

Original Article

Teaching Amidst Digital Noise: A Phenomenological Study of Technostress in Philippine Secondary Schools

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Abstract. The increasing integration of digital technologies in education has intensified teachers' exposure to constant connectivity and expanding digital work demands. This phenomenological study examined the lived experiences of 12 secondary school teachers in the Philippines as they navigated digitally mediated teaching environments. Guided by Technostress Theory and the Job Demands-Resources (JD-R) model, data were collected through in-depth semi-structured interviews and analyzed using thematic analysis. Findings reveal that teachers experience technostress as a persistent and structurally embedded condition characterized by techno-invasion, techno-overload, and techno-complexity, manifested in blurred work-life boundaries, intensified workload, cognitive strain, reduced instructional focus, and emotional fatigue. The results further indicate that technostress is not merely an individual response to technology but is shaped by institutional expectations, organizational practices, and digital work norms. By foregrounding teachers' lived experiences, the study supports and extends Technostress Theory by demonstrating that its core dimensions operate as interconnected and cumulative conditions within educational contexts, while also reinforcing the JD-R model's proposition that sustained digital demands function as job demands that deplete teachers' cognitive and emotional resources. The findings highlight the need for human-centered digital policies, clearer workload boundaries, and coherent institutional support systems to promote sustainable teaching practices in digitally intensive environments.

Keywords: *Digital overload; Teacher well-being; Teachers' lived experiences; Technostress*

The rapid expansion of digital technologies has fundamentally transformed the nature of teaching work in secondary schools. Digital platforms now mediate lesson preparation, instructional delivery, assessment, communication, and reporting, making constant connectivity an increasingly normalized condition of teachers' professional lives. Accelerated by the COVID-19 pandemic, this shift has intensified teachers' reliance on learning management systems, online communication tools, and data-driven reporting mechanisms, extending instructional responsibilities beyond traditional classroom boundaries (Rademaker et al., 2023; Reis-Andersson, 2024). While digitalization has introduced new opportunities for instructional flexibility and access to resources, it has also amplified the cognitive and emotional demands placed on teachers.

Globally, teachers are expected to remain continuously responsive to digital communications, manage multiple platforms simultaneously, and adapt to rapidly changing technological requirements, often with limited institutional support (Ramalingam & Maniam, 2024). This condition of uninterrupted digital engagement has blurred the boundaries between instructional work and personal life, contributing to attention fragmentation, workload intensification, and emotional exhaustion (Okunlola, 2024). Rather than functioning solely as instructional aids, digital technologies increasingly shape the pace, structure, and pressure of teachers' daily work.

A growing body of research identifies technostress as a significant consequence of sustained digital demands in educational contexts. Technostress refers to the psychological strain that arises when technological expectations exceed individuals' capacity to cope effectively (Ayyagari et al., 2011). This strain manifests through multiple stressors, including techno-invasion, techno-overload, and techno-complexity, which have been associated with reduced instructional focus, diminished well-being, and impaired work performance (Farmanesh et al., 2025; Yang et al., 2025). In education, empirical studies have consistently shown that teachers are particularly vulnerable to technostress due to the convergence of instructional, administrative, and communicative digital demands.

In the Philippine context, teachers' experience of digital overload is shaped by persistent structural and institutional constraints. Despite national initiatives promoting digital transformation in education, many secondary schools continue to face challenges related to unstable internet connectivity, limited access to digital devices, insufficient technical support, and uneven levels of digital competence among educators (World Bank, 2021; Department of Education [DepEd], 2022; UNESCO, 2023). These constraints coexist with increasing expectations for online documentation, digital reporting, and platform-based communication, often resulting in workloads that exceed teachers' available time and cognitive resources.

Although existing Philippine studies have examined teachers' digital readiness, instructional innovation, and technology adoption, there remains limited qualitative research that foregrounds teachers' lived experiences of technostress. Much of the current literature prioritizes system-level implementation or skill acquisition, offering insufficient insight into how teachers experience digital pressure in their everyday professional lives, how they interpret its impact on instruction and well-being, and how they attempt to cope with constant digital demands. Moreover, existing studies have largely conceptualized technostress through quantitative models that emphasize measurement and prediction, thereby providing a limited understanding of how it is experienced as an ongoing, contextually embedded condition.

To address this gap, the present study adopts a qualitative phenomenological perspective to examine teachers' lived experiences of technostress in Philippine secondary schools. Guided by Technostress Theory, which conceptualizes digital strain as arising from technological demands that exceed coping capacity, and supported by the Job Demands–Resources (JD–R) model, which explains how sustained job demands deplete cognitive and emotional resources, this study explores how techno-invasion, techno-overload, and techno-complexity are experienced as interconnected and structurally embedded conditions within teachers' professional environments. Rather than treating technostress as an isolated variable, the study investigates how these dimensions are lived, interpreted, and negotiated in the context of digitally mediated teaching.

Specifically, this study seeks to examine teachers' lived experiences of technostress, particularly in relation to constant connectivity, increasing digital workload, and the complexity of navigating multiple, evolving technological systems. By foregrounding teachers' narratives, this research aims to generate a deeper, experience-based understanding of how technostress shapes instructional practices, professional boundaries, and well-being.

This study contributes to the literature in three significant ways. First, it advances Technostress Theory by demonstrating that technostress is not merely an individual psychological response but a structurally embedded condition shaped by institutional expectations and digital work norms. Second, it contributes methodologically by employing a phenomenological approach that captures how technostress is lived and experienced, addressing the limitations of predominantly quantitative models. Finally, by situating the study within Philippine secondary schools, the research provides context-specific insights that can inform the development of more sustainable, human-centered digital practices in education.

Methodology

Research Design

This study employed a qualitative phenomenological research design to examine teachers' lived experiences of technostress within digitally mediated teaching environments. Phenomenology is appropriate for this study as it seeks to understand how individuals experience and make meaning of a particular phenomenon in their everyday lives (Neubauer et al., 2019). In this context, the approach enables an in-depth exploration of how teachers experience digital overload, constant connectivity, and technological complexity in their professional practice.

Rather than treating technostress as a measurable construct, this study conceptualizes it as a lived, meaning-laden experience shaped by teachers' interactions with digital technologies, institutional expectations, and work demands. The phenomenological approach allows the researcher to capture the essence of these experiences by focusing on participants' descriptions of how technostress is encountered, interpreted, and sustained in their daily work. Guided by Technostress Theory and the Job Demands-Resources (JD-R) model, the study explores how techno-invasion, techno-overload, and techno-complexity are experienced as interrelated and contextually embedded conditions. Through this design, the study aims to generate a deeper, experience-based understanding of technostress that reflects the realities of teachers' professional environments.

Participants and Sampling Technique

This study employed purposive sampling, a non-probability sampling technique in which participants are intentionally selected for their ability to provide rich, relevant information about a specific phenomenon (Creswell & Poth, 2018). This approach is appropriate for qualitative interpretive research, where the goal is not generalization but an in-depth understanding of participants' lived experiences and meaning-making processes.

In this study, purposive sampling was used to ensure that participants had direct and sustained experience with digitally mediated teaching, making them well-positioned to articulate how technostress is encountered in their professional practice. A total of 12 private secondary school teachers from selected schools in Region XI (Davao Region), Philippines, participated in the study. At the school level, participants consisted of six junior high school (JHS) teachers and six senior high school (SHS) teachers. The sample included four male and eight female teachers. With respect to teaching experience, three participants had between two to five years of experience, eight had six to ten years, and one had more than eleven years of teaching experience. This variation in teaching level, gender, and experience provided a diverse range of perspectives on how technostress is experienced in digitally mediated teaching environments.

To ensure relevance to the phenomenon under investigation, participants met the following inclusion criteria: (1) currently employed as private secondary school teachers, (2) actively engaged in digital teaching-related tasks such as online instruction, communication, assessment, and reporting, and (3) with at least two years of teaching experience to ensure sufficient exposure to ongoing digital demands. Teachers who held administrative roles were included only in their capacity as classroom teachers to maintain consistency in the analysis. Those with minimal engagement in digital platforms or less than two years of teaching experience were excluded. Sampling was guided by the principle of information richness, and data collection continued until data saturation was achieved. Saturation was determined when successive interviews yielded no new themes or substantive insights, indicating that sufficient depth and variation in participants' experiences had been captured to support meaningful analysis.

Research Instrument

The study used a researcher-developed semi-structured interview guide to elicit participants' lived experiences of technostress in digitally mediated teaching environments. The guide consisted of open-ended questions focusing on teachers' experiences of constant connectivity, digital workload, and technological complexity. To ensure content validity, the interview guide was validated by five experts in qualitative research and educational technology. Revisions were made in response to their feedback to improve clarity, relevance, and alignment with the study's objectives.

Data Gathering Procedure

Data for this study were collected through in-depth semi-structured interviews, a qualitative data collection technique that enables participants to describe their experiences in detail while allowing the researcher to probe for clarification and deeper insight. This technique is appropriate for interpretive qualitative research, as it facilitates the exploration of how individuals make sense of complex and context-dependent phenomena such as

technostress (Neubauer et al., 2019).

An interview guide composed of open-ended questions was developed to elicit participants' experiences of digital workload, constant connectivity, and technological complexity. The guide was reviewed for clarity and relevance prior to data collection to ensure the questions aligned with the study's objectives and could generate rich, meaningful responses. The questions were designed to encourage participants to reflect on their daily digital practices, perceived sources of stress, impacts on their teaching and well-being, and strategies for managing digital demands. Follow-up probing questions were used to clarify responses and to explore emerging themes in greater depth.

Interviews were conducted individually at a time convenient to the participants, either face-to-face or through secure online platforms, depending on accessibility and preference. Each interview lasted approximately 45 to 60 minutes. The interviews were conducted primarily in English, with participants given the flexibility to express their responses in a language they were most comfortable with when necessary. With participants' informed consent, all interviews were audio-recorded to ensure accuracy and were subsequently transcribed verbatim for analysis. To enhance the credibility of the data, the researcher maintained consistency in conducting interviews by following the interview guide while allowing participants to express their experiences freely. This approach ensured both structure and depth in the data collection process, enabling the capture of rich, experience-based narratives relevant to the study.

Data Analysis Procedure

The data were analyzed using thematic analysis following the six-phase framework proposed by Braun and Clarke (2006). This analytic approach is appropriate for interpretive qualitative research as it allows for the systematic identification, organization, and interpretation of patterns of meaning across participants' accounts while remaining grounded in their lived experiences.

While this study is grounded in a phenomenological approach, thematic analysis was employed as a flexible analytic method to systematically identify patterns of meaning across participants' lived experiences. This approach preserves participants' subjective accounts while enabling the organization of shared experiential structures relevant to the phenomenon under investigation.

The analysis began with data familiarization, where the researcher repeatedly read the interview transcripts to gain a comprehensive understanding of the participants' narratives. This was followed by the generation of initial codes, in which significant statements and relevant data segments were identified and labeled according to their meaning and relevance to technostress and digital work experiences.

In the next phase, related codes were grouped to form candidate themes that captured shared patterns across participants' accounts. These themes were then reviewed and refined to ensure internal coherence and clear distinction among them. The researcher then defined and named the themes, ensuring that each accurately represented the essence of participants' experiences and reflected the context in which they occurred.

The final phase involved the production of the analytic narrative, where themes were interpreted and discussed in relation to the study's theoretical framework, particularly Technostress Theory and the Job Demands–Resources (JD-R) model. This process enabled the development of a deeper, theory-informed understanding of how technostress is experienced and structured within digitally mediated teaching environments.

Throughout the analysis, reflexivity was maintained to ensure that interpretations remained grounded in participants' accounts rather than the researcher's prior assumptions. This was achieved through iterative review of codes and themes, as well as careful attention to preserving the meaning embedded in participants' narratives.

Ethical Considerations

Ethical approval for the study was obtained prior to data collection, and all procedures adhered to established ethical standards for qualitative research involving human participants. Participants were fully informed about the purpose of the study, the nature of their involvement, and their right to withdraw at any stage without penalty. Informed consent was secured before conducting interviews, and participation was strictly voluntary.

To protect participants' privacy and confidentiality, all identifying information was removed from the transcripts and replaced with pseudonyms or codes. Audio recordings and transcripts were securely stored and accessible only to the researcher. The study ensured that participants experienced no harm, coercion, or undue influence, and care was taken to create a respectful and non-judgmental interview environment. These measures upheld participants' autonomy, confidentiality, and well-being throughout the research process.

Trustworthiness of the Study

To ensure the rigor and quality of the qualitative findings, this study adhered to established criteria of trustworthiness, including credibility, dependability, confirmability, and transferability (Lincoln & Guba, 1985). Credibility was achieved through consistent use of semi-structured interviews, verbatim transcription, and prolonged engagement with the data through iterative reading and analysis to ensure an in-depth understanding of participants' lived experiences. Dependability was established through a systematic, transparent research process, including a structured interview guide and an audit trail documenting key decisions during data collection, coding, and theme development. Confirmability was ensured through reflexivity and by grounding interpretations in participants' narratives, allowing the findings to reflect their perspectives rather than the researcher's assumptions. Transferability was addressed by providing rich, detailed descriptions of the research context, participants, and findings, enabling readers to assess the applicability of the results to similar educational settings.

Results and Discussion

This section presents the study's findings based on a thematic analysis of teachers' interview narratives. The results describe teachers' lived experiences of technostress within digitally mediated teaching environments, as reflected in their accounts of constant connectivity, increasing digital workload, and engagement with multiple digital platforms. The themes presented in this section are derived directly from participants' narratives and reflect shared patterns of experience across the data set. Each theme is discussed in relation to Technostress Theory and supported by relevant empirical literature, providing a deeper understanding of how technostress is experienced in teaching contexts.

Lived Experiences of Teachers Regarding Technostress

Analysis of the interview narratives revealed that teachers experience technostress not as isolated incidents but as a persistent and embedded condition within their everyday professional routines. Rather than being limited to specific tasks or technologies, technostress is lived as an ongoing experience shaped by constant digital engagement, escalating work demands, and expectations of continuous responsiveness. These conditions collectively influence how teachers manage their instructional responsibilities, maintain professional boundaries, and sustain their well-being.

The findings further indicate that technostress is experienced as a multidimensional, cumulative phenomenon, in which different forms of digital pressure—such as constant availability, fragmented workload, instructional disruption, and emotional fatigue—interact and reinforce one another. The themes presented below capture how teachers live and interpret these experiences within digitally mediated teaching environments.

Living in a State of Perpetual Digital Availability

Teachers consistently described their workdays as beginning and ending with digital communication. Checking emails, Messenger or Facebook group chats, learning management systems, and online reporting platforms was portrayed as an automatic and unavoidable routine. For many participants, digital communication started early in the morning and extended late into the evening, creating a sense that work was always ongoing. One participant explained that messages, announcements, and reporting requirements were already waiting before formal work hours began, making it difficult to ease into the day (P4). Another teacher noted that even after leaving school, they continued responding to digital concerns, describing their work as “always reachable” and “never fully offline” (P8). Similarly, a participant reported regularly checking updates, even at night, to avoid missing urgent concerns (P2). These accounts illustrate how constant connectivity has become a normalized expectation rather than an occasional requirement.

This suggests that teachers experience techno-invasion not simply as intermittent interruptions but as a continuous condition of availability, where the boundaries between work and personal life are increasingly blurred. Rather than disengaging from professional responsibilities after formal working hours, teachers remain

mentally and digitally connected to work, reinforcing a sense of being perpetually “on.” This ongoing state of availability is often accompanied by feelings of pressure, obligation, and unease, where disengaging from work can evoke anxiety about missing important information or failing to meet expectations. In this context, digital communication reshapes not only how tasks are performed but also how work is temporally experienced and sustained.

From a theoretical perspective, Technostress Theory conceptualizes techno-invasion as the intrusion of technology into personal domains (Ayyagari et al., 2011). However, the findings extend this understanding by demonstrating that such intrusion is not merely an individual experience but is reinforced by institutional expectations of responsiveness, making constant availability a normalized aspect of teaching work. Empirical studies have shown that persistent digital connectivity contributes to work–family conflict and reduces individuals’ ability to psychologically detach from work, thereby increasing stress and impairing well-being (Shaukat et al., 2022). Similarly, research indicates that continuous connectivity and communication demands are associated with emotional exhaustion and burnout among employees, as they limit opportunities for recovery outside of work (Derks et al., 2015). Interpreted through the Job Demands–Resources (JD–R) model, this condition reflects sustained job demand in which expectations of constant responsiveness continuously draw on teachers’ cognitive and emotional resources without sufficient opportunities for recovery, thereby contributing to strain and reduced well-being (Bakker & Demerouti, 2007).

Taken together, these findings indicate that perpetual digital availability functions as a structurally embedded demand rather than an isolated stressor. This highlights that technostress emerges not only from the presence of digital tools but from how expectations for communication and responsiveness are organized within school environments. As such, addressing techno-invasion requires not only individual coping strategies but also organizational efforts to establish clearer and more sustainable boundaries for digital engagement.

Drowning in Fragmented and Competing Digital Demands

Teachers’ narratives reveal that digital workload is not experienced simply as an increase in the number of tasks, but as a fragmented and competing set of demands distributed across multiple platforms. Participants described managing emails, Messenger or Facebook group chats, learning management systems, and various reporting portals simultaneously, each requiring attention and often operating on different timelines and under different expectations. This created a sense of pressure and disorganization, as teachers struggled to keep track of overlapping responsibilities.

One participant shared that tasks often come from different platforms at the same time, making it difficult to determine which should be prioritized first (P6). Another explained that switching between platforms throughout the day makes them feel “mentally scattered” and unable to focus on a single task for an extended period (P9). Similarly, a teacher noted that instructions and updates are sometimes spread across different communication channels, leading to confusion and repeated checking to avoid missing important information (P1). These accounts illustrate that the burden of digital work lies not only in its volume but in how it is distributed, fragmented, and constantly shifting.

This suggests that techno-overload is experienced as fragmented cognitive engagement, with teachers’ attention continuously divided among competing digital demands. Rather than enabling efficiency, the use of multiple, uncoordinated platforms disrupts workflow coherence and increases the cognitive effort required to manage tasks. In this context, teachers are not only performing more work but are also expending additional mental resources to organize, prioritize, and navigate these demands. This condition is often accompanied by feelings of mental strain, frustration, and cognitive overload, as teachers struggle to maintain focus while continuously shifting attention across competing demands.

From a theoretical perspective, Technostress Theory conceptualizes techno-overload as the intensification of work due to technology (Ayyagari et al., 2011). However, the present findings extend this understanding by demonstrating that overload is amplified when digital systems operate in fragmented and unintegrated ways, requiring constant task-switching and attention management. This interpretation is supported by research showing that frequent task-switching and multitasking increase cognitive load and reduce efficiency, leading to higher levels of stress and decreased performance (Mark et al., 2008). Similarly, studies on technostress indicate that complexity and multiplicity of ICT systems contribute to cognitive overload and strain among users (Tarafdar

et al., 2011). Interpreted through the Job Demands–Resources (JD–R) model, this condition reflects intensified job demands in which multiple, competing digital tasks simultaneously draw on teachers’ limited cognitive resources, resulting in strain and reduced capacity for sustained attention (Bakker & Demerouti, 2007).

Taken together, these findings indicate that techno-overload in digitally mediated teaching environments is not solely a function of task quantity but of how digital work is structured and distributed across platforms. This highlights that fragmentation, rather than volume alone, is a critical mechanism through which digital demands generate stress. As such, addressing technostress requires not only reducing workload but also improving the coherence and integration of digital systems used in educational settings.

Teaching in a State of Constant Interruption

Teachers’ narratives indicate that digital demands frequently interrupt instructional time, making it difficult to sustain focus during teaching activities. Participants described how notifications, messages, and urgent digital requests occur even while they are teaching, requiring them to divide their attention between teaching and responding to digital communication. These interruptions were not occasional but recurring throughout the day, disrupting the flow of instruction and reducing opportunities for sustained engagement with students.

One participant shared that while teaching, they often receive messages that require immediate attention, forcing them to shift focus away from the lesson (P5) momentarily. Another teacher explained that checking updates during class has become necessary to avoid missing important instructions, even if it disrupts the continuity of teaching (P10). Similarly, a participant noted that interruptions from multiple platforms make it difficult to maintain concentration, stating that their attention is “constantly divided between teaching and responding” (P3). These accounts highlight how digital demands intrude directly into instructional time, altering how teaching is carried out in practice.

This suggests that technostress manifests not only as workload pressure but as instructional disruption, where teachers are unable to sustain cognitive and pedagogical focus due to continuous digital interruptions. Rather than being fully engaged in teaching, teachers operate in a state of divided attention, which can affect lesson coherence, student interaction, and the overall quality of instruction. This condition is often accompanied by feelings of frustration, tension, and a sense of loss of control, as teachers struggle to maintain instructional flow while responding to competing digital demands.

From a theoretical perspective, this finding extends Technostress Theory by illustrating how techno-overload and techno-invasion intersect within the instructional space (Ayyagari et al., 2011). The need to remain responsive to digital communication during teaching reflects both the intensification of tasks and the intrusion of external demands into core professional activities. This interpretation is supported by research showing that frequent interruptions fragment attention and significantly reduce task performance and cognitive efficiency (Mark et al., 2008). Furthermore, studies indicate that multitasking and divided attention impair cognitive processing and increase mental workload, thereby affecting performance in complex tasks such as teaching (Ophir et al., 2009).

When interpreted through the Job Demands–Resources (JD–R) model, these interruptions can be understood as competing job demands that reduce the cognitive resources available for effective teaching (Bakker & Demerouti, 2007). The constant need to switch attention between instructional tasks and digital communication contributes to strain and limits teachers’ capacity to deliver sustained and meaningful learning experiences.

Taken together, these findings indicate that constant digital interruptions transform teaching into a fragmented, reactive activity rather than a focused, continuous process. This contributes to the literature by highlighting that technostress affects not only teachers’ well-being but also the quality and integrity of instructional practice. Addressing this issue requires not only managing digital workload but also establishing clearer boundaries around instructional time to protect teachers’ capacity for sustained engagement in teaching.

Carrying Invisible Digital Fatigue Beyond Work Hours

Teachers’ narratives reveal that the effects of digital demands do not end at the end of the workday but continue into their personal time. Participants described experiencing ongoing fatigue, mental exhaustion, and difficulty disengaging from work-related thoughts even after completing their responsibilities. This fatigue was often not immediately visible but accumulated over time due to sustained digital engagement and continuous

responsiveness.

One participant reported that even after completing their tasks, they still feel mentally tired from the number of digital demands they handle throughout the day (P11). Another noted that although they are already at home, they continue thinking about pending messages and unfinished online requirements, making it difficult to fully rest (P6). Similarly, a teacher expressed that the constant need to check updates leaves them feeling “drained,” even when they are no longer actively working (P9). These accounts suggest that technostress extends beyond physical workload and becomes an ongoing cognitive and emotional burden.

This indicates that technostress manifests as persistent emotional and cognitive fatigue, where teachers carry the effects of digital demands into their personal time. Rather than experiencing a clear boundary between work and rest, teachers remain psychologically engaged with work, limiting their ability to recover and restore depleted resources. In this sense, fatigue is not simply the result of workload but of sustained mental engagement with digital tasks. This prolonged engagement is often accompanied by feelings of exhaustion, mental restlessness, and a lingering sense of incompleteness, leaving teachers unable to fully relax or detach from work-related concerns.

From a theoretical perspective, this finding extends Technostress Theory by highlighting the cumulative impact of techno-overload and techno-invasion on teachers’ well-being (Ayyagari et al., 2011). Continuous exposure to digital demands, combined with expectations of responsiveness, leads to prolonged engagement with stressors outside working hours. Empirical research has shown that sustained job demands and insufficient recovery are associated with emotional exhaustion and burnout (Maslach et al., 2001). Similarly, studies on work-related rumination indicate that the inability to mentally detach from work during non-working hours contributes to fatigue and reduced well-being (Sonnentag & Fritz, 2015).

Interpreted through the Job Demands–Resources (JD-R) model, this ongoing fatigue reflects a condition where job demands consistently outweigh available resources, resulting in exhaustion and diminished capacity for recovery (Bakker & Demerouti, 2007). The persistent cognitive engagement with work-related concerns prevents teachers from achieving the psychological detachment needed to restore energy and maintain well-being.

Taken together, these findings demonstrate that technostress is not only experienced during working hours but also persists as an invisible, cumulative strain that extends into teachers’ personal lives. This contributes to the literature by emphasizing that the impact of digital work extends beyond observable workload to include less visible forms of emotional and cognitive exhaustion. Addressing this issue requires not only managing digital demands but also creating conditions that enable teachers to meaningfully disconnect and recover from sustained digital engagement.

Teachers’ Lived Experiences of Techno-Invasion

Analysis of the interview narratives revealed that teachers experience techno-invasion not merely as the extension of work into personal time, but as a progressive erosion of boundaries between professional and personal life driven by expectations of constant digital availability. Rather than being confined to specific moments, techno-invasion is lived as a continuous and pervasive condition, where teachers remain both physically and mentally connected to work beyond formal working hours.

The findings further indicate that techno-invasion operates across both temporal and psychological dimensions, encompassing the expectation of constant reachability and the difficulty of mentally disengaging from digital demands. The two themes presented below capture how these forms of intrusion are experienced and sustained within digitally mediated teaching environments.

Being Always On: The Expectation of Continuous Digital Availability Beyond Work Hours

Teachers consistently described being expected to remain digitally available beyond formal working hours. Messages, announcements, and work-related concerns were commonly received early in the morning, late in the evening, and even during weekends. Participants emphasized that digital communication did not end when they left the school premises, creating a sense that work followed them into personal spaces such as their homes and family time. One participant shared that messages continue to arrive even late at night, making it difficult to fully disconnect from work responsibilities (P3). Another teacher noted an unspoken expectation to respond promptly, regardless of the time, which creates pressure to remain attentive to notifications (P7). Similarly, a participant

expressed feeling “always reachable,” even outside working hours, due to continuous updates and communication demands (P2). These accounts illustrate how constant accessibility has become an expected and normalized aspect of teaching work.

This suggests that techno-invasion is experienced not simply as an occasional intrusion but as a persistent expectation of availability, where teachers feel obligated to remain responsive beyond formal working hours. Rather than having clearly defined boundaries between work and personal life, teachers operate within a condition of continuous connectivity, where disengagement is difficult and often accompanied by feelings of responsibility or guilt. This condition is further experienced as emotional tension and internal pressure, in which teachers feel compelled to remain attentive even during personal time, limiting their ability to fully relax or disengage. In this context, digital communication reshapes professional expectations by extending teachers’ roles into their personal time.

From a theoretical perspective, Technostress Theory conceptualizes techno-invasion as the intrusion of technology into personal domains (Ayyagari et al., 2011). However, the present findings extend this understanding by demonstrating that such intrusion is reinforced by normative expectations of responsiveness, where constant availability becomes embedded within professional practice. This interpretation is supported by research showing that digital communication technologies increase boundary permeability, allowing work demands to spill over into non-work time and contribute to work–family conflict and reduced well-being (Derks et al., 2015). Similarly, studies on teachers indicate that persistent digital communication beyond working hours intensifies emotional exhaustion by limiting opportunities for psychological detachment and recovery (Shaukat et al., 2022). Interpreted through the Job Demands–Resources (JD-R) model, this condition reflects a sustained job demand in which expectations of constant availability continuously draw on teachers’ emotional and cognitive resources, thereby contributing to strain and reduced opportunities for recovery (Bakker & Demerouti, 2007).

Taken together, these findings indicate that being “always on” is not merely a behavioral pattern but a structurally reinforced expectation within digitally mediated teaching environments. This highlights that techno-invasion arises not only from the use of technology but from how norms of availability and responsiveness are embedded within school practices. Addressing this issue requires not only individual strategies for managing digital communication but also institutional efforts to establish clearer boundaries that protect teachers’ personal time and well-being.

When Work Occupies the Mind: The Inability to Mentally Disconnect from Digital Demands

Beyond physical time intrusion, teachers described techno-invasion as extending into their emotional and mental well-being. Participants reported difficulty mentally disconnecting from work, even when they were not actively engaging with digital tasks. The anticipation of messages, deadlines, or urgent concerns created a sustained state of alertness, contributing to stress and emotional fatigue. One participant reported that even during rest time, they continue to think about pending messages and responsibilities (P6). Another noted that while spending time with family, their attention is often divided by thoughts of work-related concerns that might arise online (P9). Similarly, a teacher expressed that even without actively checking their devices, they feel mentally preoccupied with possible updates, making it difficult to fully relax (P11). These accounts illustrate how digital work persists beyond active engagement, becoming a continuous cognitive presence.

This suggests that techno-invasion is experienced not only as a disruption of time but also as a persistent mental preoccupation, in which teachers remain psychologically engaged with work even in the absence of direct digital interaction. Rather than achieving a clear boundary between work and personal life, teachers experience a state of ongoing cognitive alertness, where the possibility of incoming demands prevents full disengagement. This condition is often accompanied by feelings of mental restlessness, anxiety, and an inability to attain a sense of psychological closure, as thoughts about work continue to occupy attention even during periods intended for rest. In this context, the effects of digital work extend beyond observable behaviors into internal cognitive and emotional processes.

From a theoretical perspective, Technostress Theory conceptualizes techno-invasion as the intrusion of technology into personal domains (Ayyagari et al., 2011). However, the present findings extend this understanding by demonstrating that such intrusion operates at a psychological level, where the anticipation of digital demands sustains continuous mental engagement. This interpretation aligns with research on psychological detachment,

which shows that the inability to mentally disengage from work during non-working hours is a key predictor of fatigue and reduced well-being (Sonnentag & Fritz, 2015). Similarly, studies indicate that work-related rumination—characterized by persistent thoughts about work—contributes to emotional exhaustion and limits recovery from job demands (Querstret & Copley, 2012). Interpreted through the Job Demands–Resources (JD–R) model, this persistent cognitive engagement reflects a condition in which ongoing job demands continue to consume psychological resources even outside working hours, thereby limiting recovery and contributing to sustained strain (Bakker & Demerouti, 2007).

Taken together, these findings indicate that techno-invasion is not limited to physical or temporal intrusion but extends into teachers' cognitive and emotional domains, where work occupies mental space even outside working hours. This highlights that technostress operates through both external demands and internalized expectations, making disengagement difficult even in the absence of active digital interaction. Addressing this issue requires not only managing digital communication practices but also creating conditions that support psychological detachment and recovery from sustained cognitive engagement.

Lived Experiences of Teachers with Techno-Overload

Analysis of the interview narratives revealed that teachers experience techno-overload not simply as an increase in workload, but as an intensified and accelerated form of work characterized by excessive digital tasks, overlapping responsibilities, and compressed timeframes. Rather than being manageable additions to their duties, digital demands are experienced as continuous and competing pressures that require immediate attention and rapid task-switching.

The findings further indicate that techno-overload operates through both quantitative and cognitive dimensions, requiring teachers not only to accomplish more tasks but also to manage them under conditions of urgency and fragmentation. This results in heightened cognitive strain and reduced capacity to sustain focus on instructional work. The two themes presented below capture how teachers experience and negotiate these conditions within digitally mediated teaching environments.

Too Much, Too Fast: The Escalation of Digital Tasks Within Compressed Timeframes

Teachers described techno-overload as the rapid accumulation of digital tasks that must be completed within limited timeframes. Participants reported managing online reports, digital lesson materials, student submissions, virtual meetings, and administrative requirements simultaneously, often with overlapping deadlines. The constant inflow of digital work reduced opportunities for focused task completion and created a sense of perpetual backlog. One participant reported that tasks from different platforms arrive almost simultaneously, making it difficult to complete one task before another begins (P5). Another noted that deadlines often overlap, forcing them to rush through tasks just to keep up with the workload (P8). Similarly, a teacher explained that even when tasks are completed, new digital requirements immediately follow, creating a feeling that work is “never finished” (P2). These accounts illustrate how digital work is experienced as continuous, fast-paced, and difficult to manage within available time.

This suggests that techno-overload is experienced not only as an increase in workload but also as compressed, accelerated work, in which teachers are required to complete multiple tasks under conditions of urgency and limited time. Rather than enabling deliberate, focused work, digital demands create a cycle of continuous task completion, where speed becomes prioritized over depth. This condition is often accompanied by feelings of pressure and overwhelm, and a persistent sense of being rushed, with teachers struggling to keep pace with the constant flow of demands. In this context, teachers are not only doing more work but are also required to perform it faster, intensifying cognitive and temporal pressure.

From a theoretical perspective, Technostress Theory conceptualizes techno-overload as the intensification of job demands due to technology (Ayyagari et al., 2011). The present findings extend this understanding by demonstrating that overload is amplified by continuous task inflow and compressed timeframes, in which digital systems enable rapid assignment and accumulation of work without corresponding adjustments to workload expectations. This interpretation is supported by research indicating that digital technologies can increase workload intensity by accelerating task pace and promoting expectations of immediacy (Tarafdar et al., 2011). Similarly, studies in digitally mediated teaching contexts show that increased digital demands contribute to workload pressure and reduced capacity to manage tasks effectively (Estrada-Muñoz et al., 2021). From the

perspective of the Job Demands–Resources (JD–R) model, this pattern reflects heightened job demands that require sustained effort within a limited time, thereby depleting teachers’ cognitive and temporal resources and increasing the likelihood of strain (Bakker & Demerouti, 2007).

Taken together, these findings indicate that techno-overload is not solely a matter of task quantity but of how work is temporally structured, where continuous inflow and urgency create a persistent sense of backlog. This highlights that digital tools, while intended to support efficiency, can also intensify the pace of work and compress available time. Addressing this issue requires not only reducing task volume but also rethinking how digital work is distributed and scheduled within educational environments.

Losing Focus on Teaching: Cognitive Strain and the Shift from Pedagogy to Compliance

Participants reported that sustained exposure to multiple digital demands led to cognitive overload, affecting their ability to concentrate and maintain instructional quality. Frequent interruptions from messages, notifications, and system updates fragmented attention and disrupted deep engagement with lesson planning and teaching tasks. Teachers described feeling mentally exhausted from continuously switching between instructional and administrative responsibilities. One participant shared that constant notifications make it difficult to stay focused on lesson preparation, as attention is repeatedly divided (P3). Another noted that managing digital reports and submissions often takes priority over refining instructional materials, reducing the time available for meaningful teaching preparation (P7). Similarly, a teacher expressed frustration that tasks accumulate faster than they can be completed, leading to anxiety and diminished motivation (P10). These accounts illustrate how cognitive strain arises from the constant need to shift attention among competing digital demands.

This suggests that techno-overload manifests not only as increased workload but also as cognitive strain that disrupts instructional focus, with teachers unable to sustain attention on pedagogical tasks due to constant task-switching and competing demands. Rather than engaging deeply with lesson planning and student interaction, teachers are compelled to divide their attention between teaching and digital compliance, resulting in reduced instructional quality. This condition is often experienced as frustration, loss of instructional control, and a diminished sense of fulfillment, as teachers are unable to fully engage in the pedagogical aspects of their role. In this context, digital demands reshape teaching work by prioritizing task completion and responsiveness over pedagogical depth and creativity.

From a theoretical perspective, Technostress Theory conceptualizes techno-overload as the intensification of job demands beyond manageable cognitive limits (Ayyagari et al., 2011). The present findings extend this understanding by demonstrating that overload operates through attention fragmentation and sustained cognitive switching, which directly affect teachers’ ability to perform core instructional tasks. This interpretation is supported by research showing that frequent interruptions and multitasking increase cognitive load and reduce performance in tasks requiring sustained attention (Mark et al., 2008). Similarly, studies on teachers’ use of digital technologies indicate that excessive ICT demands are associated with reduced concentration and increased mental fatigue, thereby compromising instructional effectiveness (Estrada-Muñoz et al., 2021).

Interpreted through the Job Demands–Resources (JD–R) model, this cognitive strain reflects a condition where competing job demands exceed teachers’ available cognitive resources, leading to reduced effectiveness and increased strain (Bakker & Demerouti, 2007). The need to continuously shift attention between instructional and administrative tasks limits teachers’ capacity to engage in reflective and creative teaching practices.

Taken together, these findings indicate that techno-overload contributes not only to workload pressure but to a shift from pedagogy to compliance, where teaching becomes increasingly task-driven rather than learning-focused. This highlights that digital demands can inadvertently undermine instructional quality when they prioritize output and responsiveness over meaningful engagement with teaching and learning processes. Addressing this issue requires not only managing digital workload but also protecting teachers’ cognitive space for sustained instructional focus.

Lived Experiences of Teachers with Techno-Complexity

Analysis of the interview narratives revealed that teachers experience techno-complexity not merely as difficulty with using digital tools, but as a continuous, evolving challenge arising from the need to navigate multiple platforms, adapt to changing digital requirements, and operate within systems that vary in structure, clarity, and

support. Rather than encountering isolated technical issues, teachers experience techno-complexity as an ongoing condition that requires constant learning, adjustment, and problem-solving.

The findings further indicate that techno-complexity operates through both system fragmentation and continuous adaptation, where teachers must manage multiple, often disconnected digital platforms while simultaneously responding to evolving expectations and requirements. This results in uncertainty, inefficiency, and increased cognitive effort as teachers attempt to make sense of and keep up with changing digital demands. The two themes presented below capture how these challenges are experienced and negotiated within digitally mediated teaching environments.

Juggling Disconnected Systems: Navigating Multiple Platforms with Uneven Support

Teachers described techno-complexity as the challenge of working across multiple digital platforms, each with different functions, interfaces, and expectations. Participants reported using a combination of learning management systems, messaging applications, online reporting portals, and virtual meeting tools, often without clear integration or standardized guidance. The need to switch between platforms increased confusion and required additional cognitive effort to remember processes, deadlines, and system-specific procedures. One participant shared that each platform has its own process, making it difficult to keep track of requirements and expectations (P4). Another noted that moving between different systems throughout the day creates confusion and slows down task completion (P8). Similarly, a teacher expressed that learning new platforms without sufficient guidance makes them feel uncertain and pressured to keep up (P2). These accounts illustrate how navigating multiple systems becomes a demanding and mentally taxing process.

This suggests that techno-complexity is experienced not only as difficulty in using technology but as system fragmentation, where teachers must continuously manage disconnected platforms that lack coherence and consistency. Rather than supporting efficiency, the multiplicity of systems increases cognitive effort and creates uncertainty in task execution. This condition is often accompanied by feelings of confusion, frustration, and insecurity, as teachers struggle to maintain confidence as they navigate systems that are constantly shifting and inadequately supported. In this context, teachers are not only required to use digital tools but also to make sense of how these tools fit together within their work processes.

From a theoretical perspective, Technostress Theory conceptualizes techno-complexity as the difficulty users experience when technologies require continuous learning and exceed existing skill levels (Ayyagari et al., 2011). The present findings extend this understanding by demonstrating that complexity is amplified in fragmented digital environments, where multiple platforms operate independently and require separate forms of knowledge and adaptation. This interpretation is supported by research indicating that platform multiplicity and lack of system integration increase cognitive load and perceived difficulty among users (Tarafdar et al., 2011). Similarly, studies in educational contexts show that insufficient training and limited technical support contribute to teachers' perceptions of technological complexity and stress (Fernández-Batanero et al., 2022). Viewed through the Job Demands-Resources (JD-R) model, these conditions represent heightened job demands in which the requirement to navigate multiple systems consumes cognitive resources, particularly in the absence of adequate training and institutional support, thereby increasing strain (Bakker & Demerouti, 2007).

Taken together, these findings indicate that techno-complexity is shaped not only by the inherent difficulty of digital tools but by how systems are structured, supported, and integrated within educational environments. The need to navigate disconnected platforms, combined with uneven access to support, creates conditions where teachers must continuously adjust and compensate for system limitations. Addressing this issue requires not only improving teachers' digital skills but also enhancing system coherence and providing consistent institutional support.

Never Fully Caught Up: Constant Adaptation to Evolving Digital Requirements

Participants also experienced techno-complexity through the constant need to adjust to evolving technological requirements. Teachers described being expected to learn new platforms, features, or procedures while continuing to fulfill existing teaching and administrative responsibilities. Frequent system updates, shifts in preferred communication tools, and changes in reporting processes contributed to uncertainty and frustration. One participant shared that, as they begin to understand one system, new changes are introduced, requiring them to relearn processes (P6). Another noted that instructions and procedures often change without sufficient

explanation, making it difficult to keep up with expectations (P9). Similarly, a teacher expressed that the continuous introduction of new tools creates pressure to adapt quickly, even without adequate preparation or training (P11). These accounts illustrate how technological change becomes a persistent and demanding aspect of teachers' work.

This suggests that techno-complexity is experienced as continuous adaptation under conditions of instability, where teachers are unable to achieve a sense of mastery due to the evolving nature of digital systems. Rather than gaining confidence through repeated use, teachers remain in a constant cycle of learning and relearning, which increases cognitive effort and reduces efficiency. This condition is often accompanied by feelings of uncertainty, frustration, and diminished competence, as teachers struggle to keep pace with changes that outstrip their ability to fully adapt. In this context, technological change does not simplify work but introduces ongoing uncertainty that requires sustained adjustment.

From a theoretical perspective, Technostress Theory conceptualizes techno-complexity as the difficulty users experience when technologies require continuous learning and exceed existing competencies (Ayyagari et al., 2011). The present findings extend this understanding by demonstrating that complexity intensifies in dynamic digital environments, where systems are frequently updated or replaced, thereby preventing users from stabilizing their knowledge and skills. This interpretation is supported by research indicating that rapid technological change and evolving digital demands increase cognitive load and contribute to stress when users are required to continuously adapt without sufficient support (Tarafdar et al., 2011). Similarly, studies in educational contexts show that ongoing changes in digital tools and processes can reduce teachers' efficiency and increase perceived workload, particularly when expectations are unclear or inconsistently communicated (Estrada-Muñoz et al., 2021). From the perspective of the Job Demands-Resources (JD-R) model, this continuous adaptation represents an ongoing job demand that requires sustained cognitive effort, which, in the absence of sufficient resources such as training and support, contributes to strain and reduced effectiveness (Bakker & Demerouti, 2007).

Taken together, these findings indicate that techno-complexity is not only a matter of difficulty in using technology but also a consequence of constant change and instability, which prevents teachers from achieving competence and confidence in digital systems. This highlights that technological demands can become persistent stressors when adaptation is continuous and unsupported. Addressing this issue requires not only improving digital competencies but also ensuring stability, clarity, and consistency in the implementation of digital systems within educational environments.

The findings discussed above provide a comprehensive understanding of how teachers experience technostress in digitally mediated environments. These insights form the basis for the conclusions and implications presented in the succeeding section.

Conclusion

This study contributes to understanding technostress in educational contexts by demonstrating that teachers experience digital demands as a structurally embedded, cumulative condition rather than as isolated technological challenges. By examining techno-invasion, techno-overload, and techno-complexity through a phenomenological lens, the study reveals how these dimensions operate as interconnected and mutually reinforcing conditions that shape teachers' professional routines, cognitive engagement, and overall well-being.

From a theoretical perspective, the findings extend Technostress Theory by showing that technostress is not merely an individual psychological response to technology use but is shaped by institutional expectations, digital work norms, and organizational practices. The integration of the Job Demands-Resources (JD-R) model further highlights how sustained digital demands function as job demands that continuously deplete teachers' cognitive and emotional resources in the absence of adequate support.

Practically, the findings underscore the need for educational institutions to adopt more intentional and human-centered approaches to digital work. Establishing clear boundaries for digital communication, streamlining reporting requirements, and ensuring coherent and well-supported digital systems are essential to mitigate excessive workload and cognitive strain. Additionally, professional development initiatives should focus not only on technical skills but also on managing digital workload and navigating technological complexity in sustainable

ways.

At the policy level, recognizing technostress as an occupational concern is critical in designing digital education frameworks that prioritize teacher well-being alongside performance and accountability. Without deliberate efforts to regulate digital demands and provide adequate support, technostress may become a normalized condition that undermines both instructional quality and teacher sustainability.

Future research may further explore technostress through longitudinal and comparative studies to better understand how teachers' experiences evolve across different contexts and over time. Investigating intervention-based strategies that address workload regulation, system integration, and institutional support may also provide actionable insights for developing more sustainable digital teaching environments.

Contributions of Authors

Kenneth A. Pondang: conceptualization, data gathering, data analysis

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References

- Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly*, 35(4), 831–858. <https://doi.org/10.2307/41409963>
- Bakker, A., & Demerouti, E. (2007). The Job Demands–Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328. <https://doi.org/10.1108/02683940710733115>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Creswell, J.W., & Poth, C.N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Department of Education. (2022). *Basic education development plan 2030*.
- Derks, D., Van Duin, D., Tims, M., & Bakker, A. (2015). Smartphone use and work–home interference: The moderating role of social norms and employee work engagement. *Journal of Occupational and Organizational Psychology*, 88(1), 155–177. <https://doi.org/10.1111/joop.12083>
- Estrada-Muñoz, C., Vega-Muñoz, A., Castillo, D., Müller-Pérez, S., & Boada-Grau, J. (2021). Technostress of Chilean teachers in the context of the COVID-19 pandemic and teleworking. *International Journal of Environmental Research and Public Health*, 18(10), 5458. <https://doi.org/10.3390/ijerph18105458>
- Farmanesh, P., Vehbi, A., & Solati Dehkordi, N. (2025). Uprooting technostress: Digital leadership empowering employee well-being in the era of Industry 4.0. *Sustainability*, 17(19), 8868. <https://doi.org/10.3390/su17198868>
- Fernández-Batanero, J.M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2022). Digital competences for teacher professional development: A systematic review. *European Journal of Teacher Education*, 45(4), 513–531. <https://doi.org/10.1080/02619768.2020.1827389>
- Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. SAGE Publications.
- Mark, G., Gudith, D., & Klocke, U. (2008). The cost of interrupted work: More speed and stress. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '08)* (pp. 107–110). Association for Computing Machinery. <https://doi.org/10.1145/1357054.1357072>
- Maslach, C., Schaufeli, W., & Leiter, M. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- Neubauer, B., Witkop, C., & Varpio, L. (2019). How phenomenology can help us learn from the experiences of others. *Perspectives on Medical Education*, 8(2), 90–97. <https://doi.org/10.1007/s40037-019-0509-2>
- Okunola, J. (2024). Digital technology adoption and school leadership in the post-pandemic era: Insights from high school leaders. *Interdisciplinary Journal of Education Research*, 6. <https://doi.org/10.38140/ijer-2024.vol6.32>
- Ophir, E., Nass, C., & Wagner, A. (2009). Cognitive control in media multitaskers. *Proceedings of the National Academy of Sciences*, 106(37), 15583–15587. <https://doi.org/10.1073/pnas.0903620106>
- Querret, D., & Cropley, M. (2012). Exploring the relationship between work-related rumination, sleep quality, and work-related fatigue. *Journal of Occupational Health Psychology*, 17(3), 341–353. <https://doi.org/10.1037/a0028552>
- Rademaker, T., Klingenberg, I., & Süß, S. (2023). Leadership and technostress: A systematic literature review. *Management Review Quarterly*, 75(1), 1–23. <https://doi.org/10.1007/s11301-023-00385-x>
- Ramalingam, S., & Maniam, M. (2024). Artificial intelligence trends in education among school administrators in Malaysia. *Proceedings of the International Conference on Professional and Industrial Education*. <https://doi.org/10.32672/pice.v2i1.1320>
- Reis-Andersson, J. (2024). Leading the digitalisation process in K–12 schools: The school leaders' perspective. *Education and Information Technologies*, 29, 2585–2603. <https://doi.org/10.1007/s10639-023-11935-x>
- Shaukat, S., Bendixen, L., & Ayub, N. (2022). The impact of technostress on teacher educators' work–family conflict and life satisfaction while working remotely during COVID-19 in Pakistan. *Education Sciences*, 12(9), 616. <https://doi.org/10.3390/educsci12090616>
- Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor-detachment model as an integrative framework. *Journal of Organizational Behavior*, 36(S1), S72–S103. <https://doi.org/10.1002/job.1924>
- Tarafdar, M., Tu, Q., Ragu-Nathan, T.S., & Ragu-Nathan, B. (2011). Crossing to the dark side: Examining creators, outcomes, and inhibitors of technostress. *Communications of the ACM*, 54(9), 113–120. <https://doi.org/10.1145/1995376.1995403>
- UNESCO. (2023). *Global education monitoring report 2023: Technology in education – A tool on whose terms?* UNESCO.
- World Bank. (2021). *Remote learning during COVID-19: Lessons from the Philippines*. World Bank Group.
- Yang, D., Liu, J., Wang, H., Chen, P., Wang, C., & Metwally, A.H.S. (2025). Technostress among teachers: A systematic literature review and future research agenda. *Computers in Human Behavior*, 168, 108619. <https://doi.org/10.1016/j.chb.2025.108619>