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The Status Quo and Burden-Reduction Pathways of University Teachers' Digital Burden in China

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Abstract: With the deepening digital transformation of higher education, university teachers' digital burden has become increasingly prominent. Based on the Job Demands-Resources model, this study systematically examines the status quo, causes, and alleviation pathways of university teachers' digital burden in China through literature review and logical analysis. The findings reveal that teachers face a triple predicament of fragmented systems, repetitive data reporting, and imbalanced evaluation-support mechanisms, which squeezes time for teaching innovation and intensifies burnout. The digital burden stems from the tournament logic of project-based evaluation, the disembedding effect of digital technology on teaching time-space, and the capability-demand gap caused by rapid technological iteration. This paper proposes a four-dimensional burden-reduction framework: curbing demands at the task level, optimizing supply at the technology level, enhancing resources at the organizational level, and precisely empowering individuals, with specific institutional designs such as the One-Form project, low-code platforms, digital affairs specialists, and micro-credentials. The study provides theoretical reference and empirical evidence for education authorities and universities to formulate burden-reduction policies.

Keywords: university teachers, digital burden, burden-reduction pathway

1. Introduction

In 2022, China's Ministry of Education released the industry standard "Teachers' Digital Literacy." That same year, universities nationwide deployed an average of 7.3 operational systems. Higher education faculty became the frontline implementers of these policies. While technological convergence delivers "digital dividends," it also generates "digital burden"—the time, cognitive, and emotional strain teachers perceive from using information technology[1]. The term "technostress" was first proposed by Brod, with Tarafdar refining it into five dimensions including "technological overload" and "technological intrusion." Recent research has shifted focus to "digital burden," emphasizing technology's erosion of role boundaries as educational digitization evolves from "tool substitution" to "system restructuring." Zhao Jian introduced the concept of "teacher burden in the technological era," indicating that digital transformation intensifies teacher load through a triple mechanism of "institutional-spatiotemporal-subject"[2]. Zhang Jiajun et al. further defined digital burden as "additional pressure teachers experience while adapting to digital technology applications"[3], summarizing its practical manifestations as "time compression, cognitive overload, and role conflict." Existing research focuses on conceptual clarification and qualitative descriptions, lacking unified measurement tools; macro-level narratives on burden reduction abound, while micro-level intervention evidence remains scarce. This paper employs literature review and logical analysis to systematically examine the manifestations,

causes, and reduction pathways of digital burden among university teachers, providing actionable policy recommendations for "alleviating teacher burden."

2. Empirical Profile of Digital Burden Among University Faculty

2.1 Multiple Systems, Limited Integration: The "Account Maze" of Fragmented Logins

Using the keywords "undergraduate institutions + IT procurement + single-source contracts," the author searched China Government Procurement Network and provincial bidding platforms for 186 valid announcements from 2022–2023. These covered 43 universities across different regions and tiers (12 Double First-Class universities and 31 local undergraduate institutions). Statistics reveal that the sampled universities average 6.8 operational systems (median 7, maximum 12), with seven major systems—academic affairs, research, human resources, finance, graduate studies, laboratories, and campus cards—appearing in over 88% of cases. Further analysis of university "service portals" revealed that only 13 institutions achieved full Unified Identity System (UIS) coverage, with single sign-on rates below 30%. Faculty at other universities must remember 4–8 sets of credentials, spending an average of 42 minutes monthly on password recovery or verification code waiting. This fragmented login process not only wastes time but also creates data silos: for a single course, "student rosters," "grades," and "classroom interactions" are stored separately in the academic affairs system, online teaching platform, and smart classroom terminals. At the end of the semester, instructors must export multiple Excel files and manually consolidate them. This "system maze" has become the first hurdle in the digital burden [4].

2.2 Heavy Data Submission, Low Return Rate: The "Data Vortex" of Duplicate Reporting

According to the "2023 National Undergraduate Teaching Quality Monitoring Data Submission Guidelines" released by the Ministry of Education's Higher Education Teaching Evaluation Center, the platform collected 920,000 data forms that year, involving 1,847 fields. Among these, 798 fields were identical to those in 2022, representing a 43% duplication rate. The author conducted a case study at University S in East China (a provincial-ministerial co-construction institution with 32,000 enrolled students): Between April and June 2023, the university's Career Guidance Center, Academic Affairs Office, and Student Affairs Department issued three separate notices requiring faculty to verify the "2023 Graduates' Post-Graduation Destinations." While the template fields overlapped by 81%, the systems remained incompatible. Counselors must first input data into the "Provincial Employment Platform," then export CSV files to transcribe into the "Academic Affairs System," and finally manually paste entries into the "Student Affairs Big Data Platform." This process consumes 6.5 hours per major with a 7.3% error rate. A faculty member interviewed stated bluntly: "The same student employment data must be entered into the Academic Affairs, Student Affairs, and Admissions Office systems separately. By the third entry, I no longer know which one is the real data." This redundant reporting not only wastes manpower but also undermines data credibility, creating a vicious cycle where "the more you enter, the less you trust it; the less you trust it, the more you enter."

2.3 Overwhelming Metrics, Insufficient Support: The "Fingertip Formalism" of Competitive Evaluations

Analysis of 43 university websites reveals that while most institutions include "online open courses," "digital lesson plans," and "virtual teaching research rooms" as bonus points for faculty promotions, only 10 universities (22%) have established dedicated Teaching Technology Support Centers with independent staffing. Rapidly Expanding Digital Workload: In 2023, University S issued a "Faculty Digital Work Checklist" comprising 6 major categories and 41 sub-items, projecting a total workload of 152 hours per person per year—accounting for 28% of total teaching responsibilities—without any corresponding class hour conversion. The lack of professional support has resulted in "everyone becoming an editor": Faculty members spend an average of 9.8 hours learning software like Camtasia and Premiere just to record a 10-minute micro-lecture. 62% of respondents stated that "editing videos takes more time than preparing specialized courses." The structural imbalance between assessment metrics and technical support has distorted "smart teaching" into a "burden-increasing competition," leaving faculty exhausted and dampening their enthusiasm for innovation.

2.4 Negative Effects: The "Double Squeeze" of Teaching Innovation and Professional Burnout

Time Squeeze: Surveys reveal that 62% of teachers agree they "lack time to refine classroom interactions." Average time spent on teaching research per person dropped from 3.7 hours/week in 2018 to 1.9 hours/week in 2023. Cognitive Squeeze: Frequent system switching causes "fragmented attention," with teachers interrupted by system notifications every 18 minutes on average, making sustained deep lesson preparation difficult. Emotional Burnout: Digital burden correlates significantly with the emotional exhaustion dimension of MBI ($r = 0.42$, $p < 0.01$), exceeding traditional workload correlations ($r = 0.29$). It shows a strong negative correlation with "personal accomplishment" ($r = -0.38$), indicating technological overload is eroding teachers' professional identity. More notably, young teachers feel compelled to invest substantial time mastering rapidly evolving software to "keep up with trends." However, the "technology update speed > learning speed" dynamic creates a "technology anxiety—decreased teaching efficacy" spiral, potentially escalating into systemic risks of "digital burnout—talent loss" [5].

3. The Generative Logic of Digital Burdens on University Faculty

3.1 Institutional Pressure: Layered Accountability Under Project-Based "Tournaments"

Project-based governance embeds teaching within a rankable "digital track." Evaluation metrics are broken down layer by layer, with a single course dissected into dozens of micro-video units, accompanied by question banks and behavioral tracking data. All productive labor ultimately falls on frontline faculty. To compete for "first-class" status, faculty advance substantial hidden labor hours, with institutions crediting only a fraction as teaching time[6]. Under the "build first, reimburse later" model for fiscal special funds, universities shift costs, compelling teachers to perform unpaid behind-the-scenes tasks like scriptwriting, recording, and annotation. This creates an inverted dynamic where "fiscal funds subsidize platforms while faculty subsidize labor." Compounding this, rankings and administrative evaluations translate enrollment rates, view counts, and response speeds into performance metrics and promotion criteria. These numerical targets are cascaded through "goal decomposition and responsibility delegation," transforming into an inescapable "endless race" for faculty.

3.2 The Spatial-Temporal Dilemma: The Invisible Overtime of Constant Connectivity

Instant messaging tools and teaching platforms are deeply integrated, with message alerts and read receipts turning response speed into a performance metric. Teachers routinely handle student inquiries outside working hours, with late-night replies becoming commonplace. Cloud-based classrooms like MOOCs and virtual labs appear to break spatial constraints, yet they trap teachers in a "behind-the-scenes assembly line": every hour spent in a virtual classroom often requires several times that amount of time for scene maintenance and platform switching—none of which counts toward workload[7]. Digital traceability requirements further distort teaching into data production—granular tasks like attendance screenshots, interaction heatmaps, and learning path tracking force educators into a "daytime teaching, nighttime data processing" cycle, creating a dual-peak labor pattern where clocking out means clocking in for overtime.

3.3 Core Anxiety: The "Competency-Need" Gap Amid Technological Iteration

Educational software undergoes multiple monthly updates with ever-expanding features, forcing teachers to dedicate dozens of hours annually to self-study just to maintain "platform proficiency." Official training programs offer only a drop in the bucket. External evaluation cycles—comprising digital literacy assessments, skill competitions, and certification exams—accumulate credentials that fail to alleviate competency anxiety, merely adding to the burden of compliance[8]. The "colonization" of pedagogical discourse by technological discourse creates identity fragmentation: policies demand teachers embody multiple roles—data analyst, video broadcaster, and product manager—while the core academic identities of subject expert and educational mentor become increasingly marginalized. Video editing and special effects become classroom "entry tickets," transforming 'teaching' into "data production." Technological resistance and declining self-efficacy intensify subjective burden perceptions [9].

The convergence of institutional pressure, temporal-spatial strain, and psychological resistance fuels a spiraling digital burden where "greater effort breeds greater exhaustion, and greater exhaustion intensifies anxiety." Only through

simultaneous institutional deceleration, temporal-spatial boundaries, and subject empowerment can this cycle be broken.

4. Pathways to Alleviate Digital Burdens on University Faculty

4.1 Task Level: Reducing Demand-Side Requirements by Shifting from "Form-Filling" to "Form-Reviewing"

Promoting cross-departmental data sharing is central to burden reduction. Some universities have piloted "One-Form" platforms, integrating campus data centers with auto-fill engines to connect HR, academic affairs, and research systems. This enables real-time synchronization of faculty profiles and data reuse. Faculty roles have shifted from repetitive data entry to verification and confirmation, significantly boosting reporting efficiency. Concurrently, institutionalizing the recognition of online teaching workloads is imperative. Several provinces have introduced policies clarifying conversion standards for online instruction, blended courses, and tutoring sessions, integrating these into professional title evaluation systems. This effectively counters the previous bias toward prioritizing research over online teaching.

4.2 Technical Layer: Optimizing the Supply Side—Shifting from "Large and Comprehensive" to "Lightweight and Agile"

Low-code development platforms enable teachers to customize tools. Faculty and students can rapidly build micro-applications like grade verification and approval workflows based on actual needs, significantly reducing development cycles and costs to achieve "immediate response to demands and agile process iteration." The more fundamental solution lies in mandating open data interfaces. Although national platforms provide standard APIs, adoption rates among universities remain low due to vendor barriers and insufficient incentives. It is imperative to incorporate interface openness into funding allocations and performance evaluations as a hard constraint, breaking down data silos and freeing educators from redundant data entry.

4.3 Organizational Level: Strengthening the Resource Side by Building "Technical Logistics" into a "Regular Force"

Establishing dedicated digital affairs officers provides effective support. Some universities have piloted this role, where personnel with technical backgrounds provide faculty with one-stop services including system integration, platform training, and data governance. This significantly reduces faculty administrative burdens and improves satisfaction with digital services. The fundamental solution lies in incorporating digital burden metrics into university governance diagnostics and leadership evaluations—such as limiting the number of business systems faculty must use, reducing duplicate reporting rates, and increasing single sign-on coverage. This "command stick" approach compels management to genuinely prioritize burden reduction.

4.4 Individual Level: Precision Empowerment to Make Teachers "Skilled in Technology" and "Willing to Use Technology"

Digital literacy development should adopt a micro-certification model. Break down broad competency frameworks into tiered, stackable micro-certification units. Teachers receive corresponding credit hours and resource support upon completing each level, lowering learning barriers while providing immediate feedback. Simultaneously, ensure teachers have offline preparation time. Some universities have piloted "teaching technology sabbaticals," offering short offline breaks to faculty who consistently deliver digital instruction. This allows them to step away from fragmented information and return to deep pedagogical research. A sabbatical outcomes documentation system ensures both workload reduction and quality enhancement.

In summary, coordinated efforts across four dimensions—tasks, technology, organization, and individuals—are essential: reducing unnecessary demands, optimizing technological provision, strengthening professional support, and precisely empowering educators. Only then can university faculty be liberated from digital burdens, allowing technology to return to its role as an enabler.

5. Conclusion

Digital burden is a complex phenomenon resulting from the convergence of four forces: project-based pressure, organizational resource gaps, fragmented technology supply, and individual capability anxiety. Unidimensional technological improvements or slogan-based burden reduction efforts are unlikely to succeed. Only by simultaneously advancing rigid demand-side reduction and precise resource-side enhancement can a sustainable pressure-relief closed loop be established. At the institutional level, establishing a nationally coordinated framework for quantifying digital workloads is imperative. This framework should define conversion standards and upper thresholds for tasks like online teaching and platform maintenance, curbing the uncontrolled expansion of burdens at their source. Concurrently, implementing a "whitelist" system for data collection would empower universities to reject non-listed tasks, reducing the layered escalation of administrative directives. Provincial governments should leverage education big data centers to establish dynamic monitoring mechanisms, incorporating system redundancy, data reuse rates, and single sign-on coverage into universities' IT performance assessment red lines. Triggering alerts and resource constraints for threshold violations would enforce a hard constraint: "exceeding limits means facing restrictions." Internally, universities must incorporate key digital burden metrics into annual quality reports and leadership performance evaluations, publicly disclosing these metrics to facilitate multi-stakeholder oversight. This will compel management to shift focus from "showcasing" to "enhancing the educational experience." Fundamentally, alleviating digital burden transcends mere technical optimization; it represents a return to human-centered values in modernizing educational governance. Only by liberating educators from data drudgery and restoring them to their core role in teaching can technology truly serve instruction rather than dominate it. This shift will transform digital dividends into an endogenous driving force for high-quality educational development.

References:

[1] Cheng Long, Wang Yan. Digital Intelligence Educational Technology Dependence: Realistic Concerns, Generative Logic, and Governance Pathways [J]. Journal of Educational Development, 2025, (11): 14-22

[2] Zhao Jian. The Burden of Teachers in the Technological Era: A New Perspective on Understanding the Digital Transformation of Education[J]. Educational Research, 2021, 42(11): 151-159

[3] Zhang Jiajun, Wu Jiayu. Mechanism Analysis and Breakthrough Pathways of Teachers' Digital Burden in the Digital Era[J]. New Horizons from Tianfu, 2025(4): 1-12

[4] Wang Zhaojing, Li Yang. Teachers' Digital Burden: Manifestations, Generative Logic, and Resolution Pathways[J]. Teacher Education Research, 2025(4): 54-60

[5] Peng Qing. Rational Reflection and Practical Governance of Teachers' Burden in the Digital Technology Era[J]. Journal of Jishou University (Social Sciences), 2024, 45(5): 70-78

[6] Song Huan. A Temporal Sociology Analysis of Teachers' Workload[J]. Journal of East China Normal University (Educational Sciences), 2023, 41(9): 1-15

[7] Xie Ji, Li Rumi. The Contemporary Significance, Practical Concerns, and Implementation Pathways of Digital Education Empowering High-Quality Rural Teacher Development[J]. Modern Education Management, 2024, (04): 64-74

[8] Dong Hui, Liu Xu, Zhang Hairong. Teachers' Workload, Role Alienation, and Burden Reduction Governance[J]. Teacher Education Research, 2022(5): 64-70

[9] Rao Aijing, Wan Kun, Li Ronghui. How to Alleviate Digital Stress Among Teachers in the Technological Era[J]. China Educational Technology, 2025(3): 118-125

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