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THE RELATIONSHIP BETWEEN REMOTE EDUCATION AND WORK-LIFE BALANCE AMONG GENERATION Z

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ABSTRACT

This study examines the relationship between remote education and work-life balance among Generation Z university students, with particular attention to differences across demographic characteristics. Drawing on generational theory and work-life balance literature, the research investigates whether remote and hybrid learning environments negatively influence students' ability to maintain boundaries between academic and personal life. Data were collected from 456 Vietnamese public university students. Statistical analyses, including independent samples of t-tests and one-way ANOVAs, were employed to test the proposed hypotheses. The findings reveal that remote education has a significant negative effect on students' work-life balance, as reflected in high levels of post-class academic worry and difficulty disengaging from study-related activities. However, no statistically significant differences were found between students engaged in fully remote and hybrid education. Furthermore, work-life balance did not significantly vary across gender, marital status, educational level, or year of study.

Keywords: work-life balance, remote education, Generation Z, university students, digital learning

INTRODUCTION

The rapid expansion of remote education has been further accelerated not only by global health crises but also by recent geopolitical conflicts affecting economic stability. In particular, the ongoing conflict between the United States and Iran in 2026 has caused a significant disruption in global energy markets, leading to a sharp increase in oil and petrol prices worldwide. Reports indicate that oil prices have exceeded gasoline prices, rising substantially across many countries due to supply chain disruptions, especially through the Strait of Hormuz, a critical route for global oil transport. This surge in fuel prices has had widespread economic consequences, including increased transportation costs, inflation, and financial strain on households. In some regions, petrol prices have risen by up to 16–30%, significantly increasing the

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cost of daily commuting. As transportation constitutes a major expense for university students, especially those who commute to campus, rising fuel costs have directly impacted their financial well-being and daily routines. In response to these economic pressures, many governments and educational institutions have adopted or reintroduced remote learning policies as a cost-reduction strategy. By shifting to online education, institutions aim to reduce transportation expenses for students and mitigate the broader cost-of--living crisis associated with rising energy prices. This shift highlights how remote education is increasingly influenced not only by technological advancement but also by macroeconomic and geopolitical factors.

Universities worldwide made a change from traditional face-to-face instruction to online and hybrid learning environments, making remote education a central mode of academic delivery (Meng et al., 2024). While this transition has increased flexibility and accessibility, it has also blurred the boundaries between academic, personal, and professional domains, raising concerns about students' work-life balance. For university students, this balance is particularly complex, as they must navigate academic demands, part-time employment, social relationships, and personal responsibilities simultaneously. Remote education introduces both opportunities and challenges in this regard. On one hand, it allows for flexible scheduling and self-paced learning; on the other hand, it can lead to increased workload, prolonged screen time, and difficulty separating study from personal life. Therefore, understanding how remote education affects students' work-life balance is both timely and necessary.

Emerging research suggests that remote learning environments may intensify role overlap, where academic activities intrude into personal time and space, potentially leading to stress, burnout, and reduced well-being (Honggang et al., 2026; Wang, 2023). Furthermore, the impact of remote education on work-life balance is not uniform across student populations. Differences may arise based on demographic and academic characteristics such as gender, marital status, educational level, and year of study. For example, female students often report higher levels of role conflict due to additional domestic responsibilities, particularly in cultures where gender roles are more pronounced (Craig & Churchill, 2021). Similarly, married students may experience greater challenges in balancing academic and family responsibilities compared to single students. Differences across educational levels and years of study may also reflect variations in academic workload, experience, and coping strategies.

Despite growing interest in remote education, limited research has systematically examined its impact on students' work-life balance and how this varies across different demographic groups. Addressing this gap is critical for designing exclusive and supportive educational policies. Therefore, this study aims to investigate how remote education affects the work-life balance of university students and whether significant differences in work-life balance exist based on gender, marital status, educational level, and year of study.

THE CONCEPTUAL BACKGROUND

Remote Education

Remote education, also referred to as online or distance learning, enables students to engage in academic activities through digital platforms without physical presence. In other words, online learning is broadly defined as an educational approach enabled by advancements in information and communication technologies (ICT), incorporating digital platforms, computer-based tools, and web applications to facilitate teaching and learning processes. This modality emphasizes interaction among participants within virtual environments, where learners and instructors engage through shared technological spaces, activities, and collaborative experiences (Ricardo et al., 2023). Unlike traditional classroom instruction, online education provides flexibility, allowing learners to manage their time, location, and preferred learning styles more autonomously. Over the past two decades, online education has evolved significantly, driven by technological and pedagogical advancements.

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There are multiple stages in this evolution, ranging from early multimedia-based content delivery to more advanced models incorporating learning management systems, social media, and collaborative tools. Recent developments include the integration of cloud computing, open educational resources, and massive open online courses, which have expanded access to education globally. When properly designed, online education can enhance the learning experience by promoting active participation, collaboration, and access to diverse digital resources.

A global meta-analysis found that online learning outcomes are generally positive, particularly when supported by feedback and interaction (Yu, 2022). Remote education has become a central component of modern education systems, offering flexibility and expanded access (Meng et al., 2024). The systematic reviews in higher education report that online learning can achieve equivalent effectiveness to face--to-face instruction (Meng et al., 2024). In specialised fields such as nursing education, online teaching has demonstrated effectiveness in improving both theoretical knowledge and practical skills (Li et al., 2024).

Work-life balance

Work-life balance refers to an individual's capability to effectively manage and integrate work and non-work responsibilities while maintaining satisfaction and effective functioning across both domains (Greenhaus et al., 2003). It encompasses both subjective perceptions of balance and the continuous effort to maintain equilibrium under changing circumstances (Clark, 2000). A wide range of determinants influence work-life balance, including job-related pressures (Buruck et al., 2020), demographic changes (Lewis et al., 2007), and rapid technological development (Mazmanian et al., 2013; Smite et al., 2023). For instance, demanding workloads, extended working hours, and frequent travel can disrupt balance, while demographic trends such as the rising participation of married women in the workforce reshape role expectations. Meanwhile, technological progress has enabled flexible arrangements, including remote work and virtual offices.

Importantly, work-life balance does not imply equal distribution of time and energy across all life domains. Instead, it is dynamic and context-dependent, shifting according to individual circumstances and life stages. For example, early-career individuals may prioritize professional advancement, whereas those with family responsibilities often place greater emphasis on personal life. Similarly, expectations differ significantly between new entrants to the workforce and those approaching retirement.

Existing literature highlights the multidimensional nature of work-life balance. Organisational support plays a critical role, as initiatives such as flexible scheduling, parental leave, and family support programmes have been shown to enhance employee well-being and performance (Allen, 2001; Kossek & Ozeki, 1998). In practice, some organisations – such as those in India – have implemented programs addressing gender equality, childcare, health awareness, and stress management (Rajadhyaksha, 2012). In addition, work-life balance is closely linked to key employee outcomes, including job satisfaction, workplace behavior, productivity, and attrition/retention rates (Grover & Crooker, 1995; Haar et al., 2014; Kossek & Ozeki, 1998; Lobel & Kossek, 1996). For married employees in particular, achieving work-life balance is strongly associated with both job satisfaction and performance (Haar et al., 2014).

Rather than being a fixed endpoint, work-life balance should be understood as an ongoing process. It recognizes that professional and personal roles can complement each other rather than exist in opposition. Maintaining balance, therefore, requires continuous reflection and adjustment in response to evolving needs and priorities. Research emphasises the importance of organisational culture in supporting work-life balance. For example, Baral and Bhargava (2011) advocate for integrated work-life balance programmes to strengthen employee commitment and productivity. Other studies suggest that work-life balance varies across demographic characteristics

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such as age, gender, and occupation (Allen et al., 2013) and is shaped by factors including family influence, professional identity, societal support, and organisational policies (Valk & Srinivasan, 2011).

Overall, work-life balance is a complex construct shaped by interrelated factors such as income, age, and personal circumstances. Achieving it requires supportive conditions that address both professional and personal demands. As individual priorities evolve, maintaining flexibility and adaptability becomes essential for sustaining both well-being and career success.

Remote education has a dual effect on university students' work-life balance. In fact, it increases flexibility and time management capability but simultaneously blurs the boundaries between academic and personal life, often leading to stress and fatigue. Demographic factors – particularly gender – significantly moderate these effects. The clearest finding across studies is that remote learning enhances scheduling flexibility. A survey of 181 undergraduate students at Mount Royal University found that 88% perceived greater flexibility and 61% reported improved time management, with 74% finding online classes more convenient than in-person ones (Salmani et al., 2024). A qualitative study of 210 graduate business students similarly concluded that online learning enhances work-life balance for most students compared to traditional fixed-time classroom learning, primarily by eliminating commuting and offering asynchronous access (Berry & Hughes, 2020).

However, this flexibility comes with a cost. Remote learning collapses the physical separation between study, work, and home, creating "porous boundaries" that make it difficult to disconnect (Naz et al., 2021). The "flexibility paradox" – where increased autonomy actually intensifies role conflict – is well-documented; indeed, remote settings can lead to fatigue, exhaustion, and reduced social engagement (Hossain et al., 2024).

Generational Theory

Generational theory offers a useful lens for understanding differences in values, attitudes, and behaviors across generational cohorts, with applications in areas such as marketing, education, and organizational studies. It conceptualizes generations as groups of individuals shaped by shared social, historical, and geographical experiences during formative periods of their lives (Mannheim, 1952). These shared experiences contribute to the development of common beliefs systems and value orientations (Pendergast, 2009). Interest in generational differences, particularly within the workplace, has increased significantly in recent years (Rudolph & Zacher, 2022). The trend is partly driven by demographic transitions, such as aging populations, and broader economic changes that influence labor markets. As a result, organizations now employ individuals from multiple generations simultaneously, each bringing distinct expectations, work-related attitudes, and preferences (Hertel & Zacher, 2018).

Research on generational cohorts has traditionally examined both similarities among individuals within the same cohort and differences across cohorts in terms of attitudes values and behaviors. However, recent scholarship argues that observed differences are often difficult to attribute solely to generational membership because age, historical period, and birth cohort effects are inherently intertwined (Rudolph & Zacher, 2022). Consequently, researchers are encouraged to adopt a broader lifespan perspective by recognizing age as a multidimensional construct, encompassingchronological age (based on birth year), functional age (health and cognitive ability), organizational age (tenure), life phase age (family and social roles), and subjective age (self-perception) (Rudolph & Zacher, 2022).

Scholarly literature typically categorizes populations into generational cohorts such as Baby Boomers, Generation X, Millennials (Generation Y), and Generation Z (e.g., Pew Research Center, 2019). These cohorts are often associated with differing value systems and behavioral tendencies that influence how individuals engage with social environments, organizational settings, and market contexts (Egri & Ralston, 2004; Schewe & Meredith, 2004). For example, individuals from the Baby Boomer cohort are frequently characterized by a preference for organizational stability and clearly defined

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hierarchies. In contrast, those belonging to Generation X are more inclined toward independence and flexible working arrangements. Millennials are often associated with a desire for meaningful employment and a balanced integration of work and personal life. In contrast, Generation Z is widely recognized for its strong affinity for digital Technologies, openness to innovation, and greater willingness to acknowledge and discuss mental health and well-being compared with previous generations (Woerner et al., 2022).

Technological advancement and evolving workplace practices have further influenced generational perspectives. Millennials and Generation Z are generally reported to place greater value on flexible employment arrangements than older cohorts, including remote and hybrid working arrangements (Çera et al., 2024). More broadly, post-pandemic evidence indicates that employees increasingly expect remote and hybrid work options as part of modern employment practices (Smite et al., 2023). In contrast, older generations may prefer more traditional work environments, which can lead to differences in expectations and potential workplace tensions. However, these differences also present opportunities for organizations to foster collaboration, enhance creativity, and improve performance by leveraging generational diversity.

Despite its usefulness, generational theory has been subjective to criticism. Scholars such as sociologist Norman Ryder argue that broad generational categories may oversimplify reality by overlooking important factors such as racial background and socioeconomic conditions, cultural background, and regional context. This highlights the need for more nuanced analyses that account for the complexity of social change.

Relationship between generation/age, remote education, and work-life balance

The proliferation of remote education has fundamentally reshaped learning environments and intensified concerns regarding work-life balance among students, especially for Generation Z – a cohort characterized by high digital proficiency and continuous engagement with technology (Prensky, 2001). While their familiarity with digital tools facilitates adaptation to online learning, it does not necessarily ensure effective management of boundaries between academic and personal life. Several studies pointed out the advantages of remote education for students. It can be mentioned firstly that the flexibility of remote education enabled students to balance work and study more effectively, with the ability to combine employment with education being particularly valued (Bakhov et al., 2021). Next, students saved time by eliminating commuting, as the ability to study from home spared valuable time otherwise wasted in traffic jams and reduced expenses related to transportation (Ober & Kochmańska, 2022). Additionally, students had more time available for family, and the flexibility of remote education also allowed them to better manage family responsibilities (Adhikari et al., 2024). Some students found that distance learning improved their study-work balance and enabled them to develop self-regulation skills and motivation for self-education (Bakhov et al., 2021).

Despite these benefits, remote education had numerous negative impacts on students' work-life balance. The most pervasive challenge was social isolation and loss of social connection. In fact, the loss of daily routine and disruption of social life contributed to feelings of loneliness and depression (Šestanović & Siddiqui, 2021). Students faced difficulties balancing household chores with academics, particularly for female students and those with family responsibilities. For instance, in Morocco, female students reported that increased household labor and caregiving responsibilities limited their time for learning (Rostom, 2022). Not only did they lose concentration during online lectures, but some students also reported that they faced a lack of practical components, and hands-on learning opportunities were noted as a significant limitation (Drašler et al., 2021).

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Relationship between gender, remote education, and work-life balance

Gender is the most consistent moderator of work--life balance under remote education. A PLS-SEM multigroup analysis of 466 Indian university students (209 male, 257 female) found that the negative effects of virtual learning ("banes") and technological challenges had significantly different impacts on well--being for male versus female students (Sharma & Sharma, 2022). A study of Austrian university students (n=236, 63.6% female) concluded that female students rated their workload during the transition to online learning as significantly higher than their male peers (Greier et al., 2022).

Among distance education doctoral students in the US (n=177), women reported poorer academic-family balance and a greater desire to set rigid boundaries between academic and family domains compared to men (Rockinson-Szapkiw & Watson, 2020). A Eurofound longitudinal survey of remote workers across Europe confirmed heightened work-life balance challenges for married, female parents and university--educated remote workers (Alfano et al., 2024).

Relationship between Educational level and year of study, online education, and work-life balance

Evidence on educational levels is thinner but suggestive. Distance education doctoral students reported lower academic-family satisfaction and more interference between academic and family domains than their residential peers (n=106 distance versus n=71 residential) (Rockinson-Szapkiw & Watson, 2020). Graduate students generally face a greater balance of challenges than undergraduates, likely because they are more often managing concurrent work and family obligations (Brus, 2006). Romero (2011) introduced the concept of "work-life learning balance" (WLLB) specifically for adult distance learners, arguing that adding academic time to already competing professional and family temporal patterns creates a distinct third source of role conflict (Romero, 2011).

Direct comparisons by year of study are largely absent from the literature. This is a notable gap – one would expect later-year students to face different pressures (e.g., thesis work, job searching) that interact with remote learning in specific ways, but this remains unstudied.

Most of this evidence comes from the COVID-19 period, when remote education was imposed rather than chosen – findings may not generalize to voluntary online programs. Nearly all studies are cross-sectional, precluding causal claims. Direct evidence on marital status and year-of-study differences among students specifically (as opposed to workers or faculty) remains limited.

Materials and Methods

Methodological Considerations

The study measures work-life balance using items adapted from prior research on work-life balance, including Felstead and Henseke (2017) and Kam and Tran (2025). While prior research offers differing classifications of generational cohorts, this study focuses exclusively on Generation Z, defined as individuals born in 1996 and onwards (Kam, 2021; Kam, 2023a; Kam, 2023b; Kam & Seymen, 2020; Kam et al., 2025; Mücevher, 2015; Oblinger & Oblinger, 2005).

This study seeks to investigate the impact of remote education on university students' work-life balance and to assess whether variations in work-life balance are associated with gender, marital status, level of education, and year of study. In line with these objectives, a set of hypotheses has been formulated.

H1: Remote education (whether fully online or hybrid) negatively affects the work-life balance of university students.

H2: There is a statistically significant difference in work-life balance levels between university students engaged in hybrid education and those in fully remote education.

H3: There are statistically significant differences in work-life balance levels among university students based on gender, marital status, educational level, and year of study.

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Sample Characteristics, Data Collection Instruments, and Procedures

Data for this study were collected between April and June 2022 using a structured questionnaire designed to assess the perceived work-life balance of Vietnamese public university students during remote and hybrid education. The questionnaire was structured into two principal sections.

The first section comprised items designed to capture participants' demographic characteristics as well as the mode of education they were engaged in. The demographic variables included age, gender, marital status, level of education, and year of study. Age was additionally used to classify respondents into generational cohorts. The educational format (remote, hybrid, or traditional) was also recorded.

The second section of the questionnaire included a standardised work-life balance scale used to evaluate students' perceptions of balance between academic responsibilities and personal life.

The study sample consisted of 456 students enrolled at a public university in Vietnam. All participants were aged 16–25, corresponding to Generation Z.

Regarding gender distribution, 266 respondents (58.3%) were male and 190 (41.7%) were female. Regarding relationship status, 89 students (19.5%) reported being single, while 367 (80.5%) indicated being in a relationship.

Regarding educational level, the majority of respondents, 385 (84.4%), reported a high school education, whereas 71 (15.6%) had attended vocational school.

The distribution of participants by year of study was as follows: first-year students constituted the largest group, 337 (73.9%), followed by second-year students, 77 (16.9%), third-year students, 28 (6.1%), and fourth-year students, 14 (3.1%).

Finally, participants were asked to indicate the predominant educational experience they had had over the previous 2 years. A total of 268 students (58.8%) reported participating exclusively in remote (online) learning, while 188 students (41.2%) reported a hybrid mode combining remote and in-person instruction. No respondents reported exclusively traditional (fully in-person) education during this period.

Instrument Reliability

Cronbach's alpha (Cronbach, 1951) is a widely used measure of internal consistency that evaluates reliability by examining the extent of shared variance among items relative to the total scale variance. Higher values indicate greater consistency among items, reflecting stronger reliability of the instrument. In addition, Cronbach's alpha can be interpreted as the mean of all possible split-half reliability coefficients (Collins, 2007). In line with recommendations in the literature, values above 0.60 are generally considered acceptable for research purposes (Rószkiewicz, 2020; Yıldız & Uzunsakal, 2018). Accordingly, Cronbach's alpha was employed to assess the reliability of the work-life balance scale, yielding a coefficient of 0.702, which indicates an acceptable level of internal consistency.

To further examine the scale's underlying structure, an exploratory factor analysis (EFA) was conducted. Factor analysis is a set of multivariate techniques used to identify latent dimensions within a dataset and clarify the structure underlying observed variables, thereby supporting broader analytical applications (Alpar, 2011). In this study, principal component analysis (Pearson, 1901) was used as the extraction method, and Varimax rotation (Kaiser, 1958) was applied to enhance the interpretability of the factor solution.

Before conducting EFA, data suitability was evaluated using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity (Bartlett, 1954). The KMO value was 0.500, indicating a minimum acceptable level of sampling adequacy (Hair et al., 2019; Tabachnick & Fidell, 2013). Bartlett's test was statistically significant ($\chi^2 = 164.264$, $p < 0.001$), confirming sufficient correlations among variables for factor analysis. Based on these results, factor analysis was deemed appropriate for the dataset, and the aforementioned extraction and rotation methods were subsequently applied.

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A total of two items related to the unidimensional structure of the scale were included in the factor analysis (Table 1). The results indicated a single--factor solution with an eigenvalue greater than 1. This factor explains 77.56% of the total variance, suggesting a strong underlying structure. Overall, these findings support the adequacy of the measurement instrument in capturing a coherent construct.

Table 1. Exploratory factor analysis results for work-life balance

Corresponding items	Work-life balance
Post-class academic worry	0.881
Difficulty unwinding after the study day	0.881
Total variance explained	77.56%

Source: own elaboration.

Results of the Study

The study hypotheses will be tested sequentially. The work-life balance construct includes items related to the achievement of balance between work and personal life, including the allocation of personal time. Before hypothesis testing, the dataset was examined for distributional properties using skewness and kurtosis values to ensure appropriateness for further analysis. According to Tabachnick and Fidell (2013) and George (2011), values of skewness and kurtosis within the range of ±1.5 indicate that the data approximate a normal distribution.

Table 2 indicates that the skewness and kurtosis values for the relevant variables fall within the acceptable range of ±1.5. Accordingly, the assumption of normality is satisfied, and parametric statistical analyses are deemed appropriate for further testing. Table 3 presents the mean values used in the assessment of Hypothesis 1.

Table 2. Skewness and Kurtosis Analysis

Corresponding Variable	Skewness	Kurtosis
Post-class academic worry	-1.01	0.76
Difficulty unwinding after the study day	-0.68	-0.30
Work-life balance	-0.71	0.20

Source: own elaboration.

Table 3. Descriptive evaluation of work-life balance (n=456)

Corresponding items	Mean	Std dev.
Post-class academic worry	4.15 (83.0%)	0.91
Difficulty unwinding after the study day	3.84 (76.8%)	1.11
Work-life balance	3.99 (79.8%)	0.89

Source: own elaboration.

According to the findings, the average work-life balance score is 3.99 (79.8%) out of 5.00 (100%). The mean scores indicate that students experience a relatively high level of difficulty balancing academic responsibilities and their personal lives. Specifically, the item "*Post-class academic worry*" has the highest mean, 4.15 (83.0%), which shows that students frequently continue to think about study--related problems even after classes. The second item, "*Difficulty unwinding after study day*", also shows a mean of 3.84 (76.8%), indicating that many students struggle to relax and separate study from personal time. The overall work-life balance confirms that remote education has a noticeable negative effect on students' ability to maintain a balance between academic and personal life. As a result, Hypothesis 1, which proposes that remote education (whether fully online or hybrid) negatively affects the work-life balance of university students, has been supported. Table 4 presents the evaluation of Hypothesis 2 below.

The differences in work-life balance levels between university students engaged in hybrid education and those in fully remote education were examined using an independent samples t-test. The results are presented in Table 4.

Table 4. Comparison of work-life balance between hybrid and fully remote students

	Form of the study	Mean	SD	F	P
Work-Life Balance	Fully remote	3.98	0.86	0.728	0.39
	Hybrid	4.01	0.93		

Note: *p<.05, n: 456 (Fully remote = 268, Hybrid = 188).
Source: own elaboration.

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The results indicate that there is no statistically significant difference in work-life balance levels between hybrid and fully remote students (F = 0.728, p > 0.05).

Consequently, Hypothesis 2, which posits a statistically significant difference in work-life balance between students enrolled in hybrid education and those in fully remote education, is not supported by the findings. Tables 5, 6, 7, and 8 evaluate Hypothesis 3.

Work-life balance differences by gender were examined using an independent-samples t-test. The results are presented in Table 5.

Table 5. Comparison of work-life balance by gender

	Gender	Mean	SD	F	P
Work-Life Balance	Male	4.06	0.90	0.624	0.43
	Female	3.91	0.87		

Note: *p<.05, n: 456 (Male = 266, Female = 190).
Source: own elaboration.

The analysis of the data revealed no statistically significant difference in work-life balance levels by gender (F = 0.624, p > 0.05). Subsequently, work-life balance differences according to marital status were examined using an independent-samples t-test, with the results presented in Table 6.

The analysis of the data indicated that there is no statistically significant difference in work-life balance levels by marital status (F = 3.34, p > 0.05). Following this, work-life balance differences according to educational level were examined using an independent-samples t-test, with the results presented in Table 7.

Table 6. Comparison of work-life balance by marital status

	Marital status	Mean	SD	F	P
Work-Life Balance	Single	4.01	1.00	3.34	0.06
	In the relationship	3.99	0.86		

Note: *p<.05, n: 456 (Single = 89, In the relationship = 367).
Source: own elaboration.

Table 7. Comparison of work-life balance by educational level

	Educational level	Mean	SD	F	P
Work-Life Balance	High School	3.98	0.91	0.88	0.35
	Vocational School	4.05	0.79		

Note: *p<.05, n: 456 (High School = 385, Vocational School = 71).
Source: own elaboration.

The analysis of the data revealed no statistically significant difference in work-life balance levels by educational level (F = 0.88, p > 0.05). Subsequently, the relationship between work-life balance and students' year of study was examined using a one-way ANOVA test, with the results presented in Table 8.

The results of the one-way ANOVA indicate a statistically significant difference in work-life balance scores across students' years of study (F = 3.20, p = 0.02). However, given the unequal group sizes and variance heterogeneity, the Games–Howell post hoc test was applied. The results of the post hoc analysis revealed no statistically significant pairwise differences between the groups. Therefore, although the overall ANOVA result suggests a difference, the lack of significant pairwise comparisons indicates that these differences are not robust. As a result, there is insufficient evidence to conclude that students' year of study has a meaningful effect on work-life balance.

Table 8. One-Way ANOVA Analysis of Work-Life Balance Across Students' Year of Study

Year of the study	N	Mean	SD	Source of variance	Sum of squares	df	Mean square	F	P
First year	337	3.96	0.89	Between groups	7.59	3	2.53		
Second year	77	4.13	0.79	Within groups	356.65	452	0.79		
Third year	28	4.25	0.84	-	-	-	-	3.20	0.02
Fourth year	14	3.46	1.27						
Total	456	3.99	0.89	-	-	-	-		

Note: The F-statistic and associated p-values remain consistent across all study years.
Source: own elaboration.

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Consequently, Hypothesis 3, which proposes statistically significant differences in work-life balance across students based on gender, marital status, educational level, and year of study, is not supported by the findings.

CONCLUSIONS

This study set out to evaluate the impact of remote education on the work-life balance of Generation Z university students and to determine whether this relationship varies across demographic characteristics. The findings provide clear evidence that remote education – whether fully online or hybrid – negatively affects students' ability to maintain a healthy balance between academic responsibilities and personal life. In particular, students reported persistent post-class academic worry and difficulty disengaging from study-related tasks, indicating a blurring of boundaries between learning and personal domains. Contrary to expectations, the results show no significant differences in work-life balance between students in fully remote and hybrid learning environments. This suggests that simply reintroducing partial face-to-face instruction may not be sufficient to alleviate the challenges associated with remote education. Additionally, the absence of significant differences across gender, marital status, educational level, and year of study indicates that the negative effects of remote education are widespread and not strongly conditioned by individual demographic factors within this cohort.

From a theoretical perspective, the findings reinforce the "flexibility paradox" by demonstrating that increased autonomy in remote education does not necessarily translate into improved well-being. Instead, it may intensify role overlap and reduce students' capacity for psychological detachment. The study also contributes to generational research by showing that, despite Generation Z's digital proficiency, they remain vulnerable to the negative consequences of technology-mediated learning environments.

Practically, the results highlight the urgent need for educational institutions to move beyond access and flexibility as primary goals of remote education and to prioritize student well-being. Universities should consider implementing structured schedules, clear workload expectations, digital well-being training, and support systems that help students establish boundaries between study and personal life.

In an era where remote and hybrid education are becoming permanent features of higher education systems, understanding and addressing their unintended consequences on student well-being is essential. This study provides a foundation for future research and policy development aimed at creating more sustainable and balanced digital learning environments.

While the study provides meaningful insights, several limitations should be acknowledged when interpreting the findings. First, this study employed a cross-sectional design, which limits the ability to draw firm conclusions regarding causal relationships among the examined variables. In other words, the identified associations were therefore interpreted as correlational rather than causal. In addition, the study relied on self-reported data, which may be influenced by response bias, common method bias, or social desirability effects. Third, the data were collected from students at a single university, potentially limiting the generalizability of the findings to other institutional, regional, or cultural contexts. Furthermore, the broader economic and social conditions during the data collection period may have shaped students' experiences in similar ways across generational groups, which could have reduced the visibility of potential differences between cohorts.

Future research should address these limitations by employing longitudinal, experimental, or mixed-method designs to provide stronger evidence regarding the direction and causality of the observed relationships. Expanding the study across multiple universities, educational institutions, and diverse cultural and geographical contexts would not only enhance the external validity but also improve the broader applicability of the findings. Longitudinal research designs would also be valuable in capturing changes in students' experiences and percep-

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tions over time, particularly as economic and social conditions evolve. In addition, future studies could compare cohorts collected under different economic, cultural, and political circumstances to identify better whether generational differences remain stable across contexts or are shaped by contextual influences. Finally, incorporating qualitative approaches, such as in-depth interviews or focus groups, may yield richer insights into the underlying reasons for students' perceptions, attitudes, and behaviors across generational groups, as well as how students from different generations interpret and respond to shared external conditions.

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