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Article

Modeling Teachers' Emotion Regulation and Psychological Capital for Human-Centered Workplace Technology

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Abstract: Designing adaptive, human-centered workplace technologies requires robust empirical baselines of end-user affective competencies. To bridge organizational psychology and systems engineering, this study models teachers' emotion regulation, emotional labor, and positive psychological functioning as foundational user-state parameters for computer information systems and Emotion AI design. Employing a quantitative descriptive-correlational methodology, empirical data were gathered from 276 public central school teachers using standardized diagnostic instruments. The findings revealed that users exhibit high normative levels of cognitive reappraisal, deep acting, authentic emotional expression, and psychological capital, particularly resilience. Comparative inferential analyses demonstrated that these emotional parameters remain invariant across teaching experience brackets, proving that a unified, standardized emotion-supportive software framework can effectively serve an entire workforce without age-segregated customization. Significant gender differences, however, highlight the necessity for gender-inclusive algorithmic calibration. Furthermore, positive interrelationships among internal regulation, external emotional displays, and psychological capital confirm an interconnected behavioral dependency. These results provide information systems designers with vital empirical specifications, establishing that next-generation enterprise software must embed Positive Computing principles and adaptive user interfaces to actively scaffold employee well-being.
Keywords: affective computing, user modeling, emotion regulation, psychological capital, human-computer interaction

1. Introduction

Although contemporary research extensively identifies cognitive reappraisal and expressive suppression as critical emotion regulation strategies employed by teachers, there remains a profound lack of empirical modeling designed to inform interactive software systems, affective computing architectures, and Artificial Intelligence (AI) interventions capable of recognizing, interpreting, and supporting these affective processes in educational workplaces. Within the expanding domain of Computer Information Systems and Human-Computer Interaction (HCI), intelligent workplace technologies must be grounded in robust psychological baselines to effectively mitigate occupational stress and enhance human performance. Teaching is universally recognized as an emotionally intensive profession where educators continuously navigate complex interpersonal dynamics while interacting with evolving educational technologies and classroom management demands. However, while empirical evidence demonstrates that teachers' emotional experiences significantly dictate classroom climate, instructional quality, and professional well-being (Frenzel et al., 2009; Taxer & Frenzel, 2015), existing literature has predominantly treated these emotional strategies as isolated behavioral phenomena rather than foundational data requirements for human-centered workplace technology (Aldrup et al., 2024; Doyle et al., 2024).

The integration of Emotion AI and affective computing into educational environments necessitates an intricate understanding of how end-users regulate their emotions during digitally mediated instruction and routine administrative tasks (Yuvaraj et al., 2025). Rooted in Gross's (1998) foundational Process Model of Emotion Regulation, cognitive reappraisal involves reframing emotionally charged situations to alter their affective trajectory,

whereas expressive suppression entails inhibiting the outward manifestation of internal emotional states (Gross & John, 2003). Recent empirical investigations underscore that cognitive reappraisal functions as a highly adaptive mechanism; teachers who utilize reappraisal exhibit significantly decreased stress levels within challenging work climates (Jeon & Ardeleanu, 2020). Crucially, in modern technological contexts, cognitive reappraisal, alongside problem-directed coping, has emerged as an indispensable strategy for educators navigating the complexities of technology-enhanced learning and digital tool integration (Suci et al., 2025). A comprehensive meta-analysis of 87 studies confirmed that antecedent-focused strategies such as cognitive reappraisal demonstrate consistently superior associations with teacher well-being compared to response-focused strategies (Wang et al., 2023).

Conversely, expressive suppression appears markedly less beneficial, with educators resorting to higher levels of suppression when confronting challenging classroom behaviors or acute operational friction (Jeon & Ardeleanu, 2020). Despite these established behavioral patterns, current research fails to translate these psychological mechanisms into algorithmic rules or user-state models for digital systems. The literature remains confined to identifying these strategies within traditional educational psychology rather than developing technological interventions, such as real-time affective monitoring, AI-driven feedback loops, or automated workload adjustment systems, designed to scaffold adaptive emotion regulation. This disconnect represents a critical void between organizational psychology and industrial management applications, underscoring the urgent need to model teachers' emotional competencies as system design parameters for human-centered technology.

In parallel with internal emotion regulation, teachers continuously perform emotional labor, the effortful management and display of emotions to align with organizational and professional display rules (Hochschild, 1983; Brotheridge & Lee, 2003). When conceptualizing Information Systems for industrial and educational management, emotional labor represents an external behavioral output that directly interacts with workplace infrastructure. Within classroom settings and digitally mediated learning platforms, teachers simultaneously interpret stressful scenarios, suppress frustration, and project empathy, operating under intense emotional demands that structural and organizational conditions frequently exacerbate (Morais et al., 2023).

Empirical research establishes that adaptive internal regulation strategies, specifically cognitive reappraisal, facilitate constructive forms of emotional labor such as deep acting and authentic emotional expression. This alignment minimizes emotional dissonance and prevents the psychological exhaustion frequently induced by prolonged surface acting and expressive suppression (Burić & Frenzel, 2020; Donker et al., 2020; König et al., 2023; Ma et al., 2023; Yin et al., 2017). Furthermore, emotional labor significantly impacts teaching satisfaction and professional efficacy, moderated by individual emotional intelligence and organizational demands (Yin, 2015; Yin et al., 2017). Meta-analytic reviews confirm that surface acting consistently predicts teacher burnout and dissatisfaction, whereas deep acting correlates with positive occupational outcomes and personal accomplishment (Yin et al., 2019). Recent empirical models reinforce that a teacher's foundational emotion regulation directly predicts their emotional labor strategies and overarching professional resilience (Hu, 2023).

From a systems engineering perspective, treating emotional labor and emotion regulation as isolated psychological constructs limits their utility for technological design. In an era where educational institutions increasingly deploy management information systems, automated administrative software, and AI-supported instructional tools, understanding the interaction between internal regulation and external emotional display is essential for developing ergonomic, human-centered systems. Without accurate behavioral modeling, technological interventions risk exacerbating surface acting by imposing rigid digital workflows that ignore the user's affective state. Therefore, quantifying these emotional labor strategies (Ma et al., 2023) is a vital prerequisite for engineering workplace technologies that actively support employee well-being rather than inducing cognitive overload.

To ensure that interactive workplace technologies promote sustained occupational health, system architects must look beyond risk mitigation and incorporate principles of Positive Computing, the design of technology to support psychological well-being and human flourishing. Within organizational behavior and industrial management, positive psychological functioning at work is best conceptualized through Psychological Capital (PsyCap), an individual's positive psychological state of development characterized by four core dimensions: self-efficacy, hope, optimism, and resilience (Luthans et al., 2006; Luthans et al., 2007; Luthans & Youssef-Morgan, 2017). These positive psychological resources function as cognitive buffers that empower educators to master technological adaptations, overcome instructional setbacks, and maintain sustained engagement amidst institutional change.

Empirical evidence indicates that educators possessing elevated psychological capital exhibit higher work engagement, superior instructional effectiveness, enhanced organizational commitment, and significantly lower vulnerability to emotional exhaustion (Han et al., 2021). Specifically, teacher self-efficacy is directly linked to

effective classroom processes, positive student academic adjustment, and heightened educator well-being (Zee & Koomen, 2016). Simultaneously, hope, optimism, and resilience serve as vital protective mechanisms against occupational burnout, loneliness, and stress, enabling teachers to adapt to complex workloads and evolving institutional expectations (Einav et al., 2024; Hascher et al., 2021). Within the methodological framework of psychometric measurement, standardized assessments of PsyCap provide robust, quantifiable metrics that can be integrated into empirical user models (Lipińska-Grobelny & Zwardoń-Kuchciak, 2021).

Rather than operating autonomously, emotion regulation, emotional labor, and positive psychological functioning form an interconnected triad that dictates human performance within socio-technical systems. When teachers employ cognitive reappraisal to engage in deep acting and authentic emotional expression, they reinforce their psychological capital, creating a positive feedback loop that sustains resilience and operational optimism. Conversely, chronic reliance on suppression and surface acting depletes psychological resources, leading to systemic burnout. Capturing these complex, correlational dynamics requires rigorous descriptive and inferential research methodologies (Creswell & Creswell, 2018; Fraenkel et al., 2012). By empirically modeling how adaptive emotional strategies correlate with psychological capital, researchers and system developers can establish data-driven specifications for AI-integrated workplace tools. Such systems can be programmed to recognize fatigue indicators, adapt communication workflows, and provide tailored digital interventions that actively cultivate user resilience and self-efficacy.

Despite the critical intersection between employee emotional competencies and workplace system design, significant conceptual and demographic gaps persist in the literature. Most existing investigations evaluate emotion regulation, emotional labor, and psychological capital in isolation or through rudimentary pairwise analyses, failing to provide the integrated user models required for advanced ICT and AI systems development. Furthermore, the preponderance of empirical data originates from Western and East Asian contexts, where technological infrastructure, organizational cultures, and emotional display rules differ substantially from those in developing educational ecosystems.

Crucially, the influence of demographic variables, such as gender and teaching experience, on the interaction between emotional strategies and technological adaptation remains inconsistently documented. While professional socialization and institutional leadership significantly shape workplace behavior, faculty development, and gender-inclusive concepts in educational environments (Abam, 2026; Legarde et al., 2025; Reyes, 2026; Wahid et al., 2026), robust localized empirical baselines are necessary to calibrate human-centered information systems for culturally diverse user populations.

To bridge this interdisciplinary gap, this study models the interrelationships among teachers' emotion regulation strategies, emotional labor practices, and positive psychological functioning within public central schools in the Division of Zamboanga City, Philippines. By synthesizing Gross's (1998) Process Model of Emotion Regulation, Hochschild's (1983) Emotional Labor Theory, and Luthans et al.'s (2007) Psychological Capital Theory into an integrated empirical evaluation, this research establishes the foundational user requirements necessary for the design and implementation of human-centered workplace technologies. Ultimately, quantifying these psychological competencies provides computer information system designers and industrial management professionals with the vital data required to engineer adaptive, emotion-aware technological environments that foster resilience, well-being, and sustainable organizational performance.

2. Methods

Research Design

A quantitative descriptive-correlational research design was employed to examine teachers' emotion regulation, emotional labor strategies, and positive psychological functioning at work. Within the context of industrial management applications, this design establishes quantitative empirical baselines for understanding how educators navigate workplace demands. The descriptive component characterized the normative levels of each variable, while the correlational approach evaluated the strength and direction of their interrelationships without inferring causality. Additionally, comparative inferential analyses were conducted to identify demographic differences based on sex and teaching experience. This methodological approach is appropriate for examining naturally occurring variables using standardized psychometric instruments (Creswell & Creswell, 2018; Fraenkel et al., 2012).

Research Locale and Population

The study was conducted across twelve public central schools within the Division of Zamboanga City, Philippines. These institutions serve as primary instructional and administrative centers operating under similar organizational structures, standardized workloads, and digital reporting environments, thereby providing a consistent workplace context. The target population consisted of 883 permanent public-school teachers. Using Slovin's formula with a 5% margin of error, the required sample size was determined to be 276 respondents. Proportional allocation was utilized to distribute sample quotas across the twelve schools based on faculty size, and simple random sampling was subsequently applied within each school to ensure that every eligible teacher had an equal opportunity of selection.

Research Instruments

Data were gathered using three standardized, validated self-report questionnaires that retained their original Likert-scale response formats. To measure emotion regulation, the study utilized the Emotion Regulation Questionnaire (ERQ) developed by Gross and John (2003), which assesses individual differences across two distinct dimensions: cognitive reappraisal, comprising six items, and expressive suppression, comprising four items. External emotional display behaviors were evaluated using the Teachers' Emotional Labor Strategy in Classrooms (TELSC) scale developed by Ma et al. (2023), which measures surface acting, deep acting, expression of naturally felt emotions, and emotion termination. Finally, positive psychological functioning was assessed using the Psychological Capital Questionnaire (KKaPsy) developed by Lipińska-Grobelny and Zwardoń-Kuchciak (2021), which evaluates workplace psychological resources across four core dimensions: self-efficacy, hope, optimism, and resilience. Prior to formal data collection, the complete instrument battery underwent expert review to ensure local contextual appropriateness and was pilot-tested among an independent cohort of teachers excluded from the final sample. Internal consistency was verified using Cronbach's alpha, with all diagnostic scales exceeding the acceptable statistical threshold of 0.70 required for quantitative research (Creswell & Creswell, 2018; Fraenkel et al., 2012).

Data Collection and Analysis

Following formal institutional approval and ethical clearance, the diagnostic survey battery was administered online via Google Forms. Participation was strictly voluntary, and electronic informed consent was secured from all respondents prior to survey access. The ingested dataset was processed and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequency distributions, percentages, means, and standard deviations, were utilized to profile the demographic distribution of the respondents and determine the normative levels of each variable. To evaluate demographic differences across user groups, non-parametric inferential tests were applied: the Mann–Whitney U test evaluated binary differences based on gender, while the Kruskal–Wallis test analyzed variations across multi-category teaching experience brackets. Furthermore, Spearman's rank-order correlation coefficient (ρ) was calculated to determine the direction, magnitude, and statistical significance of interrelationships among emotion regulation, emotional labor strategies, and positive psychological functioning.

Ethical Considerations

The investigation adhered strictly to established national and international ethical standards for human-subject research. Formal administrative approval was obtained from the Schools Division Office of Zamboanga City, while full ethical clearance was granted by the Research Ethics Office of Western Mindanao State University. To ensure confidentiality and data privacy, all participant responses were anonymized at the point of data entry. Electronic datasets and survey records were encrypted and securely archived in full compliance with the statutory mandates of the Philippine Data Privacy Act of 2012 (Republic Act No. 10173). Finally, the research maintained uncompromising academic integrity through transparent data reporting and the explicit declaration of zero conflicts of interest.

3. Results

Research Question 1. *What is the level of teachers' emotion regulation strategies in terms of cognitive reappraisal and expressive suppression?*

Table 1: Level of Teachers' Emotion Regulation Strategies in Terms of Cognitive Reappraisal and Expressive Suppression

Emotion Regulation Strategy	N	Mean	SD	Interpretation
Cognitive Reappraisal	276	5.88	1.008	High

Expressive Suppression	276	4.50	1.398	Moderately High

Legend: 6.15–7.00 = Very High; 5.29–6.14 = High; 4.43–5.28 = Moderately High; 3.57–4.42 = Moderate; 2.71–3.56 = Moderately Low; 1.85–2.70 = Low; 1.00–1.84 = Very Low.

Table 1 presents the normative levels of teachers' emotion regulation strategies across two core behavioral dimensions. The descriptive analysis revealed that educators demonstrated a high level of cognitive reappraisal (M = 5.88, SD = 1.008), indicating a strong habitual tendency to employ antecedent-focused cognitive strategies to constructively reframe workplace events. In contrast, expressive suppression obtained a moderately high normative level (M = 4.50, SD = 1.398). This distribution demonstrates a relatively lower behavioral inclination among teachers to manage workplace affective experiences through the inhibition of outward emotional displays.

Research Question 2. *What is the level of teachers' emotional labor strategies in terms of surface acting, emotion termination, deep acting, and expression of naturally felt emotions?*

Table 2: Level of Teachers' Emotional Labor Strategies

Emotional Labor Strategy	N	Mean	SD	Interpretation
Surface Acting	276	3.43	1.056	High
Emotion Termination	276	3.24	0.910	Moderate
Deep Acting	276	3.93	0.727	High
Expression of Naturally Felt Emotions	276	3.98	0.726	High

Legend: 4.21–5.00 = Very High; 3.41–4.20 = High; 2.61–3.40 = Moderate; 1.81–2.60 = Low; 1.00–1.80 = Very Low.

Table 2 details the levels of external emotional labor strategies enacted within the workplace across four distinct operational dimensions. Overall, the respondents exhibited strong engagement in adaptive display behaviors, reporting high levels of expression of naturally felt emotions (M = 3.98, SD = 0.726), deep acting (M = 3.93, SD = 0.727), and surface acting (M = 3.43, SD = 1.056). Conversely, emotion termination recorded a moderate level (M = 3.24, SD = 0.910), indicating that the complete cessation or deliberate truncation of emotional display was the least frequently utilized emotional labor strategy among the workforce.

Research Question 3. *What is the level of teachers' positive psychological functioning at work in terms of self-efficacy, hope, optimism, and resilience?*

Table 3: Level of Teachers' Positive Psychological Functioning at Work

Positive Psychological Functioning	N	Mean	SD	Interpretation
Self-Efficacy	276	4.91	0.825	High
Hope	276	5.00	0.826	High
Optimism	276	5.08	0.791	High
Resilience	276	5.33	0.831	Very High

Legend: 5.18–6.00 = Very High; 4.35–5.17 = High; 3.52–4.34 = Moderately High; 2.69–3.51 = Moderately Low; 1.86–2.68 = Low; 1.00–1.85 = Very Low.

Table 3 presents the normative levels of positive psychological functioning at work, evaluated across the four foundational dimensions of Psychological Capital. The findings demonstrated that educators possessed a very high level of workplace resilience (M = 5.33, SD = 0.831), which recorded the highest comparative mean score among all evaluated domains. Furthermore, optimism (M = 5.08, SD = 0.791), hope (M = 5.00, SD = 0.826), and self-efficacy (M = 4.91, SD = 0.825) all obtained high normative levels. Although self-efficacy recorded the lowest comparative mean score within the battery, all four dimensions reflected highly favorable baseline levels of positive psychological resources within the organization.

Research Question 4. *Is there a significant difference in teachers' emotion regulation, emotional labor strategies, and positive psychological functioning at work when grouped according to teaching experience and gender?*

Table 4: Differences in Teachers' Emotion Regulation, Emotional Labor Strategies, and Positive Psychological Functioning at Work According to Teaching Experience

Variable	χ^2	df	*p*-value	Decision	Interpretation
Emotion Regulation	1.470	3	.689	Fail to Reject H_0	No Significant Difference
Emotional Labor	2.072	3	.558	Fail to Reject H_0	No Significant Difference
Positive Psychological Functioning	4.373	3	.224	Fail to Reject H_0	No Significant Difference

Legend: α = .05 level of significance

Tables 4 and 5 illustrate the comparative inferential analyses examining whether these behavioral and psychological competencies varied according to demographic characteristics. When evaluating differences across teaching experience brackets (Table 4), the Kruskal–Wallis test revealed no statistically significant differences across all three core constructs: emotion regulation ($\chi^2 = 1.470$, $p = .689$), emotional labor ($\chi^2 = 2.072$, $p = .558$), and positive psychological functioning ($\chi^2 = 4.373$, $p = .224$). This empirical outcome indicates that length of professional tenure does not significantly differentiate these emotional and psychological metrics.

Table 5: Differences in Teachers' Emotion Regulation, Emotional Labor Strategies, and Positive Psychological Functioning at Work According to Gender

Variable	U	*p*-value	Decision	Interpretation
Emotion Regulation	1284.000	.004	Reject H_0	Significant Difference
Emotional Labor	1539.500	.038	Reject H_0	Significant Difference
Positive Psychological Functioning	2145.000	.859	Fail to Reject H_0	No Significant Difference

Legend: α = .05 level of significance

In contrast, when grouped according to gender (Table 5), the Mann–Whitney U test indicated statistically significant differences in both emotion regulation ($U = 1284.000$, $p = .004$) and emotional labor ($U = 1539.500$, $p = .038$). However, positive psychological functioning did not exhibit a statistically significant difference based on gender ($U = 2145.000$, $p = .859$), demonstrating that male and female educators maintain comparable baseline levels of psychological capital despite differences in their emotional management practices.

Research Question 5. *Is there a significant relationship between teachers' emotion regulation strategies and their positive psychological functioning at work?*

Table 6: Relationship Between Teachers' Emotion Regulation and Positive Psychological Functioning at Work

Variables	Spearman's ρ	*p*-value	Decision	Interpretation
Emotion Regulation ↔ Positive Psychological Functioning	0.279	< .001	Reject H_0	Significant Low Positive Relationship

Legend: α = .05 level of significance

Tables 6 through 8 present the Spearman's rank-order correlation analyses conducted to evaluate the structural interrelationships among emotion regulation, emotional labor strategies, and positive psychological functioning. As detailed in Table 6, a statistically significant, low positive correlation was observed between emotion regulation and positive psychological functioning ($\rho = .279$, $p < .001$), indicating that higher internal emotion regulation capabilities are associated with enhanced workplace psychological capital.

Research Question 6. *Is there a significant relationship between teachers' emotional labor strategies and their positive psychological functioning at work?*

Table 7: Relationship Between Teachers' Emotional Labor Strategies and Positive Psychological Functioning at Work

Variables	Spearman's ρ	*p*-value	Decision	Interpretation
Emotional Labor Strategies ↔ Positive Psychological Functioning	0.439	< .001	Reject H_0	Significant Moderate Positive Relationship

Legend: α = .05 level of significance

Similarly, Table 7 reveals a statistically significant, moderate positive relationship between emotional labor strategies and positive psychological functioning ($\rho = .439$, $p < .001$), demonstrating that active engagement in professional emotional labor correlates favorably with employee resilience, optimism, hope, and self-efficacy.

Research Question 7. *Is there a significant relationship between teachers' emotion regulation strategies and their emotional labor strategies?*

Table 8: Relationship Between Teachers' Emotion Regulation and Emotional Labor Strategies

Variables	Spearman's ρ	*p*-value	Decision	Interpretation
Emotion Regulation ↔ Emotional Labor Strategies	0.406	< .001	Reject H_0	Significant Moderate Positive Relationship

Legend: α = .05 level of significance

Finally, Table 8 demonstrates a statistically significant, moderate positive relationship between internal emotion regulation and external emotional labor strategies ($\rho = .406$, $p < .001$). This confirms an interconnected behavioral dependency where higher internal emotion regulation capacity is systematically associated with greater utilization of classroom emotional labor strategies.

4. Discussion

The primary novelty of this study lies in bridging traditional educational psychology with computer information systems design by establishing empirical user baselines for affective computing in the workplace. While prior scholarship has predominantly treated teacher emotions as isolated behavioral phenomena within classroom settings (Aldrup et al., 2024; Doyle et al., 2024), this investigation models cognitive reappraisal, expressive suppression, and deep acting as quantifiable behavioral parameters for Human-Computer Interaction (HCI) and Artificial Intelligence (AI) integration. The findings demonstrate that teachers maintain high normative levels of cognitive reappraisal and deep acting alongside moderate levels of expressive suppression. From a systems engineering perspective, this reveals an adaptive end-user profile that favors antecedent cognitive reframing over response-focused emotional inhibition (Gross, 1998; Gross & John, 2003). Aligning with recent developments in affective computing for education (Yuvaraj et al., 2025), these results provide information system architects with critical baseline data: intelligent workplace software and classroom management tools should be programmed to support and scaffold cognitive reappraisal rather than inducing user environments that force behavioral suppression or surface acting (Suci et al., 2025; Wang et al., 2023).

A critical technical contribution of this study is the demonstration that teaching experience does not significantly differentiate emotion regulation, emotional labor strategies, or positive psychological functioning. In the context of

industrial management applications and enterprise software deployment, this demographic invariance offers a distinct architectural advantage: software developers and system administrators do not need to engineer age-gated or tenure-segregated user interfaces. A unified, standardized emotion-supportive software architecture can effectively serve educators across all career stages without risking usability disparities. Conversely, the significant gender differences observed in emotion regulation and emotional labor underscore the necessity for gender-inclusive and culturally responsive system design (Legarde et al., 2025; Yin et al., 2019). When deploying Emotion AI or automated monitoring systems in educational institutions, algorithmic models must be calibrated to account for gender variations in emotional labor display rules without assuming underlying differences in professional resilience or psychological capital, which remained invariant across gender groups in this empirical sample.

The statistically significant positive relationship identified between internal emotion regulation and external emotional labor strategies (ρ = .406) provides empirical validation for a foundational system dependency. Within an information systems framework, internal emotion regulation acts as the primary cognitive processing engine (Gross, 1998), whereas emotional labor represents the external behavioral interface displayed to colleagues, students, and organizational technologies (Hochschild, 1983). The findings confirm that educators with robust internal regulation capabilities systematically engage in more adaptive, constructive emotional labor in the workplace. Consequently, technological interventions designed to mitigate workplace stress and prevent burnout must target antecedent cognitive reframing rather than merely monitoring external expressions (Hu, 2023; Jeon & Ardeleanu, 2020). If an AI-supported classroom management system attempts to regulate employee workflow solely based on surface behavioral metrics without supporting internal cognitive coping mechanisms, it risks exacerbating emotional dissonance and surface acting, which are well-documented antecedents of systemic employee exhaustion (Burić & Frenzel, 2020; Yin et al., 2017).

By establishing significant positive correlations between emotional competencies and Psychological Capital (PsyCap), this study directly contributes to the emerging domain of Positive Computing, the intentional design of technology to foster human flourishing and psychological well-being. The empirical analysis revealed that both emotion regulation (ρ = .279) and emotional labor strategies (ρ = .439) correlate positively with workplace self-efficacy, hope, optimism, and resilience. This demonstrates that psychological capital is not merely a static personal trait, but an dynamic operational resource that interacts continuously with employee emotional practices (Luthans et al., 2006; Luthans et al., 2007; Luthans & Youssef-Morgan, 2017). When developing industrial management software and educational platforms, system engineers must expand their design parameters beyond simple task automation and error reduction. Instead, human-centered workplace technologies should incorporate positive feedback loops, adaptive workload balancing, and digital interventions that explicitly reinforce user self-efficacy and resilience (Einav et al., 2024; Hascher et al., 2021; Zee & Koomen, 2016).

Ultimately, this investigation bridges a significant socio-technical gap by providing quantitative, localized empirical baselines from a developing educational ecosystem, a context frequently underrepresented in global ICT literature. As educational institutions increasingly integrate automated management information systems and AI-driven instructional tools, organizational leadership must recognize that software implementation is inherently an affective and psychological event (Frenzel et al., 2009; Taxer & Frenzel, 2015). To ensure sustainable organizational performance and prevent employee burnout, institutional support systems and academic mentorship frameworks must evolve alongside technological deployments (Abam, 2026; Morais et al., 2023; Reyes, 2026; Wahid et al., 2026). By translating teachers' complex emotional processes into structured user-state baselines, this study equips researchers, industrial management professionals, and software engineers with the necessary empirical foundation to design next-generation, human-centered workplace technologies that actively protect and enhance human psychological capital.

5. Conclusion

This empirical investigation concludes that teachers' adaptive emotional functioning, specifically characterized by high levels of cognitive reappraisal, deep acting, authentic emotional expression, and exceptional workplace resilience, serves as a vital baseline parameter for designing human-centered computer information systems and Emotion AI architectures. Because these internal emotional competencies and positive psychological resources remain statistically invariant across teaching experience brackets, software architects and system engineers are not required to build age-gated or tenure-segregated interfaces, enabling the deployment of unified, standardized emotion-supportive digital frameworks across the entire workforce. Ultimately, the successful management and integration of educational workplace technologies depend on transitioning from rigid, transaction-focused software toward adaptive

socio-technical systems that actively accommodate internal emotional regulation and protect the psychological capital of end-users.

To operationalize these baselines within industrial management applications, it is recommended that software developers, system engineers, and institutional leaders collaborate to design interactive information systems that intentionally scaffold antecedent cognitive reappraisal while eliminating digital workflows that provoke expressive suppression or surface acting. System designers should embed Positive Computing principles directly into enterprise platforms by introducing adaptive user interfaces, real-time affective feedback loops, and automated workload balancing algorithms specifically engineered to bolster employee self-efficacy, hope, optimism, and resilience. Concurrently, educational organizations must establish robust administrative support structures and proactive mentorship frameworks alongside technological rollouts to mitigate the emotional friction associated with rapid digital transformation.

Future investigations should advance beyond cross-sectional self-report methodologies by developing, deploying, and testing real-time algorithmic models and machine learning architectures within active digital workplace environments. Researchers are encouraged to explore multi-modal affective computing systems that integrate quantitative baseline psychometric profiles with real-time biometric telemetry, such as physiological sensors, facial recognition, eye-tracking, and keystroke dynamics, to enhance the predictive accuracy and responsiveness of Emotion AI tools. Furthermore, longitudinal empirical studies should be conducted across diverse industrial and socio-technical ecosystems to evaluate the sustained efficacy of positive computing interventions in reducing burnout, optimizing human-computer interaction, and securing long-term organizational performance.

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