ISRG Journal of Arts, Humanities and Social Sciences (ISRGJAHSS)

ISRG PUBLISHERS
Abbreviated Key Title: ISRG J Arts Humanit Soc Sci
ISSN: 2583-7672 (Online)
Journal homepage: https://isrgpublishers.com/isrgjahss
Volume – IV Issue - II (March – April) 2026
Frequency: Bimonthly

STATUS AND EXTENT OF LEARNING CONTINUITY PLAN ON CLIMATE-RELATED CLASS DISRUPTION: BASIS FOR ENHANCEMENT OF CTE LEARNING CONTINUITY PLAN FRAMEWORK

JENNY ARMAS

Cagayan State University-Aparri Campus, Aparri, Cagayan

| **Received:** 13.03.2026 | **Accepted:** 20.03.2026 | **Published:** 28.04.2026

***Corresponding author:** JENNY ARMAS

Abstract

Climate-related disruptions increasingly threaten instructional continuity in higher education, requiring resilient Learning Continuity Plans (LCP). This study assessed the status and extent of LCP implementation in the College of Teacher Education at Cagayan State University–Lal-lo, Aparri, and Gonzaga campuses using a descriptive-correlational mixed methods design. Results showed that the LCP is generally established but only moderately implemented during disruptions, with no significant differences across campuses. Key challenges include technological limitations, connectivity issues, financial constraints, and psychosocial pressures, despite existing best practices. A significant relationship was found between LCP status and extent of implementation. Strengthening ICT infrastructure and learner support is recommended.

Keywords: learning continuity plan, climate-related disruptions, flexible learning, ICT infrastructure, resilience

INTRODUCTION

The growing globalization of education has placed learning systems within a broader international context where disruptions in one region can significantly affect others. Schools are therefore expected to be resilient and responsive to emerging challenges, particularly climate change, which has become a major disruptor of educational continuity. The Intergovernmental Panel on Climate Change (IPCC, 2013) projects a global temperature increase of 2.6°C to 4.8°C by the end of the century, intensifying extreme weather events such as typhoons, floods, and heat waves. These conditions pose serious threats to education systems, especially in climate-vulnerable regions.

Globally, studies show that climate-related disruptions contribute to learning loss, reduced engagement, and inequitable access to education. UNESCO (2021) emphasizes that prolonged school interruptions compromise both quality and continuity of learning, while empirical evidence links instructional disruption to poor academic performance and lower retention. Despite global frameworks promoting resilience, contextual gaps remain in translating these strategies into local educational systems.

In the Philippines, frequent typhoons, flooding, power outages, and extreme heat further disrupt schooling. PAGASA reports around 20

DOI: 10.5281/zenodo.19842587

tropical cyclones annually, often resulting in infrastructure damage and class suspensions, while extreme heat advisories in 2024 prompted widespread disruptions. In response, CHED issued CMO No. 04, s. 2020 and CHED Advisory No. 7, s. 2024, promoting flexible learning and contingency planning. At Cagayan State University–College of Teacher Education, a Board-approved Learning Continuity Plan (LCP) was implemented using standardized formats and digital platforms such as Moodle, LENS, Microsoft Teams, and Messenger, alongside modular and blended approaches. However, implementation challenges persist, including connectivity issues, power interruptions, and heat-related disruptions.

This study therefore examines the status and extent of LCP implementation and identifies gaps between policy and practice to inform the development of a more adaptive, context-responsive framework that strengthens institutional resilience and ensures equitable access to quality education.

Statement of the Problem

The study assessed the status and extent of the Learning Continuity Plan (LCP) on climate-related class disruptions as a basis for enhancing the College of Teacher Education's (CTE) Learning Continuity Plan. Specifically, it seeks answers to the following questions:

1. What is the status of the Board-Approved Learning Continuity Plan in the College of Teacher Education in terms of the following dimensions:
   - 1.1. Flexible Learning Delivery
     - 1.1.1. Online
     - 1.1.2. Modular
     - 1.1.3. Blended
     - 1.1.4. Hybrid
   - 1.2. Technical Assistance and ICT Support
   - 1.3. Faculty Development
   - 1.4. Student Orientation
   - 1.5. Monitoring and Evaluation Systems
2. To what extent is the Learning Continuity Plan implemented during climate-related class disruptions, such as:
   - 2.1. Typhoons
   - 2.2. Flooding
   - 2.3. Extreme heat index conditions
   - 2.4. Power interruptions
   - 2.5. Internet instability
3. What challenges are encountered in the implementation of the Learning Continuity Plan, categorized as:
   - 3.1. Physical
   - 3.2. Technological
   - 3.3. Financial
   - 3.4. Administrative
   - 3.5. Psychological
4. What data-supported best practices are implemented by CTE campuses in Lal-lo, Aparri, and Gonzaga in sustaining learning continuity during climate-related disruptions?
5. Is there a significant difference in the status of the Learning Continuity Plan, the extent of its implementation, and the challenges encountered in its implementation when the respondents are grouped according to campus?
6. Is there a significant relationship among the status of Learning Continuity Plan (LCP), the extent of its implementation, and the challenges encountered in its implementation?
7. What enhanced Learning Continuity Plan (LCP) framework may be proposed based on the assessed status and extent of LCP implementation to strengthen the resilience, responsiveness, and sustainability of the CTE academic continuity plan?

METHODOLOGY

Research Design

To assess the status and extent of the Learning Continuity Plan (LCP) in the College of Teacher Education across the Lal-lo, Aparri, and Gonzaga campuses, a descriptive-correlational mixed methods design was used. The study examined LCP status in terms of flexible learning delivery, technical support, faculty training, student orientation, and monitoring and evaluation, as well as its extent of implementation during class disruptions. A researcher-made questionnaire was used, with descriptive statistics and correlation analysis applied, while qualitative data were analyzed through thematic analysis and triangulation to enrich findings.

Locale of the Study

This study was conducted in the College of Teacher Education (CTE) in the three campuses of Cagayan State University in Lal-lo, Aparri, and Gonzaga, Cagayan, all in Northern Luzon. These campuses were identified because of the similarity in their purpose of training future educators and their experience in disruptions caused by seasonal learning disruptions, such as extreme heat conditions that occur throughout March to May, and the disturbances caused by typhoons that occur throughout June to November, as they greatly impacted the continuity of learning and teaching. They are especially susceptible to climate-related risks, namely, typhoons, flooding, and heat extremes, which explains their being chosen as the research locale to assess the status and extent of the Learning Continuity Plan implementation.

Respondents and Sampling Techniques

The respondents were academic coordinators, deans, and faculty members of the College of Teacher Education across CSU Lal-lo, Aparri, and Gonzaga campuses, selected through purposive sampling due to their direct involvement in implementing the Learning Continuity Plan (LCP). Faculty who experienced class disruptions were included, while those on leave or without LCP experience were excluded. Administrators and key faculty leaders were also included for qualitative data to provide in-depth insights on implementation practices, challenges, and institutional responses.

Research Instruments

The study used a researcher-made survey questionnaire to assess the status and extent of the Learning Continuity Plan (LCP) in Cagayan State University campuses in Lal-lo, Aparri, and Gonzaga. The instrument was based on the Board-approved LCP framework and validated by experts, then pilot tested for reliability. It consisted of three parts: status of LCP (flexible

DOI: 10.5281/zenodo.19842587

learning, ICT support, faculty development, orientation, monitoring), extent of implementation during climate disruptions (typhoons, floods, heat, power and internet issues), and challenges and best practices. This design ensured alignment with objectives and supported both quantitative and qualitative analysis of LCP implementation.

Data Gathering Procedure

The researcher secured formal permission from the Office of the President, Office of Research, Development, and Extension, and the Campus Executive Officers of CSU Lal-lo, Aparri, and Gonzaga before data collection. After approval, a validated and pilot-tested questionnaire based on the Board-approved LCP was administered to assess its status, extent of implementation, challenges, and best practices. Respondents were informed of the study's purpose, voluntary participation, and confidentiality before answering. Completed questionnaires were checked, retrieved, coded, and analyzed using descriptive and inferential statistics, while qualitative data were thematically analyzed. Findings were then tabulated and used to develop an improved LCP framework.

Data Analysis Plan

The data were analyzed using a descriptive-correlational design with triangulation, integrating quantitative results and qualitative findings from respondents' experiences and institutional practices. Descriptive statistics such as frequency, percentage, mean, weighted mean, and standard deviation were used to describe the status and extent of the Learning Continuity Plan (LCP), while Pearson r correlation was employed to determine relationships among variables at a 0.05 level of significance after testing data normality. The status of LCP was interpreted using a five-point scale with weighted mean and standard deviation, while the extent of implementation and challenges were analyzed using corresponding rating scales. Qualitative data were treated through inductive thematic analysis, involving coding, categorization, and theme development to identify recurring patterns on challenges and best practices. These analytical procedures ensured a systematic, objective, and comprehensive interpretation of both numerical and contextual data aligned with the study objectives and framework.

Ethical Considerations

The research was conducted in accordance with strict ethical standards to protect the privacy, rights, and safety of all participants. Prior to data collection, respondents were fully informed about the study's purpose, objectives, procedures, and scope, and were asked to sign informed consent forms, emphasizing voluntary participation and the right to withdraw without penalty. Anonymity and confidentiality were ensured, with no identifying information disclosed and all data securely stored and accessible only to the researcher. Ethical clearance was obtained from the Office of Research, Development, and Extension. The study adhered to principles of respect for persons, beneficence, and justice throughout the research process.

RESULTS AND DISCUSSIONS

Assessment of the Respondents on the Status of the Board-Approved

Learning Continuity Plan of the College of Teacher Education

Flexible Learning Delivery

Table 1a. Weighted means and status of the CSU Board-approved LCP of CTE in terms of flexible learning delivery

Statements	Weighted Mean	Descriptive Value
1. Adherence to blended learning (75% face-to-face, 25% online) is implemented during normal conditions.	3.85	Largely established
2. Online learning via LENS (Moodle-based Learning Management System) is systematically utilized across courses.	3.62	Largely established
3. Synchronous sessions follow CSU class size guidelines (maximum 50 students).	4.22	Largely established
4. Diverse asynchronous materials (such as recorded lectures or digital modules) are consistently uploaded to LENS.	3.59	Largely established
5. Modular delivery is prepared for students in low-connectivity areas.	3.47	Partially established
6. Target completion dates for offline modules are clearly defined and monitored.	4.08	Largely established
7. A clear protocol for activating hybrid learning during disruptions is established and followed.	4.15	Largely established
8. Adherence to laboratory/practical classes complies with the 25-student or 50% capacity rule.	4.04	Largely established
9. Online assessment methods align with the approved syllabus and learning outcomes.	4.27	Largely established
10. Learning delivery shifts are guided by the Implementation Framework (Normal, Localized, Severe Crisis).	3.66	Largely established
Dimension Mean	**3.90**	**Largely established**

Table 1a presents the status of the Learning Continuity Plan (LCP) in terms of flexible learning framework. The overall dimension mean of 3.90, interpreted as Largely Established, indicates that blended, online, hybrid, and modular modalities are actively implemented across the three CSU CTE campuses. Online assessment methods obtained the highest mean of 4.27, reflecting strong integration of digital evaluation practices in achieving course outcomes. Meanwhile, modular delivery in low-connectivity areas recorded the lowest mean of 3.47, suggesting

DOI: 10.5281/zenodo.19842587

that although implemented, it requires further strengthening in terms of preparation and distribution. These findings support Pokhrel and Chhetri (2021) and Bozkurt and Sharma (2020), emphasizing that flexible learning enhances institutional resilience and ensures continuity of instruction during disruptions.

Technical Assistance and ICT Support

Table 1b. Weighted means and status of the CSU Board-approved LCP of CTE in terms of technical assistance and ICT support

Statements	Weighted Mean	Descriptive Value
1. The MIS Office ensures functionality of LMS platforms.	3.47	Partially established
2. ICT technical support is accessible during class disruptions.	3.62	Largely established
3. Official communication tools (e.g., Zoom, Meet, Teams, Email) are standardized.	4.32	Largely established
4. Faculty receive assistance in resolving LMS-related concerns.	3.92	Largely established
5. The University's campus network infrastructure is sufficient to support the requirements of LENS and synchronous sessions.	3.26	Partially established
6. Power backup systems (e.g., generators, UPS) are functional for critical ICT infrastructure during interruptions.	3.16	Partially established
7. System downtime incidents are addressed promptly.	3.11	Partially established
8. Campus LENS coordinators actively assist faculty.	3.72	Largely established
9. Technical guidelines for flexible learning are disseminated clearly.	4.15	Largely established
10. ICT preparedness is reviewed before each semester.	3.82	Largely established
Dimension Mean	**3.66**	**Largely established**

Table 1b presents the status of the Learning Continuity Plan (LCP) in terms of technical assistance and ICT support. The overall dimension mean of 3.66, interpreted as Largely Established, indicates that the university has functional technological systems supporting flexible learning implementation. The highest-rated indicator is the standardization of official communication tools (M = 4.32), showing strong availability of communication platforms and technical support. However, system downtime received the lowest mean of 3.11, interpreted as Partially Established, indicating persistent infrastructure limitations. Respondents noted connectivity issues affecting participation in online classes. These findings align with Subedi et al. (2020), emphasizing that ICT infrastructure is crucial for effective flexible learning implementation.

Faculty Development

Table 1c. Weighted means and status of the CSU Board-approved LCP of CTE in terms of faculty development

Statements	Weighted Mean	Descriptive Value
1. Regular training on online pedagogy is conducted.	3.84	Largely established
2. Workshops on digital assessment tools are provided.	3.81	Largely established
3. Mentoring support is available for course redesign.	3.86	Largely established
4. Faculty are trained on climate-resilient instructional strategies that discuss flexible and adaptive teaching approaches that sustain learning despite climate-related disruptions.	3.96	Largely established
5. Learning Management System utilization training is mandatory and structured.	3.81	Largely established
6. Faculty collaborate in developing modules and shared resources.	4.05	Largely established
7. Professional development addresses laboratory adaptation strategies.	3.96	Largely established
8. Training includes flexible assessment during disruptions.	3.95	Largely established
9. A formal policy exists for adjusting faculty workload to account for the demands of flexible learning.	3.99	Largely established
10. Faculty preparedness is evaluated before full implementation.	3.80	Largely established
Dimension Mean	**3.90**	**Largely established**

DOI: 10.5281/zenodo.19842587

Table 1c shows the status of the Learning Continuity Plan in terms of faculty development. The findings show the dimension mean of 3.90, which was interpreted as Largely Established, which means that the faculty members get sufficient support in terms of training and professional development connected with the implementation of flexible learning. Faculty collaboration in the development of modules and shared instructional materials got the highest indicator, 4.05. These findings indicate that the university has taken an active role in helping the faculty members to acquire the competencies required to employ flexible and adaptive teaching methods during disruption caused by climatic conditions. A number of the respondents indicated that online course training on digital teaching strategies and online assessment techniques has enabled them to be able to adjust to the flexible learning environment. Nonetheless, respondent 3 added,

"Training on LMS utilization and digital assessment tools helped us manage our classes more effectively during disruptions, but it was done a long time ago, around 2022."

This means that training is still necessary to increase faculty preparedness for crisis-responsive teaching. These findings corroborate the study of Trust and Whalen (2020), stated found that the professional development programs based on digital pedagogy and instructional technology are highly effective in enhancing the capabilities of teachers to switch to the online learning setting. Meanwhile, Hodges et al. (2020) highlighted that faculty training is a vital aspect in making the emergency remote teaching a successful crisis-response strategy. These studies imply that the development of the faculty should be continuous to empower the institution against disruptions in education, hence, continuous professional development on preparedness for crisis-responsive teaching is a must.

Student Orientation and Support

Table 1d. Weighted means and status of the CSU BOR-approved LCP of CTE in terms of student orientation and support

Statements	***Weighted Mean***	***Descriptive Value***
1. Students receive orientation on LENS usage.	3.62	Largely established
2. Structured digital citizenship training is provided to students to support responsible and ethical online engagement under the LCP.	3.81	Largely established
3. Guidelines for blended and hybrid learning are clearly communicated.	4.20	Largely established
4. Academic advising remains accessible during disruptions.	4.20	Largely established
5. Accessible channels for psycho-social support are clearly communicated and available to students.	3.95	Largely established
6. Students are oriented on online assessment procedures.	4.12	Largely established
7. Helpdesk services are accessible for LMS concerns.	3.81	Largely established
8. Laboratory adjustments are explained clearly to students.	4.28	Largely established
9. Communication protocols during emergencies are disseminated.	4.01	Largely established
10. Time-management guidance is integrated into orientation.	4.09	Largely established
Dimension Mean	**4.01**	**Largely established**

Table 1d presents the status of the Learning Continuity Plan in terms of student orientation and support systems. The results reveal a dimension mean of 4.01, interpreted as Largely Established, indicating that the College of Teacher Education has institutionalized orientation programs and support mechanisms that help students adapt to flexible learning modalities. The highest indicator is a clear explanation of laboratory adjustments with a weighted mean of 4.28. This means that the institution provides structured guidance to help students navigate changes in instructional modalities during disruptions. Meanwhile, some of the participants stated that students are properly oriented on learning modalities, assessment procedures, and communication protocols during emergencies. But, on the other hand, respondent 7 stated,

"Some of our students do not really have an experience prior to the use of the Learning Environment Network System (LENS), at hindi na ito gumagana sa atin, matagal na hindi ginagamit sa college purely messenger, at Google Meet na lamang kapag may interruption sa klase."

These responses suggest that while orientation programs are well established, the restoration of LENS would be a necessary tool for effective instruction during disruptions and continuous training for students to improve familiarity with digital learning systems. These findings support the systems view of distance education proposed by Moore and Kearsley (2012), which emphasizes that learner support services are essential components of successful distance learning systems.

These studies imply that while providing orientation and support services to ensure students' successful adaptation to a flexible learning system, there is still a need to rebuild a structured LMS particularly the LENS.

Monitoring and Evaluation Systems

Table 1e. Weighted means and status of the CSU Board-approved LCP of CTE in terms of monitoring and evaluation systems

Statements	**Weighted Mean**	**Descriptive Value**
1. Deans regularly monitor flexible learning	4.41	Largely established

DOI: 10.5281/zenodo.19842587

implementation.		
2. Program Chairs review class size compliance.	4.30	Largely established
3. Feedback from faculty is systematically collected.	4.26	Largely established
4. Student feedback is gathered for quality improvement.	4.31	Largely established
5. Post-disruption evaluations are conducted.	3.50	Largely established
6. QA Office assesses adherence to LCP guidelines.	4.23	Largely established
7. Preparedness reports are submitted prior to semester start.	3.91	Largely established
8. Assessment methods are reviewed for compliance.	3.99	Largely established
9. Implementation reports are systematically collected and analyzed to inform evidence-based decision-making.	3.97	Largely established
10. Monitoring findings result in documented actions and measurable improvements in LCP implementation.	4.05	Largely established
Dimension Mean	**4.09**	**Largely established**

Table 1e illustrates the status of the Learning Continuity Plan in terms of monitoring and evaluation systems. The results show a dimension mean of 4.09, interpreted as Largely Established, indicating that the university has established strong mechanisms for monitoring the implementation of flexible learning strategies. Regular monitoring of flexible learning implementation by deans 4.41 obtained the highest indicator. These results indicate that institutional leaders actively oversee the implementation of flexible learning practices to ensure compliance with university guidelines. And this finding was supported by some of the participants stating,

"Regular monitoring from program chairs and deans helps ensure that classes follow the learning continuity guidelines." Precisely, administrative monitoring and feedback mechanisms help improve the implementation of flexible learning strategies. However, some respondents mentioned that

"Post-disruption evaluations are not always conducted consistently, which may limit opportunities to identify lessons learned after disruptions."

These responses explain why the indicator post-disruption evaluations are conducted. 3.50 received the lowest rating. These findings support the principles of continuous improvement emphasized by Deming (1986), which highlight the importance of systematic monitoring and evaluation in improving organizational processes. Similarly, Stufflebeam and Zhang (2017) emphasized that evaluation systems provide vital feedback that enables institutions to refine policies and improve program implementation. These studies imply that systematic monitoring mechanisms in strengthening the implementation of learning continuity programs are still required to ensure the effectiveness of the framework.

Summary of the Status of LCP

Table 1f. Overall mean and status of the CSU Board-approved LCP of CTE

Dimension	Mean	Descriptive Value
1. Flexible learning delivery	3.90	Largely established
2. Technical assistance and ICT support	3.66	Largely established
3. Faculty development	3.90	Largely established
4. Student orientation and support	4.01	Largely established
5. Monitoring and evaluation systems	4.09	Largely established
Overall Mean	**3.91**	**Largely established**

Table 1f shows the overall mean of 3.91. This means that the Learning Continuity Plan is Largely Established. The major components of the Learning Continuity Plan are noticeably implemented across the three CSU campuses. Among the dimensions, monitoring and evaluation systems obtained the highest mean of 4.09. On the other hand, technical assistance and ICT support recorded the lowest mean of 3.66. These findings suggest that monitoring systems and student support services are well established. However, the ICT infrastructure remains an area that needs improvement.

This highlights the importance of collaboration, preparedness, and administrative support in sustaining Learning Continuity. This study implies that improving ICT infrastructure and expanding student support mechanisms may further enhance the effectiveness of the Learning Continuity Plan. The Learning Continuity Plan is crucial and still needs to be strengthened. This also implies that College of Teacher Education should focus on improving its ICT infrastructure to further enhance the effectiveness of the LCP.

Extent of Implementation of the Learning Continuity Plan during Climate-Related Class Disruptions Typhoons

Table 2a. Weighted means and extent of implementation of LCP during typhoons

Statements	Weighted Mean	Descriptive Value
1. Immediate shift to online/asynchronous delivery.	3.69	Highly implemented
2. Communication is activated within 24 hours.	3.45	Implemented

DOI: 10.5281/zenodo.19842587

3. Asynchronous materials provided/downloaded.	3.72	Highly implemented
4. Deadlines & Attendance flexibly adjusted.	3.74	Highly implemented
5. LMS/ICT Support remains accessible.	3.35	Implemented
6. Modular/Offline backups utilized.	3.68	Highly implemented
7. Lab/Practical sessions rescheduled safely.	3.59	Highly implemented
8. Student Support (Mental Health/Advising) available.	3.88	Highly implemented
9. Low-bandwidth communication used (SMS/Lite apps).	3.20	Implemented
10. Post-disruption recovery plans implemented.	3.18	Implemented
Dimension Mean	**3.55**	**Highly implemented**

Table 2a shows the extent of the Learning Continuity Plan during typhoon-related disruptions. The results show a dimension mean of 3.55, which means it was Highly Implemented. This indicates that the College of Teacher Education has systems in place to speedily switch to alternative learning methods when typhoon disruption occurs. Student support services receive the highest mean of 3.88. This means that the institutions focus on students' well-being and being flexible with lessons during unprecedented events. Relatively low ratings were observed in post-disruption recovery planning, 3.18, suggesting that while immediate responses are strong, structured recovery processes may still require further strengthening.

These results agree with what Kuntz, Näswall and Malinen said in 2017 about organizations being able to withstand situations. Organizations that can adapt and plan for emergencies can keep running when unprecedented events happen. Thus, letting students learn at their pace and having flexible rules are crucial for keeping education going during emergencies. These studies imply how important it is for institutions to be able to adjust to disruptions caused by disasters so they can keep teaching. The Learning Continuity Plan is one of the key tools for this reason. It needs to be flexible to accommodate students affected by typhoons.

Flooding

Table 2b. Weighted means and extent of implementation of LCP during flooding

Statements	Weighted Mean	Descriptive Value
1. Immediate shift to online/asynchronous delivery.	3.66	Highly implemented
2. Communication is activated within 24 hours.	3.55	Highly implemented
3. Asynchronous materials provided/downloaded.	3.69	Highly implemented
4. Deadlines & Attendance flexibly adjusted.	3.69	Highly implemented
5. LMS/ICT Support remains accessible.	3.42	Implemented
6. Modular/Offline backups utilized.	3.66	Highly implemented
7. Lab/Practical sessions rescheduled safely.	3.74	Highly implemented
8. Student Support (Mental Health/Advising) available.	3.73	Highly implemented
9. Low-bandwidth communication used (SMS/Lite apps).	3.27	Implemented
10. Post-disruption recovery plans implemented.	3.28	Implemented
Dimension Mean	**3.57**	**Highly implemented**

Table 2b displays the extent of implementation of the Learning Continuity Plan during flooding-related disruptions. The results reveal a dimension mean of 3.57, interpreted as Highly Implemented, indicating that the College of Teacher Education has developed responsive mechanisms that support instructional continuity during flooding incidents. The highest-rated indicator is safe rescheduling of laboratory and practical sessions 3.74. These results suggest that both academic adjustments and student welfare mechanisms are prioritized during flooding disruptions. However, low-bandwidth communication 3.27 obtained the lowest ratings, indicating areas where institutional processes may still require improvement.

These findings align with the Crisis Management Model of Burnett (1998), which emphasizes the importance of preparedness and responsive strategies during crisis situations. This implies that higher education institutions that adopt flexible learning modalities are better able to sustain instructional continuity during environmental disruptions Crawford et al. (2020).

Extreme Heat Index Conditions

Table 2c. *Weighted means and extent of implementation of LCP during extreme heat index conditions*

Statements	Weighted Mean	Descriptive Value
1. Immediate shift to online/asynchronous delivery.	3.26	Implemented
2. Communication is activated within 24 hours.	3.23	Implemented
3. Asynchronous materials	3.78	Highly

DOI: 10.5281/zenodo.19842587

provided/downloaded.		implemented
4. Deadlines & Attendance flexibly adjusted.	3.77	Highly implemented
5. LMS/ICT Support remains accessible.	3.62	Highly implemented
6. Modular/Offline backups utilized.	3.69	Highly implemented
7. Lab/Practical sessions rescheduled safely.	3.55	Highly implemented
8. Student Support (Mental Health/Advising) available.	3.54	Highly implemented
9. Low-bandwidth communication used (SMS/Lite apps).	3.34	Implemented
10. Post-disruption recovery plans implemented.	3.22	Implemented
Dimension Mean	**3.50**	**Highly implemented**

Table 2c presents the extent of implementation of the LCP during extreme heat index conditions. The findings reveal a dimension mean of 3.50, interpreted as Highly Implemented, indicating that the institution has adapted its instructional strategies to address heat-related disruptions. The provision of asynchronous learning materials 3.78 got the highest rating, meaning faculty members prioritize student well-being and accessibility during extreme heat conditions. However, communication within 24 hours 3.23 received the lowest ratings, indicating that response mechanisms for heat-related disruptions may not always be activated as quickly as those for typhoons and flooding.

The qualitative findings further support these results. Some of the participants stated that

"Asynchronous learning materials are frequently utilized during extreme heat conditions to reduce the need for prolonged online sessions." RRAR

One respondent explained,

"During extreme heat, we minimize synchronous classes and instead provide recorded lectures and reading materials."-RJC

Some of them also emphasized that flexible deadlines allow students to complete their academic tasks without compromising their health and safety. These responses demonstrate that instructional adjustments during heat-related disruptions are primarily designed to ensure student well-being.

This means that flexible learning environments enhance institutional resilience by allowing educational institutions to sustain instructional delivery across different types of disruptions. These studies imply the importance of adaptable learning systems in responding to emerging climate-related challenges Pokhrel and Chhetri (2021) .

Power Interruptions

Table 2d. *Weighted means and extent of implementation of LCP during power interruptions*

Statements	Weighted Mean	Descriptive Value
1. Immediate shift to online/asynchronous delivery.	2.84	Implemented
2. Communication is activated within 24 hours.	2.85	Implemented
3. Asynchronous materials provided/downloaded.	3.20	Implemented
4. Deadlines & Attendance flexibly adjusted.	3.66	Highly implemented
5. LMS/ICT Support remains accessible.	3.32	Implemented
6. Modular/Offline backups utilized.	3.66	Highly implemented
7. Lab/Practical sessions rescheduled safely.	3.57	Highly implemented
8. Student Support (Mental Health/Advising) available.	3.61	Highly implemented
9. Low-bandwidth communication used (SMS/Lite apps).	3.18	Implemented
10. Post-disruption recovery plans implemented.	3.23	Implemented
Dimension Mean	**3.31**	**Implemented**

Table 2d presents the extent of implementation of the Learning Continuity Plan during power interruptions. The results reveal a dimension mean of 3.31, interpreted as Implemented, indicating that although strategies are in place to address power-related disruptions, the implementation is not yet fully optimized. Among the indicators, flexible adjustment of deadlines 3.66 received the highest ratings.

These results suggest that the institution compensates for power-related disruptions through flexible academic policies and alternative instructional materials. On the other hand, immediate shifts to online learning 2.84 received the lowest ratings, indicating limitations in technology-dependent processes during power outages.

These findings are in line with the work of Pokhrel and Chhetri (2021), who emphasized that diversified learning delivery modes, including offline and low-technology approaches, are essential in sustaining education during crisis situations. Similarly, Dhawan (2020) highlighted that the institutions must develop contingency plans that include alternative learning systems when digital platforms become inaccessible. These studies emphasize the importance of hybrid and offline learning strategies in maintaining instructional continuity during infrastructure disruptions.

DOI: 10.5281/zenodo.19842587

Internet Instability

Table 2e. Weighted means and extent of implementation of LCP during Internet instability

Statements	Weighted Mean	Descriptive Value
1. Immediate shift to online/asynchronous delivery.	2.61	Implemented
2. Communication is activated within 24 hours.	2.76	Implemented
3. Asynchronous materials provided/downloaded.	3.07	Implemented
4. Deadlines & Attendance flexibly adjusted.	3.59	Highly implemented
5. LMS/ICT Support remains accessible.	3.22	Implemented
6. Modular/Offline backups utilized.	3.58	Highly implemented
7. Lab/Practical sessions rescheduled safely.	3.51	Highly implemented
8. Student Support (Mental Health/Advising) available.	3.38	Implemented
9. Low-bandwidth communication used (SMS/Lite apps).	3.20	Implemented
10. Post-disruption recovery plans implemented.	3.12	Implemented
Dimension Mean	**3.20**	**Implemented**

Table 2e presents the extent of implementation of the LCP during internet instability. The results reveal a dimension mean of 3.20, interpreted as Implemented, indicating that while mechanisms exist to address connectivity challenges, their effectiveness remains moderate. The highest-rated indicators include flexible deadlines 3.59, suggesting that faculty members utilize flexible and alternative learning strategies to compensate for connectivity limitations. However, immediate shifts to online learning 2.61 received the lowest ratings, indicating delays in technology-dependent instructional processes. However, some of the participants stated that unstable internet connections often prevent students from participating in synchronous sessions.

One respondent explained, ***"Some students experience unstable internet connections, so asynchronous materials and modular activities are used to ensure they can still complete their lessons."***

Respondents also emphasized the importance of low-bandwidth communication platforms such as messaging applications to maintain contact with students during connectivity disruptions. These responses highlight the persistent digital divide that affects the effectiveness of online learning systems.

These findings support the argument of Pokhrel and Chhetri (2021) that learning continuity in developing contexts requires flexible, low-bandwidth, and offline-capable systems. Additionally, Bozkurt and Sharma (2020) emphasized that equitable access to digital infrastructure is a critical factor in sustaining online education. These studies imply that strengthening digital infrastructure and expanding alternative delivery systems are necessary to improve learning continuity during connectivity disruptions.

Summary of Implementation of LCP in Climate-Related Disruptions

Table 2f. Overall mean and extent of implementation of LCP during climate-related class disruptions

Dimension	Mean	Descriptive Value
1. Typhoons	3.55	Highly implemented
2. Flooding	3.57	Highly implemented
3. Extreme Heat Index Conditions	3.50	Highly implemented
4. Power Interruptions	3.31	Implemented
5. Internet Instability	3.20	Implemented
Overall Mean	**3.43**	**Implemented**

Table 2f presents the overall extent of implementation of the Learning Continuity Plan (LCP) during climate-related class disruptions. The overall mean of 3.43, interpreted as Implemented, indicates that institutional mechanisms for ensuring learning continuity are operational but vary in effectiveness depending on the type of disruption. Environmental disruptions such as flooding (3.57), typhoons (3.55), and extreme heat (3.50) were rated Highly Implemented, reflecting strong adaptive strategies for recurring climate hazards. However, power interruptions (3.31) and internet instability (3.20) were only Implemented, indicating ongoing infrastructural challenges. Qualitative findings emphasize flexible modalities and asynchronous learning, while highlighting persistent technological barriers. Anchored on Burnett's Crisis Management Model (1998), the results suggest the need for strengthened ICT infrastructure to enhance resilience.

Challenges Encountered by the Respondents in the Implementation of the Learning Continuity Plan Physical Challenges

Table 3a. Weighted means and extent of challenges encountered in the implementation of LCP in terms of physical challenges

Statements	Weighted Mean	Descriptive Value
1. Facility Integrity: Damage to campus buildings or utilities that prevents safe instructional use.	2.95	Serious
2. Geographic Barriers: Impassable roads or flooded routes halt module distribution and movement.	3.12	Serious
3. Environmental Stress: Inadequate classroom	3.22	Serious

DOI: 10.5281/zenodo.19842587

cooling/ventilation during heat waves or storms.		
4. Spatial Limitations: Lack of safe hubs or laboratory space for staggered/hybrid sessions.	2.96	Serious
5. Recovery Lag: Prolonged delays in restoring campus safety and utility functionality post-disaster.	2.70	Serious
Category Mean	**2.99**	**Serious**

Table 3a presents the challenges encountered in implementing the Learning Continuity Plan (LCP) in terms of physical factors, with a category mean of 2.99, interpreted as Serious. This indicates that environmental and infrastructural conditions significantly hinder instructional continuity during climate-related disruptions. Physical barriers such as damaged facilities, unsafe classrooms, and geographic inaccessibility limit the consistent delivery of learning activities despite existing continuity measures. Among the indicators, environmental stress (3.22) obtained the highest mean, showing strong effects of climate conditions on learning continuity, while recovery lag (2.70) reflects delays in restoring safe learning environments. A participant emphasized the need for broader emergency preparedness beyond floods and typhoons. These findings highlight the need for strengthened infrastructure resilience and disaster preparedness systems.

Technological Challenges

Table 3b. Weighted means and extent of challenges encountered in the implementation of LCP in terms of technological challenges

Statements	Weighted Mean	Descriptive Value
1. Infrastructure Gaps: Unstable local internet and frequent power outages that collapse the "continuity" of synchronous sessions.	3.00	Serious
2. Resource Inequity: Limited student/faculty access to functional hardware (laptops/tablets) and sufficient data allowances.	3.15	Serious
3. LMS Fragility: Frequent downtime or "bottlenecking" of the LENS platform during peak emergency transitions.	2.62	Serious
4. Technical Support Latency: Insufficient or delayed ICT troubleshooting and lack of "failsafe" backup platforms when primary systems fail.	2.77	Serious
Category Mean	**2.89**	**Serious**

Table 3b. presents the technological challenges in the implementation of the Learning Continuity Plan, which yielded a category mean of 2.89, interpreted as Serious, indicating that technological limitations continue to affect the effectiveness of flexible learning modalities. These findings suggest that while digital platforms support learning continuity, gaps in connectivity, device availability, and system stability still hinder instructional delivery and student participation.

The highest indicators were resource inequity 3.15, and infrastructure gaps 3.00, reflecting the persistent digital divide experienced by both students and faculty. This finding is strongly supported by respondent statements describing difficulties experienced by learners during online learning. One participant explained:

"Some students who do not have internet connectivity are unable to join synchronous sessions." -r 4.

Some of the participants also highlighted the importance of restoring a centralized learning management system to support continuity. One respondent underlined:

"Kailangan na kailangan na talaga maibalik ang LENS lalo na dito sa atin sa College kung saan we are training future educators. Their learning must not stop dahil lang may mga class disruptions."-r8

These responses support the quantitative findings that technological limitations significantly affect the implementation of the LCP, and so this implies the importance of strengthening digital infrastructure and centralized learning platforms, particularly the use of LENS.

Financial Challenges

Table 3c. Weighted means and extent of challenges encountered in the implementation of LCP in terms of financial challenges

Statements	Weighted Mean	Descriptive Value
1. Operational Overhead: High out-of-pocket costs for internet, printing, and device maintenance for both students and faculty.	2.73	Serious
2. Budgetary Constraints: Lack of dedicated institutional funds for "Climate-Resilient" infrastructure and rapid LCP activation.	2.69	Serious
3. Equity Barriers: Financial strain on low-income students that leads to total disconnection during	2.68	Serious

DOI: 10.5281/zenodo.19842587

prolonged disruptions.		
4. Resource Maintenance: Insufficient funding for the continuous repair, replacement, and upgrading of digital instruction tools.	2.85	Serious
Category Mean	**2.74**	**Serious**

Table 3c. illustrate the financial challenges in the implementation of the Learning Continuity Plan generated a category mean of 2.74, interpreted as Serious, indicating that financial constraints significantly affect the sustainability of flexible learning systems. Economic limitations influence both institutional resources and the ability of students and faculty to access necessary learning tools during disruptions.

Indicators such as resource maintenance 2.85 and operational overhead 2.73 reveal the financial burden associated with maintaining internet connectivity and instructional tools. These results are supported by respondents who shared their personal experiences regarding financial demands during online instruction. One participant claimed:

"I am currently using my own mobile data during online classes, and the internet data consumed by applications such as Google Meet is very demanding. Because of this, I frequently need to purchase additional data to sustain my online teaching sessions." -RBBT

Similarly, another respondent emphasized the broader financial burden affecting students:

"Many students struggle to afford stable internet data, which becomes a barrier to their participation in online learning." R2

These statements confirm that financial constraints affect both instructors and learners, reinforcing the statistical finding that financial challenges remain a serious factor affecting the effectiveness of the Learning Continuity Plan DepEd (2022).

Administrative Challenges

Table 3d. Weighted means and extent of challenges encountered in the implementation of LCP in terms of administrative challenges

Statements	Weighted Mean	Descriptive Value
1. Communication Lag: Delays in the official issuance of suspension advisories and modality-shift instructions.	2.39	Minor
2. Protocol Ambiguity: Lack of clear, specific guidelines for when and how to activate hybrid or modular alternatives.	2.24	Minor
3. Structural Silos: Inconsistent coordination between academic units and overlapping responsibilities among emergency response offices.	2.50	Serious
4. Oversight Deficits: Inadequate monitoring and post-disaster evaluation to improve the LCP for the next cycle.	2.47	Minor
Category Mean	**2.40**	**Minor**

Table 3d presents the administrative challenges, which obtained a category mean of 2.40, interpreted as Minor, suggesting that institutional governance and policy implementation generally support the implementation of the Learning Continuity Plan. Compared with other dimensions, administrative structures appear relatively stable and capable of facilitating continuity measures.

However, certain indicators such as structural silos 2.50 suggest coordination gaps between institutional units. These results are reflected in participant responses regarding policy clarity and communication. One respondent emphasized the need for clearer implementation guidelines by stating:

"There is a need for a more consistent and clearly defined guideline for the implementation of online classes." -r1

Another participant noted that communication delays sometimes occur during disruptions:

"At times, there are delays in the communication of updates or announcements." -r2

Despite these concerns, respondents also acknowledged positive administrative practices. One participant stated:

"The administration has been proactive in consulting faculty members regarding their situations during climate-related disruptions." -rD

These statements imply that although administrative systems are generally effective, clearer communication and stronger coordination could further improve policy implementation Maniagasi (2024)

Psychological Challenges

Table 3e. Weighted means and extent of challenges encountered in the implementation of LCP in terms of psychological challenges

Statements	Weighted Mean	Descriptive Value
1. Cognitive Load: High stress and burnout resulting from the rapid "pivot" between multiple teaching modalities.	2.82	Serious
2. Diminished Engagement: Reduced student motivation and faculty morale due to the uncertainty and "stop-and-start" nature of disruptions.	2.66	Serious
3. Safety vs. Performance: The emotional strain of	2.68	Serious

DOI: 10.5281/zenodo.19842587

balancing personal/family safety with academic responsibilities during crises.		
4. Digital Fatigue: Psychological exhaustion from extended screen time and the lack of social-academic interaction during	2.78	Serious
Category Mean	**2.78**	**Serious**

Table 3e shows the psychological challenges, which generated a category mean of 2.78, interpreted as Serious, indicating that emotional and mental pressures significantly affect both students and faculty during disruptions. The rapid shift between learning modalities, combined with uncertainty during climate-related interruptions, contributes to stress, fatigue, and reduced engagement.

Indicators such as cognitive load 2.82 and digital fatigue 2.78 highlight the psychological strain associated with prolonged online learning and instructional adjustments. These findings are reinforced by respondents who described personal experiences of exhaustion and emotional strain during the implementation of flexible learning systems. One participant shared:

"I experienced exhaustion due to the demands of planning lessons, conducting teaching sessions, and continuously monitoring student progress." -RMTU

These statements demonstrate that psychological and social pressures significantly affect learning participation and highlight the importance of emotional support and flexibility in implementing the Learning Continuity Plan UNESCO (2020).

Summary of Challenges

Table 3f. Overall mean and extent of challenges encountered in the implementation of LCP

Category	Mean	Descriptive Value
1. Physical challenges	2.99	Serious
2. Technological challenges	2.89	Serious
3. Financial challenges	2.74	Serious
4. Administrative challenges	2.40	Minor
5. Psychological challenges	2.99	Serious
Overall Mean	**2.74**	**Serious**

Generally, Table 3f shows that the overall challenges encountered in the implementation of the Learning Continuity Plan yielded a mean of 2.74, interpreted as Serious, indicating that multiple factors significantly affect the effectiveness of academic continuity strategies. Physical and technological challenges emerged as the most prominent, followed by psychological and financial constraints, while administrative challenges were relatively minimal. The integration of quantitative and qualitative findings reveals that barriers extend beyond institutional systems and include environmental conditions, digital inequality, financial burdens, and psychosocial pressures among students and teachers. These results highlight the need for a holistic approach to strengthen infrastructure, expand digital support, and provide psychosocial assistance for sustainable academic continuity during disruptions.

Table 4a. Data-Supported Best Practices and Corresponding Evidence from Respondents

Best Practice	Evidence from Respondents	Challenge Addressed
Flexible learning modalities	Use of asynchronous learning and alternative platforms	Connectivity issues
Multi-platform communication	Messenger and Google Meet are used after LENS removal	Platform limitations
Administrative consultation	Faculty consultations during disruptions	Policy confusion
Instructional module preparation	Materials prepared in advance	Internet instability
Centralized LMS platform	Respondents emphasized restoring LENS	Technological coordination
Institutional strengthening	Recommendation to review and update LCP annually	Policy sustainability

Table 4a reveals several data-supported best practices implemented by the College of Teacher Education (CTE) in Lal-lo, Aparri, and Gonzaga campuses to sustain learning continuity during climate-related disruptions. One of the most prominent practices is the adoption of flexible learning modalities, including synchronous, asynchronous, and modular approaches, which allow instruction to continue despite unstable internet connectivity or sudden class suspensions. Respondents noted that asynchronous learning is an effective alternative when live sessions are not feasible. Faculty also utilize multiple communication platforms such as Messenger, SMS, and Google Meet to maintain communication when the LMS is unavailable. Additionally, advance preparation of learning materials and regular consultation with administration strengthen adaptive instructional responses during disruptions.

However, some respondents stressed the need to strengthen institutional digital systems and restore a centralized learning management platform, as reflected in statements such as

"Kailangan na kailangan na talaga maibalik ang LENS lalo na dito sa atin sa College kung saan we are training future educators" and "Napakaganda ng LENS, mas maganda kaysa sa Messenger dahil makikita mo ang progress ng mga bata."

This implies that while effective practices are already being implemented to sustain learning continuity, further institutional strengthening and harmonization of the Learning Continuity Plan framework may enhance the resilience, responsiveness, and sustainability of academic delivery during climate-related disruptions.

DOI: 10.5281/zenodo.19842587

Differences in the Implementation of the Learning Continuity Plan during

Climate-Related Class Disruptions by Campus

Table 5. Comparison statistics in the implementation of the LCP during climate-related class disruptions when grouped by campus

Campus	Mean	SD	F-value	p-value	Inference
Status of implementation of CSU BOR-approved LCP of CTE					
Aparri	3.71	0.59	2.161	0.123	Not significant
Gonzaga	4.06	0.26			
Lallo	3.96	0.55			
Extent of implementation of LCP during climate-related disruptions					
Aparri	3.38	0.36	0.758	0.472	Not significant
Gonzaga	3.54	0.24			
Lallo	3.41	0.40			
Challenges encountered in the implementation of LCP					
Aparri	2.79	0.59	0.221	0.802	Not significant
Gonzaga	2.67	0.50			
Lallo	2.78	0.60			

*tested at 0.05 level of significance

Table 5 presents the comparison of the Learning Continuity Plan (LCP) implementation when respondents are grouped according to campus. For the status of implementation, Gonzaga obtained the highest mean (4.06), followed by Lal-lo (3.96) and Aparri (3.71), yet the F-value (2.161, p = 0.123) indicates no significant difference, suggesting comparable institutional implementation across campuses. This reflects a harmonized execution of LCP components such as flexible learning modalities, ICT support, faculty development, and monitoring systems. Qualitative data support this, highlighting both the presence of established continuity practices and the need for clearer guidelines and stronger institutional systems like LENS.

In terms of extent of implementation during disruptions, results also show no significant differences (F = 0.758, p = 0.472), indicating similar responsiveness across campuses in handling climate-related disruptions. Lastly, challenges encountered were likewise not significantly different (F = 0.221, p = 0.802), suggesting shared contextual issues such as connectivity, financial constraints, and environmental vulnerabilities. Overall, findings confirm a university-wide harmonized LCP implementation.

Relationship among the Parameters of Implementation of the

Learning Continuity Plan during Climate-Related Class Disruptions

Table 6. Correlation statistics among the parameters of implementation of the learning continuity plan during climate-related class disruptions

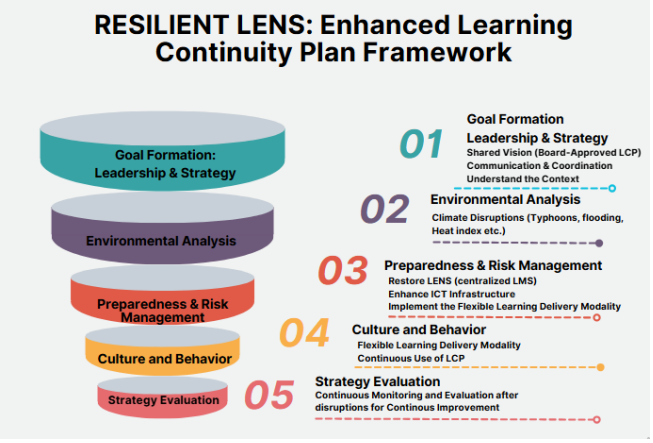
Variables	r-value	p-value	Inference
Status of implementation of BOR-approved LCP vs Extent of implementation of LCP during climate-related disruptions	0.575	0.000	Significant
Status of implementation of BOR-approved LCP vs Challenges encountered in the implementation of LCP	-0.076	0.520	Not significant
Extent of implementation of LCP during climate-related disruptions vs Challenges encountered in the implementation of LCP	0.087	0.463	Not significant

*tested at 0.05 level of significance

Table 6 presents the correlation analysis among the status of implementation of the Learning Continuity Plan (LCP), its extent of implementation during climate-related disruptions, and the challenges encountered. Results show a moderate positive and significant relationship between LCP status and extent of implementation (r = 0.575, p = 0.000), indicating that stronger institutional frameworks lead to more effective operational execution during disruptions. This suggests that well-established systems such as flexible learning modalities, ICT support, faculty training, and monitoring enhance implementation effectiveness. In contrast, no significant relationships were found between LCP status and challenges (r = -0.076, p = 0.520) and between extent of implementation and challenges (r = 0.087, p = 0.463), implying that challenges are largely influenced by external factors beyond institutional control.

RESILIENT LENS | ENHANCED LEARNING CONTINUITY PLAN FRAMEWORK

DOI: 10.5281/zenodo.19842587



Rationale

The study revealed that while the Board-approved Learning Continuity Plan (LCP) of the College of Teacher Education is generally established, its implementation during climate-related disruptions remains only moderate. Key challenges identified include unstable internet connectivity, absence of a centralized learning management system due to the loss of LENS, limited ICT infrastructure, and insufficient preparedness among faculty and students. These gaps affect the effectiveness, accessibility, and consistency of learning delivery during disruptions such as typhoons, flooding, and extreme heat.

In response, this intervention program, RESILIENT LENS | is proposed to enhance the learning continuity plan framwork. Anchored on the integrated model combining crisis management and organizational resilience principles, the framework focuses on restoring centralized systems, strengthening digital infrastructure, and improving preparedness and support mechanisms. This initiative aims to ensure a more resilient, flexible, and sustainable implementation of the Learning Continuity Plan.

Objectives

The main objective of this framework was to enhance the effectiveness and resilience of the Learning Continuity Plan in addressing climate-related class disruptions.

To restore and institutionalize the Learning Environment Network System (LENS) as a centralized learning management system (LMS).

To strengthen internet connectivity and ICT infrastructure across the three campuses.

To enhance faculty preparedness through professional development on preparedness for crisis-responsive teaching.

To promote flexible and adaptive teaching-learning practices supported by a systematic monitoring and evaluation mechanism for LCP implementation.

Participants/Person Involved/Responsible

The implementation of the program will involve key stakeholders, including the University Administration, which provides policy support and institutional direction, and the Campus Administrators from Lallo, Aparri, and Gonzaga, who oversee program implementation and supervision. The ICT Office or IT personnel will handle technical support, system development, and maintenance, while faculty members will implement flexible learning strategies and actively participate in training. Students, as the primary beneficiaries, will also serve as active participants in the program.

Conclusion

This study assessed the status and extent of the Learning Continuity Plan (LCP) in addressing climate-related class disruptions in the College of Teacher Education (CTE) of Cagayan State University across Lal-lo, Aparri, and Gonzaga campuses as a basis for enhancing the LCP framework. Findings revealed that the Board-approved LCP is generally established, particularly in flexible learning delivery. Its implementation during typhoons, flooding, extreme heat, power interruptions, and internet instability was moderately implemented, indicating functional but varying effectiveness. Persistent challenges include technological limitations, unstable connectivity, financial constraints, and socioeconomic difficulties. Despite these, best practices such as flexible modalities, multiple communication platforms, and proactive material preparation were evident. No significant differences were found among campuses, and correlation results confirmed that stronger LCP structures enhance implementation effectiveness, supporting framework enhancement.

Recommendations

Strengthening infrastructure, restoring and maintaining a centralized LMS, enhancing faculty training, and providing student support programs are recommended to improve the implementation and resilience of the Learning Continuity Plan in the College of Teacher Education.

Declaration of no Conflict of Interest

The author hereby declares no conflict of interest and this article is her original work.

REFERENCES

1. **Adedoyin, O. B., & Soykan, E. (2020).** COVID-19 pandemic and online learning: the challenges and opportunities. Interactive Learning Environments. https://doi.org/10.1080/10494820.2020.1813180
2. **Aguilera-Hermida, A. P. (2020).** College students' use and acceptance of emergency online learning due to COVID-19. Computers in Human Behavior, 119, 106713. https://doi.org/10.1016/j.chb.2020.106713
3. **Ayson, M. Clave, J. M., & Versola, J. R. (2025).** Adapting to the evolving new normal: View from a case of Philippine in-service teachers post-pandemic. Journal of Interdisciplinary perspectives, 3(12), 73–81. https://ejournals.ph/article.php?id=31240
4. **Boin, A., Hart, P., Stern, E., & Sundelius, B. (2017).** The politics of crisis management: Public leadership under pressure (2nd ed.). Cambridge University Press.
5. **Bozkurt, A., & Sharma, R. C. (2020).** Emergency remote teaching in a time of global crisis. Asian Journal of Distance Education, 15(1), 1–6.
6. **Burnett, J. J. (1998**). A strategic approach to managing crises. Public Relations Review, 24(4), 475–488.
7. **Chatpakkarattana, T., & Khlaisang, J. (2012)**. The learner support system for distance education. Creative

DOI: 10.5281/zenodo.19842587

Education, 3(8). https://doi.org/10.4236/ce.2012.38B011

8. **Commission on Higher Education. (2020). CMO No. 4, s. 2020**: Guidelines on the implementation of flexible learning. https://ched.gov.ph
9. **Commission on Higher Education. (2021). CMO No. 31, s. 2021.** https://ched.gov.ph
10. **Commission on Higher Education. (2021). CMO No. 32, s. 2021:** Learning continuity plan checklist. https://ched.gov.ph
11. **Department of Education. (2020).** Basic Education Learning Continuity Plan (BE-LCP). https://www.deped.gov.ph
12. **Dhawan, S. (2020).** Online learning: A panacea in the time of crisis. Journal of Educational Technology Systems, 49(1), 5–22. https://doi.org/10.1177/0047239520934018
13. **Doctora, G. R., & Bantulo, J. S. (2022).** Learning continuity plan implementation: Basis for intervention. European Journal of Education Studies. https://oapub.org
14. **García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021).** Transformation of higher education after COVID disruption. Frontiers in Education, 6. https://doi.org/10.3389/feduc.2021.616059
15. **Giray, L. P. (2021).** Flexible learning and faculty readiness in higher education. Educational Technology Research and Development, 69, 353–356. https://doi.org/10.1007/s11423-020-09838-0
16. **Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020).** The difference between emergency remote teaching and online learning. EDUCAUSE Review.
17. **Intergovernmental Panel on Climate Change (IPCC). (2013**). Climate change 2013: The physical science basis. Contribution of Working Group I to the Fifth Assessment Report of the IPCC. Cambridge University Press. https://doi.org/10.1017/CBO9781107415324
18. **Iglesias-Pradas, & Prieto, J. (2021).** Emergency remote teaching and academic performance. Computers & Education, 174, 104321. https://doi.org/10.1016/j.compedu.2021.104321
19. **Kuntz, J., Näswall, K., & Malinen, S. (2017)**. Resilient organizations. Journal of Contingencies and Crisis Management, 25(2). https://doi.org/10.1111/1468- 5973.12141
20. **Moore, M. G., & Kearsley, G. (2012)**. Distance education: A systems view of online learning (3rd ed.).
21. **Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA). (2024).** Tropical cyclone climatology and extreme weather events in the Philippines. https://www.pagasa.dost.gov.ph
22. **Peng, R., et al. (2024)**. Factors influencing online learning. Education and Information Technologies, 29(2), 1451–1472. https://doi.org/10.1007/s10639-023-11830-6
23. **Philipsen,J., Pareja Roblin, N., Vanslambrouck, S., & Zhu, C. (2019).** Teacher professional development for online learning. Educational Technology Research and Development, 67, 1145–1174. https://doi.org/10.1007/s11423- 019-09645-8
24. **Pokhrel, S., & Chhetri, R. (2021).** Impact of COVID-19 on teaching and learning. Higher Education for the Future, 8(1), 133–141. https://doi.org/10.1177/2347631120983481
25. **Republic Act No. 10121. (2010)**. Philippine Disaster Risk Reduction and Management Act. https://www.officialgazette.gov.ph
26. **Subedi, S., Nayaju, S., Subedi, S., Shah, S. K., & Shah, J. M. (2020**). Impact of e-learning during COVID-19. International Journal of Educational Research Open, 1, 100012. https://doi.org/10.1016/j.ijedro.2020.100012
27. **Trust, T., & Whalen, J. (2020).** Teacher training for emergency remote teaching. Journal of Technology and Teacher Education, 28(2), 189–199.
28. **UNESCO. (2022).** From learning recovery to transformation.
29. **World Bank. (2022).** The state of the global education crisis.

DOI: 10.5281/zenodo.19842587