

Study of Technostress among Teachers: Its Relationship with Self-Efficacy in Implementation of Merdeka Curriculum

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ABSTRACT

This study aims to examine the relationship between technostress and self-efficacy among junior high school teachers in the implementation of the Merdeka Curriculum. Technostress refers to the psychological pressure that arises from the demands of technology use in the teaching and learning process, whereas self-efficacy refers to teachers' beliefs in their own abilities to manage digital learning tasks and challenges. This research employed a quantitative approach with a correlational design, involving 124 junior high school teachers in Paseh, Bandung Regency. The instruments used were the Technostress Scale, which includes five dimensions (learning-teaching process oriented, profession oriented, technical issue oriented, personal oriented, and social oriented), and the Self-Efficacy Scale based on Bandura's theory, consisting of three dimensions: magnitude, strength, and generality. Data were analyzed using Spearman's rank correlation test, which revealed a significant negative relationship between technostress and self-efficacy (Spearman's $\rho = -0.585$, $p < 0.001$). These findings indicate that higher levels of self-efficacy are associated with lower levels of technostress among teachers. The results highlight the importance of strengthening teachers' self-efficacy to better manage technological challenges in implementation of the Merdeka Curriculum.

Keywords: *merdeka curriculum, teachers, technostress, self-efficacy*

1. INTRODUCTION

The implementation of the Merdeka Curriculum, which emphasizes flexibility and learner autonomy, has reinforced the role of technology as a central medium in classroom management, assessment, and reporting of learning outcomes. The integration of technology is expected to enhance instructional effectiveness and expand access to digital learning resources. However, the digital transformation within education has not been without challenges. While technological advancement provides numerous opportunities for innovation, it also introduces new forms of psychological strain among educators, a phenomenon commonly referred to as technostress (Tarafdar, 2014).

Technostress is defined as a type of stress that arises when individuals are unable to adapt to the demands of technology use. Within the educational context, this phenomenon has become increasingly prevalent among teachers, particularly during the implementation of the Merdeka Curriculum, which requires creativity, innovation, and technological competence. Such pressures may stem from difficulties in operating digital tools, adapting to online administrative systems, and the lack of adequate

technological infrastructure in schools (Coklar, 2017). Teachers who are less familiar with digital systems often experience anxiety, confusion, and emotional exhaustion due to the growing complexity of technology-driven work demands.

According to Coklar (2017), technostress among teachers comprises five interrelated dimensions: (1) Learning–Teaching Process Oriented, referring to stress caused by difficulties in utilizing technology for instructional purposes; (2) Profession Oriented, which pertains to pressure arising from increased workload and concerns over changes in professional identity; (3) Technical Issue Oriented, related to technological disruptions such as network failures or device malfunctions; (4) Personal Oriented, encompassing feelings of inadequacy or lack of confidence in mastering new technologies; and (5) Social Oriented, which emerges from diminished social interactions and potential miscommunication within digital environments. These dimensions indicate that technostress is not solely a consequence of technical challenges but also reflects psychological and social aspects inherent in technology-mediated teaching.

Although technology facilitates teaching and learning processes, it simultaneously imposes considerable psychological burdens on educators. Teachers are increasingly expected to manage virtual classrooms, employ interactive learning media, and conduct technology-based assessments. In the absence of sufficient training and institutional support, these demands may result in excessive workload, decreased job satisfaction, and reduced teaching efficacy (Zheng, 2024). This is supported by the findings of Meyla Eka Ningtyas and Agus Sugiarto (2022), who reported high levels of technostress among elementary school teachers in Kecamatan Tuntang, despite their extensive teaching experience. These results suggest that years of professional experience do not necessarily correspond with technological adaptability.

Teacher stress, burnout, and diminished self-efficacy caused by technology have been shown to negatively influence students' academic outcomes. Research indicates that teachers with low self-efficacy are associated with poorer academic performance (Herman, Prewett, et al., 2020) as well as increased behavioral problems among students (Herman et al., 2018). Furthermore, Herman et al. (2018) reported that students taught by teachers experiencing high levels of stress and burnout tend to demonstrate lower academic achievement and more disruptive behaviors. Supporting these findings, a systematic review by Madigan and Kim (2021) revealed that elevated teacher stress is frequently linked to reduced student motivation and lower academic achievement.

One of the most influential factors in mitigating technostress is self-efficacy, defined as an individual's belief in their capability to organize and execute actions required to manage prospective situations (Bandura, 1997). Teachers with high self-efficacy tend to be more confident in integrating technology into their pedagogy, better

prepared to address technical challenges, and more capable of developing adaptive strategies for digital instruction. Conversely, teachers with low self-efficacy are more vulnerable to anxiety and stress when confronted with technology-based teaching demands (Magistra, 2021).

Despite the growing body of research highlighting the negative relationship between self-efficacy and technostress, empirical evidence within the context of the Merdeka Curriculum in Indonesia remains limited. The Merdeka Curriculum requires teachers to be independent, reflective, and innovative in designing student-centered learning activities. This paradigm shift necessitates a high level of self-efficacy for teachers to effectively manage digital pressures while maintaining psychological well-being. Prior studies (Effiyanti & Sagala, 2018; Saringatun, 2021) have demonstrated that technostress can diminish teachers' performance and productivity, particularly when unaccompanied by adequate psychological and organizational support. Teachers who perceive themselves as less capable or unsupported by their institutions are more likely to experience emotional fatigue, frustration, and a decline in instructional quality. Therefore, enhancing teachers' self-efficacy represents a crucial strategy for mitigating the adverse effects of technostress, especially amidst the ongoing digital transformation within the educational landscape.

2. METHODOLOGY

2.1 Research Design

This study employed a quantitative approach with a correlational research design, aimed at analyzing the relationship between technostress and self-efficacy among junior high school teachers during the implementation of the Merdeka Curriculum. The quantitative approach was chosen because the data were numerical and analyzed statistically. The correlational design was used to determine the direction and strength of the relationship between the two variables.

2.2 Participants of the Study

The participants consisted of 124 junior high school teachers in Kecamatan Paseh, Bandung Regency, West Java, Indonesia. The sampling technique used was convenience sampling, a non-probability method in which participants were selected based on their availability and willingness to participate in the study. The inclusion criteria were as follows: 1) Active junior high school teachers; 2) Teachers involved in the implementation of the Merdeka Curriculum at their respective schools; 3) Teachers aged between 25 and 60 years old.

Paseh was selected due to its ongoing adoption of the Merdeka Curriculum and the varying levels of schools' readiness in applying digital learning and school management systems.

2.3 Instruments

Two instruments were used in this study are Technostress Scale and Self Efficacy Scale. Technostress scale adapted from the Teachers Technostress Levels Defining Scale developed by Coklar (2017), consisting of five dimensions: learning–teaching process oriented, profession oriented, technical issue oriented, personal oriented, and social oriented. The instrument utilized a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Self-Efficacy Scale adapted from Bandura’s (1997) self-efficacy theory and the New General Self-Efficacy Scale developed by Chen et al. (2001), comprising three dimensions: magnitude, strength, and generality, rated on a five-point Likert scale.

Both instruments underwent content validation (expert judgment) by educational psychology experts and reliability testing using Cronbach’s Alpha, which indicated satisfactory internal consistency.

2.4 Data Collection Procedure

Data were collected through an online questionnaire (Google Form) distributed to junior high school teachers in Bandung Regency. Participation was voluntary, and respondents were assured of anonymity and confidentiality. Each questionnaire included an informed consent section to ensure that participants agreed to take part willingly and with full understanding.

2.5 Data Analysis Techniques

The collected data were analyzed using Spearman’s Rank Correlation Test (Spearman’s rho) to examine the relationship between technostress and self-efficacy. This non-parametric test was selected because the data were ordinal and not normally distributed. Statistical analyses were conducted using JASP software, with a significance level set at 0.05.

3. RESULT AND DISCUSSION

3.1 Normality Test

Table 1. Normality Test Results using Shapiro

		Shapiro-Wilk	p
T	S	0.982	0.328
S	E		

The normality test was conducted using the Shapiro–Wilk Test to examine whether the data distribution met the assumption of normality. The test results showed that the data were normally distributed, with a Shapiro–Wilk value of 0.988 and a significance level ($p = 0.328$) greater than 0.05 (> 0.05). These results indicate that the

distribution of the technostress (TS) and self-efficacy (SE) variables met the assumption of normality.

Even though the data fulfilled the normality assumption, the analysis in this study employed the Spearman rank correlation test. This non-parametric test was chosen because both technostress and self-efficacy variables were measured using Likert-scale instruments, which are ordinal in nature. The Spearman correlation analysis aimed to determine the strength and direction of the relationship between technostress and self-efficacy among teachers in the implementation of the Merdeka Curriculum. The results are expected to provide empirical insight into how teachers' self-efficacy influences their ability to manage technostress in adapting to digital learning environments.

3.2 Correlation between technostress and self-efficacy

Table 2. Correlation Test Results

Variable		TS	SE
1. TS	Spearman's rho	-	
	p-value	-	
2. SE	Spearman's rho	-0.585	-
	p-value	< .001	-

Based on Table 2, the results indicate a significant relationship between technostress (TS) and self-efficacy (SE) among junior high school teachers. The Spearman correlation test showed a Spearman's rho value of -0.585 with $p < 0.001$. Since the p-value is smaller than 0.05, it can be concluded that there is a statistically significant relationship between technostress and self-efficacy. The negative Spearman's rho value indicates that the relationship between the two variables is negative and significant, meaning that higher levels of self-efficacy are associated with lower levels of technostress experienced by teachers. In other words, teachers who possess stronger confidence in their abilities tend to experience less psychological strain when dealing with technological demands in the implementation of the Merdeka Curriculum. This result aligns with the theoretical framework proposed by Bandura (1997), which states that individuals with strong self-efficacy beliefs are more capable of managing challenges, including those related to technological adaptation. Teachers who believe in their ability to handle digital tools and pedagogical technology are therefore less vulnerable to psychological strain arising from technological demands.

The negative association between both variables is consistent with previous empirical findings. Ostadrahimi (2024) reported that higher self-efficacy significantly reduces technostress among teachers engaged in technology-supported learning environments. Similarly, Zheng (2024) found that teachers with strong confidence in their technological competence are better able to cope with digital workload and exhibit

lower stress levels during the integration of e-learning systems. The current study strengthens these findings by demonstrating that the same pattern also applies within the context of the Merdeka Curriculum.

Table 3. Correlation test results between Technostress dimensions and self efficacy

	Spearman's rho	p
LT - SE	-0.492	< .001
PR - SE	-0.391	< .001
TI - SE	-0.520	< .001
PE - SE	-0.508	< .001
SO - SE	-0.509	< .001

Learning–Teaching Process Oriented (LT) demonstrated a negative correlation of -0.492 with Self-efficacy (SE), significant at $p < .001$. This indicates that higher levels of self-efficacy are associated with lower levels of stress related to integrating technology into the teaching–learning process. The LT dimension reflects pressures such as developing digital instructional materials, managing online classrooms, and using technology-based assessment platforms, tasks emphasized in the implementation of the Merdeka Curriculum. Teachers with high self-efficacy are more likely to interpret these demands as manageable challenges rather than threats. Prior research confirms that computer and digital self-efficacy negatively relate to technostress creators, indicating that teachers who feel more competent with technology report lower stress when designing technology-assisted instruction (Dong et al., 2020). The current findings reinforce this evidence by showing that confidence in technological competence reduces pedagogical tensions related to technology integration.

Profession Oriented (PR) showed a significant negative correlation of -0.391 with Self-efficacy (SE), suggesting that although self-efficacy contributes to reducing professional stress, the magnitude is smaller than in other dimensions. The PR dimension concerns fears about shifting professional roles, increasing digital workloads, and concerns about job security as technology reshapes educational practices. Teachers with higher self-efficacy are better prepared to manage these evolving expectations, including digital communication, online administrative tasks, and the integration of new digital policies. Previous research demonstrated that technostress increases burnout and decreases job satisfaction and work performance, particularly when digital responsibilities rise without adequate institutional support (Tu et al., 2025). Thus, teachers who believe in their ability to navigate technological changes tend to experience less profession-related technostress.

Technical Issue Oriented (TI) had the strongest negative correlation with Self-efficacy (SE) at -0.520 , significant at $p < .001$, indicating that self-efficacy is highly

influential in reducing stress arising from technical problems. The TI dimension encompasses difficulties such as unstable internet connections, device malfunctions, software errors, account management issues, and data security concerns. Teachers with strong technological self-efficacy tend to remain calm and solution-focused when facing such disruptions. This is consistent with evidence showing that self-efficacy in digital competence negatively predicts technostress creators among secondary school teachers (Zivi et al., 2025). Additionally, cross-cultural findings show that technology self-efficacy is negatively associated with technostress, while excessive technology use can increase stress (Cazan et al., 2024). These findings support the conclusion that teachers' confidence in handling technical issues substantially mitigates technostress in this domain.

Personal Oriented (PE) demonstrated a negative correlation of -0.508 with Self-efficacy (SE) and was significant at $p < .001$. This dimension reflects personal feelings related to technology, such as perceiving oneself as incapable, fearing technological inadequacy, or depending heavily on more technologically skilled colleagues. The strength of the correlation suggests that personal perceptions and self-beliefs are closely intertwined with technostress. Research confirms that teachers with low computer self-efficacy are more vulnerable to techno-anxiety and more reluctant to explore new technologies (Zhong, 2025). Additional evidence shows that teachers' educational technology self-efficacy negatively predicts technostress levels, indicating that teachers who perceive themselves as competent in meeting educational technology standards tend to experience lower stress (Nartgün et al., 2024). This supports the conclusion that increasing self-efficacy not only reduces technical stress but also reshapes teachers' personal appraisal of technological challenges.

Social Oriented (SO) showed a negative correlation of -0.509 with Self-efficacy (SE), significant at $p < .001$. This dimension concerns stress related to changes in social interaction, including communication conflicts mediated by technology, reduced interpersonal connection, and blurred boundaries between work and personal life due to constant digital engagement. Teachers with high self-efficacy tend to manage communication more effectively, regulate their use of digital tools, and maintain social connectedness despite technological demands. Research among primary school teachers in China found that technostress contributes to work-family conflict and health issues, especially during technology-intensive periods such as distance learning (Wang et al., 2023). Cross-cultural evidence also indicates that technology self-efficacy and collegial social support are negatively associated with technostress, confirming their protective role against social strains created by technology use (Cazan et al., 2024). These findings align with the current study, indicating that teachers who feel competent technologically are better able to maintain positive social functioning and reduce social-oriented stress.

Overall, the consistent negative correlations across all technostress dimensions indicate that self-efficacy serves as a significant psychological resource for mitigating technology-related stress. Prior research has shown that technostress dimensions such as LT, PR, TI, PE, and SO are negatively associated with positive psychological resources, including psychological capital (Efilti & Çoklar, 2019). The present findings extend this understanding by demonstrating that self-efficacy specifically, defined as teachers' confidence in their own abilities, plays a crucial role in reducing technostress within the context of the Merdeka Curriculum. In general, this pattern indicates that the higher the teachers' self-efficacy, the lower the technostress they experience across all dimensions, a finding consistent with studies showing that technology-related self-efficacy functions as a protective factor against technostress among educators (Zivi et al., 2025).

These results suggest that professional development initiatives should not only focus on technical skills but also strengthen digital self-efficacy through mastery experiences, guided practice, peer collaboration, and constructive feedback. Such approaches have the potential to reduce technostress across instructional, professional, technical, personal, and social domains, enabling teachers to adapt more effectively to the digital demands of the Merdeka Curriculum.

4. CONCLUSION

This study examined the relationship between technostress and self-efficacy among junior high school teachers in the implementation of the Merdeka Curriculum. The findings revealed significant negative correlations between self-efficacy and all five dimensions of technostress such as learning-teaching process oriented, profession oriented, technical issue oriented, personal oriented, and social oriented. These results indicate that teachers with higher levels of self-efficacy tend to experience lower levels of technostress when integrating digital tools and platforms into their instructional and administrative tasks. The study provides empirical support for the role of self-efficacy as a psychological resource that helps teachers manage technological demands more effectively. The findings underscore the need for targeted professional development programs that strengthen teachers' digital competence and confidence. Enhancing self-efficacy through mastery experiences, mentoring, collaborative learning, and supportive school environments may reduce technostress and improve teachers' readiness to implement the Merdeka Curriculum. Future research may expand this work by examining additional moderating variables, exploring longitudinal patterns, or comparing technostress levels across different school contexts to deepen understanding of teachers' digital adaptation in educational reform.

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