International Journal of Technology in Education and Science

www.ijtes.net

Flexible Learning as a Short-term Strategy for Instructional Continuity: Addressing Micro-Disruptions in Higher Education

Dyanmary D. Del Rosario [1], Rogelio C. Sala [2 *], Rowena P. Dato-on [3]

[1] College of Education, Cebu Technological University Daanbantayan Campus, Philippines, 0009-0001-4347-7189
[2] College of Education, Arts and Sciences, Cebu Technological University Consolacion Campus, Philippines, 0000-0003-1149-5099
[3] College of Education, Cebu Technological University Daanbantayan Campus, Philippines, 0000-0002-6460-6621
* Corresponding author: Rogelio C. Sala (rogelio.salajr@ctu.edu.ph)

Article Info

Article History

Received:
25 February 2026

Revised:
20 May 2026

Accepted:
12 June 2026

Published:
15 June 2026

Keywords

Flexible learning
Instructional continuity
Short-term distance learning
Micro-disruptions
Pedagogical resilience

Abstract

Higher education continuity is frequently jeopardized by "micro-disruptions"—transient crises such as climate events, personal health issues, and logistical challenges—that extend beyond traditional classroom settings. While literature addresses long-term pandemic closures, a significant gap remains regarding short-term distance learning as a targeted intervention to maintain the academic schedule. This study evaluates the perceived relevance of online, offline, and blended learning modalities as short-term strategies for instructional continuity at Cebu Technological University Daanbantayan Campus across twelve specific challenging circumstances. Utilizing a quantitative descriptive-evaluative design, data were collected from 347 respondents, including 327 pre-service teachers and 20 faculty members, through a structured survey instrument grounded in CHED Memorandum Order No. 4, Series of 2020. Findings reveal a strategic "perception gap": students identified online learning (GM = 3.95) as the most adaptable mode for institutional disruptions, whereas faculty prioritized offline modular learning (GM = 4.01) as an indispensable "equity safety net" for financial and environmental recovery. Notably, an independent-samples t-test revealed no statistically significant difference between students' and teachers' perceptions of online learning ($p = 0.1303$), indicating shared institutional alignment regarding the utility of digital technologies. However, for mental health disruptions, students prioritized offline modalities as a restorative "analog" space to mitigate "Zoom fatigue," while teachers favored blended learning (M = 4.05) to maintain academic connection. The study concludes that distance learning must be reframed from an emergency exigency into a permanent, strategic framework. It is recommended that the institution formalize a "Precision-Application" policy that empowers faculty to transition strategically between modalities, ensuring that instructional delivery remains inclusive, resilient, and uninterrupted in the post-pandemic higher education landscape.

Citation: Del Rosario, D. D., Sala, R. C., Dato-on, R. P. (2026). Flexible learning as a short-term strategy for instructional continuity: Addressing micro-disruptions in higher education. *International Journal of Technology in Education and Science (IJTES), 10*(4), 895-908. https://doi.org/10.46328/ijtes.7756

ISSN: 2651-5369 / © International Journal of Technology in Education and Science (IJTES).

Introduction

The continuity of instructional delivery in higher education is frequently jeopardized by a myriad of internal and external disruptions that transcend the traditional classroom setting. While institutional factors such as faculty development and infrastructure maintenance play a role, environmental and socio-psychological challenges increasingly dictate the academic rhythm. For instance, climate-related events have become more frequent, significantly impacting students' ability to engage with academic content (Sholes et al., 2023). Furthermore, the shift to emergency remote education has been shown to increase mental health burdens and limit access to resources, often exacerbating existing educational inequities (Zuo & Ives, 2022).

In the Philippine context, these inequities are magnified by a persistent digital divide. Research indicates that the implementation of digital interventions is often compromised by a dual-layered challenge: while institutions frequently lack the necessary technological infrastructure and reliable devices (Baticulon et al., 2021; Bustillo & Aguilos, 2022), teacher education students simultaneously grapple with varying levels of digital literacy, which further hinders the efficacy of purely online modalities. Furthermore, the transition to the "New Normal" has highlighted that while remote learning offers opportunities for flexibility, it simultaneously introduces significant barriers—ranging from unstable internet connectivity to the high cost of data—that necessitate a more nuanced, multimodal approach (Sarmiento, 2021; Talimodao & Madrigal, 2021). At Cebu Technological University (CTU) Daanbantayan Campus, compounded disruptions—ranging from natural disasters to personal commitments such as childcare and financial instability—threaten the integrity of required academic schedules.

The implementation of adaptive strategies is grounded in established frameworks for educational resilience and risk management. Institutions are now encouraged to develop comprehensive plans that include rigorous risk assessments and communication strategies to ensure smooth transitions to online learning (Goyal & Maheshwari, 2026). Within this framework, effective instructional design serves as a critical buffer; by employing best practices and targeted resources, institutions can mitigate the impacts of disruptions for both students and faculty (Milman & Watkins, 2021).

Crucially, for students facing severe financial constraints, the provision of offline asynchronous modules is not merely an alternative but a necessity for inclusivity, ensuring that those without stable high-speed access are not disenfranchised (Baticulon et al., 2021). This is codified under the Commission on Higher Education (CHED) Memorandum Order (CMO) No. 4, Series of 2020, which institutionalized flexible learning via online, offline (modular), and blended modalities. These mandates, supported by the USAID framework for comprehensive distance learning (Morris & Haddock, 2021), provide the necessary policy infrastructure for HEIs to maintain pedagogical stability during localized crises. By aligning institutional strategies with these global best practices, universities can ensure academic continuity despite prolonged disruptions.

Despite the proven utility of flexible learning during the COVID-19 pandemic, a significant research gap remains regarding its application to localized "micro-disruptions" in the post-pandemic era. While existing literature indicates that flexible learning enhances student engagement, independence, and workforce readiness (Baldera et

al., 2025; Belmaz et al., 2024), there is a dearth of empirical evidence addressing how HEIs can mitigate "increased mental burdens" and "limited resource access" (Zuo & Ives, 2022) when the disruption lasts only a few days or weeks. Furthermore, although research emphasizes that institutional support and IT infrastructure are crucial for long-term adaptation (Baldera et al., 2025), there remains a gap in understanding the precise application of these delivery methods as targeted solutions to the twelve distinct socio-economic and logistical challenges identified at CTU. Specifically, the literature has not yet established which specific modality—synchronous online, asynchronous offline, or blended—is perceived as most relevant for maintaining continuity during transient crises such as sudden family care duties, mental health episodes, or temporary campus repairs.

Thus, this study addresses this gap by evaluating the perceived relevance of online, offline, and blended learning modalities as short-term strategies for instructional continuity at CTU Daanbantayan Campus. By identifying the most appropriate modalities for twelve specific challenging circumstances, the research seeks to operationalize the recommendation that institutions fostering student resilience and robust support systems can significantly enhance academic success during disruptions (Sholes et al., 2023). Through this analysis, distance learning can be reframed from a pandemic-era emergency measure into a permanent, strategic intervention for maintaining instructional continuity during temporary disruptions. Ultimately, this study aims to provide a data-driven foundation for a localized short-term distance-learning policy, ensuring that instructional delivery remains resilient, inclusive, and uninterrupted, regardless of specific barriers to in-person attendance.

Method

Research Design

This study employed a quantitative, descriptive-evaluative research design, specifically the survey research method. This approach was selected to systematically quantify stakeholders' perceptions of the relevance of diverse instructional modalities. The design is appropriate for addressing the research aim, as it enables the empirical assessment of the perceived effectiveness of online, offline, and blended learning across 12 predetermined challenging circumstances. By using a structured survey, the researcher converted subjective professional and personal perceptions into measurable data points for statistical comparison (see Appendix).

Research Environment and Participants

The study was conducted at Cebu Technological University (CTU) Daanbantayan Campus, specifically within the College of Education. The participant pool consisted of 347 respondents, comprising 327 pre-service teachers and 20 faculty members across the Bachelor of Elementary Education (BEEd), Bachelor of Secondary Education (BSEd) in Mathematics, and Bachelor of Technology and Livelihood Education (BTLEd). Purposive sampling was employed to select third-year and fourth-year education students. These cohorts were chosen because they possess a unique lived experience with flexible learning, having navigated the full transition from purely online instruction during the 2020–2022 academic years to the current post-pandemic landscape. This longitudinal exposure ensures that the respondents provide a highly informed and reflective assessment of the modalities in question. Data collection was finalized during the Second Semester of Academic Year 2023–2024.

Research Instrument

The primary data collection tool was a two-part structured survey instrument designed to capture both demographic data and pedagogical perceptions. The first section gathered respondents' profile details, while the second section focused on the Perception of the Extent of Relevance of Flexible Learning in Various Challenging Circumstances. This section assessed respondents' views on the relevance of online, offline, and blended learning across 12 specific scenarios identified through preliminary, informal qualitative interviews. The definitions of the flexible learning modalities used in the instrument were strictly grounded in the Commission on Higher Education (CHED) Memorandum Order No. 4, Series of 2020. Respondents indicated their perceptions on a five-point Likert scale, providing a standardized framework for evaluating the suitability of each mode.

Data Gathering Procedure

The data collection process followed a systematic institutional protocol to ensure validity and high response rates. Formal authorization was first secured through a letter of request addressed to the Campus Director, which was subsequently forwarded to the Dean of the College of Education upon approval. Once permission was granted, the researcher personally distributed the survey instrument to the target respondents within their respective departments. This face-to-face administration allowed immediate clarification of the research objectives and ensured complete responses. Following the collection phase, the raw data were electronically encoded into a spreadsheet for systematic cleaning, categorization, and subsequent statistical analysis.

Statistical Treatment of Data

To analyze and interpret the collective perceptions of the student and teacher groups, the Weighted Mean was utilized as the primary measure of central tendency. This statistical tool enabled ranking the three learning modalities by perceived relevance across the 12 challenging circumstances. The resulting mean scores were interpreted using a standard five-point Likert scale with the following evaluative intervals: 4.21–5.00 (Very High Relevance); 3.41–4.20 (High Relevance); 2.61–3.40 (Moderate Relevance); 1.81–2.60 (Low Relevance); and 1.00–1.80 (Very Low Relevance).To determine whether a significant difference exists between students' and teachers' perceptions, the t-test for two independent samples with unequal variances was employed. This inferential statistic was processed via Excel's Analysis ToolPak to test the null hypothesis (H_0) at a significance level of $\alpha = 0.05$. This approach ensures that any observed variations in modality preference are statistically significant rather than due to chance.

Ethical Considerations and Data Management

The study strictly adhered to the 2022 National Ethical Guidelines for Research Involving Human Participants to ensure the protection of all respondents. Prior to participation, each respondent was provided with a comprehensive letter of invitation and an informed consent form detailing the study's objectives and the voluntary nature of their involvement. These documents, written in clear, accessible English, assured participants that they

could withdraw at any time without negative consequences. To comply with data privacy standards, all personal information was kept strictly confidential, and identifiers were anonymized during data processing to prevent breaches of participant privacy.

Scope and Limitations

While this study provides valuable insights into the relevance of flexible learning, several limitations should be noted. First, the research was conducted within a single institutional context (the College of Education at CTU Daanbantayan); therefore, the findings may not be fully generalizable to other academic disciplines or geographical locations with different technological infrastructures. Second, the disparity in sample size between pre-service teachers (*n = 327*) and faculty members (*n = 20*) may affect the statistical power of the comparative analysis. Finally, the study relies on self-reported survey data, which is subject to participants' subjective interpretations and potential response biases. Future research could benefit from a multi-campus approach or qualitative interviews to further triangulate these findings.

Results

Demographic Profile

The study surveyed 347 respondents from the College of Education at the CTU Daanbantayan Campus. As shown in Table 1, the Bachelor of Elementary Education (BEEd) program accounted for the largest segment of the sample, representing 54.18% (*n = 188*) of the total population, followed by BSEd-Mathematics and BTLEd-Home Economics. A critical characteristic of the student respondents is their extensive longitudinal exposure to flexible learning: fourth-year students transitioned to a purely online modality during the global health crisis (AY 2020-2022), while third-year students entered the system under similar conditions. This established familiarity ensures that participants have the necessary experiential baseline to evaluate the relevance of instructional modes across varying degrees of disruption.

Table 1. Profile of the Respondents

Respondents		**N**	**Percentage (%)**
BEEd	3rd year Students	102	29.39
	4th year Students	74	21.33
	Teachers	12	3.46
BSEd-Mathematics	3rd year Students	50	14.41
	4th year Students	31	8.93
	Teachers	5	1.44
BTLEd-Home Economics	3rd year Students	54	15.56
	4th year Students	16	4.61
	Teachers	3	0.86
TOTAL		**347**	**100.00**

Students' Perceived Relevance of Learning Modalities

The study assessed students' perceptions of the utility of online, offline, and blended modes across three primary domains of disruption. Table 2 summarizes these perceptions using weighted mean scores.

Table 2. Students' Perceived Relevance of Flexible Learning Modalities

Various Challenging Circumstances	**Online Learning**	**Offline Learning**	**Blended Learning**
Environmental factors			
During the times of recovery from a natural disaster (typhoons, etc.).	3.72	3.77	3.56
During unfavorable weather conditions (extreme heat during the dry season or persistent rain during the wet season).	3.95	3.74	3.69
Student's Personal Factors			
When a student faces financial problems.	3.68	3.96	3.61
When a student has a work commitment.	3.94	3.73	3.57
When a student needs to provide childcare for their own child.	3.94	3.72	3.50
When a student needs to care for their sick parents/guardians.	4.21	3.94	3.64
When a student faces physical health issues.	4.14	3.96	3.54
When a student faces mental health issues.	3.70	3.87	3.57
When a student needs to attend the wake ceremony of an immediate family member.	4.09	3.95	3.55
Institutional factors			
When the school needs to repair the building/s.	4.15	3.78	3.54
When there are week-long or days-long school-related celebrations or activities.	3.87	3.71	3.54
When a teacher needs to attend seminars or training.	4.01	3.81	3.60
Grand Mean	3.95	3.83	3.58

Regarding Environmental Factors, students indicated a slight preference for offline learning ($M = 3.77$) during disaster recovery, likely due to infrastructure damage hindering connectivity. However, online learning ($M = 3.95$) was deemed most relevant during unfavorable weather. In the domain of Personal Factors, online learning was most relevant to circumstances requiring a student's presence at home, such as caring for sick relatives ($M = 4.21$) or physical illness ($M = 4.14$). Conversely, offline learning was preferred for mental health challenges ($M = 3.87$) and financial problems ($M = 3.96$), suggesting a need to decouple from digital stressors or data costs during personal crises. Finally, for Institutional Factors, online learning consistently outperformed other modes, particularly during building repairs ($M = 4.15$) and teacher training ($M = 4.01$).

Teachers' Perceived Relevance of Learning Modalities

In contrast to the student data, the faculty perspective revealed a distinct orientation toward tactile and modular

strategies. Table 3 presents the evaluation from the teaching staff.

Table 3. Teachers' Perceived Relevance of Flexible Learning Modalities

Various Challenging Circumstances	**Online Learning**	**Offline Learning**	**Blended Learning**
Environmental factors			
During the times of recovery from a natural disaster (typhoons, etc.).	3.30	4.05	4.05
During unfavorable weather conditions (extreme heat during the dry season or persistent rain during the wet season).	3.75	3.95	3.85
Student's Personal Factors			
When a student faces financial problems.	3.35	4.25	3.80
When a student has a work commitment.	3.45	4.00	3.80
When a student needs to provide childcare for their own child.	3.75	4.00	3.75
When a student needs to care for their sick parents/guardians.	3.60	4.10	3.80
When a student faces physical health issues.	3.70	3.90	3.85
When a student faces mental health issues.	3.70	3.65	4.05
When a student needs to attend the wake ceremony of an immediate family member.	3.60	4.20	3.75
Institutional factors			
When the school needs to repair the building/s.	4.20	4.10	4.10
When there are week-long or days-long school-related celebrations or activities.	4.00	3.80	3.95
When a teacher needs to attend seminars or training.	3.40	4.15	3.90
Grand Mean	**3.65**	**4.01**	**3.89**

Teachers identified offline learning as the most reliable modality in most circumstances, as evidenced by a Grand Mean of 4.01. For Environmental Factors, offline and blended modes shared the highest relevance ($M = 4.05$) during disaster recovery. Within Personal Factors, teachers strongly favored offline modules for students facing financial issues ($M = 4.25$) and family issues ($M = 4.20$). Interestingly, teachers perceived blended learning ($M = 4.05$) as the most relevant intervention for students facing mental health issues, whereas students preferred purely offline modes. While online learning was favored for school-based issues like building repairs ($M = 4.20$), the overall faculty data suggest a belief that offline modalities provide a more stable, equitable "safety net" for learners.

Significant Difference in Perceptions of Online Learning Relevance

An independent-samples t-test was conducted to compare perceptions of students ($M = 3.95, SD = 0.61$) and teachers ($M = 3.65, SD = 0.84$) regarding the relevance of online learning. As shown in Table 4, the analysis yielded $t(1.58) = 1.58$, $p = 0.1303$. Because $p > .05$, the difference between the two groups is not statistically

significant. This shared perception suggests a common institutional alignment, where both students and faculty recognize the utility of online education as a responsive tool for maintaining instructional continuity during micro-disruptions.

Table 4. Significant Difference between Students' and Teachers' Perceptions

Variables	$\bar{x}$	SD	t –value	p-value	α	df	Interpretation	Decision
Students' Perception	3.95	0.61	1.5776	0.1303	0.05	22	Not	Failed to
Teachers' Perception	3.65	0.84					Significant	Reject H_0

If *p*-value < α, reject H_0.

Discussion

The findings of this study provide empirical evidence of the strategic utility of flexible learning as a short-term intervention to maintain instructional continuity. The results demonstrate that both students and faculty perceive online, offline, and blended modalities as highly relevant. However, while their descriptive preferences diverge based on the nature of the disruption, the statistical analysis suggests a deeper level of institutional alignment than previously assumed.

The Digital Agility of Students vs. Faculty Risk-Aversion

A primary finding of this study is the high perceived relevance of online learning among students (*GM = 3.95*), particularly for institutional and personal health disruptions. This preference aligns with the work of Baldera et al. (2025), who noted that flexible learning enhances engagement and independence among learners already acclimated to digital environments. For students at CTU who have "longitudinal exposure" to remote modalities, online learning is viewed as the most efficient way to maintain the academic schedule without a physical classroom.

Conversely, teachers demonstrated a significant preference for offline learning (*GM = 4.01*). This "faculty risk-aversion" likely stems from a prioritized focus on equity and access. Teachers rated offline modules highest for students facing financial problems (*M = 4.25*). This alignment reflects a pedagogical commitment to overcoming the digital divide, recognizing that students from lower socio-economic backgrounds often lack the hardware and data required for sustained synchronous engagement (Baticulon et al., 2021). By prioritizing offline modules, faculty mitigate the risk of academic exclusion for financially challenged learners (Sarmiento, 2021).

Statistical Alignment and Institutional Synchronicity

Despite these descriptive differences in ranking, the independent-samples t-test revealed no statistically significant difference between students' and teachers' perceptions of online learning relevance (*p = 0.1303*). This lack of significance is a critical finding, as it indicates a "Unified Perception" within the academic ecosystem. It suggests that despite their different roles—one as the provider and the other as the recipient of instruction—both groups

share a common mental model regarding the efficacy of digital tools during crises. This institutional synchronicity is vital for policy-making; it implies that the implementation of short-term distance-learning protocols will likely meet minimal resistance, as both stakeholders recognize the baseline utility of these interventions.

Environmental Resilience and the Infrastructure Gap

The data regarding environmental factors underscores the necessity of a "modality match" during natural disasters. While students favored online learning during unfavorable weather (*M = 3.95*), both groups pivoted toward offline and blended modes during post-typhoon recovery. This finding supports the recommendations of Goyal and Maheshwari (2026), who argued that institutional risk assessments must include a diverse range of communication and delivery strategies. The slight preference for offline modes (*M = 3.77* for students; *M = 4.05* for teachers) during recovery periods suggests that when physical and digital infrastructures are compromised, the "modular" approach provides the only viable path for pedagogical stability.

Socio-Psychological Factors and Mental Health

One of the most nuanced findings involves the perception of mental health disruptions. Students indicated that offline learning (M = 3.87) was most relevant when facing mental health issues. This preference suggests a strategic desire to "decouple" from the digital stressors and "Zoom fatigue" documented in remote education (Bustillo & Aguilos, 2022; Fauville et al., 2021). In periods of psychological distress, the "always-on" nature of digital platforms can exacerbate anxiety and cognitive load (Beaunoyer et al., 2020; Neagu & Vieriu, 2025). Therefore, students may perceive the offline modality as a restorative "analog" space—a "pedagogy of care" that allows for academic progress while mitigating the intrusive pressures of constant digital connectivity (Bozkurt & Sharma, 2020). Interestingly, teachers perceived blended learning (M = 4.05) as the optimal intervention, suggesting they view a "middle-ground" approach as necessary to maintain a connection to the academic community while providing the flexibility to recover.

Institutional Implications for Short-term Policy

The consistent preference for online learning during institutional disruptions—such as building repairs (*M = 4.15* for students; *M = 4.20* for teachers)—indicates that when students are personally healthy and financially stable, the digital classroom is the preferred substitute for physical space. This supports the study's central argument: distance learning should be reframed from a "pandemic-era exigency" into a "permanent, strategic intervention." As suggested by Milman and Watkins (2021), effective instructional design can mitigate the impacts of these "micro-disruptions" if the institution has a pre-set policy for shifting modalities.

Conclusion

The study concludes that there is a robust institutional alignment between students and faculty, as evidenced by the lack of statistically significant difference in their perceptions of online learning relevance (*p = 0.1303*),

indicating a shared mental model that views digital platforms as a primary tool for instructional continuity. However, the relevance of a specific modality is highly contingent on the nature of the disruption, following a "Modality-Match" principle: online learning is preferred when institutional space is constrained, while offline modular learning serves as a critical socio-economic safety net during financial crises, disaster recovery, and periods of high cognitive load. This underscores a "faculty risk-aversion" in which teachers prioritize equitable, low-data options to prevent academic disenfranchisement, while students specifically value "analog spaces" as restorative environments to mitigate "Zoom fatigue" and other mental health stressors. Ultimately, the findings reveal that distance education at CTU Daanbantayan has successfully evolved from a pandemic-era exigency into a permanent, strategic framework capable of maintaining pedagogical stability amid both macro and micro disruptions.

Recommendations

It is recommended that Cebu Technological University formally operationalize these findings by drafting a Localized Short-Term Distance Learning Policy that empowers academic leaders to authorize immediate, situational shifts in modality—such as transitioning to offline modules for disaster recovery or online platforms for temporary campus repairs. To support the identified need for "analog" restorative spaces, faculty should maintain a "ready-to-print" asynchronous repository for all major courses, ensuring that students facing financial or mental health challenges can decouple from digital stressors without losing academic momentum. Furthermore, the institution should provide targeted professional development in "Compassionate Instructional Design" to help teachers balance the blended learning connection they prefer with the reduced cognitive load students require during personal crises. Finally, the university should establish a longitudinal monitoring system to track the frequency of the twelve identified challenging circumstances, allowing for data-driven adjustments to the academic calendar and the expansion of campus "Wi-Fi hotspots" to mitigate the high cost of data and further bridge the digital divide.

Statements and Declarations

Acknowledgments/Notes: This paper is derived from a dissertation titled Flexible Learning as Short-term Distance Learning Strategy. During the preparation of this article, the authors used Copilot, Gemini, and Grammarly for language editing and proofreading. After using Copilot, Gemini, and Grammarly, the authors reviewed and edited the content as needed and took full responsibility for the publication's content.

Supplementary Materials: Not applicable.

Author Contributions: All authors contributed equally. All authors have read and agreed to the published version of the manuscript.

Funding: Not applicable.

Data Availability: Not applicable.

Ethics Approval: The study was conducted in accordance with the 2022 National Ethical Guidelines, and informed consent was obtained from all participants.

Informed Consent: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: Not applicable.

References

Baldera, P., Cruz, M. E. P., Eusebio, E. J. G., Patiam, A., Agpaoa, M., & Punongbayan, M. (2024). A two-tiered case analysis of flexible learning in graduate education at a Philippine state university: Advancing strategic curriculum innovation towards sustainable quality education (SDG4). *Journal of Lifestyle and SDGs Review*, *5*(2), Article e03786. https://doi.org/10.37497/sdgs.v5i2.3786

Baticulon, R. E., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., Sy, J. J., Tanjutco, C. J., & Reyes, J. C. (2021). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. *Medical Science Educator*, *31*(2), 615–626. https://doi.org/10.1007/s40670-021-01231-z

Beaunoyer, E., Dupéré, S., & Guitton, M. J. (2020). COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies. *Computers in Human Behavior*, *111*, 106424. https://doi.org/10.1016/j.chb.2020.106424

Belmaz, Y., Pikalova, A., & Zlatina, K. (2024). Hnuchke osvitnie seredovyshche yak neobkhidnist suchasnoi osvity [Flexible educational environment as a necessity of modern education]. *Theoretical and Empirical Scientific Research: Concepts and Trends*, 327–328. https://doi.org/10.46489/toesiwc-24-42-13

Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to CoronaVirus pandemic. *Asian Journal of Distance Education*, *15*(1), i–vi. https://doi.org/10.5281/zenodo.3778083

Bustillo, E., & Aguilos, M. (2022). The challenges of modular learning in the wake of COVID-19: A digital divide in the Philippine countryside revealed. *Education Sciences*, *12*(7), 449. https://doi.org/10.3390/educsci12070449

Commission on Higher Education. (2020). *Guidelines on the implementation of flexible learning* (CHED Memorandum Order No. 04, Series of 2020). https://cms-cdn.e.gov.ph/CHED/pdf/2020-CMO-NO4.pdf

Fauville, G., Luo, M., Queiroz, A. C. M., Bailenson, J. N., & Hancock, J. (2021). Nonverbal mechanisms predict Zoom fatigue and explain why women experience higher levels than men. *Computers in Human Behavior Reports*, *4*, 100110. https://doi.org/10.1016/j.chbr.2021.100110

Goyal, M., & Maheshwari, S. (2026). Enabling academic continuity: Strategies and methodologies for pervasive online education. In A. Duarte, J. G. Andrade, & P. Dias (Eds.), *Digital tools and platforms for effective and personalized learning* (pp. 59–88). IGI Global. https://doi.org/10.4018/979-8-3373-6013-3.ch003

Milman, N. B., & Watkins, R. (2021). Designing with instructional continuity in mind. In R. K. Power (Ed.), *A practitioner's guide to instructional design in higher education*. EdTech Books.

https://doi.org/10.59668/164.4224

Morris, E., & Haddock, C. (2021). *Toolkit for designing a comprehensive distance learning strategy*. USAID; Arizona State University. https://pdf.usaid.gov/pdf_docs/PA00Z7XJ.pdf

Neagu, S. N., & Vieriu, A. M. (2025). Digital and psychological well-being among technical university students: Exploring the impact of digital engagement in higher education. *Education Sciences*, *15*(9), 1192. https://doi.org/10.3390/educsci15091192

Sarmiento, C. P. (2021). *Bridging the gap in remote teaching and learning* [Research project]. National Research Council of the Philippines; Department of Science and Technology. https://www.stii.dost.gov.ph/1182-remote-learners-need-remediation-teachers-

Sholes, J., Sullivan, A., & Self, S. (2023). The impact of long-term disruptions on academic success in higher education and best practices to help students overcome them. Journal of Higher Education Theory & Practice, 23(4), 1–11. https://doi.org/10.33423/jhetp.v23i4.5884

Talimodao, A. J. S., & Madrigal, D. V. (2021). Printed modular distance learning in Philippine public elementary schools in time of COVID-19 pandemic: Quality, implementation, and challenges. *Philippine Social Science Journal*, *4*(3), 19–29. https://doi.org/10.52006/main.v4i3.391

Zuo, X., & Ives, D. (2022). ABD'deki yüksek öğretim kurumlarındaki olağanüstü durumlarda uzaktan eğitim dönemindeki öğrenci deneyimleri ve fırsat eşitliği [Student experiences and equity during emergency remote teaching in U.S. higher institutions: A literature review]. *Boğaziçi University Journal of Education*, *39*(1), 115–135. https://doi.org/10.52597/buje.1053118

Appendix. Survey Instrument

Name (optional): _____

Faculty ___ Student ___ *(3rd Year ____ 4th Year ____)*

(BEEd ___ BSEd ___ BTLEd ___)

How would you find ONLINE, OFFLINE, and BLENDED as the flexible learning modes in the identified circumstances?

ONLINE LEARNING	:	A flexible learning mode that is electronic-based and uses available online classrooms for instruction delivery.
OFFLINE LEARNING	:	A flexible learning mode that does not use internet connectivity. It involves the use of printed modules.
BLENDED LEARNING	:	A flexible learning mode that is a combination of online and offline modes. It involves the use of online classrooms and printed modules.

Choose and ENCIRCLE among the options:

5 *Extremely helpful*
4 *Very helpful*
3 *Moderately helpful*
2 *Slightly helpful*
1 *Not at all helpful*

Various Challenging Circumstances	**ONLINE LEARNING**					**OFFLINE LEARNING**					**BLENDED LEARNING**				
During the times of recovery from a natural disaster (typhoons, etc.).	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
During unfavorable weather conditions (extreme heat during the dry season or persistent rain during the wet season).	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When a student faces financial problems.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When a student has a work commitment.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When a student needs to provide childcare for their own child.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**

Various Challenging Circumstances	**ONLINE LEARNING**					**OFFLINE LEARNING**					**BLENDED LEARNING**				
When a student needs to care for their sick parents/guardians.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When a student faces physical health issues.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When a student faces mental health issues.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When a student needs to attend the wake ceremony of an immediate family member.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When the school needs to repair the building/s.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When there are week-long or days-long school-related celebrations or activities.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**
When a teacher needs to attend seminars or training.	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**	**5**	**4**	**3**	**2**	**1**