

Technology Gap and Research Burnout Among China's Foreign Language Teachers: A Constructivist Grounded Analysis

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Abstract The rapid diffusion of frontier artificial intelligence agent tools, such as Codex, OpenClaw, and Claude Code, has been accompanied by a celebratory discourse of low-threshold empowerment. Yet for many foreign language (FL) teachers in humanities-oriented disciplines, this discourse sits uneasily alongside a widening gap between the tools showcased at the research frontier and the web-based AI applications they actually use. This study examines how FL teachers subjectively construct the experience of a technology gap and how that construction travels, through psychological mechanisms, into research burnout. The author adopted a constructivist grounded theory approach, conducting 31 in-depth interviews with FL faculty across six Chinese universities varying in rank, region, and disciplinary orientation. Data were analyzed through open, axial, and selective coding with constant comparison and memoing, and theoretical saturation was reached after the 27th interview. The core category that emerged was a downward spiral from technology gap perception to research burnout, mediated by two mutually reinforcing psychological mechanisms: technology threshold anxiety and efficacy collapse. Disciplinary mismatch perception and upward social comparison amplified the threat appraisal, while defensive rationalization and surface coping served as short-term emotion-regulation strategies that paradoxically deepened long-term helplessness. A counter-pathway of efficacy repair, anchored in mastery experiences and contextualized peer support, was also identified. Counterintuitively, AI functioned less as an empowering tool than as a pressure source that intensified existing inequities in research capacity. The findings reframe the prevailing empowerment narrative by foregrounding its psychological costs in low task-technology fit disciplines. The study contributes a process model and a set of indigenous concepts that reposition teacher AI support as a socio-emotional and organizational challenge, not merely a technical training problem.

Keywords technology gap; technology anxiety; self-efficacy; learned helplessness; burnout; technology acceptance; foreign language teachers; constructivist grounded theory

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1. Introduction

The arrival of AI4Science as a research paradigm has reshaped the imaginary of what scholarly work can look like. Frontier agent tools, exemplified by Codex, OpenClaw, Claude Code, and a growing ecosystem of locally deployed large language models and agentic coding workflows, promise to compress literature triage, code generation, and data analysis into a single conversational interface. In the celebratory discourse that surrounds these tools, the threshold of entry is repeatedly described as low: anyone, the narrative goes, can now delegate cognitive labor to an AI collaborator and reclaim time for higher-order thinking. This narrative is seductive, and it travels fast through academic social media, conference keynotes, and institutional strategy documents. Yet the author's preliminary conversations with foreign language (FL) faculty suggested that the lived experience of these tools is far more fractured than the discourse implies, and that the fracture lines run along disciplinary, generational, and infrastructural fault zones that the empowerment story does not acknowledge.

The gap is not merely one of access. Most FL teachers the author encountered had, in fact, tried ChatGPT, DeepL, or domestic web-based assistants for translation polishing or brainstorming. What they had not done, and what they increasingly felt they should be doing, was deploy local models, configure agent workflows, fine-tune domain-specific corpora, or integrate retrieval-augmented pipelines into their research practice. The frontier tools that circulate in AI4Science conversations operate on a different epistemic substrate than the web-based assistants that FL teachers actually use, and the distance between these two layers of the AI stack is widening rather than narrowing. As one associate professor of English literature put it during pilot interviews, the gap is not between using AI and not using it, but between using AI as a consumer and using it as a researcher who can shape the tool to a disciplinary question.

This distance matters because FL disciplines, including English and American literature, translation studies, and cultural studies, occupy an awkward position in the AI4Science imaginary. Their core scholarly tasks, the close reading of literary texts, the interpretation of culturally situated discourse, the negotiation of translational ethics, depend on forms of deep textual interpretation that current AI tools can simulate but not reliably perform. The disciplinary payoff of frontier agent tools is, for many FL scholars, genuinely uncertain. And yet the institutional and peer environment increasingly treats fluency with these tools as a marker of scholarly currency, a signal that one belongs to the future of research. The result is a peculiar form of pressure: FL teachers are exhorted to adopt tools whose disciplinary utility they reasonably doubt, while simultaneously being made to feel that their doubt is itself evidence of backwardness.

The psychological consequences of this configuration have received little systematic attention. The prevailing literature on AI in education has documented tool diffusion, skill gaps, and task-technology fit [1,2], but it has largely done so within an adoption-and-acceptance frame that presupposes the tool is, in principle, beneficial. Literature on technostress has documented the strain of digital work environments [3–5], but it has rarely engaged with the specific dynamics of disciplinary mismatch. Research on teacher burnout has accumulated robust models of demands-resources imbalance [6,7], yet it has not traced how a perceived technology gap crystallizes into the specific behavioral withdrawal patterns that FL teachers describe when they talk about giving

up on research, submitting the minimum, or, in their own words, lying flat.

This study addresses that gap. Drawing on constructivist grounded theory [8], the author asks two questions. First, how do FL teachers subjectively construct the experience of a technology gap, and how does that construction trigger technology anxiety and self-efficacy decline? Second, through what mechanisms does the psychological reaction to the gap evolve into research behavioral withdrawal and occupational burnout, and what mediating and moderating roles are played by social comparison, disciplinary identity, organizational support, and resource availability? By foregrounding teachers' own meaning-making rather than predefined adoption metrics, the study aims to surface the indigenous concepts and process dynamics that the empowerment discourse has rendered invisible, and to reframe the conversation about AI and faculty development as one that is simultaneously technical, psychological, and organizational.

2. Literature Review

The intellectual terrain this study inhabits sits at the intersection of four bodies of scholarship: research on AI in education and teacher technology integration, technostress and technology anxiety, occupational burnout and learned helplessness, and self-efficacy and technology acceptance. Each body has matured in relative isolation, and each, on its own, is insufficient to capture the dynamic by which a perceived technology gap crystallizes into research withdrawal. The author reviews them here not to exhaust them but to locate the specific gap this study addresses.

2.1 AI in Education and the Limits of the Adoption Frame

Scholarship on AI in education has expanded rapidly in the past decade. Systematic reviews [2,1] map a field dominated by intelligent tutoring systems, learning analytics, and adaptive assessment, with comparatively little attention to higher education faculty as a distinct population. Where teachers do appear, they tend to appear as adopters whose behavior is to be predicted from perceived usefulness and ease of use, or as objects of professional development whose beliefs must be aligned with technology integration [9,10]. Selwyn [11] has criticized this framing for its instrumental optimism, arguing that it obscures the structural, political, and affective dimensions of educational technology. The present study extends this critique by foregrounding the affective costs of the empowerment narrative in a specific disciplinary community.

A persistent finding in this literature is the gap between technology access and technology use. Cuban and colleagues documented this gap decades ago in the context of classroom computers [12], and it has re-emerged in the AI era as a gap between the tools showcased at the research frontier and the tools teachers actually integrate into their workflow. Ertmer's [9] distinction between first-order barriers (extrinsic, such as equipment and training) and second-order barriers (intrinsic, such as beliefs and self-efficacy) remains analytically useful here, but it was developed in a context where the technology in question had a relatively stable pedagogical purpose. The frontier AI tools that animate the current discourse do not yet have a stable pedagogical purpose in FL disciplines, and this instability, the author argues, is itself a source of psychological strain that the barriers framework does not fully capture.

2.2 Technostress and Technology Anxiety

The concept of technostress, introduced by Brod [13] and developed by Tarafdar and colleagues [3,4,5], names the stress that arises from the demands of digital work environments. Tarafdar et al. [3] identified five components of technostress, including techno-overload, techno-invasion, and techno-complexity, and linked them to role stress and reduced productivity. More recently, Tarafdar et al. [14] refined the construct to distinguish techno-eustress from techno-distress, acknowledging that technology can generate both challenge and threat appraisals. This nuance is important for the present study, because the FL teachers the author interviewed often described AI simultaneously as exciting and as threatening, and the same tool could move a teacher from one appraisal to the other across a single week.

Technology anxiety, a related but distinct construct, refers to the apprehension or fear that arises when interacting with, or anticipating interaction with, technology [15,16]. Unlike technostress, which is a response to ongoing exposure, technology anxiety can precede use and can itself inhibit adoption. Compeau and Higgins [17] showed that computer self-efficacy and computer anxiety are inversely related, and that outcome expectations mediate the link between self-efficacy and use. The present study builds on this work by examining how technology anxiety operates not as a static trait but as a threshold phenomenon, one that intensifies at the moment a teacher contemplates crossing from familiar web-based tools to unfamiliar frontier agent tools. The indigenous concept of technology threshold anxiety, developed in the findings, is intended to capture this moment-specific, threshold-bound quality.

2.3 Burnout, Learned Helplessness, and the Demands-Resources Imbalance

Burnout, defined as a syndrome of emotional exhaustion, depersonalization or cynicism, and reduced personal accomplishment [18], has been studied extensively in teachers. The job demands-resources (JD-R) model [6,19] provides the dominant explanatory frame, positing that burnout arises when chronic demands deplete resources faster than they can be replenished. Hakanen et al. [7] extended this model to teachers, showing that demands such as workload and role conflict predict exhaustion, which in turn predicts disengagement. Hobfoll's [20] conservation of resources (COR) theory offers a complementary account, arguing that stress arises from the threat of resource loss, actual loss, or the failure to gain resources after investment. The present study draws on both frames, but it foregrounds a resource that the JD-R and COR literatures have undertheorized in the AI context: the psychological resource of perceived technological currency, the sense that one's skills are adequate to the demands of the moment.

Learned helplessness, originally described by Seligman [21] and reformulated by Abramson et al. [22], provides the bridge from acute anxiety to chronic withdrawal. When individuals repeatedly experience uncontrollable negative outcomes, they develop a generalized expectation of helplessness that suppresses future instrumental behavior, even in controllable situations. The reformulation by Abramson and colleagues is particularly relevant here because it introduced the dimension of internality, the tendency to attribute failure to stable, global, internal causes. The FL

teachers in this study who moved from acute technology anxiety to chronic research withdrawal often made precisely such attributions, concluding not that a particular tool was difficult, but that they themselves were constitutionally unsuited to the AI era. This slide from situational to dispositional attribution is, the author argues, the mechanism by which technology gap perception converts into the behavioral pattern the teachers themselves called lying flat.

2.4 Self-Efficacy, Social Comparison, and Technology Acceptance

Bandura's [23,24] self-efficacy theory holds that individuals' beliefs about their capacity to execute courses of action determine their motivation, effort, and persistence. Four sources shape these beliefs: mastery experiences, vicarious experiences, verbal persuasion, and physiological arousal [24,25,26]. In the technology domain, Compeau and Higgins [17] showed that computer self-efficacy predicts use and that it is itself shaped by encouragement and by observing others. Tschannen-Moran and Woolfolk Hoy [27] developed the construct of teacher efficacy, emphasizing its contextual and task-specific character. The present study extends this work by examining how the four sources operate, and sometimes misfire, in the specific context of FL teachers' encounters with frontier AI tools. A central finding is that vicarious experiences, in the form of upward social comparison with AI-fluent peers, can depress rather than support efficacy when the comparison target is perceived as belonging to a different technological world.

Social comparison theory [28,29,30] provides the framework for understanding this dynamic. Upward comparison can be motivating or demoralizing depending on perceived similarity and perceived attainability of the comparison target. When FL teachers compared themselves to colleagues in computer science or to AI influencers on social media, the comparison was frequently demoralizing because the target was perceived as categorically different rather than incrementally ahead. The technology acceptance model (TAM; Davis [31]) and its successor, the unified theory of acceptance and use of technology (Venkatesh et al. [32]), round out the framework by specifying perceived usefulness and perceived ease of use as proximal determinants of adoption intention. In the present study, TAM operates less as a predictor of adoption and more as a moderator of the gap-to-burnout pathway: when perceived usefulness is low (as it often is in FL disciplines), the gap is more likely to be appraised as threatening rather than challenging, and the downward spiral is more likely to be set in motion.

2.5 The Gap This Study Addresses

Across these four bodies of literature, the author identifies a consistent absence: no study has traced, as a process, how a perceived technology gap travels through psychological mechanisms into research behavioral withdrawal and burnout in a specific disciplinary community. The technostress literature documents the strain but not the disciplinary dynamics. The burnout literature models the demands-resources imbalance but treats technology as a generic demand rather than as a meaning-laden symbol of scholarly currency. The self-efficacy literature specifies the sources of efficacy beliefs but has not examined how those sources malfunction when the task itself is contested. And the AI-in-education literature, dominated by the adoption frame, has presupposed that the tool is beneficial and that the teacher's task is to catch up. This

study addresses that absence by constructing, from the ground up, a process model of how FL teachers move from technology gap perception to research burnout, and by identifying the indigenous concepts and the moderating conditions that shape that movement.

3. Theoretical Framework

The theoretical framework that guides this study is not a single theory but an integration of five constructs, technology gap perception, technology anxiety, self-efficacy, learned helplessness, and burnout, with the technology acceptance model (TAM) operating as a moderator of the pathway between them. The author does not claim that this integration is novel in its components; each construct has a substantial literature. What is novel is the specific architecture by which they are connected into a process model of how FL teachers move from the perception of a technology gap to research burnout. The framework was developed in dialogue with the data, not imposed on it, and it served as a source of theoretical sensitivity [33] rather than as a deductive template. The author describes it here as it stood at the point of analysis, with the understanding that the findings section will refine and, in places, revise it.

3.1 Core Constructs and Their Definitions

Technology gap perception is defined as the teacher's subjective evaluation of the distance between their current technological capability and the demands of the frontier tools they perceive as circulating in their professional environment. It has three components: complexity perception (how cognitively demanding the tools appear), controllability perception (how modifiable the tools appear to be by the teacher's own effort), and adaptability perception (how well the tools appear to fit the teacher's disciplinary tasks). This construct extends Ertmer's [9] first- and second-order barriers by foregrounding the subjective and relational character of the gap, rather than treating it as an objective distance between skill and requirement.

Technology anxiety is defined as a threatening emotional experience, including tension, palpitations, and avoidance, that arises from the perceived complexity and uncontrollability of technology. Following Beckers and Schmidt [15] and Meuter et al. [16], the author treats anxiety as both a state and a trait, but the framework foregrounds its state component, particularly its intensification at the threshold of attempting a new tool. Self-efficacy is defined, after Bandura [24], as the individual's belief in their capacity to perform technology-related tasks, shaped by mastery experiences, vicarious experiences, verbal persuasion, and physiological arousal. Learned helplessness is defined, after Abramson et al. [22], as the generalized expectation of uncontrollability that arises from repeated failure or lack of control, leading to motivational inhibition and avoidance. Burnout is defined, after Maslach et al. [18], as the triadic syndrome of emotional exhaustion, cynicism, and reduced personal accomplishment.

3.2 The Integrated Pathway

The framework specifies a four-stage pathway. The first stage is the situational trigger: when teachers encounter frontier agent tools such as Codex, OpenClaw, or Claude Code, the high complexity, steep learning cost, strong institutional expectations, and insufficient resources combine to produce an intense technology gap perception.

The second stage is the psychological reaction: the gap triggers threat processing that produces technology anxiety, while the absence of mastery experiences and the presence of negative social comparison depress self-efficacy. Technology anxiety and efficacy decline reinforce each other, forming what the author terms a threat-efficacy collapse loop. The third stage is the behavioral consequence: from a TAM perspective, low perceived ease of use and low perceived usefulness, especially in low task-technology fit contexts, depress adoption intention; efficacy decline and anxiety trigger avoidance and minimal investment behaviors; repeated failed attempts or passive coping induce learned helplessness; and prolonged imbalance between high demands and low resources eventuates in research withdrawal, emotional exhaustion, and burnout, or, in the teachers' idiom, lying flat.

The fourth stage is the mediating and moderating layer. Social comparison, through peer demonstrations and media narratives, amplifies threat appraisal. Disciplinary identity cognition, the belief that one's discipline has low need for frontier tools, can function either as a defensive rationalization that maintains short-term psychological equilibrium at the cost of long-term burnout risk, or as a genuine weakening of perceived usefulness that leads to abandonment. Organizational support, peer mentoring, and contextualized training can repair self-efficacy by raising perceived ease of use and providing mastery experiences, thereby attenuating anxiety and buffering burnout. The framework thus specifies both a downward spiral and a repair pathway, and it predicts that the spiral will dominate when task-technology fit is low, social comparison is upward and dissimilar, and organizational support is weak.

3.3 Three Propositions for Theoretical Sensitivity

From this architecture, the author derived three propositions to guide theoretical sensitivity during analysis. Proposition 1: when the technology gap is appraised as uncontrollable and high-cost, technology anxiety and efficacy collapse will jointly mediate research withdrawal. Proposition 2: in low task-technology fit disciplinary contexts, individuals will more readily maintain short-term psychological balance through defensive rationalization, but this will increase long-term burnout risk. Proposition 3: high-quality mastery experiences and contextualized support can reverse the negative spiral, attenuating anxiety and restoring efficacy. These propositions were treated as sensitizing hypotheses, not as hypotheses to be tested in a confirmatory sense. Their function was to attune the author to the dynamics the framework predicted, while remaining open to the dynamics the data might surface that the framework had not anticipated. As the findings will show, the data largely confirmed the propositions but also refined them in important ways, particularly by surfacing the indigenous concept of technology threshold anxiety as a distinct moment in the spiral, and by revealing that defensive rationalization is not merely a coping strategy but a disciplinary identity claim that carries its own consequences.

4. Methodology

4.1 Research Design and Paradigmatic Stance

This study employs constructivist grounded theory [34,8], a methodological approach that shares with its Glaserian and Straussian predecessors the commitment to

inductive theory-building from data, but that departs from them in its epistemological assumptions. Where the original formulation of grounded theory [35] sought to discover a theory waiting in the data, constructivist grounded theory holds that data and analysis are co-constructed by the researcher and the participants, and that the resulting theory is an interpretive account rather than a mirror of an external reality [8,36]. This stance is appropriate for the present study because the phenomenon under investigation, the subjective construction of a technology gap and its psychological consequences, is itself a meaning-making process. A method that treats meaning as constructed rather than discovered is, the author argues, better suited to capturing the process than one that presupposes a single objective gap to be measured.

The constructivist stance also has methodological implications that the author took seriously. The author did not seek to bracket prior theoretical commitments, which is impossible in any strong sense, but to make them visible and to hold them loosely. The integrated framework described above served as a source of theoretical sensitivity, not as a coding scheme to be applied. The author wrote reflexive memos throughout the study documenting how her own position, as a researcher trained in both educational technology and applied linguistics, shaped the questions she asked and the codes she privileged. These memos are part of the audit trail and are available on request.

4.2 Theoretical Sampling and Participants

Consistent with grounded theory, sampling was theoretical rather than statistical [35,8]. The author began with a purposive sample of FL teachers who had publicly expressed, in faculty development workshops or on academic social media, some form of ambivalence about AI tools, and then refined the sample iteratively as categories emerged. The sampling criteria were designed to maximize variation along three dimensions that the framework identified as analytically relevant: technological capability (high, medium, low, as self-reported and verified through a brief technology use inventory), disciplinary orientation (English and American literature, linguistics, translation studies, cultural studies), and career stage (early career, mid-career, senior). The author also sampled for institutional context, recruiting from six universities that varied in rank (two Project 985, two Project 211, two regional comprehensive) and region (eastern, central, western China), on the assumption that institutional resources and regional AI infrastructure would moderate the gap experience.

Sampling continued until theoretical saturation was reached, defined as the point at which additional interviews yielded no new conceptual categories and only incremental elaboration of existing ones [8,35]. Saturation was assessed category by category, not globally. The final sample comprised 31 FL teachers (16 women, 15 men), ranging in age from 29 to 56 years ($M = 41.2$, $SD = 7.8$) and in teaching experience from 3 to 28 years. Twelve participants self-identified as having low technological capability, twelve as medium, and seven as high. Eleven worked in literature or cultural studies, ten in linguistics, and ten in translation studies. Table 1 summarizes the sample. The author conducted four additional follow-up interviews with key informants at intervals of three to six months to verify the stability of the process over time, following the procedure recommended by Charmaz [8] for longitudinal verification of process claims.

Table 1 Participant Demographics (N = 31)

Pseudonym	Discipline	Career Stage	Tech Capability	Institution Type
Lin	English Ligature	Senior	Low	985
Chen	Linguistics	Mid	Low	211
Wang	Translation	Early	Low	Regional
Zhao	Cultural Studies	Mid	Low	211
Liu	English Ligature	Early	Low	Regional
Sun	Linguistics	Senior	Medium	985
Zhou	Translation	Mid	Medium	985
Wu	English Ligature	Mid	Medium	211
Xu	Linguistics	Early	Medium	Regional
Ma	Translation	Senior	Medium	985
Hu	Cultural Studies	Mid	Medium	211
Gao	English Ligature	Early	Medium	Regional
Lin B.	Linguistics	Mid	High	985
He	Translation	Early	High	985
Guo	English Ligature	Mid	High	211
Tang	Cultural Studies	Senior	High	985
Fang	Linguistics	Early	High	Regional
Cao	Translation	Mid	High	985
Shen	English Ligature	Senior	Low	211
Yao	Linguistics	Early	Low	985
Tan	Translation	Mid	Low	Regional
Deng	Cultural Studies	Early	Low	985
Bai	English Ligature	Mid	Medium	985
Lu	Linguistics	Senior	Medium	Regional
Cui	Translation	Early	Medium	211
Pan	Cultural Studies	Mid	Medium	Regional
Yu	English Ligature	Senior	Medium	985
Su	Linguistics	Early	High	211
Mo	Translation	Mid	High	Regional
Ruan	English Ligature	Early	High	985
Wei	Cultural Studies	Senior	High	211

Note. Tech Capability was self-reported and verified through a brief technology use inventory covering web-based AI, local model deployment, agent workflows, and coding. Institution Type refers to the Chinese university tier system: 985 = elite research-intensive; 211 = research-oriented; Regional = comprehensive regional university.

4.3 Data Collection

Data were generated through in-depth, semi-structured interviews conducted between September 2024 and March 2025. Each interview lasted between 75 and 120 minutes and was conducted in Mandarin Chinese, the participants' working language, with the option for participants to switch to English for technical terms. Interviews were audio-recorded with consent and transcribed verbatim, yielding approximately 38 hours of audio and 612 pages of single-spaced transcript. The author conducted all interviews herself to ensure consistency in probing and to maintain the relational continuity that

constructivist grounded theory requires [8].

The interview protocol was organized around five thematic clusters, each with core questions and follow-up probes. The first cluster, technology encounters, asked participants to describe a recent moment when they became aware of a frontier AI tool and to walk the interviewer through their immediate cognitive and emotional response. The second cluster, anxiety and efficacy, asked participants to describe the bodily sensations, the cognitive appraisals, and the behavioral impulses that accompanied the encounter, and to rate the intensity of their anxiety on a 0–10 scale at key narrative moments. The third cluster, disciplinary identity, asked participants to articulate what they took to be the legitimate relationship between their discipline and frontier AI tools, with probes designed to distinguish defensive rationalization from genuine task-technology fit assessment. The fourth cluster, social comparison, asked participants to identify the comparison targets they encountered, the media through which they encountered them (offline peers, academic social media, conference presentations), and the frequency of comparison. The fifth cluster, organizational support and resources, asked participants to describe the forms of support they had received or wished they had received, with probes for contextualized training, peer mentoring, time relief, and technical assistance positions.

To activate specific memories and to reduce the social desirability bias that can accompany abstract questioning, the author used case triggers and brief scenarios. For example, when probing the moment of encountering a frontier tool, the author would describe a hypothetical scene in which a colleague demonstrated a local model workflow at a department meeting, and would ask the participant to narrate their internal experience in that scene. This technique, adapted from critical incident technique [37] and from narrative interviewing [8], proved effective in eliciting concrete, moment-specific accounts rather than generalized attitudes. The author also asked participants to self-rate their emotional intensity at key narrative moments and to note any physiological reactions, which facilitated subsequent coding of the threshold anxiety construct.

Memoing was integral to data collection, not separate from it. The author wrote analytical memos immediately after each interview, documenting initial codes, theoretical hunches, comparisons with prior interviews, and reflexive observations about her own role in shaping the data. These memos, totaling 142 pages, became the primary site where the framework was refined in dialogue with the data, and where the indigenous concepts that anchor the findings were first named and tentatively defined.

4.4 Data Analysis

Data analysis followed the three-stage coding procedure of grounded theory [35,38,8], conducted iteratively with data collection rather than after it. In the open coding stage, the author line-by-line coded the first 12 transcripts, generating 287 initial codes that remained close to participants' own words. For example, the participant's statement, "When I see them operating these tools, my first reaction is 'this is not my world', " was coded as essentialized self-limitation and instrumental self-denial. The statement, "Even if I learned it, it wouldn't be useful for our research," was coded as perceived disciplinary mismatch and linked to low perceived usefulness. The statement,

“I tried twice and failed; just thinking about trying again makes my heart race,” was coded as trial-and-error exhaustion and technology threshold anxiety, and was linked to learned helplessness. The statement, “The school pushes hard, so I just meet the minimum standard,” was coded as surface coping and research minimization strategy.

In the axial coding stage, the author grouped the open codes into categories and specified the relationships among them, using the paradigm model of conditions, actions, and consequences [38] as an organizing heuristic without imposing it rigidly. This stage produced the seven axial categories that structure the findings: technology gap perception, technology threshold anxiety, efficacy collapse, defensive rationalization, surface coping, learned helplessness, and research burnout, with social comparison and disciplinary identity as moderators and mastery experience as the repair pathway. Constant comparison [35] was used throughout, both within cases (comparing different moments in the same participant’s narrative) and across cases (comparing the same category across participants), to refine the boundaries and properties of each category.

In the selective coding stage, the author identified the core category that integrated the others. The core category that emerged was the downward spiral from technology gap perception to research burnout, mediated by the threat-efficacy collapse loop and shaped by the moderating conditions. The author then constructed the process model presented in Figure 1, which traces the spiral and its repair pathway. Theoretical saturation was reached after the 27th interview, with the final four interviews confirming rather than extending the categories. Saturation was assessed by category: no new properties of the seven axial categories emerged after the 24th interview, and no new relationships among them emerged after the 27th. The author continued to the 31st interview to ensure saturation across the institutional and disciplinary variation, and to allow for the four follow-up interviews that verified temporal stability.

4.5 Trustworthiness and Ethical Considerations

The author addressed trustworthiness through the four criteria of credibility, transferability, dependability, and confirmability proposed by Lincoln and Guba [39] and elaborated by Shenton [40] and Morse et al. [41]. Credibility was supported by prolonged engagement (the author spent an average of 90 minutes per interview and conducted follow-ups), persistent observation, peer debriefing with two colleagues trained in qualitative methods, and member checking. For member checking, the author returned the process model and the category descriptions to 12 participants, who confirmed the accuracy of the representation and, in three cases, suggested refinements that were incorporated. Transferability was supported by thick description of the context, the participants, and the disciplinary cultures, allowing readers to judge the applicability of the findings to their own settings. Dependability was supported by an audit trail of decisions, memos, and code revisions. Confirmability was supported by triangulation across data sources (interviews, observation of two faculty development workshops, and artifacts such as departmental AI policy documents) and by the reflexive memos that documented the author’s role in constructing the data.

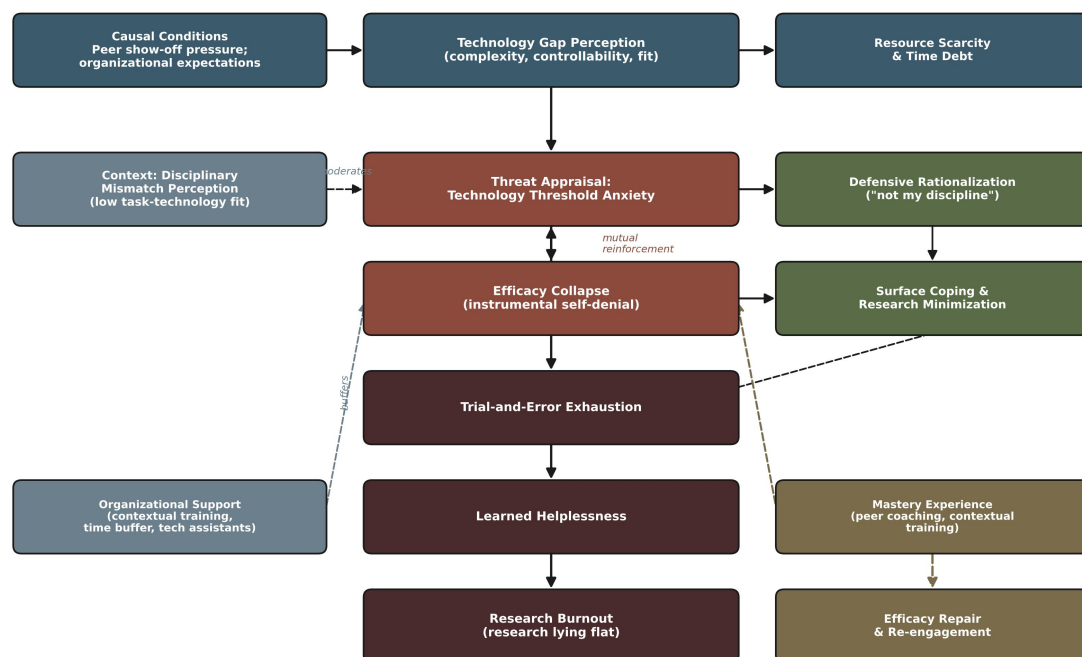
Ethical approval was obtained from the institutional review board of the author’s home university [IRB No. withheld for review]. All participants provided written

informed consent and were assured of anonymity, the right to withdraw at any time, and the secure storage of data. Pseudonyms were used throughout, and identifying institutional details were altered where they risked compromising anonymity. Three participants described emotional distress during interviews when recounting their burnout experiences; in each case, the author paused the interview, offered the option of rescheduling or withdrawing, and provided contact information for the university's counseling service. All three chose to continue after a brief break.

5. Findings

The analysis produced a process model of how FL teachers move from the perception of a technology gap to research burnout, with a counter-pathway of efficacy repair. The model, presented in Figure 1, traces a downward spiral through seven axial categories: technology gap perception, technology threshold anxiety, efficacy collapse, defensive rationalization, surface coping, learned helplessness, and research burnout, with social comparison and disciplinary identity as moderators and mastery experience as the repair pathway. The author presents the model as a narrative, following the spiral from its trigger to its endpoint, and then describes the repair pathway. Throughout, the author uses the indigenous concepts that emerged from the data to preserve the texture of the participants' meaning-making.

Figure 1. The Technology Gap-Efficacy Collapse-Research Burnout Spiral



Note. Solid arrows represent the dominant downward spiral; dashed arrows represent moderating and repair pathways.

Note. Solid arrows represent the dominant downward spiral from technology gap perception to research burnout. Dashed arrows represent moderating and repair pathways. The threat-efficacy collapse loop denotes the mutually reinforcing relationship between technology threshold anxiety and efficacy collapse.

5.1 Technology Gap Perception: The Situational Trigger

The spiral begins with technology gap perception, the teacher's subjective evaluation of the distance between their current capability and the demands of frontier

tools. This perception was not a static assessment but a moment-bound experience, triggered by specific encounters: a colleague’s demonstration of a local model workflow at a department meeting, a viral post on academic social media showcasing an agent-assisted literature review, a conference panel where a presenter casually mentioned fine-tuning a domain corpus. The gap was not experienced as a neutral fact but as a threat to the teacher’s standing in the scholarly community, and the threat was amplified by three contextual conditions that the participants named repeatedly: peer show-off pressure, organizational expectation pressure, and resource scarcity and time debt.

Peer show-off pressure operated through both offline and online channels. Offline, it was the colleague who, in a faculty meeting, casually demonstrated a retrieval-augmented pipeline that, in the participant’s words, “made my own workflow look like it belonged to the previous century.” Online, it was the steady stream of AI-fluence content on platforms where, as one participant put it, “everyone seems to be running agents and publishing faster, and you start to wonder what you are doing with your time.” The pressure was not merely informational; it was performative, signaling that scholarly currency was now indexed by tool fluency, and that those who lacked it were falling behind in a way that was visible to others.

Organizational expectation pressure operated through institutional policies that, in the wake of AI4Science, increasingly framed AI adoption as a research productivity strategy. Several participants described departmental directives that encouraged, and in some cases required, the integration of AI tools into grant proposals and research plans, without accompanying investment in training or infrastructure. As one mid-career participant noted, “The school pushes hard, so I just meet the minimum standard,” a phrase that captures the surface coping strategy that emerges later in the spiral. Resource scarcity and time debt compounded the pressure: participants described heavy teaching loads, administrative duties, and the absence of dedicated technical support positions, all of which made the time investment required to learn frontier tools feel like a debt that could not be repaid. One participant described the situation as “being asked to run a marathon when you have not been given shoes.”

5.2 Technology Threshold Anxiety: The Moment of Crossing

The gap perception crystallized, at the moment of attempting to engage with a frontier tool, into what the author terms technology threshold anxiety. This construct names a specific moment in the spiral: the threshold moment when a teacher contemplates, or actually attempts, to cross from familiar web-based tools to unfamiliar frontier agent tools. Unlike the generalized technology anxiety documented in the literature [15,16], threshold anxiety is moment-specific, bodily, and anticipatory. It is the heart-racing, the cognitive blanking, the impulse to close the terminal, that arises at the point of attempting to configure a local model or to invoke an agent workflow for the first time.

The participants described this moment with remarkable consistency across disciplinary and institutional lines. Lin, a senior professor of English literature, described it as follows: “I tried twice and failed; just thinking about trying again makes my heart race.” The phrase “makes my heart race” was used by 19 of the 31 participants

to describe the threshold moment, and the author coded it as a physiological marker of the anxiety. Chen, a mid-career linguist, described the cognitive component: "I open the terminal and my mind goes blank, and I think, 'I am not the kind of person who can do this.'" The self-categorization, "not the kind of person who can do this," recurred across interviews and was coded as essentialized self-limitation, a more dispositional and stable attribution than the situational frustration that accompanies ordinary learning difficulty.

The threshold moment was also marked by what the author coded as instrumental self-denial, the dismissal of the tool's relevance to the self. Wang, an early-career translator, captured this in the phrase that became one of the study's anchoring quotes: "When I see them operating these tools, my first reaction is 'this is not my world'." The phrase "not my world" was used by 14 participants, and it signaled a categorical rather than incremental distancing from the tool. The teacher was not saying that the tool was difficult but learnable; she was saying that the tool belonged to a world to which she did not belong, and that the boundary was constitutive rather than contingent. This categorical distancing, the author argues, is the mechanism by which threshold anxiety sets up the efficacy collapse that follows.

5.3 Efficacy Collapse: The Erosion of the Belief in Capability

Threshold anxiety, when repeated or when reinforced by negative social comparison, depressed self-efficacy. The author terms this efficacy collapse, a more precipitous and categorical decline than the gradual efficacy erosion described in the self-efficacy literature [24,25]. Collapse, rather than erosion, captures the participants' experience of a sudden loss of footing, a sense that the ground they had stood on as competent scholars was being pulled away. The collapse was driven by the malfunction of three of Bandura's [24] four sources of self-efficacy: the absence of mastery experiences, the demoralizing rather than motivating character of vicarious experiences, and the absence of verbal persuasion.

Mastery experiences were scarce because the threshold anxiety itself inhibited the attempts that would generate them. The teachers who most needed a successful encounter with a frontier tool were the least likely to attempt one, and the few attempts they made often ended in failure that confirmed rather than challenged the anxiety. Zhao, a mid-career cultural studies scholar, described the cycle: "I tried to set up the local model, I followed the tutorial, and it failed at the dependency step. I tried again the next day, and it failed at a different step. After the third time, I stopped trying. I told myself it was not worth it, but really I was afraid of failing again." The repeated failure, in the absence of scaffolding, produced not a learning curve but a helplessness curve.

Vicarious experiences, which Bandura [24] identified as a source of efficacy, functioned in this context as a source of efficacy collapse. The problem was not the absence of models but the perceived dissimilarity of the models. When participants observed AI-fluent colleagues or social media influencers, they did not see a slightly more advanced version of themselves; they saw a categorically different kind of scholar. As Liu, an early-career literature scholar, put it, "They are a different species. Watching them does not make me think I can do it; it makes me think I will never be them." This perception of categorical dissimilarity is consistent with social comparison theory's

prediction that upward comparison is demoralizing when the target is perceived as dissimilar rather than similar [29,30], and it inverts the efficacy-building function that vicarious experiences are supposed to perform.

Verbal persuasion was largely absent or counterproductive. Institutional exhortations to adopt AI tools, unaccompanied by training or support, functioned not as encouragement but as additional pressure. Peer encouragement, when it came from the categorically dissimilar AI-fluent colleagues, was experienced as patronizing rather than supportive. The only form of verbal persuasion that participants reported as efficacy-supportive was the encouragement of peers who were themselves struggling, who framed the difficulty as shared and surmountable rather than as a personal deficit. This finding, which the author returns to in the discussion, has implications for the design of peer support programs.

5.4 Defensive Rationalization: The Short-Term Equilibrium Strategy

Faced with threshold anxiety and efficacy collapse, participants did not immediately withdraw. They first engaged in what the author terms defensive rationalization, a cognitive strategy that reframed the decision not to engage with frontier tools as a principled disciplinary choice rather than as a capitulation to anxiety. The strategy took two forms. The first was the claim that the tools were not useful for the discipline, captured in the phrase, “Even if I learned it, it wouldn’t be useful for our research.” This claim was sometimes genuinely grounded, as when literature scholars pointed out that close reading cannot be delegated to a language model, but it was also sometimes deployed as a post hoc justification for avoidance, blurring the line between genuine task-technology fit assessment and defensive rationalization.

The second form of defensive rationalization was the appeal to disciplinary authenticity, the claim that engaging with frontier tools would compromise the integrity of the discipline. Sun, a senior linguist, articulated this position: “If I use an agent to draft my analysis, then whose analysis is it? The discipline has standards, and those standards are not negotiable just because a tool is convenient.” This appeal functioned as a boundary maintenance strategy, marking the teacher as a guardian of disciplinary purity against technological encroachment. The author does not claim that this appeal was always defensive in the rationalizing sense; in some cases, it reflected a genuine and defensible disciplinary position. But the construct of defensive rationalization names the pattern in which the appeal was deployed primarily to manage the anxiety aroused by the gap, rather than to advance a considered disciplinary argument, and in which its function was to restore short-term psychological equilibrium at the cost of foreclosing the exploration that might have generated mastery experiences.

Defensive rationalization was reinforced by what the author coded as security compliance hesitation, the concern that using frontier tools, particularly locally deployed models and agent workflows, raised data security, intellectual property, and ethical questions that the institution had not adequately addressed. This concern was legitimate, and the author treats it as a genuine moderator of adoption rather than as a mere rationalization. But it also functioned, in practice, as an additional justification for non-engagement, and the line between legitimate caution and defensive rationalization was often blurred in participants’ accounts.

5.5 Surface Coping and Research Minimization: The Behavioral Consequence

When defensive rationalization failed to fully contain the anxiety, or when institutional pressure made non-engagement costly, participants shifted to behavioral strategies that the author groups under surface coping and research minimization strategy. Surface coping involved performing the gestures of AI adoption without substantive engagement: attending a workshop, listing a tool in a grant proposal, generating a polished translation with a web-based assistant and presenting it as AI-assisted research. The goal was to signal compliance with the institutional expectation of AI fluency without incurring the cost of actually acquiring it. As one participant noted, “The school pushes hard, so I just meet the minimum standard,” a phrase that captures the surface coping strategy with precision.

Research minimization strategy was a more consequential behavioral pattern. It involved reducing the scope, ambition, and output of research to a level that could be sustained without engaging with frontier tools. Participants described choosing research questions that could be answered with traditional methods, selecting journals that did not expect AI-assisted analysis, and declining collaborative opportunities that would have required tool fluency. The strategy was rational at the individual level, given the constraints, but it had the collective effect of consolidating the disciplinary marginalization of FL research in an AI-saturated academic environment. The author terms the endpoint of this strategy research lying flat, borrowing the participants’ own term, which names a state of disengagement that goes beyond burnout to include a deliberate reduction of scholarly aspiration.

A particularly insidious variant of research minimization was what the author terms agentic outsourcing, the delegation of research tasks to AI tools in a way that hollowed out the scholar’s own contribution without producing the mastery that would have come from engaging with the tools substantively. Participants who engaged in agentic outsourcing described generating literature reviews with web-based assistants, polishing translations with AI, and drafting grant proposals with AI assistance, all without understanding the tools well enough to evaluate their outputs critically. The result was a paradoxical state in which the teacher was more dependent on AI than the AI-fluent colleague, but without the agency that comes with understanding, a state that one participant described as “being driven by the tool rather than driving it.”

5.6 Learned Helplessness and Research Burnout: The Endpoint

Surface coping and research minimization, sustained over time, eventuated in learned helplessness and research burnout. Learned helplessness, in the reformulated version of Abramson et al. [22], involves the attribution of failure to internal, stable, and global causes. The participants who reached this endpoint did not attribute their difficulty to the steepness of the learning curve or to the absence of support; they attributed it to their own constitutive unsuitability to the AI era. As one participant put it, “I am just not a technology person, and no amount of training will change that.” This attribution, once made, suppressed future instrumental behavior: the participant stopped attempting to learn, stopped seeking support, and stopped entertaining the possibility that the gap could be closed.

Research burnout, the endpoint of the spiral, manifested as the triadic syndrome described by Maslach et al. [18]: emotional exhaustion (“I am tired in a way that sleep does not fix”), cynicism (“research has become a game I no longer want to play”), and reduced personal accomplishment (“I used to think I was a good scholar; now I am not sure I am a scholar at all”). The burnout was specific to the research domain; several participants described continuing to teach with engagement and competence while withdrawing from research entirely. This domain specificity is consistent with the JD-R model’s prediction that burnout follows the depletion of domain-specific resources [6,19], and it suggests that the technology gap operates as a demand that depletes the specific resource of perceived technological currency, rather than as a generic stressor.

The endpoint of research lying flat was reached by a subset of participants who had moved beyond burnout into a state of deliberate disengagement. These participants described not the exhaustion of someone who wanted to continue but could not, but the settled posture of someone who had concluded that the game was not worth playing. As one participant put it, “I have made my peace with being a teaching-focused academic. The research race is for people who can run it, and I cannot.” The author treats research lying flat as a distinct endpoint rather than as a synonym for burnout, because it involves an active reframing of identity rather than a passive depletion of resources, and because it carries consequences for the discipline that ordinary burnout does not.

5.7 The Repair Pathway: Efficacy Repair Through Mastery and Support

The spiral was not inevitable. A subset of participants, including some who had entered the spiral, described a counter-pathway that the author terms efficacy repair. The pathway was anchored in two resources that the framework had predicted but that the data refined: high-quality mastery experiences and contextualized peer support. Mastery experiences, when they occurred, interrupted the anxiety-helplessness cycle by providing evidence that the gap could be closed. The mastery experiences that mattered were not the dramatic successes of the AI-fluent colleagues, which participants perceived as dissimilar, but the small, incremental successes of peers who were themselves struggling. As one participant described it, “A colleague walked me through it once, and I found it wasn’t that hard.” The phrase “wasn’t that hard” signaled a recalibration of the perceived difficulty, and it was coded as a mastery experience that restored efficacy.

Contextualized peer support operated through what the author terms proximity mentoring, the support of peers who were close enough in the technology gap to be perceived as similar but far enough ahead to provide scaffolding. Proximity mentoring differed from the expert mentoring that institutions typically provided, which was often delivered by AI-fluent colleagues or external trainers whom participants perceived as categorically dissimilar. The participants who described efficacy repair uniformly identified proximity mentoring, rather than expert training, as the decisive factor. This finding has implications for the design of faculty development programs, which the author returns to in the discussion.

The repair pathway was also supported by organizational conditions that buffered the resource depletion: dedicated time for learning, technical support positions, and contextualized training that addressed the specific task-technology fit questions of FL

disciplines. Where these conditions were present, the spiral was attenuated or reversed; where they were absent, the spiral proceeded unchecked. The moderating role of organizational support is consistent with the JD-R model's prediction that resources buffer the impact of demands [6,7], but the study refines this prediction by specifying which resources matter: not generic training or generic encouragement, but contextualized, proximity-based, mastery-generating support.

6. Discussion

The findings of this study reframe the prevailing narrative of AI as a low-threshold empowerment tool by foregrounding the conditions under which it functions, for a specific disciplinary community, as a pressure source that intensifies rather than alleviates research burnout. The author discusses the theoretical contributions of this reframing, the mechanisms by which AI becomes non-empowering in low task-technology fit disciplines, and the practical implications for teacher development, AI literacy training, tool design, and academic support systems.

6.1 Theoretical Contributions

The study makes three theoretical contributions. First, it extends the technostress literature by introducing the construct of technology threshold anxiety as a moment-specific, bodily, and anticipatory form of technology anxiety that intensifies at the point of crossing from familiar to unfamiliar tools. The existing literature on technology anxiety [15,16] treats anxiety primarily as a trait or as a response to ongoing exposure; the construct of threshold anxiety foregrounds the threshold moment as analytically distinct, and it suggests that interventions targeting the threshold moment may be more effective than those targeting generalized anxiety. The construct also bridges the technostress and self-efficacy literatures by specifying the mechanism, the threat-efficacy collapse loop, through which anxiety and efficacy decline mutually reinforce each other.

Second, the study contributes to the self-efficacy literature by documenting the conditions under which Bandura's [24] four sources of self-efficacy malfunction. The finding that vicarious experiences, in the form of upward social comparison with categorically dissimilar models, can depress rather than support efficacy refines the standard account of vicarious experience as an efficacy source. This refinement is consistent with social comparison theory's prediction that upward comparison is demoralizing when the target is perceived as dissimilar [29,30], but it has not been previously documented in the specific context of FL teachers' encounters with frontier AI tools. The finding has implications for the design of modeling and demonstration in faculty development programs, which the author returns to below.

Third, the study contributes to the burnout literature by specifying the resource that is depleted in the technology gap context: the psychological resource of perceived technological currency. The JD-R model [6,19] and COR theory [20] provide general frames for understanding resource depletion, but they have not previously identified perceived technological currency as a distinct resource. The study's finding that burnout in this context is domain-specific, affecting research while sparing teaching, is consistent with the JD-R prediction that burnout follows the depletion of domain-specific resources, and it suggests that the technology gap operates as a demand that depletes a specific

resource rather than as a generic stressor. The indigenous concept of research lying flat, which names an active identity reframing rather than a passive depletion, further refines the burnout construct by distinguishing between exhaustion-driven and identity-driven withdrawal.

6.2 AI as a Non-Empowering Pressure Source in Low Task-Technology Fit Disciplines

The central counterintuitive finding of this study is that AI, in the specific configuration of low task-technology fit, upward dissimilar social comparison, and weak organizational support, functions less as an empowering tool than as a pressure source that intensifies existing inequities in research capacity. This finding challenges the empowerment narrative that dominates the AI-in-education literature [1,2] and the policy discourse that surrounds AI4Science. The author does not claim that AI is inherently non-empowering; the high-capability participants in this study, and the participants who traversed the repair pathway, described genuine empowerment. The claim is more precise: AI is non-empowering under specifiable conditions, and those conditions are disproportionately present in FL disciplines, where task-technology fit is genuinely uncertain, where social comparison targets are categorically dissimilar, and where organizational support is typically generic rather than contextualized.

The mechanism by which AI becomes non-empowering is the threat-efficacy collapse loop, in which threshold anxiety and efficacy decline mutually reinforce each other, producing a downward spiral that, once entered, is difficult to exit without the specific interventions of proximity mentoring and mastery-generating support. The loop is self-perpetuating because the anxiety inhibits the attempts that would generate mastery, and the absence of mastery confirms the anxiety. The defensive rationalization and surface coping strategies that participants deployed to manage the anxiety in the short term, far from being maladaptive, were rational responses to the constraints they faced; but they had the long-term effect of foreclosing the exploration that might have interrupted the spiral. This temporal structure, in which short-term rationality produces long-term harm, is a feature of the technology gap context that the empowerment narrative does not acknowledge.

The disciplinary dimension of this mechanism deserves emphasis. FL disciplines, including English and American literature, translation studies, and cultural studies, occupy an awkward position in the AI4Science imaginary because their core scholarly tasks depend on forms of deep textual interpretation that current AI tools can simulate but not reliably perform. The perceived usefulness of frontier agent tools is, for many FL scholars, genuinely uncertain, and this uncertainty is not merely a deficit to be corrected by training but a substantive disciplinary judgment that deserves engagement. The study's finding that defensive rationalization and genuine task-technology fit assessment are often blurred in participants' accounts suggests that the disciplinary conversation about AI needs to be distinguished from the psychological conversation about anxiety, and that conflating the two, as both the empowerment narrative and the defensive rationalization do, serves neither.

6.3 Practical Implications

The findings have four sets of practical implications. First, for teacher development,

the study suggests that the prevailing model of expert-led training, in which AI-fluent colleagues or external trainers deliver workshops to faculty, is likely to be counterproductive for the teachers who need support most. The finding that vicarious experiences with categorically dissimilar models depress rather than support efficacy implies that the modeling in such workshops functions as a demoralizing upward comparison rather than as an efficacy-building vicarious experience. The alternative the study suggests is proximity mentoring, in which peers who are close enough in the technology gap to be perceived as similar provide scaffolding. Institutions can support proximity mentoring by identifying and rewarding the peers who occupy this position, by creating structured peer support programs that pair struggling faculty with slightly more advanced peers, and by providing time and recognition for the mentoring labor.

Second, for AI literacy training, the study suggests that training should be contextualized to the specific task-technology fit questions of FL disciplines, rather than generic. A workshop on configuring a local model for corpus linguistics, or on using an agent workflow to support, not replace, close reading, would address the perceived usefulness question that the generic training does not. The study's finding that perceived usefulness moderates the gap-to-burnout pathway implies that training which raises perceived usefulness, by demonstrating disciplinary relevance, will attenuate the spiral. Training should also target the threshold moment specifically, providing scaffolded first encounters with frontier tools that are designed to generate mastery experiences rather than to confirm the anxiety. The finding that the threshold moment is bodily and anticipatory implies that training should include affective scaffolding, normalizing the anxiety and providing coping strategies, rather than focusing exclusively on technical instruction.

Third, for intelligent tool design, the study suggests that the design of frontier agent tools should attend to the experience of the threshold moment. The current generation of tools, optimized for users who are already fluent, presents a steep threshold that functions as a barrier rather than as a gateway. Design interventions that lower the threshold, through guided on boarding, contextualized defaults, and error recovery that does not punish experimentation, would attenuate the threshold anxiety and support the mastery experiences that interrupt the spiral. The study's finding that the security compliance hesitation functions as both a legitimate concern and a defensive rationalization implies that tool design should also address the security and ethical questions proactively, through transparent data handling and clear institutional compliance frameworks, rather than leaving them to be navigated by individual teachers.

Fourth, for academic support systems, the study suggests that institutions should treat the technology gap as a socio-emotional and organizational challenge, not merely as a technical training problem. The finding that resource scarcity and time debt compound the gap implies that institutional support should include dedicated time for learning, technical support positions, and the recognition of AI fluency acquisition as scholarly labor rather than as an expectation to be met in unpaid overtime. The finding that organizational expectation pressure, unaccompanied by support, functions as additional demand rather than as encouragement implies that institutional policies should be designed to align expectations with resources, rather than to generate

expectations in the absence of resources. The study's finding that research lying flat is an active identity reframing rather than a passive depletion implies that interventions targeting lying flat must address the identity dimension, not merely the resource dimension, through mentoring and recognition that revalidates the scholarly identity of struggling faculty.

7. Conclusion

This study set out to examine how foreign language teachers subjectively construct the experience of a technology gap and how that construction travels, through psychological mechanisms, into research burnout. The constructivist grounded theory analysis of 31 interviews produced a process model that traces a downward spiral from technology gap perception, through technology threshold anxiety and efficacy collapse, to defensive rationalization, surface coping, learned helplessness, and research burnout, with a counter-pathway of efficacy repair anchored in mastery experiences and proximity mentoring. The central finding, that AI functions less as an empowering tool than as a pressure source under specifiable conditions, reframes the prevailing empowerment narrative and foregrounds the psychological costs of the technology gap in low task-technology fit disciplines.

The study's contribution is both theoretical and practical. Theoretically, it extends the technostress, self-efficacy, and burnout literatures by introducing the construct of technology threshold anxiety, by documenting the conditions under which the sources of self-efficacy malfunction, and by identifying perceived technological currency as a distinct resource whose depletion drives domain-specific burnout. Practically, it suggests that interventions targeting the technology gap must address the threshold moment, the disciplinary task-technology fit question, and the organizational conditions that buffer or compound the spiral, and that the prevailing model of expert-led training should be supplemented, and in some cases replaced, by proximity mentoring and contextualized, mastery-generating support.

The broader implication of the study is that the conversation about AI and faculty development needs to move beyond the adoption frame that has dominated the literature and the policy discourse. The technology gap is not merely a problem of access or skill; it is a problem of meaning, identity, and organizational design. Treating it as the latter, as this study has tried to do, opens space for interventions that take seriously the psychological and disciplinary specificity of teachers' encounters with frontier AI tools, and that hold the promise of an AI integration that is empowering rather than exhausting.

References

- [1] Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International Journal of Educational Technology in Higher Education*, 17, 1–30. <https://doi.org/10.1186/s41239-020-00179-7>
- [2] Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education. *International Journal of Educational Technology in Higher Education*, 16, Article 39. <https://doi.org/10.1186/s41239-019-0171-0>
- [3] Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, 24(1), 301–328. <https://doi.org/10.2753/MIS0742-1222240109>
- [4] Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research*, 19(4), 417–433. <https://doi.org/10.1287/isre.1070.0165>
- [5] Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly*, 35(4), 831–858. <https://doi.org/10.2307/41405943>
- [6] Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>
- [7] Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43(6), 495–513. <https://doi.org/10.1016/j.jsp.2005.11.001>
- [8] Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). Sage.
- [9] Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47(1), 47–61. <https://doi.org/10.1007/BF02299597>
- [10] Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, 59(2), 423–435. <https://doi.org/10.1016/j.compedu.2012.02.018>
- [11] Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.
- [12] Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technologies in the classroom: The paradoxical reality. *American Educational Research Journal*, 38(4), 813–834. <https://doi.org/10.3102/00028312038004813>
- [13] Brod, C. (1984). *Technostress: The human cost of the computer revolution*. Addison-Wesley.
- [14] Tarafdar, M., Cooper, C. L., & Stich, J.-F. (2019). The technostress trifecta—Techno eustress, techno distress and design: An analytical framework for the study of information technology and individuals. *International Journal of Information Management*, 46, 86–99. <https://doi.org/10.1016/j.ijinfomgt.2018.12.003>
- [15] Beckers, J. J., & Schmidt, H. G. (2003). Computer experience and computer anxiety: Implications for the use of the computer. *Computers in Human Behavior*, 19(6), 785–797. [https://doi.org/10.1016/S0747-5632\(03\)00013-1](https://doi.org/10.1016/S0747-5632(03)00013-1)
- [16] Meuter, M. L., Ostrom, A. L., Bitner, M. J., & Roundtree, R. (2003). The influence of technology anxiety on consumer use and experiences with self-service technologies. *Journal of Business Research*, 56(11), 899–906. [https://doi.org/10.1016/S0148-2963\(01\)00276-4](https://doi.org/10.1016/S0148-2963(01)00276-4)
- [17] Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189–211. <https://doi.org/10.2307/249688>
- [18] Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- [19] Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving wellbeing and performance. In C. Bauer & O. Hämmig (Eds.), *Bridging occupational, organizational and public health: A transdisciplinary approach* (pp. 43–68). Springer.
- [20] Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513–524. <https://doi.org/10.1037/0003-066X.44.3.513>
- [21] Seligman, M. E. P. (1972). Learned helplessness. *Annual Review of Medicine*, 23, 407–412. <https://doi.org/10.1146/annurev.me.23.020172.002203>
- [22] Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, 87(1), 49–74. <https://doi.org/10.1037/0021-843X.87.1.49>
- [23] Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- [24] Bandura, A. (1997). Self-efficacy: The exercise of control. W. H. Freeman.