

# E-Learning and Psychological Wellbeing of Postgraduate Learners in Selected Universities in Nairobi Kenya

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## ABSTRACT

This study explores the impact of various e-learning modes on the psychological wellbeing of postgraduate learners in selected universities in Nairobi County. Utilizing the PERMA framework, which assesses Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment, the research evaluates how different e-learning approaches—namely Pure Online Teaching, Distance Learning with access to video recordings, a Combination of Online and Video Recorded Sessions, and Blended Learning (Online and In-Person)—affect psychological wellbeing. A total of 246 postgraduate students participated in the study. Results indicate that Pure Online Teaching yielded the highest overall psychological wellbeing ( $M=7.40$ ), followed by Blended Learning ( $M=7.29$ ). Distance Learning with video recordings and the Combination mode showed similar results ( $M=7.03$  and  $M=7.04$ , respectively), while Blended Learning exhibited the lowest impact on engagement and the highest levels of loneliness. A One-Way ANOVA revealed that loneliness was significantly affected by the mode of e-learning ( $p=0.014$ ). These findings suggest that while Pure Online Teaching offers substantial psychological benefits, the effectiveness of e-learning modes in promoting psychological wellbeing varies. This variation has important implications for designing future e-learning frameworks, emphasizing the need to address psychological outcomes to enhance student experiences and support mental health in educational settings. By tailoring e-learning strategies to foster positive emotions and engagement, institutions can better meet the psychological needs of their learners.

**Keywords:** E-learning, Psychological Wellbeing, PERMA Framework, Online Teaching, Distance Learning, Blended Learning, Postgraduate Students, Loneliness, Engagement, Educational Psychology.

## INTRODUCTION

The transition to e-learning has fundamentally transformed the landscape of higher education, particularly in the context of the COVID-19 pandemic. As universities across the globe swiftly adapted to virtual learning modalities, the psychological well-being of students emerged as a critical concern. Empirical studies conducted during the pandemic have illuminated significant mental health challenges faced by students engaged in e-learning. For instance, a cross-sectional survey involving 5,100 medical students at Wannan Medical College in China reported alarming prevalence rates of depression (31.9%), anxiety (32.9%), and stress (14.6%) among those participating in online learning (Zhu et al., 2020). Similarly, research by Irawan, Dwisona, and Lestari (2020) highlighted a high incidence of stress symptoms among university students in Indonesia during the pandemic, underscoring the adverse impact of e-learning on students' mental health during this unprecedented global crisis.

These studies, along with others from varied contexts, consistently indicate that, while online learning was a necessary adaptation during the pandemic, it posed significant challenges to students' psychological well-being. However, existing literature has predominantly focused on undergraduate populations or those directly affected by the health crisis, such as medical students engaged in patient care. In Kenya, a study conducted among postgraduate residents at Aga Khan University (Ali et al., 2022) revealed that individuals directly involved in the care of COVID-19 patients exhibited heightened rates of depression, anxiety, burnout, and interpersonal disengagement compared to their second-line counterparts. Although this research illuminated the mental health vulnerabilities of postgraduate students in crisis situations, it did not specifically investigate the impact of e-learning as an independent variable in these experiences.

As universities continue to embed e-learning into their curricula in the post-pandemic era, understanding its long-term implications for students' psychological well-being is of paramount importance. Postgraduate learners, who frequently balance academic responsibilities with professional and personal commitments, may encounter distinct challenges within an online learning framework. Research conducted by Ajmal and Ahmad (2019) on anxiety factors among distance learners in Pakistan identified academic performance as a significant source of anxiety, although this study was situated in a pre-pandemic context and focused on open distance learning rather than structured e-learning systems. Furthermore, while studies in Africa (Okwuduba et al., 2021) have explored predictors of academic success and emotional resilience, they do not specifically address the post-COVID-19 e-learning landscape for postgraduate students.

The psychological well-being of students, particularly within an e-learning framework, is influenced by numerous factors, including social isolation, diminished peer interaction, restricted access to on-campus resources, and challenges in maintaining a structured learning environment. The PERMA model (Seligman, 2011), which delineates five core elements of psychological well-being—Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment—suggests that the e-learning environment may adversely affect all these dimensions. For instance, students may experience diminished engagement and a profound sense of isolation, both of which can negatively impact their emotional well-being. Additionally, the Job Demand-Control-Support theory (Karasek, 1979) emphasizes the necessity of adequate support systems in high-demand environments, such as those presented by online learning, where students confront increased academic pressures with limited face-to-face interaction.

Despite the well-documented challenges encountered during the pandemic, a significant gap persists in the literature regarding the post-pandemic experiences of postgraduate learners engaged in e-learning. Specifically, there is a dearth of understanding about how students have adapted to continued online learning or the implications of this mode of education on their mental health beyond the crisis period. While the pandemic served as a catalyst for the widespread adoption of e-learning, its long-term effects on learners' psychological well-being remain ambiguous, particularly in developing countries like Kenya, where disparities in access to technology, internet connectivity, and institutional support are pronounced.

This study aims to address this gap by investigating the psychological well-being of postgraduate learners in selected universities in Nairobi, Kenya, during the post-pandemic period. By concentrating on e-learning as a central mode of education, this research seeks to elucidate the unique psychological challenges faced by postgraduate students, their coping strategies, and the institutional support systems available to them. In doing so, the study contributes to the expanding body of knowledge on e-learning and mental health, providing insights that may inform policies and practices aimed at enhancing student well-being in virtual learning environments.

## METHODS

### Participants and Sampling

This study aimed to investigate the impact of e-learning on the psychological well-being of postgraduate learners in selected universities in Nairobi, Kenya. A proportionate stratified sampling technique was used to select participants from both public and private universities. Based on Yamane's formula for determining sample size (1967), a total of 323 participants were included in the study. This sample size was calculated using the formula

$$n=1+N(e)2N$$

where

N is the population size of 1608, and e is the desired level of precision, set at 0.05. Participants were selected from various universities to ensure a representative sample across different academic settings.

### Data Collection Procedures

Data collection occurred in two phases between August and November 2023. The first phase involved the collection of quantitative data using the PERMA Profiler (2016), a standardized questionnaire developed by Dr.

Peggy Kern. This questionnaire, which assesses psychological well-being based on the PERMA model—comprising Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment—was distributed via a Google Form. The form was shared with participants through their respective university departments, and responses were captured and recorded in a Google Excel sheet.

The second phase focused on qualitative data collection. An open-ended interview guide was employed to gain deeper insights into participants' experiences with e-learning. Participants were selected based on their responses to the quantitative phase, particularly those with outlier responses. Invitations for interviews were sent via email, and a total of eight participants were interviewed. Each interview, conducted via telephone, lasted approximately 15-20 minutes and was guided by a structured schedule. Interviews were recorded and transcribed using a specialized app, with transcripts reviewed for accuracy.

### **Data Analysis**

Quantitative data were analyzed using SPSS. Descriptive statistics, including means, percentages, and standard deviations, were computed to summarize the demographic characteristics and key variables. To address the research questions, independent sample t-tests and Analysis of Variance (ANOVA) were employed to compare differences between variables and assess the impact of e-learning on psychological well-being. The PERMA Profiler demonstrated high internal consistency with a Cronbach's alpha of 0.857, indicating reliable measurement of the psychological constructs.

Qualitative data were analyzed through content analysis and thematic analysis. Thematic analysis involved identifying and coding key themes and patterns from the interview transcripts. This process allowed for a detailed exploration of participants' experiences, engagement levels, support systems, and coping mechanisms. To ensure the trustworthiness of the findings, transcripts were shared with three participants for member checking, and a peer review was conducted to validate the thematic interpretations and ensure they accurately reflected participants' narratives.

### **Ethical Considerations**

Ethical considerations were considered in this study, ensuring that the rights and well-being of participants were protected. Informed consent was obtained from all participants, who were briefed on the study's objectives, methodologies, and their right to withdraw at any point without consequence. This process not only fostered transparency but also empowered participants by allowing them to make informed decisions about their involvement. To safeguard participant confidentiality, all data were anonymized and securely stored in compliance with data protection regulations. These measures were essential in upholding the integrity and validity of the research while addressing potential biases that could compromise the study's findings.

The research received ethical approval from the Kenya Methodist University Institutional Scientific and Ethics Review Committee, alongside authorization from the National Commission for Science, Technology, and Innovation (NACOSTI) and the relevant participating universities. Informed consent was systematically acquired through various means; for the online questionnaire, participants indicated their consent by clicking a submission button, while verbal consent was collected during telephone interviews. Throughout the study, participant anonymity was rigorously maintained, with responses anonymized and data access secured through password protection. These ethical safeguards were integral not only to protect participant rights but also to enhance the credibility of the research outcomes.

### **Limitations**

The study's limitations include the self-reported nature of the data, which may introduce bias, and the small sample size for the qualitative phase, which could limit the generalizability of the findings. Despite these limitations, the study employed rigorous methods to ensure the reliability and validity of the data. This chapter outlines the mixed-methods approach used to examine the psychological impact of e-learning on postgraduate learners in Nairobi, Kenya, providing a comprehensive overview of the participants, data collection procedures, analysis methods, ethical considerations, and limitations of the study.

## RESULTS

### Demographic Characteristics of the Respondents

The demographic profile of the respondents is presented in Table 1. The sample predominantly comprised individuals aged between 31 and 45 years, representing 48.4% of the participants. This was followed by respondents over 45 years of age at 28.5%, and those aged 23 to 30 years at 23.2%. The gender distribution was nearly balanced, with males constituting 51.2% and females 48.8%.

Table 1: Personal Characteristics of the Respondents

Variable	Category	N	%
Age in Years	31 - 45	119	48.4%
	Above 45	70	28.5%
	23 -30	57	23.2%
Gender	Male	126	51.2%
	Female	120	48.8%
Marital & Family Status	Married with children	118	48.0%
	Single/Unmarried	76	30.9%
	Other	28	11.4%
	Single Parent	13	5.3%
	Married without children	11	4.5%
Employment/Work Status	Full Time employment	172	69.9%
	Unemployment	22	8.9%
	Other	17	6.9%
	Part time employment	13	5.3%
	Part time income generating activity	13	5.3%
	Full time income generating activity	9	3.7%

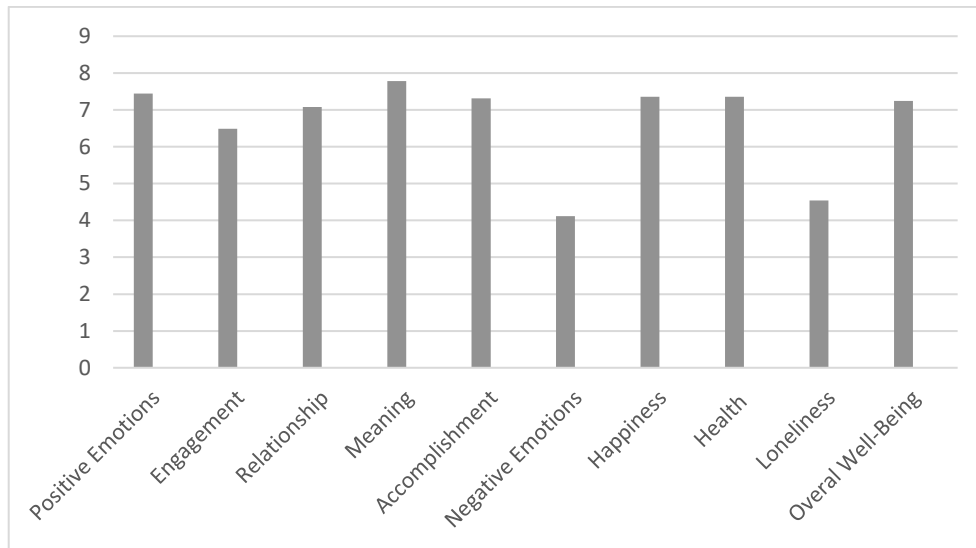
In terms of marital and family status, 48.0% of respondents reported being married with children, while 30.9% identified as single or unmarried. Additionally, 11.4% classified their status as 'Other,' 5.3% were single parents, and 4.5% were married without children. Regarding employment status, a significant majority of respondents, 69.9%, were engaged in full-time employment. The remaining participants included 8.9% who were unemployed, 6.9% in 'Other' employment statuses, 5.3% in part-time employment, and another 5.3% involved in part-time income-generating activities. Finally, 3.7% reported engagement in full-time income-generating activities.

### PERMA Measures of Psychological Wellbeing Among Postgraduate Learners

The overall wellbeing, as measured by the PERMA Profiler, averaged 7.27 on a scale from 0 to 10. The scores

for the PERMA+ hap scales demonstrated positive emotions (M=7.44, SD=1.69), engagement (M=6.49, SD=1.28), relationships (M=7.08, SD=1.67), meaning (M=7.78, SD=1.64), accomplishment (M=7.31, SD=1.62), and happiness (M=7.52, SD=1.86). The highest mean score was observed in the meaning domain (7.78), followed by happiness (7.52), while the engagement domain recorded the lowest mean score (6.49) as shown in figure 1.

Figure 1: PERMA Psychological Profile for Postgraduate Learner in Selected Universities in Nairobi County



Additionally, the measures for loneliness and negative emotions yielded means of 4.54 (SD=2.96) and 4.13 (SD=1.97), respectively. It is important to note that these scales are reverse measures, where a lower score indicates less loneliness and fewer negative emotions. The PERMA measures in this study align well with established statistical norms globally. The average overall psychological wellbeing in this study (M=7.27) is comparable to international norms, with similar values reported in various regions: the United States (M=7.21), Western Europe (M=7.01), the Middle East (M=6.92), Australia (M=7.03), and Africa (M=7.27). Additionally, the scores for other PERMA constructs in this study reflect international averages across all domains.

### Online Learning and Postgraduate Wellbeing

The examination of psychological wellbeing among postgraduate students engaged in exclusively online teaching reveals significant findings. The mean score for positive emotions was 7.64 (SD = 1.66), with scores ranging from 3 to 10. The confidence interval for this mean score spans from 7.27 to 8.01. Conversely, the mean score for engagement was 6.66 (SD = 1.40), with a range of 3.3 to 10, and its confidence interval is situated between 6.35 and 6.97 as shown in table 2.

Table 2: Pure On-line Teaching and Psychological Wellbeing of Postgraduate Students

	Min.	Max.	Mean	Std. Dev.	95% Confidence Interval for Mean		Std. Error
					Lower Bound	Upper Bound	
Positive emotions	3	10	7.64	1.66	7.27	8.01	0.18
Engagement	3.3	10	6.66	1.40	6.35	6.97	0.15
Relationships	3.3	10	8.06	1.61	7.70	8.42	0.18
Meaning	3.3	10	7.53	1.66	7.16	7.90	0.18
Accomplishment	3.3	10	7.53	1.66	7.16	7.90	0.18



Loneliness	0	10	4.01	2.76	3.39	4.62	0.30
Happiness	1	10	7.62	1.89	7.20	8.04	0.21
Overall Psychological Wellbeing	3.3	10	7.48	1.37	7.17	7.78	0.15

The assessment of relationships yielded the highest mean score of 8.06 (SD = 1.61), with a range from 3.3 to 10, and a confidence interval extending from 7.70 to 8.42. Both meaning and accomplishment exhibited comparable mean scores of 7.53 (SD = 1.66) each, with ranges from 3.3 to 10, and confidence intervals of 7.16 to 7.90 for both constructs. In terms of loneliness, respondents reported a mean score of 4.01 (SD = 2.76), with scores ranging from 0 to 10. The confidence interval for loneliness is between 3.39 and 4.62, suggesting a moderate level of reported loneliness among participants. Happiness was assessed with a mean score of 7.62 (SD = 1.89), ranging from 1 to 10, and a confidence interval of 7.20 to 8.04. Overall, the mean score for psychological wellbeing was 7.48 (SD = 1.37), with scores ranging from 3.3 to 10 and a confidence interval from 7.17 to 7.78. These results provide a comprehensive overview of the psychological wellbeing of postgraduate students participating in online learning, underscoring strengths in positive emotions, relationships, and overall wellbeing, while also identifying areas for potential enhancement in engagement and addressing feelings of loneliness.

### Postgraduate Wellbeing in Online Learning with Video

The investigation into the psychological wellbeing of postgraduate students participating in a combination of online sessions with access to video recordings yields significant findings. The mean score for positive emotions was 6.85 (SD = 1.98), with scores ranging from 0 to 8.67. The confidence interval for this mean score spans from 5.90 to 7.81. Engagement, on the other hand, yielded a mean score of 6.49 (SD = 1.45), with a range from 2.33 to 8.67, and its confidence interval lies between 5.79 and 7.19 as shown in Table 3.

Table 3: Combination of On-line sessions with access to video recording and Psychological Wellbeing of Postgraduate Students

	Min.	Max.	Mean	Std.	95% Confidence		Std.
					Lower Bound	Upper Bound	
				Dev			Error
Positive emotions	0	8.67	6.85	1.98	5.90	7.81	0.45
Engagement	2.33	8.67	6.49	1.45	5.79	7.19	0.33
Positive Relationships	3	9	6.63	1.57	5.87	7.39	0.36
Sense of Meaning	1	9.33	7.35	1.85	6.45	8.24	0.42
Sense of Accomplishment	1	9	7.01	1.69	6.19	7.83	0.38
Loneliness	0	8	3.89	2.64	2.62	5.16	0.60
Happiness	1	9	6.78	1.96	5.84	7.73	0.44
Overall Psychological Wellbeing	3.5	9.61	7.04	1.50	6.41	7.65	0.30

The assessment of positive relationships revealed a mean score of 6.63 (SD = 1.57), with a range from 3 to 9, and a confidence interval extending from 5.87 to 7.39. The sense of meaning was reported with a mean score of 7.35 (SD = 1.85), ranging from 1 to 9.33, and its confidence interval is between 6.45 and 8.24. Similarly, the sense of accomplishment scored a mean of 7.01 (SD = 1.69), with scores ranging from 1 to 9 and a confidence interval from 6.19 to 7.83. Regarding loneliness, respondents reported a mean score of 3.89 (SD = 2.64), with

scores ranging from 0 to 8, and its confidence interval is between 2.62 and 5.16. Happiness was assessed with a mean score of 6.78 (SD = 1.96), ranging from 1 to 9, and a confidence interval from 5.84 to 7.73. Overall, the mean score for psychological wellbeing was 7.04 (SD = 1.50), with scores ranging from 3.5 to 9.61 and a confidence interval extending from 6.41 to 7.65. These results indicate that students engaging in a combination of online sessions with access to video recordings report relatively high levels of psychological wellbeing, particularly demonstrating strengths in their sense of meaning and sense of accomplishment, while exhibiting moderate levels of loneliness and engagement.

### Blended Learning and Psychological Wellbeing of Postgraduate Students

The analysis of psychological wellbeing among postgraduate students engaged in a blended learning format, which combines online teaching with in-person sessions, reveals notable findings. The mean score for positive emotions was 7.51 (SD = 1.59), with scores ranging from 3.67 to 10. The confidence interval for this mean extends from 7.21 to 7.81. Engagement scored a mean of 6.41 (SD = 1.17), with a range from 3.67 to 10, and its confidence interval lies between 6.19 and 6.63 as shown in table 4.

Table 4: Blended (On-line teaching + In-Person Sessions) and Psychological Wellbeing of Postgraduate Students

	Min.	Max.	Mean	Std. Dev	95% Confidence		Std. Error
					Lower Bound	Upper Bound	
Positive emotions	3.67	10	7.51	1.59	7.21	7.81	0.15
Ability to Engagement	3.67	10	6.41	1.17	6.19	6.63	0.11
Positive Relationships	2.67	10	7.05	1.74	6.72	7.38	0.16
Sense of Meaning	3.33	10	7.77	1.52	7.48	8.05	0.14
Sense of Accomplishment	3.33	10	7.35	1.47	7.07	7.63	0.14
Loneliness	0	10	5.08	3.06	4.49	5.66	0.29
Happiness	3	10	7.62	1.82	7.28	7.97	0.17
Overall Psychological Wellbeing	4	9.39	7.04	1.30	7.04	7.54	0.12

Positive relationships yielded a mean score of 7.05 (SD = 1.74), with scores ranging from 2.67 to 10, and a confidence interval extending from 6.72 to 7.38. The sense of meaning was reported with a mean score of 7.77 (SD = 1.52), ranging from 3.33 to 10, and its confidence interval is between 7.48 and 8.05. Similarly, the sense of accomplishment scored a mean of 7.35 (SD = 1.47), with scores ranging from 3.33 to 10 and a confidence interval from 7.07 to 7.63.

Loneliness was reported with a mean score of 5.08 (SD = 3.06), with scores ranging from 0 to 10, and its confidence interval extends from 4.49 to 5.66. Happiness had a mean score of 7.62 (SD = 1.82), with scores ranging from 3 to 10 and a confidence interval between 7.28 and 7.97. Overall, the mean score for psychological wellbeing was 7.04 (SD = 1.30), with scores ranging from 4 to 9.39 and a confidence interval extending from 7.04 to 7.54. These results indicate that students participating in a blended learning format report relatively high levels of psychological wellbeing, particularly in terms of positive emotions, sense of meaning, and happiness, while also experiencing moderate levels of loneliness and engagement.

### One-Way ANOVA of Modes of Learning on Psychological Wellbeing

A One-Way ANOVA was conducted to examine the effects of different modes of learning on various dimensions of psychological wellbeing among postgraduate students. The analysis revealed notable differences in certain wellbeing constructs based on the mode of learning. For Positive Emotion, the mean square was 3.716 as shown

in table 5, with an F-value of 1.296 and a p-value of 0.272, indicating no statistically significant differences in positive emotions across the various learning modes. Similarly, Engagement yielded a mean square of 0.923, an F-value of 0.556, and a p-value of 0.695, suggesting that engagement levels were not significantly influenced by the mode of learning.

Table 5: One-Way ANOVA of Modes of Learning on Psychological Wellbeing

Wellbeing Construct	Mean Square	F	Sig.
Positive Emotion	3.716	1.296	0.272
Engagement	0.923	0.556	0.695
Relationships	3.397	1.222	0.302
Meaning	3.751	1.393	0.237
Accomplishment	3.122	1.189	0.316
Negative Emotion	1.314	0.334	0.855
Loneliness	27.116	3.212	0.014
Happiness	3.442	0.993	0.412
Overall Well-being	2.431	1.266	0.284

The results for Relationships indicated a mean square of 3.397, an F-value of 1.222, and a p-value of 0.302, demonstrating no significant differences in relationship quality among different learning modes. For Meaning, the mean square was 3.751, the F-value was 1.393, and the p-value was 0.237, suggesting that the sense of meaning remained consistent across modes of learning.

Regarding Accomplishment, the mean square was 3.122, with an F-value of 1.189 and a p-value of 0.316, indicating that modes of learning did not significantly affect the sense of accomplishment. The results for Negative Emotion were represented by a mean square of 1.314, an F-value of 0.334, and a p-value of 0.855, reflecting no significant differences in negative emotions based on the learning mode. A notable finding emerged for Loneliness, which exhibited a mean square of 27.116, an F-value of 3.212, and a p-value of 0.014. This result indicates significant differences in feelings of loneliness across different learning modes, suggesting that the mode of learning may influence students' feelings of isolation. Conversely, Happiness had a mean square of 3.442, an F-value of 0.993, and a p-value of 0.412, revealing no significant differences in happiness among the various learning modes. Lastly, Overall Well-being had a mean square of 2.431, an F-value of 1.266, and a p-value of 0.284, indicating no significant differences in overall wellbeing across the learning modes.

The One-Way ANOVA was essential in this study to assess the impact of varying modes of learning (such as online, blended, or face-to-face) on different aspects of psychological wellbeing. By conducting this analysis, the study aimed to determine whether and how the mode of learning influences constructs such as positive emotions, engagement, relationships, meaning, accomplishment, negative emotions, loneliness, and overall wellbeing. The significant difference observed in loneliness underscores the importance of considering how learning environments may affect students' mental health. This insight is valuable for designing educational interventions that address potential issues related to feelings of isolation, thereby enhancing the overall learning experience and psychological wellbeing of students.

## DISCUSSION

The findings from this study provide a nuanced understanding of how various e-learning modes impact the



psychological wellbeing of postgraduate learners in Nairobi County. Utilizing the PERMA framework, the analysis evaluated overall psychological wellbeing and its components: Positive Emotions, Engagement, Relationships, Meaning, Accomplishment, and Loneliness. This section interprets the results, explores their implications, and situates them within the broader context of existing research.

The results indicate that Pure Online Teaching ( $M = 7.48$ ) and Blended Learning ( $M = 7.29$ ) yielded the highest overall psychological wellbeing scores among the e-learning modes examined. This finding aligns with prior research suggesting that fully online environments can support wellbeing when implemented effectively, as they offer flexibility and convenience (El-Amin, 2020; Su et al, 2022). The high overall wellbeing scores in these modes are consistent with findings from Butler & Kern (2016), who established similar benchmarks for psychological wellbeing using the PERMA Profiler across various cultures.

In contrast, Distance Learning with access to video recordings ( $M = 7.03$ ) and a Combination of Online sessions with access to video recordings ( $M = 7.04$ ) exhibited lower scores. These asynchronous approaches may result in diminished psychological wellbeing due to reduced direct interaction between students and instructors, which limits opportunities for immediate feedback and engagement.

**Positive Emotions and Happiness:** Positive Emotions and Happiness were relatively high across all modes, with Pure Online Teaching scoring the highest on both ( $M = 7.64$  for Positive Emotions and  $M = 7.62$  for Happiness). This suggests that the ability to control one's learning environment and schedule may enhance positive affect. Respondents indicated positive experiences, highlighting the flexibility offered by e-learning (Respondent P#6, P#1).

**Engagement:** Engagement was notably lower in Distance Learning with access to video recordings ( $M = 6.32$ ) and a Combination of Online sessions with access to video recordings ( $M = 6.49$ ). This reflects the challenge of maintaining interactive and immersive learning experiences in these formats. The reduced engagement may stem from the lack of real-time interaction, which diminishes the immediacy and dynamism of the learning process (Kaufmann & Vallade, 2022).

**Relationships:** High scores for Relationships in Pure Online Teaching ( $M = 8.06$ ) suggest that this mode effectively fosters a sense of connection despite physical distance. This finding aligns with research indicating that instructors can create a supportive learning environment even in virtual settings (Kaufmann & Vallade, 2022). **Meaning and Accomplishment:** Both Blended Learning (Meaning:  $M = 7.77$ ) and Pure Online Teaching (Meaning:  $M = 7.78$ ) reported high scores for Meaning, reflecting that learners find personal significance and value in their educational experiences. This is consistent with the PERMA framework's emphasis on the importance of meaning for overall wellbeing (Butler & Kern, 2016).

**Loneliness:** The ANOVA results revealed a significant relationship between e-learning modes and Loneliness ( $p = 0.014$ ), with the Blended Learning mode exhibiting the highest level of reported loneliness ( $M = 5.08$ ). This may be attributed to the hybrid nature of Blended Learning, which might not fully satisfy the social interaction needs of students, leading to a sense of isolation.

## Implications

The study highlights the importance of selecting appropriate e-learning modes to optimize psychological wellbeing. Pure Online Teaching appears particularly effective in supporting positive emotions and relationships, likely due to its flexibility and emphasis on virtual interaction. Conversely, while the Blended Learning approach is beneficial in terms of meaning, it may be less effective in maintaining engagement and reducing loneliness. The results also suggest that the negative psychological impacts observed during the COVID-19 pandemic were likely influenced by the broader context of the crisis rather than the e-learning modes themselves. This is supported by recent studies indicating that the crisis environment, rather than instructional methods, played a significant role in learners' psychological outcomes (Wang, 2023; Nuryana et al., 2023).

While this study provides valuable insights, it is limited by its focus on a specific geographic region and population. Future research should explore these findings in different contexts and with larger, more diverse

samples to enhance the generalizability of the results. Additionally, longitudinal studies could assess the long-term effects of e-learning modes on psychological wellbeing. In conclusion, this study underscores the importance of considering psychological wellbeing when designing and implementing e-learning strategies. By understanding the impact of different e-learning modes on wellbeing, educational institutions can better support their learners and enhance the overall effectiveness of their programs.

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