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Technostress among Malaysian English Instructors: Impact on Job Performance

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Abstract

Technostress – a symptom of stress brought on by the use of Information and Communication Technology (ICT) – has become more common within educational contexts and is affecting English language instructors who rely heavily on technology. Although technostress has been extensively studied in a variety of professional settings, little is known about how it affects English language instructors in Malaysia. This study examined the relationship between the five dimensions of technostress and Malaysian English instructors' job performance. Through convenience sampling, 60 English instructors from different Malaysian educational institutions were recruited and participated in an online survey. Data was gathered quantitatively and analysed using Statistical Package for Social Sciences (SPSS). The findings revealed that respondents maintained excellent job performance despite moderate to high levels of techno-invasion and techno-uncertainty. It was notable that low techno-insecurity and techno-complexity indicated successful use of technology. These findings have significant implications for educational stakeholders, highlighting the need for improved technical support systems, structured policies for technological implementation, and focused professional development initiatives that address specific dimensions of technostress while maintaining the effectiveness of English language instructions.

Keywords: Technostress, ICT, Job Performance, English Language Instructors, The Use of Technology for Language Learning

Introduction

Over the past two decades, the Malaysian education system has been revolutionised through the increasing integration of Information and Communication Technology (ICT) in teaching and learning. Driven by the Malaysian government's awareness of the significance of ICT, many initiatives have been launched. These include the Smart School Blueprint (1997) and the Malaysian Education Blueprint (2013-2025) (Ministry of Education Malaysia, 2013). Although the goal of these initiatives is to improve teaching and learning through the use of technology, these programmes have created new challenges for instructors, particularly English language instructors. English language instructors face these challenges while

balancing between integrating technology into the classroom and their core duties as language instructors.

Current studies have shown the teaching of the English language is evolving through the increasing use of various technologies. Though the use of technology in the classroom is beneficial, English instructors are experiencing technostress as a result of the continuous implementation of ICT (Tarafdar et al., 2007). The use of generative artificial intelligence (GenAI) tools in English classrooms, specifically ChatGPT, though is beneficial, has found to be detrimental to the teachers (Kohnke et al., 2024). Teachers' lack of technological pedagogical content knowledge (TPACK) skills was one of the sources of technostress when they implemented online meeting platforms such as Zoom and Microsoft Teams in their classrooms (Khlaif et al., 2023).

Instructors are increasingly experiencing technostress, which is characterised as a negative psychological and physiological condition that occurs as individuals adjust to the demands of technology (Walters, 2021). Malaysian English instructors face some unique challenges in today's digital education settings (Chandran et al., 2022; Ng & Yunus, 2021). They must balance between mastering the evolving technology, meeting the different needs of their students to prepare them for communication in the globalised world, as well as implementing and maintaining effective teaching strategies (Adnan et al., 2024; Ag-Ahmad et al., 2023).

The pressure to integrate technology while making sure that language instruction is conducted effectively has created a complex problem that needs to be solved carefully (Che Had & Ab Rashid, 2019; Ooi & Othman, 2023). Though the number of research on technostress in educational settings is increasing, the understanding of how Malaysian English language instructors manage technostress is still limited (Musa et al., 2023; Wahab et al., 2022). Juggling these factors while ensuring quality language instruction, the job performance of English instructors in Malaysia has also been affected. Based on previous research, instructors' job performance can be greatly affected by technostress (Estrada-Muñoz et al., 2020; Li & Wang, 2020; Penado Abilleira et al., 2021).

Despite their significant role in preparing students for global communication in this digital era and the impact technostress has on teachers' job performance, there is a scarcity of previous studies that specifically examine the effects of technostress on Malaysian English instructors' job performance. Hence, to contribute to the development of effective support systems and interventions in managing technostress in educational contexts and to address the gap in the literature, this study aimed to examine the levels of technological stress experienced by Malaysian English instructors and assess technostress impacts on their job performance. The findings of this study will provide necessary knowledge regarding the repercussions of technological integration in education, as well as inform policy decisions regarding technology integration in language education. These insights are valuable as educational institutions continue to expand their technological infrastructure and digital learning initiatives (Ghory & Ghafory, 2021; Tan & Feng, 2023).

Literature Review

Technostress and its Dimensions

Technostress has changed significantly with technological advancement since it was initially proposed by psychologist Craig Brod in 1984 as a "modern disease" resulting from challenges adjusting to computer technology (Salanova et al., 2014). Early definitions mostly addressed technostress as the stress related to computers, but Clute (1998) broadened the definition to include psychological aspects such as helplessness and excessive technological dependence.

Salanova, Llorens and Ventura (2014) described technostress as an adverse psychological state brought on by the use of technology or the potential use of technology in the workplace, including sentiments of cynicism, fatigue, and anxiety, as technology grew more and more incorporated into professional settings. According to Walters (2021), more recent conceptualisations acknowledge technostress as a broader phenomenon in which people experience overload due to the pervasive use of technology, including challenges like email overload and constant software updates.

Technostress creators are the primary causes of technology-induced stress at work (Ragu-Nathan et al., 2008). Five key dimensions that have been identified and validated are techno-overload which refers to the pressure to work faster and longer due to technology integration; techno-invasion which is the blurring of personal and professional boundaries through constant connectivity; techno-complexity which is one's perception of inadequate technical skills which in return requires continuous learning; techno-insecurity which refers to the fear of replacement by more technologically proficient colleagues; and techno-uncertainty which is the anxiety caused by continuous technological changes and updates. Organisations, such as academic institutions, can use technostress inhibitors, such as technical support, literacy facilitation, and involvement facilitation to help counter these stressors (Tarafdar et al., 2011).

Technostress in English Education

There are advantages and disadvantages to using technology in English language education. While ICT can enhance educational quality (Ghory & Ghafory, 2021) and supplement traditional pedagogical approaches (Tan & Feng, 2023), it has also led to an increase in technostress among instructors.

Recent studies have shown that technostress is common in English language instruction across various contexts. According to Kohnke, Zou and Moorhouse (2024), the main causes of technostress in Hong Kong's higher education institutions are inadequate training and the rapid development of Artificial Intelligence (AI). Technostress among Peruvian university English professors manifested through anxiety, fatigue, and poor academic performance (Rodriguez-Barboza, 2023). A study by Hunutlu and Küçük (2022) revealed that there were moderate levels of technostress among English teachers who utilised web 2.0 technologies, while another study by Muslimin, Mukminatien and Ivone (2023) discovered that English as a Foreign Language (EFL) lecturers with low digital literacy had greater levels of technostress.

In Malaysia, English language education has undergone significant evolution since independence, shifting from Malay language to English as the medium of instruction in 2002

(Gill, 2005). Workload management (Chandran et al., 2022), professional development gaps (Ag-Ahmad et al., 2023), and technological integration issues (Ng & Yunus, 2021) are some of the particular difficulties faced by Malaysian English instructors. According to Ooi and Othman (2023), in-service teachers are good at adjusting to technology, but Che Had and Ab Rashid (2019) pointed out that the shortcomings in the infrastructure and limitations on system support were some of the challenges of technological adaptation in education.

There is a scarcity of research focused on technostress among English instructors in Malaysia. High levels of technostress during the COVID-19 epidemic have been reported in broader surveys of Malaysian teachers (Wahab et al., 2022). Musa, Talip and Awang (2023) identified five basic components of technostress among Malaysian primary school teachers, which were the teaching-learning process, social orientation, profession-related factors, technical aspects, and personal elements. Nevertheless, these studies did not focus on English language instructors.

Technostress and Job Performance

In educational contexts, the relationship between technostress and job performance has attracted a lot of attention. Workplace efficiency, work quality, and career advancement potential are all included in job performance as cited by Pandey and Chauhan (2021). Recent research has shown that these elements of job performance might be jeopardised by technological stressors.

According to research, instructors deal with unique technostress challenges that have a direct impact on their job effectiveness. Based on Khedhaouria and Cucchi (2019), job burnout is caused by specific combinations of stressors, including role ambiguity, privacy concerns, and work overload. In educational settings, reduced classroom participation and decreased teaching efficiency are the results of job fatigue manifestation. These results are consistent with a study by Salanova, Llorens and Ventura (2014), which found that professionals who experience technostress are less productive and are more likely to miss work.

The educational sector is vulnerable to the impacts of technostress. According to Arredondo-Hidalgo and Caldera-González (2022), teaching performance is particularly affected by time management issues and distractions brought on by technology. This result is further supported by research done by Rodriguez-Barboza (2023) which demonstrates that technostress impairs job performance through a variety of mechanisms. These include adaptation stress, burnout, and sleep disruption. These factors are especially important in educational settings where there is a constant need for technological adaptation.

The impact of technostress extends to a wider range of professional outcomes instead of just affecting performance measures. Research suggests that to address technostress, it is essential to take into account both institutional and individual factors, such as technological infrastructure, professional development support, and organisational policies (Salanova et al., 2014).

Methodology

A quantitative research approach was employed in this study. The target population of this study was English language instructors who were teaching in both public and private Malaysian institutions. Convenience sampling, a non-probability sampling technique, was used to recruit the research respondents due to restrictions and difficulties in reaching the target population. An online survey was conducted using Google Forms to collect data from 60 respondents. The survey was distributed through various social media platforms, including WhatsApp, Telegram, and Instagram. The close-ended survey consisted of three sections, which were Section A (Demographic background), Section B (Technostress creators), and Section C (Job Performance). All items were measured on a five-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree", where "Strongly Disagree" was 1 and "Strongly Agree" was 5. A pilot study was carried out to confirm the validity and reliability of the survey questions before the data collection process. 10 volunteers were chosen as a sample and all of them answered the survey. The value of Cronbach's alpha calculated for 24 survey items, which was .857, suggested good internal consistency without any significant redundancy among the items (Taber, 2018). Data collected from the online survey were calculated and examined statistically using Statistical Package for Social Sciences (SPSS). Descriptive statistics, including frequency, mean, and standard deviation were used to analyse the data. The mean scores were interpreted based on the mean score interpretation by Nunnally et al. (1976) as shown in Table 1.

Table 1
Level of mean interpretation by Nunnally et al. (1976)

No.	Mean Score	Level of Interpretation
1	1.00 – 2.00	Very Low
2	2.01 – 3.00	Low
3	3.01 – 4.00	High
4	4.01 – 5.00	Very High

Table 1, portraying the interpretation of mean scores according to (Nunnally et al., 1976), was referred to in interpreting and analysing the data obtained from the questionnaire.

Results

Demographic Data

A total of 60 English instructors participated as respondents of this study. The demographic data of the respondents were collected and portrayed in

Table 2.

Table 2
Socio-Demographic Data of the Respondents

Demographic Variable	Frequency (n=60)	Percentage (%)
Gender		
Male	9	15.0
Female	51	85.0
Age		
21 – 30	36	60.0
31 – 40	15	25.0
41 – 50	5	8.3
51 – 60	4	6.7
Teaching Experience (years)		
1 – 10	43	66.7
11 – 20	12	20.0
21 – 30	3	5.0
31 – 40	2	3.3
Institution Location		
Northern region	18	30.0
Central region	22	36.7
Southern region	10	16.7
East Coast region	7	11.7
Eastern Malaysia	3	5.0
Institution Type		
Public	52	86.7
Private	8	13.3
Grade Level of Teaching		
Primary	8	13.3
Secondary	33	55.0
Tertiary	18	30.0
Others	1	1.7

Portrayed in

Table 2, majority of the respondents were female, with a total of 51 (85.0%) and a small percentage of male (15.0%). The highest proportion of respondents, 36 (60.0%), were aged 21 – 30 years old. The calculated mean age of the respondents was 32.03 ± 8.72 years old, with a range of 37 years. More than half of the respondents, 43 (66.7%) had teaching experience of 1 to 10 years, and the mean teaching experience was 7.22 ± 8.51 years.

Respondents of this study were teaching in various locations. A total of 11 states were recorded in which the institutions where the respondents were teaching. Approximately one-third of the respondents (36.7%) were teaching in institutions located in central regions of Malaysia, while a smaller percentage of respondents was recorded in Eastern Malaysia (5.0%). A big proportion of respondents. 52 (86.7%) were teaching in public institutions, while the rest were teaching in private institutions. 33 (55.0%) of the respondents were teaching in secondary schools, and almost one-third of the respondents, 18 (30.0%) were in tertiary institutions.

Level of Technostress among Malaysian English Instructors

Using a five-point Likert scale, Table 3**Table 3** shows the descriptive data for the dimensions of technostress among English instructors in Malaysia. Techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty are the dimensions, and each dimension comprises several items that are intended to evaluate each specific dimension. The following analysis interprets the frequencies and means for each item from the responses of 60 respondents.

Table 3
Descriptive Statistics for Technostress Creators

Technostress Creators		Likert Scale 1	2	3	4	5	Mean
Techno-overload							
TO1	I am forced by this technology to do more work than I can handle.	11	25	8	14	2	2.52
TO2	I am forced by this technology to work with very tight time schedules.	7	25	9	15	4	2.73
TO3	I am forced to change my work habits to adapt to new technologies.	8	24	4	18	6	2.83
TO4	I have a higher workload because of increased technology complexity.	10	22	8	10	10	2.80
Techno-invasion							
TIV1	I have to be in touch with my work even during my vacation due to this technology.	4	5	9	25	17	3.77
TIV2	I have to sacrifice my vacation and weekend time to keep current on new technologies.	6	17	15	12	10	3.05
TIV3	I feel my personal life is being invaded by this technology.	5	18	9	18	10	3.17
Techno-complexity							

TC1	I do not know enough about this technology to handle my job satisfactorily.	9	36	7	7	1	2.25
TC2	I need a long time to understand and use new technologies.	12	30	10	6	2	2.27
TC3	I do not find enough time to study and upgrade my technology skills.	6	28	8	13	5	2.72
TC4	I find new recruits to this organisation know more about computer technology than I do.	11	18	7	22	2	2.77
TC5	I often find it too complex for me to understand and use new technologies.	11	32	8	7	2	2.28
Techno-insecurity							
TIS1	I feel a constant threat to my job security due to new technologies.	15	25	11	8	1	2.25
TIS2	I have to constantly update my skills to avoid being replaced.	6	24	6	17	7	2.92
TIS3	I am threatened by coworkers with newer technology skills.	11	34	7	6	2	2.23
TIS4	I feel there is less sharing of knowledge among coworkers for fear of being replaced.	18	30	4	4	4	2.10
Techno-uncertainty							
TU1	There are always new developments in the technologies we use in our organisation.	1	5	12	31	11	3.77
TU2	There are constant changes in computer software in our organisation.	3	16	15	21	5	3.15
TU3	There are constant changes in computer hardware in our organisation.	6	19	18	14	3	2.82
TU4	There are frequent upgrades in computer networks in our organisation.	7	17	15	17	4	2.90

The data from Table 3 revealed that the levels of technostress among respondents varied. Techno-invasion and techno-uncertainty dimensions showed the most significant stressors affecting English instructors in Malaysia. Respondents who experienced techno-invasion reported highest levels of stress related to “being in touch with work even during vacation due to this technology” (TIV1, M=3.77), which is classified as “High” on Nunnally and Berstein’s scale (Nunnally et al., 1976). Item TIV3 (M=3.17) also resulted in high levels of tension, showing respondents felt like their personal lives were being invaded by the technology. Item TU1 (M=3.77) and TU2 (M=3.15) proved that respondents felt a great deal of stress under the techno-uncertainty dimension. Based on these results, the biggest technological stressors for respondents are the pressure to keep up with the rapidly evolving technology and the invasion of boundaries between work and personal life.

In contrast, respondents expressed lower stress levels for factors related to techno-complexity, with most of them falling into the “Low” range. Low scores were given to items TC5 (M=2.28), TC2 (M=2.27), and TC1 (M=2.25). This pattern showed that in general, respondents felt capable of understanding and using the technologies that are required for their profession, though they might feel pressured by the rapid changes in the technology. Items in techno-insecurity also repeatedly received low mean scores, especially TIS4 (M=2.10) and TIS3 (M=2.23), proving respondents did not feel insecure and threatened due to technology being implemented in the workplace.

On the other hand, with mean scores varying from 2.52 to 2.83 falling into the “Low” category but moving toward the upper boundary, respondents showed a moderate stress level in the techno-overload dimension. Item T03 (M=2.83) showed that respondents felt like

they were moderately forced to change their work habits to adapt to the technologies, while item TO4 (M=2.80) portrayed a moderate agreement among respondents on how their workload is higher due to increased technology complexity. These results imply that although some workload pressure is brought on by technological adaptation, most respondents have not experienced it to the point of exhaustion. The results of the stressors technostress showed that Malaysian English instructors' biggest technological challenges are adjusting to constant technological evolution and maintaining work-life boundaries.

Job Performance Level Among Malaysian English Instructors

Table 4 shows the descriptive statistics for four items in the job performance construct that were measured by a 5-point Likert scale. The means of each item explain the central tendencies of responses, hence providing insights into how ICT impacts Malaysian English instructors' job performance.

Table 4
Descriptive Statistics for job Performance

Job Performance		**Likert Scale**					**M**
		1	2	3	4	5	
JP1	The ICT in my school enhances my productivity.	2	5	14	28	11	3.68
JP2	The ICT in my school allows me to perform my work duties with convenience.	2	6	6	35	11	3.78
JP3	The ICT in my school enables me to accomplish more work than would otherwise be possible.	2	5	9	30	14	3.82
JP4	The ICT in my school enables me to try out innovative ideas.	2	9	7	28	14	3.72

Based on Table 4, Malaysian English instructors consistently expressed good opinions about how the use of ICT improves their job performance. All four items scored mean scores ranging from 3.68 to 3.82, placing all items in the High category. Item JP3 received the highest mean score of 3.82, while item JP2 scored the second highest (M=3.78). Though slightly lower, items JP1 (M=3.68) and JP4 (M=3.72) still scored mean scores of the high range. Analysing the distribution of responses, a significant inclination towards agreement, which is points 4 and 5 in the Likert scale, was recorded. This trend can be explained by respondents' perceptions of how ICT improves their job productivity, ease of use, innovation ability, and work capacity. This also implies that the respondents believed that the use of technology in their workplace brings advantages, apart from experiencing the different types of technostress. The high mean scores show how ICT supports their work-related duties effectively.

Levels of Technostress and the Impact on Job Performance

Table 5 presents the summary of descriptive statistics for every construct that summarises overall values of mean (M) and standard deviation (s.d.). Techno-invasion (M=3.33, s.d.=1.05) showed the highest mean of all dimensions of technostress, which indicates that respondents felt that technology significantly interferes with their time. Responses for this construct are a bit more consistent than techno-overload, with a smaller value of standard deviation. The mean score for techno-uncertainty (M=3.16) and a low standard deviation score of .84 indicate respondents' moderate agreement with the frequent changes in technology, proving the dynamic nature of the ICT environment.

Table 5
Number of items and Descriptive Statistics for Each Construct

Construct	No. of Items	M	s.d.
Technostress Creators			
Techno-overload	4	2.72	1.10
Techno-invasion	3	3.33	1.05
Techno-complexity	5	2.46	.86
Techno-insecurity	4	2.38	.91
Techno-uncertainty	4	3.16	.84
Job Performance	4	3.75	.95

Techno-insecurity, on the other hand, scored the lowest mean, which is 2.38, suggesting that the respondents are not concerned about their job security as a result of technological usage. Some variabilities of responses were observed through the score of .91 for the standard deviation of the construct. Techno-overload scored a mean of 2.72, hence showing a balanced view of workload demands brought by technology. The responses from respondents were varied, indicated by the higher standard deviation as compared to other items, with some of them feeling more overwhelmed than others. Results for the techno-complexity construct proved that the majority of the respondents do not think that using technology is challenging, based on the low mean score (M=2.46). In addition, a much lower standard deviation was calculated, suggesting that the responses from respondents are consistent and similar.

From the data collected, the mean and standard deviation values for the job performance construct are 3.75 and .95 respectively. The high mean suggests that the respondents believe that ICT plays a great role in improving their ability to accomplish their work, hence increasing their job performance. The moderate value of standard deviation indicated that there are some variations in respondents' evaluations and perceptions of how ICT has affected their roles as an instructor.

These findings are consistent with previous studies that emphasise techno-invasion and techno-uncertainty as the most significant stressors, while techno-complexity and techno-insecurity are of less concern. The level of job performance is still high despite the stressors, which suggests that most of the respondents can successfully use ICT effectively while managing technostress. The use of technostress management strategies helps them to maintain their professional efficiency as an English instructor.

Discussion

The results show that Malaysian English instructors have different levels of technostress dimensions, with the most common stressors being techno-invasion (M=3.33) and techno-uncertainty (M=3.16). This is consistent with previous research by Kohnke, Zou and Moorhouse (2024) who found that language instructors' main source of stress was the quick changes in technology. Rodriguez-Barboza (2023) reported a general tendency to blur work-life boundaries in educational settings, which is reflected in the high techno-invasion scores, particularly in work-related connectivity during vacations (M=3.77).

The mean score for techno-insecurity was notably the lowest (M=2.38), indicating that Malaysian English instructors are reasonably confident in their technological competence. This aligns with the findings of Muslimin, Mukminatien and Ivone (2023) that lower levels of

technostress are associated with better levels of digital literacy. The moderate levels of techno-complexity (M=2.46) further confirm this, which is in line with the stress levels of English teachers who use educational technology as reported by Hunutlu and Küçük (2022). According to the results, respondents' technological confidence may act as a buffer against extreme technostress, especially in fields where technical competence is necessary.

Respondents reported low techno-overload scores (M=2.72), despite the documented technological constraints in Malaysian schools, including system support and infrastructural limitations (Che Had & Ab Rashid, 2019). This surprising finding raises the possibility that despite infrastructural limitations, English instructors have created effective strategies to manage technological workload. Respondents also reported high job performance scores (M=3.75), even though they experienced moderate to high levels of some technostress aspects. This resilience is consistent with findings from Ooi and Othman (2023) that showed Malaysian in-service teachers exhibit strong technological adaptation.

The findings of this study imply that Malaysian English instructors maintain comparatively high levels of job performance despite having to deal with similar technostress issues identified in previous research (Musa et al., 2023; Wahab et al., 2022). This may be explained by the way English language instruction has changed in Malaysia (Gill, 2005) and the gradual emergence of coping strategies. The results support the claim made by Salanova, Llorens and Ventura (2014) that taking into account both institutional and personal factors is necessary to reduce the negative impacts of technostress.

These findings have significant implications for educational institutions and policymakers. In line with Khedhaouria and Cucchi's (2019) suggestions for managing technological stressors in educational settings, the high techno-invasion and techno-uncertainty scores suggest the need for clearer work-life boundaries and more comprehensive and effective approaches to technological transformation in institutions.

Conclusion and Recommendations

This study examined the many aspects of technostress and how they affected Malaysian English instructors' job performance. According to the results, respondents maintained high job performance levels even though techno-invasion and techno-uncertainty appeared as significant technological stressors, which is significant considering the demands of teaching English that increasingly include the use of digital technologies for communication, pronunciation practice, and exposure to the authentic language. Though there were institutional obstacles, low techno-insecurity and techno-complexity scores indicate a successful technological adaptation among the instructors, suggesting effective integration of technology into language classrooms. These findings show the relationship between English instructors' job performance and technological stress, as well as contribute to the theoretical understanding of technostress in educational contexts.

This study makes several significant contributions to the field of educational technology and language instruction. The results of this study provide empirical data and a pioneering examination of technostress dimensions, specifically among Malaysian language instructors, which will fill a crucial gap in the literature. The findings also offer insights that help educational institutions develop interventions to better assist language instructors in

managing technostress. Lastly, the results emphasise the need for more defined strategies for the implementation of technology that respect work-life boundaries for policymakers. Through longitudinal studies, future research should explore the specific coping strategies used by Malaysian English instructors to maintain high job performance despite facing technostress. This way, researchers can investigate and look at how these associations change over time.

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