

## **Access, Cost, and Quality in Flexible Learning: An Analysis of Institutional Perspectives Using the Iron Triangle Framework**

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### Paper Info:

Received: 06 Nov 2025

Revised: 23 Apr 2026

Accepted: 04 May 2026

Available Online: 05 May 2026

DOI: <https://doi.org/10.64233/NJBQ7466>

### Citation:

Bernardino, M. N. R., & Garcia, P. G. (2026). Access, cost, and quality in flexible learning: An analysis of institutional perspectives using the iron triangle framework. *ASEAN Journal of Open and Distance Learning*, 18(1), 20-31, <https://doi.org/10.64233/NJBQ7466>

### **Abstract**

*The COVID-19 pandemic compelled higher education institutions to transition from traditional classroom instruction to flexible learning to sustain educational continuity. Framed within Daniel's Iron Triangle of Education Framework and moving beyond descriptive accounts, this study explored how the perspectives of students, faculty, and administrators shape these tensions between issues of access, quality, and cost. Thematic analysis revealed that participants viewed FL as a combination of traditional and digital approaches, a product of the pandemic, and a potential means to attract new students. Divergences emerged between increased access and decreased student motivation; enhanced faculty skills and increased workload; and institutional affordability versus the need for additional investment. The study concludes that flexible learning entails ongoing negotiation among cost, access, and quality shaped by stakeholder perspectives on FL itself. Recommendations emphasise the need for inclusive planning, sustained faculty training, and investment in digital infrastructure, and strategically framing FL as a long-term and sustainable mode of education.*

**Keywords:** COVID-19 pandemic, flexible learning, higher education, iron triangle of education, stakeholder perspectives

## 1. Introduction

The sudden onset of the COVID-19 pandemic in 2020 brought unprecedented disruptions to education systems worldwide, forcing institutions to shift rapidly from traditional face-to-face instruction to alternative learning modalities. Among these, flexible learning (FL) emerged as a vital approach to ensure educational continuity amid restrictions. FL is characterised by learner-centred strategies that provide students with options regarding time, place, pace, and mode of learning, often supported by technology integration (Huang et al., 2020). This adaptability made FL an essential mode of instruction during the pandemic, as it enabled both teachers and learners to continue the educational process despite physical limitations.

Several studies have highlighted the advantages of FL. According to Rasheed et al. (2020), FL promotes accessibility and inclusivity by accommodating diverse learning needs and allowing students to manage their learning schedules independently. Similarly, Dziuban et al. (2018) emphasised that FL enhances learner autonomy, digital literacy, and engagement through the use of digital tools and online collaboration. However, existing research has indicated that the implementation of FL often faces challenges such as limited access to digital resources, unstable internet connectivity, insufficient faculty training, and disparities in student motivation and self-regulation (Adedoyin & Soykan, 2023; Baticulon et al., 2021).

A closer examination of the literature has revealed that although educators value the access provided by FL, they also express concerns regarding technological access, the quality of instruction and assessment, and the need for training and resources (Adedoyin & Soykan, 2023; Bozkurt & Sharma, 2020; Rapanta et al., 2020). In essence, issues of access, quality, and cost are already implicitly acknowledged in the literature. However, existing studies are largely descriptive and do not adequately explain how these issues are interrelated within an institutional setting. To better understand the interplay among the factors that shape these outcomes, this study adopted Daniel et al.'s (2009) Iron Triangle of Education (ITE) framework, which suggests that access, cost, and quality in education are tightly interrelated, with changes in one often affecting the others, resulting in trade-offs. Drawing on the experiences of a college that adopted FL as a teaching and learning approach during the pandemic, this study aims to (1) analyse institutional perspectives on FL and its implementation, (2) examine divergences in these perspectives, and (3) assess the explanatory utility of the Iron Triangle framework in making sense of these divergences.

## 2. Literature Review

Most studies on FL focus on describing the perceptions and experiences of different groups within educational institutions – students, teachers, and administrators – as they transition to this new model of instruction.

### 2.1. Students' Perspectives

Students generally view FL as an empowering and accessible mode of education that allows them to learn anytime and anywhere. This modality has been widely recognised for its potential to reduce traditional barriers to education, particularly those related to geographical and time-based constraints (Bao, 2020; Dhawan, 2020; Tahir & Jan, 2025). Online and blended learning environments, in particular, are associated with opportunities for self-paced and autonomous learning, as well as the development of digital literacy and self-regulation skills (Bozkurt & Sharma, 2020). During the COVID-19 pandemic, FL also enabled students to manage academic demands alongside personal and economic responsibilities at a time when face-to-face instruction was disrupted.

Despite these perceived benefits, students' positive views of flexibility are often tempered by significant challenges that accompany this learning approach. Several studies have shown that while students appreciate the accessibility and convenience of FL, they struggle with issues such as poor internet connectivity, unsuitable study environments, and low self-motivation (Fabito et al., 2020; Ngubane, 2021; European University Association [EUA], 2023). For instance, It was reported that although most students supported online education, many struggled with increased workloads, unstable internet access, and difficulty managing independent learning (Almahasees et al., 2021; Maypa et al., 2023). Similarly, Ngubane (2021) revealed that unreliable digital devices and inadequate home study conditions negatively affected students' academic performance and contributed to higher stress levels. These findings suggest that while FL may improve access, it can also intensify existing inequalities related to digital resources and learning environments.

## **2.2. Faculty Members' Perspectives**

Faculty members across various contexts recognise the pedagogical potential of FL but remain cautious about the challenges associated with its implementation. Many view FL as an opportunity to diversify instructional strategies through a combination of synchronous and asynchronous modes that accommodate different learning preferences (Means et al., 2014; Hodges et al., 2020; Pentang et al., 2025). Studies suggest that digital learning platforms can support more personalised instruction and encourage self-paced engagement (Bond et al., 2021).

At the same time, faculty members report significant constraints. While FL enabled continuity of teaching during periods of disruption, instructors faced inadequate training, limited institutional support, and insufficient technological infrastructure (Ignacio, 2021). Additional challenges included difficulties sustaining student engagement and managing technical issues (Ngubane, 2021; Grynyuk et al., 2022; Bercasio, 2023). Faculty members also raised concerns about academic integrity and fairness in online assessment, particularly in verifying student work and ensuring equal access to learning resources (Gupta et al., 2023). Overall, these findings underscore that while FL encourages pedagogical innovation, it also demands institutional investment in faculty development, digital infrastructure, and fair assessment practices.

## **2.3. Institutional or Administrative Perspectives**

From an institutional standpoint, FL is widely recognised as a strategic response to educational disruption. Universities and educational organisations, such as the European University Association (EUA, 2023) and the University of the Philippines Open University (Alfonso & Garcia, 2015) view FL as central to promoting institutional resilience, continuity, and inclusivity. Institutions identify FL as an opportunity to strengthen digital infrastructure, enhance curriculum adaptability, and sustain academic operations during periods of crisis (Tsai et al., 2020). However, they also acknowledge persistent barriers, including unstable internet connectivity, limited access to technological resources, and unequal home learning environments that disproportionately affect students from lower-income and rural backgrounds (Camara, 2022). These institutional insights highlight the importance of bridging the digital divide to promote equitable access and ensure that FL benefits all learners regardless of socioeconomic status.

Across the literature, tensions emerge both between and within certain groups. For example, while students may value autonomy associated with FL, difficulties with self-motivation can contradict the flexibility offered by FL. Faculty members emphasise the need for training and institutional support, which in turn requires additional investment. Meanwhile, institutions frame FL as a strategy for resilience and continuity, yet also recognise the risk of reinforcing existing inequalities. There is a need to better understand how these perspectives

are interrelated and the extent to which the Iron Triangle of Education can explain these differences and their implications for institutional outcomes.

### 3. Research Method

This study employed a qualitative case study design to explore the perspectives of teachers, students, and administrators in a private college in the Philippines (Creswell, 1998). The college is one of the oldest higher education institutions in the province. During the pandemic, the institution adopted FL to ensure continuity. In doing so, the college considered key policy directives issued by the Commission on Higher Education (CHED) at the time, which guided higher education institutions (HEIs) in transitioning to FL.

Data were collected through semi-structured interviews with participants. The participants comprised four student council officers who served as intermediaries between the administration and students; four faculty members with a minimum of three years of teaching experience, ensuring that they had taught under both previous (traditional) and current (flexible) learning modalities; and four administrators who headed academic units, learning support units, technology support units, and administrative offices. The number of participants was sufficient to achieve data saturation in a single-case study.

The interview data were analysed thematically to identify patterns, relationships, and tensions in the perspectives and implementation of FL. Following the process described by Miles and Huberman (1994), initial coding involved assigning descriptive labels to significant statements. To ensure consistency in theme development, clue words and guiding questions were used to identify the nature of FL, the nature of its implementation, and areas of convergence and divergence in participants' responses.

Clue words used to determine the perspectives on FL focused on data that addressed the questions, "What is the nature of FL?" and "What makes FL what it is?" Excerpts referring to the definition, characteristics, and inherent qualities of FL were grouped under this category. These included statements describing FL as both digital and traditional, as a product of the pandemic, as a personalised and autonomous form of learning, as economical for students and institutions, and as a means of bridging distance and improving technical skills. These coded clue words were then analysed and categorised to generate themes related to perspectives on FL.

For the analysis of perspective on FL implementation, clue words were coded from responses addressing the questions, "How was my experience of FL in my school?" and "How did others experience FL?" Data related to actions, decisions, and practices of individuals or groups in relation to the FL programme were classified under this category. These clue words guided the identification of experiences that reflected institutional strategies and outcomes, including the need to enhance teachers' digital literacy, requirements for technological access, budgetary constraints, challenges faced by both students and faculty, and perceptions that FL should be selectively applied. These instances captured the processes and realities of FL implementation within the institutional context.

Following the identification of themes related to perspectives, these themes were refined and analysed, with related themes combined to form overarching themes. Finally, areas of divergence were identified using clue words that indicated whether themes supported or contradicted one another. Divergence emerged when responses negated one another – for instance, when perceived benefits of FL contrasted with experiences of limited access, low motivation, or inadequate learning outcomes. By tracing these patterns through the use of clue words, the analysis revealed tensions among participants' perspectives, which were central to understanding the multidimensional nature of FL within the institution.

## 4. Findings and Discussion

### 4.1. Findings

#### 4.1.1. Perspectives on Flexible Learning

Based on the analysis of the interview data, the following themes related to participants' perspectives on FL were identified:

- FL is a combination of traditional and digital learning
- FL is a product of the pandemic
- FL can attract potential students

Table 1 presents a summary of these themes, their descriptions, and sample excerpts from the interview transcripts.

**Table 1**

*Thematic Perspectives on FL*

Themes on FL Perspective	Description	Excerpts from Interview Data
FL is a combination of traditional and digital learning	FL is perceived as a multifaceted mode of delivery that combines online instruction, limited face-to-face interaction, and modular teaching. Please refer to Table 1 for data excerpt.	<p>"It's actually the combination of online teaching and learning and limited face-to-face teaching and learning. (Female, Director for Instruction)"</p> <p>Similarly, a faculty member explained: "Flexible learning (sigh) is using either online, face-to-face, plus modular teaching." (Female, Faculty)</p>
FL is a product of the pandemic	Participants viewed FL as an instructional response to the global health crisis, which accelerated changes in teaching and learning practices, propelling it as a prevailing educational norm.	"It actually became prominent during the pandemic because teachers and students were some miles apart, so we really have to observe some of the principles of flexible learning." (Male, Faculty)
FL can attract potential students	FL was also perceived as having the potential to attract prospective students, particularly graduate students, as it allows them to study from home.	"The benefit is, of course, we can have many students, including those coming from different or far places – that is the number one." (Male, Dean)

#### 4.1.2. Perspectives on Flexible Learning Implementation

Analysis of the interview data also revealed several themes and subthemes related to the implementation of FL. These are summarised below, with a more detailed summary presented in Table 2:

- FL enables affordable and self-directed education
  - FL is economical for schools and students
  - FL provides learners with freedom and control over their studies
- FL requires additional skills, resources, and institutional investment
  - FL requires the acquisition of appropriate technical and pedagogical skills
  - FL requires students' access to technology
  - FL increases faculty workload
- FL improves teachers' technical skills
- FL reduces student motivation

**Table 2**

*Thematic Perspectives on FL Implementation*

<b>FL Implementation Themes</b>	<b>FL Implementation Sub-themes</b>	<b>Description</b>	<b>Excerpts from Interview Data</b>
FL enables affordable and self-directed education	FL is economical for schools and students	FL reduces costs associated with commuting and relocation, making education more accessible.	<p>“...they (students) don’t need to come to school, and working students can access education.” (Male, MIS Head)</p> <p>“Actually, students living far away could save money and experience less hassle since they don’t need to travel to attend class” (Female, Student)</p>
	FL provides learners with freedom and control over their studies	Students highlighted the flexibility to choose how, when, and when they learn, which supported self-directed learning.	<p>“It gave me an opportunity to use my freedom in deciding how, when, what, and where I learn.” (Female, Student)</p> <p>“Based on my experience, it gave me control over my learning and helped me become self-directed since I get to choose from a variety of learning modes.” (Female, Student)</p>
FL requires additional skills, resources, and institutional investment	FL requires the acquisition of technical and pedagogical skills	Faculty members reported challenges in adapting to unfamiliar digital tools, platforms, and instructional strategies.	<p>“I find flexible learning very challenging, especially if you are not really adept in technology and I am not tech-savvy. That’s why, perhaps, I’m experiencing challenges in virtual learning.” (Male, Faculty)</p> <p>“...I observed how difficult it was for older or more traditional teachers to adapt to modern teaching approaches.” (Male, Administrator)</p>
	FL requires students’ access to technology	FL’s implementation was constrained by poor internet connectivity and limited access to digital devices.	<p>“Some students lack digital devices, internet access, and even load allowance.” (Female, Student)</p> <p>“There are many challenges, especially internet connection issues for both students and teachers.” (Female, Faculty)</p> <p>“I have encountered a lot of technical issues... There were times when I couldn’t attend my class due to internet connection problems. (Female, Student)</p>
	FL increases faculty workload	FL has increased teacher’s workload as they now have to create digital content and manage online platforms, thus impacting faculty well-being.	<p>“There was a lot of preparation – we had to revise course outlines and modify modules. For teachers who are not trained in module writing, this was quite challenging.” (Female, Administrator)</p>

FL Implementation Themes	FL Implementation Sub-themes	Description	Excerpts from Interview Data
FL improves teacher's technical skills		FL has been instrumental in helping teachers develop their skills in the use of modern technologies for teaching and learning.	"And of course, another thing is we were able to gain new skills. I used to be very poor in terms of technology, but because of the implementation of flexible learning, we became familiar with different platforms." (Female, Faculty)
FL reduces student motivation		FL has led to a decrease in student motivation due to procrastination, lack of teacher feedback, and challenges in teaching skills-based courses.	<p>"Students are not paying attention and are unmotivated during classes." (Female, Faculty)</p> <p>"Flexible learning is a combination of online and face-to-face. During online class, we are not giving full attention to our classwork because it can be done later." (Female, Student)</p> <p>"In flexible learning mode, teachers give grades to students' work without checking the quality of the content and if it is really the student who did the task." (Female, Student)</p> <p>"We have a laboratory where we need to do actual experiments, but we can't really absorb it well because it's online." (Male, Student)</p>

#### 4.1.3. Points of Divergence

The findings indicate that the implementation of FL produces simultaneous and often conflicting outcomes. Key tensions include: (1) increased student access and autonomy alongside reduced motivation and engagement; (2) enhanced faculty technical skills along with increased workload; and (3) reduced costs for students but higher costs for the institution in skills, technology, and infrastructure.

These tensions were examined by mapping them onto the interdependent elements of the Iron Triangle of Education: access, quality, and cost. Tables 3, 4, and 5 apply this framework to the findings.

**Table 3**

*Access vs Quality: Divergence between Learner Access and Reduced Motivation*

Themes and/or Subthemes	Excerpts from Interview Data	Key Element under ITE	Type of Tension based on ITE Framework
FL enables affordable and self-directed education <ul style="list-style-type: none"> <li>● FL is economical for schools and students</li> <li>● FL provides learners with freedom and control over their studies</li> </ul>	<p>"The benefit is, of course, we can have many students, including those coming from different or far places – that is the number one."</p> <p>"It gave me control over my learning."</p>	Access	Access vs Quality <ul style="list-style-type: none"> <li>● FL increases access but may reduce learning outcomes and student engagement</li> </ul>

Themes and/or Subthemes	Excerpts from Interview Data	Key Element under ITE	Type of Tension based on ITE Framework
FL reduces student motivation	"We don't pay much attention to the tasks, sir, because it's online anyway, and we can do it later, so the teachers are not able to properly monitor us."	Quality	

**Table 4**

*Quality vs Cost: Divergence between Improved Teacher Skills and Increased Workload*

Themes and/or Subthemes	Excerpts from Interview Data	Key Element under ITE	Type of Tension based on ITE Framework
FL improves teachers' technical skills	"We were able to adapt our strategies; we became more creative with our presentation."	Quality	Quality vs Cost
FL increases faculty workload	"...because there was a lot of preparation... we needed to revise our course outlines and modify our modules for each course..."	Cost	<ul style="list-style-type: none"> <li>Improved instructional quality through enhanced ICT skills are accompanied by increased time, effort, and workload demands on faculty members</li> </ul>

**Table 5**

*Access vs Cost: Divergence between Student Access and Institutional Resource Requirements*

Data Source (Participant Code & Position)	Excerpts from Interview Data	Code on Relationship to Another Theme	Type of Tension based on ITE Framework
FL enables affordable and self-directed education	<p>"Students living far away could save money and experience less hassle since they don't need to travel to attend class."</p> <p>"It gave me an opportunity to use my freedom in deciding how, when, what, and where I learn."</p>	Access	<p>Access vs Cost</p> <ul style="list-style-type: none"> <li>Opportunities created by increased student access conflict with the additional institutional investment required to implement FL</li> </ul>
FL requires additional skills and institutional investment	"We really need to add more systems to ensure good internet access on campus."	Cost	

These findings indicate that tensions inherently exist between cost, access, and quality, and that trade-offs have to be implemented to address these conflicts (Daniel et al., 2009).

## 4.2. Discussion

### 4.2.1. Account for the Divergences

Educational institutions tend to manage these tensions by negotiating among the elements involved. The College's introduction of an interdisciplinary team-teaching approach, along with plans for a mentor-mentee system to prepare them for their new roles and help reduce workload, indicates an awareness of the trade-offs inherent in implementing FL.

However, as many of these initiatives were not fully implemented, the tensions persisted and meaningful trade-offs were not achieved. It is argued that the continuation of these tensions stems largely from stakeholders' perspectives on FL: (1) that FL is a product of the pandemic; (2) that FL represents a combination of traditional and digital modes; and (3) that FL can attract potential students.

While institutions recognise that FL can attract students, the College appears to have viewed FL primarily as a product of the pandemic – an emergency response to a public health crisis rather than a long-term educational strategy. This perception contributed to limited commitment and investment in fully integrating FL practices, as many perceived it as a temporary solution rather than a permanent shift in teaching and learning. In addition, the view that FL represents a combination of the traditional and digital modes suggests that they view it as a technical adjustment rather than as a pedagogical approach with its own underlying principles. As a result, FL was treated as a mere blending of technologies with existing classroom strategies. This perspective may have led to a degree of complacency, with the assumption that existing practices were adequate while awaiting a return to conventional face-to-face teaching after the pandemic, which ultimately occurred.

#### **4.2.2. Theoretical and Practical Implications**

The interpretivist approach adopted in this study highlights how the emergence and persistence of tensions arise from the interplay of various perspectives. Rather than assuming that the three elements of the Iron Triangle of Education repel one another like magnets, the study examined how particular perspectives of FL shape these tensions and their persistence over time. The perspectives matter because they influence institutional decisions and practices, and thus produce concrete consequences.

Conceptualising FL merely as the integration of traditional practices with digital tools risks reducing technology to a passive role and overlooking its potential to fundamentally reshape teaching and learning processes (Garrison et al., 2000). Maintaining a view of technology as supplementary may have limited the institution's inability to fully anticipate and address the deeper systemic changes needed to implement FL.

The study also suggests that tensions among the elements can also arise within a single sector. For example, administrators acknowledged that FL increased access to more students while simultaneously recognising the additional investments and costs required to support its implementation. This duality within the same group reflects the complexity of the tensions previously identified in the literature (Andrade & Alden-Rivers, 2019).

#### **4.2.3. Limitations and Future Research**

While this study contributes to a more interpretivist understanding of tensions among access, quality, and cost, the data do not fully explain the trade-offs between these elements, particularly in terms of how changes in one element affects the others. Future longitudinal research could provide deeper insight into how these trade-offs evolve over time and how institutions progressively respond to them.

## **5. Conclusion**

This study offers a meaning-centred relational perspective on the Iron Triangle of Education in the context of FL, emphasising that access, quality, and cost are not fixed conditions but are shaped by stakeholder perspectives and institutional narratives. By applying the framework analytically, the study moves beyond the largely descriptive literature on FL to demonstrate how underlying social and organisational understandings, such as viewing FL as

a temporary pandemic response or merely a combination of traditional and digital tools, can reinforce, rather than resolve, systemic trade-offs. The study identifies two key practical implications. First, implementing FL is as much a process of meaning-making as it is a pedagogical, technical, or logistical undertaking. Stakeholder interpretations influence levels of engagement and commitment, which in turn affect how tensions are managed. Second, while leadership that aligns and mobilises stakeholders is important, such alignment alone may only partially address the inherent trade-offs among access, cost, and quality. Accordingly, this study recommends that educational organisations proactively examine stakeholder perspectives on FL in order to better anticipate and respond to tensions among these three dimensions. For future research, longitudinal studies could examine how changes in one dimension of the Iron Triangle of Education – such as expanded access – affect cost and quality over time. Further research could also quantify the relationship between specific stakeholder perspectives and perceived tensions, thereby strengthening both theoretical and practical approaches to sustainability in FL.

**Acknowledgement:** The authors gratefully acknowledge the participants of this study for sharing their time and insights. We also thank our colleagues and peers for their constructive feedback and support.

**Conflict of Interest Statement:** The first author is an employee of the institution studied. No other conflicts of interest are declared by the authors.

**Author contributions statement:** The first author led the data collection process. Both authors collaboratively conceptualised the study, developed the research design and methodology, and participated in the analysis of data. Both also contributed to the interpretation of findings, as well as the drafting, revision, and finalisation of the manuscript.

**Data availability statement/supplementary data:** The datasets generated and/or analysed during the current study are not publicly available due to confidentiality and ethical considerations, but are available from the corresponding author upon reasonable request.

**Ethics Statement:** Ethics approval was not required for this study.

## References

- Adedoyin, O. B., & Soykan, E. (2023). Covid-19 pandemic and online learning: The challenges and opportunities. *Interactive Learning Environments*, 31(2), 863–875. <https://doi.org/10.1080/10494820.2020.1813180>
- Almahasees, Z., Mohsen, K. & Amin, M.O. (2021) Faculty's and Students' Perceptions of Online Learning During COVID-19. *Front. Educ.* 6:638470. <https://doi.org/10.3389/feduc.2021.638470>
- Alfonso, G., & Garcia, P. (2015). Open and distance eLearning: New dimensions in teaching, learning, research, and extension for higher education institutions. *International Journal on Open and Distance E-Learning*, 1(1&2), 1-13. <https://ijodel.upou.edu.ph/ijodel/article/view/3>
- Andrade, M. S., & Alden-Rivers, B. (2019). Developing a framework for sustainable growth of flexible learning opportunities. *Higher Education Pedagogies*, 4(1), 1–16. <https://doi.org/10.1080/23752696.2018.1564879>
- Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, 2(2), 113–115. <https://doi.org/10.1002/hbe2.191>
- Baticulon, R. E., Sy, J. J., Alberto, N. R. I., Baron, M. B. C., Mabulay, R. E. C., Rizada, L. G. T., ... & Tiu, C. J. S. (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>

- Bercasio, R. R. O. (2023). Flexible pedagogies during the educational disruption in Bicol, Philippines: Developing practice-informed framework. In C. R. Pérez & M. M. C. Shohel (Eds.), *Inclusive pedagogy in contemporary education*. IntechOpen. <https://doi.org/10.5772/intechopen.113300>
- Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2021). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education*, 18(1), 50–68. <https://doi.org/10.1186/s41239-021-00282-x>
- Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to the coronavirus pandemic. *Asian Journal of Distance Education*, 15(1), i–vi. <https://www.asianjde.com/ojs/index.php/AsianJDE/article/download/447/297>
- Camara, R. (2022). Challenges and responses of Pangasinan State University in implementing flexible learning during the COVID-19 pandemic. *Philippine Journal of Educational Research*, 7(1), 45–63.
- Creswell, J. W. (1998). *Research design: Qualitative and quantitative approaches*. Sage Publications.
- Daniel, J., Kanwar, A., & Uvalić-Trumbić, S. (2009). *Breaking higher education's iron triangle: Access, cost, and quality*. Commonwealth of Learning. <https://oasis.col.org/handle/11599/1442>
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>
- Dziuban, C., Graham, C. R., Moskal, P. D., Norberg, A., & Sicilia, N. (2018). Blended learning: The new normal and emerging technologies. *International Journal of Educational Technology in Higher Education*, 15(1), 1–16. <https://doi.org/10.1186/s41239-017-0087-5>
- European University Association. (2023, June). *Digital transformation and flexible learning in European higher education: Trends and challenges*. European University Association.
- Fabito, B. S., Trillanes, A. O., & Sarmiento, J. R. (2020). Barriers and challenges of implementing online classes during the COVID-19 pandemic among IT students. *International Journal of Computing Sciences Research*, 4(3), 153–166. <https://doi.org/10.25147/ijcsr.2017.001.1.51>
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2–3), 87–105. [https://doi.org/10.1016/S1096-7516\(00\)00016-6](https://doi.org/10.1016/S1096-7516(00)00016-6)
- Grynyuk, S., Kovtun, O., Sultanova, L., Zheludenko, M., Zasluzhena, A., & Zaytseva, I. (2022). Distance learning during the COVID-19 pandemic: The experience of Ukraine's higher education system. *The Electronic Journal of e-Learning*, 20(3), 242-256. <https://doi.org/10.34190/ejel.20.3.2198>
- Gupta, T., Shree, A., Chanda, P., & Banerjee, A. (2023). Online assessment techniques adopted by the university teachers amidst COVID-19 pandemic: A case study. *Social Sciences & Humanities Open*, 8(1), 100579. <https://doi.org/10.1016/j.ssaho.2023.100579>
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). *The difference between emergency remote teaching and online learning*. Educause Review <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>
- Huang, R., Liu, D., Tlili, A., Knyazeva, S., Chang, T. W., Zhang, X., ... & Burgos, D. (2020). *Handbook on facilitating flexible learning during educational disruption: The Chinese experience in maintaining undisrupted learning in COVID-19 outbreak*. Smart Learning Institute of Beijing Normal University. <https://iite.unesco.org/wp-content/uploads/2020/03/Handbook-on-Facilitating-Flexible-Learning-in-COVID-19-Outbreak-SLIBNU-V1.2-20200315.pdf>

- Ignacio, A. E. (2021). Online classes and learning in the Philippines during the Covid-19 pandemic. *International Journal on Integrated Education*, 4(3), 1-6.  
<https://www.neliti.com/publications/344064/online-classes-and-learning-in-the-philippines-during-the-covid-19-pandemic>
- Maypa, A., Marcial, D., & Montemayor, J. (2023). Student engagement, challenges, and coping mechanisms in high school online distance learning during Covid-19 pandemic. *Information Technologies and Learning Tools*, 93(1), 1-13.  
<https://journal.iitta.gov.ua/index.php/itlt/article/view/5148>
- Means, B., Bakia, M., & Murphy, R. (2014). *Learning online: What research tells us about whether, when and how*. Routledge.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage Publications.
- Ngubane, S. (2021). Online learning experiences of students at a South African University of Technology. *African Journal of Distance Education*, 9(2), 21–38.
- Pentang, J.T., Bucad, M.L. & Bautista, R.M. (2025). Flexible learning modalities in the Philippines: COVID-19 and beyond. In: M.S. Carandang (Ed.), *Teaching & Learning Beyond the Classroom* (pp. 34-47). Institute of Industry and Academic Research Incorporated.  
<https://doi.org/10.53378/09.25.008>
- Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education*, 2, 923–945. <https://doi.org/10.1007/s42438-020-00155-y>
- Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. *Computers & Education*, 144, 103701.  
<https://doi.org/10.1016/j.compedu.2019.103701>
- Tahir, S., & Jan, T. (2025). Flexible pedagogies: Challenges and solutions. *Emerging Learning Technologies*, 2(1), 1–9. <https://pedapub.com/editorial/index.php/emerging-learning-technologies/article/view/139>
- Tsai, C.-H., Rodriguez, G. R., Li, N., Robert, J., Serpi, A., & Carroll, J. M. (2020). Experiencing the Transition to remote teaching and learning during the COVID-19 pandemic. *Interaction Design and Architecture(s)*. 70-87. <https://doi.org/10.55612/s-5002-046-004>
- University of the Philippines Open University. (2025). *Flexible learning framework for Philippine higher education institutions*. UPOU Policy Paper Series.