachers' actions, such as P13's use of coded names to protect privacy, were enabled or constrained by a lack of institutional policy (exosystem) and the pervasive influence of commercial platform markets (macrosystem). Scholars have aptly characterised this interconnected environment as a "platform society," where public values in sectors like education must constantly negotiate with the data-driven, commercial logic of digital infrastructures (Decuypere *et al.*, 2021; Gilliard, 2017; Kerssens & Van Dijck, 2022; Van Dijck *et al.*, 2018; Van Dijck, 2024; Williamson, 2017).

Critical digital literacy as a response to datafication

The processes of platformization are closely linked to the datafication of education (Jarke & Breiter, 2019). Critical scholars argue this datafication raises significant concerns about student surveillance, algorithmic bias, and the commodification of education (Benjamin, 2019; Couldry & Mejias, 2019; Floridi & Taddeo, 2016; Macgilchrist, 2021a). Our study investigated how these macro-level concerns manifest in teachers' awareness and practices, particularly in their understanding of data privacy (RQ3).

In response, the concept of critical digital literacy (CDL) has emerged as an essential educational goal (Selwyn, 2019; Selwyn & Stirling, 2011; Selwyn & Jandrić, 2020). Moving beyond functional skills, CDL equips learners to interrogate the political and economic dimensions of digital tools, asking who benefits from a platform's design and what values it reinforces (Pangrazio & Sefton-Green, 2022; Selwyn, 2019). For this study, we operationalised CDL by examining if and how teachers fostered this critical stance in their classrooms. We coded for instances where they reported discussing data privacy with students, analysing platform terms of service, or encouraging students to question algorithmic recommendations, as hinted at by P14's practice of talking about privacy "when situations arise."

In the context of the research, emancipatory teaching has been conceptualized in the Freirean tradition as a form of teaching practice that creates the conditions for the learner to not just interrogate but also transform the socio-political conditions in which the learning process takes place (Freire, 1970; Giroux, 2020). Three levels of pedagogical practice in the context of digital platforms have been identified in the research:

1) The pragmatic use of the digital platform, in which the functionality of the platform is the main concern;

2) The critical awareness of the digital platform, in which the reflection on the use of the data and the power of the algorithms and the digital platform itself plays a role;

3) Emancipatory practice, in which the aim is to transform the relation in the classroom and to create the conditions for the collective critical agency of the learners.

This distinction in the research allows us to assess the emancipatory potential of the teacher's awareness of the risks associated with the digital platform.

The gap: From theoretical critique to classroom practice

While the theoretical critiques of platformisation are well-established, and the normative case for critical digital literacy is strongly made, there remains a relative lack of empirical research into how these dynamics play out in the daily lives of teachers. We know what scholars say teachers *should* do, but we have less insight into what they *actually* do within the constraints of their specific contexts (Pangrazio *et al.*, 2022).

This study addresses this gap by focusing on the lived experiences of high school teachers in Kosovo. It investigates the concrete, often tactical, ways they mediate between platform constraints and their pedagogical values, providing a grounded perspective on the possibilities and limits of resistance and critical practice in a platformising educational landscape.

Methodology

Research design and rationale

This study employed a qualitative research design to gain an in-depth understanding of teachers' experiences and perceptions regarding the use of digital platforms. A qualitative approach was deemed most appropriate as it allows for the exploration of complex, nuanced phenomena in a real-world context, prioritising depth, detail, and the subjective meanings that participants ascribe to their experiences (Creswell & Poth, 2016). This aligns with our goal of uncovering the lived realities of teachers navigating platformized classrooms.

Participants and sampling

Participants were 14 high school teachers (12 female, 2 male) from schools in Prishtina, Ferizaj, and Prizren, with teaching experience ranging from under 3 years to over 20 years. The majority held a Master's degree. A purposive sampling strategy was used to select participants who were actively using digital platforms in their teaching, ensuring they could provide rich, relevant insights related to the research questions (Palinkas *et al.*, 2015).

Data collection

Data was collected through semi-structured interviews, which allowed for consistency across participants while providing flexibility to probe interesting leads that emerged during conversations (Kallio *et al.*, 2016). Each interview, lasting 45–60 minutes, was conducted in person at the participants' schools, audio-recorded, and later transcribed verbatim.

The interview guide was developed based on the study's theoretical framework and research questions. Core questions included:

1. What digital platforms do you use most frequently in your teaching, and what has your experience been like?
2. How do you support students in using these platforms independently and responsibly?
3. What is your understanding of what happens to student data on these platforms?
4. Have you ever had concerns about student privacy or how a platform works? Can you describe that?
5. What kind of training or institutional support would help you use these technologies more effectively and ethically?

Data analysis

The data were analyzed using reflexive thematic analysis following the six-phase process outlined by Braun and Clarke (2006, 2019). This method was selected for its utility in identifying, analyzing, and reporting patterns (themes) within qualitative data, and its compatibility with both experiential and critical research questions. Considering the nature of reflexive thematic analysis as an interpretative approach, the researchers position themselves as scholars in the domain of education and digital pedagogy. This positioned the researchers to take a critical approach to the phenomenon of platformization, datafication, and power. The researchers had regular sessions to discuss the potential bias and ensure the interpretations were grounded in the participants' accounts. Data saturation was considered to be achieved when new

themes were not emerging from the final interviews. The consistency of the themes from the participants from different schools and levels of experience was seen as an indicator of the sufficiency of the sample size in terms of addressing the research questions.

The analysis process was as follows:

1. **Familiarization:** Researchers repeatedly read the transcripts to immerse themselves in the data.

2. **Initial Coding:** We systematically generated initial codes across the entire dataset. This was a data-driven (inductive) process, focusing on capturing key ideas from the teachers' statements.

3. **Generating Themes:** The coded data were then collated and organized into potential themes. At this stage, we began a more theoretical, deductive interpretation, examining how the initial codes related to our theoretical framework (e.g., instances of "teacher agency," "ecological constraints," "critical literacy practices").

4. **Reviewing Themes:** Potential themes were checked against the coded data and the entire dataset to ensure they formed a coherent pattern and accurately reflected the participants' accounts.

5. **Defining and Naming Themes:** We further refined the essence of each theme and generated clear, descriptive names for them (e.g., "Pragmatic Adoption," "Tactical Resistance," "The Institutional Support Gap").

6. **Producing the Report:** The final analysis was woven into a narrative, supported by vivid, compelling extracts from the interviews.

During the coding process, initial codes were generated independently by members of the research team and subsequently compared and refined through iterative discussions. Differences in coding interpretations were resolved through consensus, ensuring consistency and analytical rigor. This collaborative process contributed to the refinement of the coding framework and the development of coherent and well-defined themes.

The analysis was thus a hybrid approach: themes were primarily emergent from the data, but their final organization and interpretation were informed by the concepts of our theoretical framework. The coding was conducted using MAXQDA software to facilitate data management. To enhance credibility, the research team held regular debriefing sessions to discuss and reconcile coding interpretations, ensuring a consistent analytical approach.

Ethical considerations

Prior to participation, all teachers received a detailed information sheet and provided written informed consent. They were advised of their right to withdraw at any time. Confidentiality was maintained by using pseudonyms (P1, P2, etc.) in the data analysis and reporting. Audio recordings were deleted following transcription.

Results

Our analysis of teacher interviews revealed a complex navigation of the platformized classroom, characterized by pragmatic adoption, tactical resistance, and a pronounced gap between awareness of digital risks and the capacity to address them. The findings are organized into three central themes.

Theme 1: Pragmatic adoption and constrained choice

In response to RQ1 (teachers' experiences and perceptions), we found that platform use was driven primarily by pragmatism and institutional adoption rather than critical selection. Teachers relied on a narrow ecosystem of tools, predominantly Google Classroom and the school's "E-system," which were often mandated or became the default, especially after their widespread use during the pandemic. As P6 noted, *"None, only during the pandemic we used Google Classroom."*

The perceived value of these platforms was largely functional, focused on efficiency in communication, assignment distribution, and assessment. P4 described their approach as *"contemporary and functional,"* while P5 stated, *"I use technology only as a tool to facilitate communication and conduct online lessons."* This suggests that the "innovation" of platforms is, in practice, often reduced to utility and administrative convenience, with teachers exercising little critical choice over which digital infrastructures shape their pedagogy.

Though the intention behind the adoption of such platforms by the teacher has been described as functional and efficiency-based, such a functional approach also conceals the structural limitations and constraints. For instance, the

restricted number and normalized presence of such platforms indicate a situation where the decisions and choices of the teacher might be more externally dictated than based on a preference for a particular teaching approach. Such a situation, therefore, also conceals the fact that the adoption and implementation of such a neutral and functional approach might also be based on the logic of the platformization process, where the interests of efficiency and standardization might take priority over other considerations.

Theme 2: Tactical resistance and mitigation strategies

Addressing RQ2 (strategies for autonomy and critical awareness) and RQ3 (navigating data privacy), we identified several nuanced strategies teachers employed to assert agency and mitigate perceived risks. These were not large-scale rebellions but everyday "tactics" to reclaim pedagogical space.

A key strategy was the conscious limitation of data sharing. P13 reported *"Using coded names or initials to avoid displaying full data,"* and P2 confirmed using *"only minimal personal data... for administrative purposes."* Others exercised platform choice within constraints, with P12 stating, *"If a platform doesn't serve me well, I switch, I don't stick with it."* To foster student autonomy (RQ2), teachers used a scaffolded approach. P2 provided *"initial guidance then independent action,"* and P8 emphasized *"concrete instructions for each digital task and space for individual effort."* These practices demonstrate that teacher agency exists, but manifests as localized, tactical resistance rather than systemic opposition.

Such practices of tactical resistance clearly illustrate that teachers are not passive users of digital platforms but active mediators of their constraints. Nevertheless, these resistive practices are still local, fragmented, and individual in nature. Most importantly, while teachers are trying to resist the risks associated with digital platforms, such as data exposure, they still remain dependent on these platforms for their teaching activities. This shows us a fundamental paradox in terms of how these teachers resist and reproduce these digital platforms. This can be seen as a manifestation of asymmetrical power relations in terms of how these digital platforms are influencing the possibilities for pedagogical practice.

Theme 3: The awareness-action gap and the call for support

Finally, addressing RQ3 and RQ4 (institutional supports), a clear disconnect emerged between teachers' awareness of digital ethics and their ability to act upon it, largely due to a lack of institutional support. While many participants expressed a moderate understanding of data tracking, with P1 noting, *"we know about cookies and trackers, but we don't know exactly what happens afterward"*, this awareness was coupled with feelings of uncertainty and a lack of authority. P11 confessed, *"I'm not sure, we haven't had any training on this,"* and P12 called it *"a part missing in my practice; I have many uncertainties."*

This gap fuelled a powerful, consistent demand for structured support. Participants requested *"practical training on data protection"* (P3) and guidance on *"integrating ethics topics into the curriculum"* (P14). They advocated for stronger institutional policies, with P3 demanding *"regulations banning platforms that lack data transparency."* This collective voice highlights that without formal training and clear policies, teachers feel individually responsible for managing systemic risks, limiting their capacity to implement consistent critical digital literacy education.

This identified gap in awareness and action suggests an important misalignment between teacher cognition and institutional capacity. While teachers have emerging awareness of datafication, privacy, and algorithmic processes, this does not translate into pedagogical practice. This is less about teachers' lack of desire than about structural limitations in training, policy, and institutional support. Ecologically, we can think about the gap between teachers' practice at the micro-level and the conditions of the exosystem and macrosystem, in which governance conditions do not support teachers' critical engagement. Thus, we can think about critical digital literacy as an aspirational practice rather than an actual practice, reinforcing the need to reconceptualize digital literacy as structurally rather than individually focused.

Discussion

Synthesis of findings

This study contributes to existing knowledge on platformized education by providing an empirically informed account of how teachers manage the relationship between awareness, agency, and structural constraint. Although prior studies highlighted the need for critical digital literacy and teacher agency, this study's findings show that such teacher capabilities are not solely an individualistic matter but are significantly influenced by structural factors. In this respect, this study contributes to contemporary understandings of teacher agency by revealing its tactical and situated nature, as opposed to its emancipatory potential. Teachers are neither passive agents of technological adoption, nor are they completely empowered agents of change, but rather operate in a constrained environment where teacher agency is limited by the lack of support, policies, and programs.

This study set out to investigate how teachers experience and navigate platformized education. Our findings paint a picture of educators as tactically aware but structurally unsupported (Jacovkis *et al.*, 2024; Knox, 2020; Markauskaite *et al.*, 2024). They are not passive consumers of edtech; they are active agents who make deliberate, if constrained, choices to protect student privacy and foster independence. However, their agency is significantly limited by a stark awareness-action gap, where their concerns about datafication and algorithmic governance are not met with adequate institutional resources or policy frameworks.

On this basis, the notion of the 'awareness-action gap' can be seen not only as an empirical phenomenon, but also as an ecological one. At the individual level, teachers have an awareness of issues related to data privacy, algorithmic bias, and platform governance. Nevertheless, at the institutional level, teachers lack the conditions necessary to translate their awareness into their pedagogical practice.

At the ecological level, the gap between awareness and practice can be seen as a misalignment between individual practice (micro-level – teachers), institutional conditions (exosystem – school policies and training), and structural factors (macrosystem – market logics of platforms). Consequently, the development of critical digital literacy is patchy, which calls for the reconceptualization of digital literacy as something other than an individual capacity.

Teacher agency as tactical resistance

Our finding that teachers engage in "tactical resistance", using coded names, minimizing data, and selectively abandoning platforms, resonates with literature that positions teachers as critical mediators of technology (Erstad & Sefton-Green, 2013). However, our study specifies the *form* this mediation takes. These are not grand acts of refusal but what Macgilchrist (2021b) might term "frictions," subtle subversions of platform logics to preserve pedagogical values. This aligns with a sociocultural view, demonstrating how teachers re-contextualize the mediating artifact of the platform to align with local ethical concerns, even when they cannot change the artifact itself.

The structural constraints on critical practice

The pronounced "awareness-action gap" we identified is a critical contribution. Teachers in our study were aware of the risks outlined by critical scholars (e.g., Couldry & Mejias, 2019; Van Dijck *et al.*, 2018) but lacked the capacity to systematically address them. This finding directly supports Pangrazio and Sefton-Green's (2022) argument that critical digital literacy cannot be left to individual teacher initiative. The calls for "practical training" (P3) and integrated curriculum (P14) highlight that without dedicated professional development, CDL remains an abstract concept rather than a classroom practice.

An ecological disconnect

Viewing these findings through an ecological lens (Bronfenbrenner, 1979) clarifies the root of the problem. Teachers at the *microsystem* level are actively trying to create ethical, critical digital learning environments. However, they are operating within a deficient *exosystem* (school and policy levels) that lacks transparent platform governance and mandated training. Furthermore, they are subject to a *macrosystem* (broader market and cultural ideologies) that prioritizes commercial platform adoption without concurrent investment in digital ethics. This ecological misalignment means teacher agency is expended on navigating systemic failures rather than being amplified by supportive structures.

Importantly, the findings also raise critical questions regarding the emancipatory potential of digital pedagogy. While teachers demonstrate elements of critical awareness and tactical resistance, there is limited evidence of fully emancipatory practice in a Freirean sense. This suggests that emancipatory teaching cannot emerge solely from individual teacher initiative, but requires supportive institutional conditions, dialogical pedagogical spaces, and explicit integration into curricula and teacher education. Without these conditions, emancipatory pedagogy risks remaining an aspirational concept rather than a sustained classroom reality.

Conclusion and recommendations

Conclusion

This study sought to understand how high school teachers in Kosovo experience and navigate the platformized classroom. Our findings, in response to our research questions, clearly show that teachers are not passive recipients of technology but active, tactical agents. They primarily rely on a narrow set of platforms for pragmatic reasons (RQ1) and have developed specific strategies to protect student privacy and foster autonomy, such as using coded names and scaffolding independent platform use (RQ2). However, their understanding of data ethics, while present, is often partial and uncertain (RQ3). Crucially, this awareness does not translate into confident practice due to a significant lack of institutional support, with teachers uniformly calling for structured training and clear policies (RQ4).

The primary contribution of this study is its empirical demonstration of the **gap between tactical awareness and strategic action**. We have documented the specific, everyday ways teachers resist platform logics, but we have also shown that this resistance is fragile, individual, and ultimately limited without systemic backing. Our ecological analysis confirms that teacher agency at the microsystem level is insufficient when the exosystem (school policy) and macrosystem (broader edtech market) are misaligned with the goals of critical, ethical digital education.

Limitations

This study has several limitations. The qualitative design and small sample size (14 teachers) from specific regions in Kosovo mean the findings are not statistically generalizable. The data are based on self-reported practices and perceptions, which may differ from observed behavior. Furthermore, the study reflects the particular context of Kosovar education, and while the themes may be transferable, the specific challenges and policy landscapes may vary in other countries.

Recommendations

Based on our findings, we propose the following concrete recommendations aimed at bridging the identified awareness-action gap and providing the structural support teachers need:

1. For School Administrators:

Develop a School Digital Ethics Policy: Create and implement a clear policy that outlines approved educational platforms, specifies data handling and privacy protocols (e.g., what student data can be uploaded), and establishes criteria for evaluating new digital tools based on transparency and ethical design.

Provide Practical, Not Theoretical, Training: Move beyond one-off workshops. Instead, establish ongoing professional learning communities where teachers can workshop real-world scenarios, such as how to conduct a "platform audit" with students or how to adapt a lesson plan to include a discussion of algorithmic bias.

2. For Teacher Training Institutions (Pre-service and In-service):

Integrate Critical Digital Literacy into Pedagogy Courses: Mandate that teacher training programs include modules on data privacy, algorithmic governance, and the political economy of edtech. This should not be a separate IT skills course but must be embedded into methods courses for all subjects.

Equip Teachers with Classroom-Ready Resources: Provide trainers and teachers with concrete lesson plans and activities that integrate critical digital literacy. For example, a history teacher could analyze the bias in search engine results, or an English teacher could deconstruct the persuasive design of a popular app.

3. For Policymakers (Ministry of Education):

Formalize Critical Digital Literacy in the National Curriculum: Mandate critical digital literacy as a cross-curricular competency, ensuring it is systematically developed across subjects and grade levels, rather than being left to individual teacher initiative.

Establish Vetting and Procurement Guidelines: Create national guidelines for the procurement of educational software, prioritizing platforms that demonstrate transparency in data use, robust privacy protections, and a commitment to interoperability to avoid vendor lock-in.

By implementing these multi-level recommendations, stakeholders can transform the current reality where teachers bear the sole burden of ethical navigation. The goal is to build an educational ecosystem that doesn't just provide digital tools but also equips teachers and students with the critical framework to use them wisely and justly.

Ethics and consent

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Ethical approval was granted by the Scientific Committee of the Faculty of Philology at the University "Ukshin Hoti" Prizren on 10 March 2025. As indicated in the official approval letter, the committee did not issue an ethics reference or permit number.

All participants provided written informed consent before participating in interviews and questionnaire activities.

Data availability

The primary data consist of written survey-style interview responses from teachers and contain sensitive personal information. In line with participant consent and the conditions set by the Scientific Committee of the Faculty of Philology, University "Ukshin Hoti" Prizren (approval date: 10.03.2025), these data cannot be made publicly available due to the risk of re-identification. However, restricted access may be granted for non-commercial academic research following a formal request to the corresponding author. All requests will undergo ethical assessment, and access, if approved, will require a data-sharing agreement ensuring confidentiality, non-redistribution, and compliance with the original ethical approval. All analytical procedures, coding frameworks, and methodological details are fully described in the article, allowing full transparency and replication of the analytical approach.

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Open Peer Review

Current Peer Review Status: ? ? ?

Version 2

Reviewer Report 29 April 2026

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Peter Schildhauer
Bielefeld University, Bielefeld, Germany

Thank you for providing the revised version! In my report, I will refer to key aspects of my previous review:

Topic and framing:
I stated that the study deals with an important topic, but that the expectations raised by some of the high-level concepts used are not always met. I have the impression that, though improved, this is still the case: For example, "algorithmic bias" or the "power of algorithms" are invoked at several points, but it does not become obvious yet how they relate to the study, e.g. how recommendation and other algorithms play a role in the platforms under scrutiny.

Theory and engagement with relevant literature:
I stated that the CDL discourse is hardly represented in the paper. Though slightly improved, this is still the case. I suggest that some of the sources I recommended in my review be included (I mentioned: Bacalja et al. (2021) and Nichols et al. (2021), as well as the contributions by Darvin (2017), Leander & Burriss (2020), Jeong et al. (2022), Gerlach et al. (2025), and the monograph by Jones & Hafner (2021)).

Similarly, my suggestion to use ‘big’ concepts only when they are properly and precisely defined in the given context has so far not been taken up. Buzz words such as “democratic engagement” and "autonomy" are still underdefined. The term “emancipatory teaching”, however, has been clarified.

Methodology:
Here, I cautioned that the paper does not contain an actual artefact analysis. This means that the concepts raised in the introduction and elsewhere (*surveillance*, *algorithmic governance,* etc.) are not applied to the specific platforms that play a role in the research context (Google Classroom, ClassDojo). This is still the case in the revised version and the insights promised by devoting some attention first to the platforms and then squaring the results with the teacher interviews are still lacking.

The study appears to provide some more insights into the participants and into the team-coding procedure. However, the paper does not yet reflect more explicitly on the fact that the data are not observational, and in what way issues such as social desirability (especially regarding normatively loaded topics such as data security and teacher professionalism) might have played a role.

This would also involve hedging the strong claim that the study can bridge the following gap: “We know what scholars say teachers should do, but we have less insight into what they actually do within the constraints of their specific contexts.” (Just as pointed out in my previous review, the study can, unfortunately, not address these issues as *actual* practices have not been observed, and teachers may strongly filter what they relate in the context of an interview.

In addition to my previous review, I would like to point out that, e.g., Gerlach et al. (2025) indeed DO provide some insights into what (two) teachers do in terms of CDL in their classrooms by means of ethnography. It would, therefore, make sense to reframe the claim a bit and reposition the study regarding the research landscape.
In my review, I also suggested to spend some more energy on presenting and reflecting on the design of the interview guide (e.g. use of leading questions). As far as I can see, there is still some unused potential here.

Analysis and conclusions:
It looks like the ecological systems analysis has been enhanced. However, some claims, e.g. regarding "pedagogical values", should still be supported more thoroughly by data. Similarly, the connection between algorithmic recommendations and P14's view of talking about privacy "when situations arise" could be made stronger: In what way does awareness of recommendation algorithms show in P14s interview? Generally, the claim that the teachers in the sample show awareness of algorithmic bias or recommendations should be substantiated more by data: How do the teachers express this awareness, where in the interviews does it show?

Overall assessment:
Unfortunately, I have to stand by my first assessment: The study is very promising but still needs some work to unfold its full potential.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: critical digital literacy, teacher education, professionalisation research, qualitative research

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 23 April 2026

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Ezequiel Aleman
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The engagement with the literature is relevant and draws on influential scholars situated within current critical discourses in digital education.

Given this is a qualitative study with a low number of participants, it would be important to have a reflexivity and positionally section. Thematic analysis has an interpretive nature where the perspectives, assumptions and potential biases may influence the analysis. Therefore, a more explicit account of these aspects of the authors' positionally could strengthen the credibility of the study.

The analysis is adequately supported by the results. The lack of guidance teachers describe is consistent with other studies in the field. My only concern is that given this is a more localized study with self-reported practices, it is difficult to make strong claims about pedagogical transformation, critical literacy development or emancipatory potential. The fact that there are no other data sources such as teacher artifacts or observations of practice, makes it challenging to make broader claims. While you have a limitations section, it would be important to inform other researchers of ways in which this study could be expanded by incorporating teacher's designs and artifacts that could overcome the limitations of the study and, eventually, address some aspects of the awareness-action gap.

I appreciate the amendments on the awareness-action gap framework. However, they appear to be presented just briefly in two paragraphs near the conclusion, and then you mix your definition and engagement of the framework with other aspects such as the emancipatory potential of digital pedagogy. This complicates the understanding of the framework. I would try to focus on the main argument which is the framework you developed.

Is the work clearly and accurately presented and does it engage with the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

Are all the source data and materials underlying the results available?
No

If applicable, is the statistical analysis and its interpretation appropriate?
Not applicable

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: critical AI literacy; ontological design; speculative pedagogies; participatory research; design-based research

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Version 1

Reviewer Report 04 March 2026

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Summary
This manuscript addresses a timely and significant issue: the platformization of education and the role of emancipatory teaching and critical digital literacy in responding to datafication and algorithmic governance. The study is theoretically grounded in sociocultural, ecological, and critical platform studies frameworks and offers valuable empirical insights from Kosovo—an underrepresented context in international edtech research. The topic is highly relevant to contemporary debates in digital education and aligns well with the scope of Scopus-indexed journals.
The manuscript demonstrates several strengths, including a clear research design, coherent structure, strong engagement with contemporary literature, and policy-relevant recommendations. The identification of an “awareness–action gap” between teachers’ recognition of digital risks and their capacity to respond is a promising contribution.
However, to meet the standards of a high-quality journal, the manuscript requires revision. The primary concerns relate to analytical depth and theoretical advancement. While the findings are clearly presented, they remain largely descriptive and need deeper interpretive engagement. The

"awareness–action gap" should be further conceptualized and developed as a stronger theoretical contribution. Additionally, the emancipatory dimension of the study is underdeveloped in the findings and discussion.
Methodologically, the study would benefit from a clearer discussion of data saturation, researcher reflexivity, and contextual policy background. Strengthening the analytical sophistication and clarifying the manuscript's original contribution to international scholarship will significantly enhance its publishability.
In general, the manuscript is promising and potentially publishable, but substantial refinement is necessary to meet the expectations of a high-quality journal.

Review in detail
Introduction
The introduction presents a timely and relevant discussion of platformization in education, particularly in relation to datafication, surveillance, and critical digital literacy. The problem is clearly articulated, and the research questions are logically derived from identified gaps in the literature. The engagement with key scholars in platform studies and critical digital literacy is strong, demonstrating familiarity with contemporary debates.
However, while the literature review is comprehensive, it tends to be additive rather than integrative. The manuscript would benefit from a clearer articulation of its specific theoretical contribution. The concept of the "awareness–action gap" is introduced implicitly but not sufficiently framed as a novel conceptual advancement. Additionally, the emancipatory dimension, which is central to the title, is not fully operationalized in the introduction. A stronger clarification of how emancipatory teaching is defined, enacted, and measured in the study would enhance coherence between the title, theoretical framework, and empirical investigation.
Overall, the introduction is well structured and grounded in relevant literature but requires sharper positioning to highlight the manuscript's originality and theoretical advancement.

Method
The qualitative research design is appropriate for addressing the research questions. The use of semi-structured interviews allows for in-depth exploration of teachers' perceptions and practices, and reflexive thematic analysis is a suitable analytical approach. The six-phase description of the analytic process enhances transparency, and the use of MAXQDA supports methodological rigor. Ethical considerations are clearly documented and adhere to established standards.
However, several areas require strengthening to meet high-ranking journal expectations. First, the manuscript does not sufficiently discuss researcher reflexivity or positionality. Given the interpretive nature of thematic analysis, clarification of the researchers' perspectives and assumptions is important. Second, the justification for the sample size and discussion of data saturation are limited. Although 14 participants can be appropriate in qualitative research, the authors should clarify how they determined adequacy of data. Third, more detail regarding the development and refinement of codes would improve transparency and replicability.
The method is technically sound but would benefit from deeper elaboration of analytical decisions and epistemological positioning.

Results
The results are clearly structured and aligned with the research questions. The identification of three main themes—pragmatic adoption, tactical resistance, and the awareness–action gap—provides a coherent analytical narrative. The inclusion of participant quotations supports credibility and illustrates key findings effectively.

Nevertheless, the findings remain somewhat descriptive. While themes are clearly presented, the analytical depth could be strengthened. The concept of “tactical resistance” is promising but under-theorized. There is limited exploration of contradictions, tensions, or power dynamics within participants’ accounts. For example, the ways in which teachers simultaneously reproduce and resist platform logic could be analyzed more critically. Additionally, variations across experience level, gender, or institutional context are not explored.
To meet higher scholarly standards, the results section should move beyond thematic categorization toward deeper interpretive engagement with structural constraints and ideological dimensions of platformization.

Discussion
The discussion effectively synthesizes the findings and reconnects them to the broader literature. The ecological framing is useful in highlighting the misalignment between classroom-level agency and institutional structures. The emphasis on structural constraints and the need for systemic support is persuasive and policy relevant.
However, the discussion largely confirms existing scholarship rather than advancing it. The manuscript would benefit from a clearer articulation of how its findings extend, refine, or challenge current theories of critical digital literacy and platform governance. The emancipatory dimension remains underdeveloped; the study shows tactical mitigation strategies but does not clearly demonstrate transformative or dialogical pedagogical practices in a Freirean sense. Strengthening this theoretical linkage would enhance the manuscript’s conceptual contribution. Furthermore, the “awareness–action gap” could be developed into a more robust analytical model rather than remaining a descriptive finding. A clearer explanation of how this concept contributes to international scholarship would strengthen the discussion significantly.

Conclusion
The conclusion accurately summarizes the findings and reiterates the importance of institutional support for ethical and critical digital practice. The recommendations are practical and multi-level, addressing schools, teacher education institutions, and policymakers. These recommendations are logically derived from the findings and are relevant to contemporary debates.
However, some of the broader claims regarding emancipatory transformation and systemic change would benefit from stronger empirical grounding. The manuscript would be strengthened by more explicitly stating its theoretical contribution and clarifying the implications for future research.
Overall, the conclusion is coherent and aligned with the study, but the manuscript as a whole requires deeper analytical sophistication and stronger theoretical positioning to meet the standards of a high-quality journal.

Is the work clearly and accurately presented and does it engage with the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

Are all the source data and materials underlying the results available?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Not applicable

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: TESOL, TEFL, Discourse analysis, qualitative research, teacher education

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

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Summary:
This research article investigates the perspectives of 14 Kosovar teachers on the use of digital educational platforms in their classrooms. This investigation is framed by a discourse of power and criticality, which highlights aspects such as surveillance, algorithmic governance and generally the exploitation of data. Against this backdrop, the study positions the concept of critical digital literacy as the ability to critically question these problematic facets of educational tools. Additionally, the study theorises usage practices within an ecological framework (sensu Bronfenbrenner 1979), which positions teachers and their classroom practices at a micro-level, influenced by school-level policies, ideologies present in the broader social context, institutional policies and others. The study employs semi-structured interviews, which are based on an interview guide comprising five questions. The data are analysed by drawing on reflexive thematic analysis, during which the data are analysed inductively, but also brought into a dialogue with pre-existing theoretical concepts. The main findings indicate that teachers adopt platforms out of pragmatism (e.g. because of choices made by their school), that teachers try to scaffold independent student work, are aware of some problematic aspects of the platforms (such as the use of cookies and trackers), employ minor strategies of subversive resistance (e.g. not using their learners' full names), and generally feel not empowered to work with these platforms critically (but left alone without proper training and institutional guidelines). The study develops several

implications for bridging what is framed as an “awareness-action gap” that are targeted at school administrators (e.g. providing consistent, practice-oriented training), teacher training institutions (e.g. the integration of critical digital literacy in courses), and policy makers (e.g. making corresponding curricular changes).

Critical Review:

Topic and framing:
The study addresses a highly relevant topic and uses a very intriguing framing. The title already takes up several concepts from the critical digital literacy discourse (*countering the code*, *emancipatory teaching*), and the introduction adds to this by including further concepts such as *surveillance*.
Unfortunately, the expectations raised by these high-level concepts are not always met by the study. In the following sections, I therefore try to show how the potential of the study can be exploited further.

Theory and engagement with relevant literature:
As its main frameworks, the study adopts critical digital literacy (CDL) as well as the perspective of ecological systems theory. While I am not an expert in ecological systems theory and therefore cannot make any assessment regarding this discourse, the CDL discourse appears to me as underrepresented in the study as the authors currently rely mainly on three sources, all of which are co-authored by Selwyn. Therefore, a diversification of voices and a deeper engagement with the concepts negotiated in this discourse would be highly desirable. In particular, facets of CDL (e.g. knowledges, skills, attitudes) should be discussed in more detail to allow for a more thorough analysis of the data (as one of the claims of the study is to show “if and how teachers fostered this critical stance in their classrooms”, p. 5). For example, the handbook articles Bacalja et al. (2021) and Nichols et al. (2021), as well as the contributions by Darvin (2017), Leander & Burriss (2020), Jeong et al. (2022), Gerlach et al. (2025), and the monograph by Jones & Hafner (2021) could provide valuable access routes to the discourse.
Additionally, the study should make sure to use ‘big’ concepts only when they are properly and precisely defined in the given context. Buzz words such as “democratic engagement” (p. 1) , “emancipatory teaching” (p. 1), “autonomy” (e.g. p. 4) and others should be filled with life to not become mere ‘slogans’ (Schmenk, 2008a, 2008b).

Methodology:
The authors present their methodology in a mainly accessible way. They meet ethical standards and have gone to great lengths to ensure that their dataset is available for other scholars, too. However, there is also a gap in the methodology, namely that it does not contain an actual artefact analysis. This means that the concepts raised in the introduction and elsewhere (*surveillance*, *algorithmic governance,* etc.) are not applied to the specific platforms that play a role in the research context. As these are apparently only two or three in total (Google Classroom, ClassDojo, and some unnamed educational platform used by a school), the study could benefit tremendously from analysing these first in order to show readers exactly where the problematic aspects of the platforms lie and then move on to investigate how the teachers in question navigate these. This would allow to substantiate claims such as: “Platforms like Google Classroom or ClassDojo structure how knowledge is shared, how participation is measured, and how teacher and student roles are defined” (p. 4) and statements such as: “Critical scholars argue this datafication raises significant concerns about student surveillance, algorithmic bias, and the

commodification of education." (p. 4) Additionally, main interests such as the tension between "pedagogical goals and platform constraints" (p. 1) could be fully explored that way.

In addition, the study could also benefit from addressing the following points:

- Provide more information on the participants, e.g. their professional experience, their type of school (and teaching subjects?), etc. and reflect on how these characteristics may have had an impact on the conclusions.
- Elaborate on how teamwork unfolded during the coding process (p. 6): How did the individual coders proceed, how were conflicting coding suggestions navigated and, generally, to what extent and how was inter-coder validation approached?
- Reflect more explicitly on the fact that the data are not observational, and in what way issues such as social desirability (especially regarding normatively loaded topics such as data security and teacher professionalism) might have played a role. This would also involve hedging the strong claim that the study shows "if and how teachers fostered this critical stance in their classrooms" (p. 5) and that it can bridge the following gap: "We know what scholars say teachers should do, but we have less insight into what they actually do within the constraints of their specific contexts." (p. 5) As it stands, the study can, unfortunately, not address these issues as *actual* practices have not been observed, and teachers may strongly filter what they relate in the context of an interview.
- Related to this, reflect more thoroughly on the design of the interview guide. For example, the core question no. 4 ("Have you ever had concerns about student privacy or how a platform works? Can you describe that?", p. 5) is not only a closed question but can also be considered a leading question, with the follow-up that presupposes that such concerns existed. If asked together, both questions could strongly prompt even teachers who did not have such concerns to think they should have had and make them answer in a socially desirable way.

Analysis and conclusions:
The analysis provides interesting insights into the interview data. However, it could benefit from a more rigorous analytical approach and, hence, a deeper dive into the data. For example, it would have been highly intriguing to find out what teacher scaffolding looked like and what is meant by "localised, tactical resistance rather than systemic opposition" (p. 6), how and where teachers showed "concerns about datafication and algorithmic governance" (p. 6), what the "pedagogical values" (p. 6) are that they allegedly thought to preserve, in what way they are "aware of the risks outlined by critical scholars" (p. 7) and to what extent/how the teachers "are actively trying to create ethical, critical digital learning environments" (p. 7). Unfortunately, the analysis so far does not detail any of these, which makes it difficult for readers to fully comprehend what the researchers found in the data. While the study already does work nicely with interview quotes, this practice should be expanded to allow for higher credibility and intersubjectivity. Addressing these points would also, in my view, be a precondition for providing the ecological systems theory analysis, as this, too, remains rather vague without this basis.

Overall assessment:
The study is very promising but still needs some work to unfold its full potential.

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Is the work clearly and accurately presented and does it engage with the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

Are all the source data and materials underlying the results available?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Not applicable

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: critical digital literacy, teacher education, professionalisation research, qualitative research

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.