Systemic Resiliency Model for Learning Continuity Plan

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Abstract

The increasing vulnerability of educational systems to disruptions such as natural disasters, pandemics, and infrastructure limitations has underscored the critical need for resilient mechanisms that ensure sustained learning. This study aimed to develop a systemic resiliency model to serve as a foundation for strengthening division-level Learning Continuity Plans (LCPs). Based on Resilience Theory, Organizational Learning Theory, and Systems Theory, the study employed a mixed-methods approach that involved surveys of secondary school teachers and school heads, complemented by qualitative interviews. It investigated the relationship between professional profiles such as educational attainment, years of experience, and training, and the level of systemic resiliency and LCP implementation. Findings revealed that respondents with more extensive training and longer years of service demonstrated higher levels of resiliency and more effective implementation of LCPs. The model that emerged from the study focuses on four interrelated dimensions of resiliency: cultivating meaningful connections with stakeholders, addressing systemic and contextual challenges, promoting strong institutional character through ethical leadership, and enhancing competence through continuous professional development. Quantitative data showed that connections were the most established, while challenges and monitoring mechanisms were the least developed. Qualitative results emphasized the importance of community partnerships, leadership adaptability, and innovative localized strategies in sustaining education delivery. The integration of data informed the development of a practical and adaptable resiliency model tailored to diverse school contexts. The study recommends institutionalizing this model through targeted capacity-building, participatory planning, and robust monitoring and evaluation systems to ensure continuity, equity, and quality in education, particularly during times of crisis and transition.

Keywords: Systemic Resiliency; Learning Continuity Plan; Mixed-Methods Research; Crisis-Responsive Education; Stakeholder Engagement

1.0 Introduction

The ongoing challenges faced by educational systems globally, exacerbated by crises such as the COVID-19 pandemic and natural disasters, have underscored the need for resilience within school systems. In the Philippines, particularly in regions like Eastern Visayas, schools regularly encounter disruptions from a range of natural hazards, including typhoons, earthquakes, extreme heat, and other environmental threats. These challenges are compounded by inadequate infrastructure, limited resources, and the added complexities of the country's archipelagic geography (Bai, 2023; D'Ayala et al., 2020). Such disruptions have led to significant setbacks in educational delivery, with frequent school closures and prolonged interruptions in learning, all of which highlight the critical need for systems that can ensure continuity of education during crises.

In response to these challenges, the Department of Education (DepEd) introduced the Division Learning Continuity Plan (DLCP) as a framework to sustain educational activities during emergencies. The DLCP provides guidelines for various learning delivery modes, risk reduction strategies, and mechanisms for maintaining stakeholder engagement. However, despite its centrality to ensuring continuity, the implementation of the DLCP has revealed several gaps, particularly in schools located in geographically isolated and disadvantaged areas (GIDAs). These schools face unique challenges such as inadequate access to technology, inconsistent internet connectivity, and insufficient infrastructure, which impede the successful implementation of the plan (Moldavan et al., 2021; Raghunathan et al., 2022).

In light of these limitations, the need for a more systemic and integrated approach to building institutional resilience becomes evident. While existing studies have predominantly focused on isolated elements of resilience, such as infrastructure (Hassan et al., 2020), teacher preparedness (Pekas et al., 2022), and technology access, few have investigated the interrelationship between critical factors such as leadership resilience, accountability, pedagogical support, and effective stakeholder

collaboration. Furthermore, limited research has explored how these factors can be synthesized into a comprehensive framework that addresses the specific needs of schools in disaster-prone regions.

This study seeks to fill this gap by developing a Systemic Resiliency Model that considers the roles of four key dimensions: connections, challenges, character, and competence. These dimensions are examined through the lens of school leaders' and teachers' profiles, alongside their practices in risk assessment, learner support, resource management, personnel mobilization, and monitoring systems. The study posits that the capacity of schools to maintain educational continuity is not only shaped by infrastructure and technology but also by the interpersonal dynamics, leadership qualities, and institutional frameworks that support these schools during crises. By systematically investigating these factors, this research aims to provide a clear, evidence-based pathway for building resilient schools capable of responding effectively to both natural and health-related disruptions.

Moreover, the study highlights the importance of context-specific interventions that address the diverse needs of schools within the Catbalogan City Division. The findings will inform the development of targeted capacity-building programs for both teachers and school heads, focusing on enhancing skills in crisis leadership, digital literacy, and alternative delivery modes. Through this localized approach, the study will offer practical recommendations for policy development that strengthen the institutional resilience of schools, with a focus on sustainable resource allocation and stakeholder coordination.

At its core, this study aims to integrate theoretical frameworks on resilience with practical strategies for implementing the DLCP. It aims to establish a comprehensive model that can be adapted and scaled within the Schools Division of Catbalogan City, ensuring that schools are better equipped to deliver quality education during crises, maintain learner engagement, and sustain the overall quality of education. By focusing on both systemic factors (such as resource management and logistical support) and human factors (such as leadership and community engagement), the study intends to create a holistic approach to educational resilience that goes beyond simple crisis management to long-term sustainability.

The study's outcomes are expected to benefit school administrators, policymakers, and educational stakeholders by providing a clear framework for addressing the multifaceted challenges of crisis-driven educational disruptions. Resilient schools are crucial for ensuring that education remains accessible and equitable, even in the face of ongoing natural and societal crises (Miranda et al., 2021). This research contributes not only to the academic understanding of school resilience but also to the development of actionable strategies that enhance the responsiveness and adaptability of the education system during future emergencies.

2.0 Methodology

2.1 Research Design

The study utilized a convergent parallel mixed-methods design (Creswell & Plano-Clark, 2018) to develop a Systemic Resiliency Model as the basis for enhancing the Division Learning Continuity Plan (DLCP) in the Schools Division of Catbalogan City. Quantitative and qualitative data were collected concurrently, analyzed separately, and merged during interpretation to provide both statistical breadth and contextual depth.

The quantitative strand employed a descriptive-correlational design to (1) profile teachers and school heads; (2) measure perceived resiliency across four dimensions—connections, challenges, character, and competence; and (3) assess DLCP implementation in terms of risk assessment, learner support, resource management, personnel mobilization, and monitoring and evaluation. Correlational analysis examined associations between respondents' profiles and resiliency/practice levels, as well as the relationship between overall resiliency and implementation practices.

The qualitative strand used a descriptive-exploratory approach, gathering in-depth insights from purposively selected school heads experienced in crisis leadership. Data were collected through semi-structured interviews and focus group discussions, transcribed verbatim, and thematically analyzed to capture challenges and opportunities in implementing resiliency measures. Conducting both strands concurrently enabled triangulation, improving validity and reliability. The integration of findings informed the creation of a contextually responsive, empirically grounded Systemic Resiliency Model to guide adaptive and sustainable educational continuity strategies in disaster-prone and resource-limited settings such as Catbalogan City.

2.2 Sample and Sampling Procedure

The respondents of the study consisted of public-school teachers and school heads from both elementary and secondary schools within the jurisdiction of the Schools Division of Catbalogan City for School Year 2024–2025. They were chosen as primary participants because of their direct involvement in the implementation of the Division Learning Continuity Plan (DLCP) and their vital roles in institutional decision-making, instructional delivery, and strengthening school resiliency. To ensure fair and representative participation, a stratified random sampling technique was applied, dividing the population into two strata, elementary and secondary schools. This approach allowed proportional representation from both educational levels and accounted for variations in school size, location, and operational contexts. Within each stratum, simple random sampling was employed to select the teacher and school head respondents, thereby minimizing selection bias and ensuring equal chances of participation for all eligible individuals.

For the quantitative component, the study engaged fifty-eight school heads and three hundred forty-three teachers. These respondents provided demographic and professional information, including age, sex, educational attainment, position, years of service, number of trainings attended, and school location. They also shared their perceived levels of practice in the five

key DLCP implementation areas: risk assessment, learner support, resource management, personnel mobilization, and monitoring and evaluation. For the qualitative component, ten school heads and ten teachers were purposively selected to participate in in-depth interviews. These sessions yielded detailed insights into the practical realities, challenges, and leadership perspectives that influence school resiliency.

The inclusion criteria specified that respondents must be public school teachers or school heads assigned to either elementary or secondary schools in the division, have served at least one academic year in their current post, be actively engaged in DLCP planning, execution, or monitoring, and have voluntarily provided informed consent. Exclusion criteria ruled out newly hired personnel without a full year of service, educators from private schools, non-teaching staff not involved in DLCP implementation, respondents unavailable during the data collection period, and individuals who declined to participate. These carefully defined parameters ensured that all participants possessed sufficient exposure to DLCP processes and were capable of offering informed perspectives necessary for developing a comprehensive and context-based Systemic Resiliency Model.

2.3 Analysis of Data

The study employed a range of statistical tools tailored to the level of measurement of each variable and aligned with the research objectives. Descriptive statistics included frequency count, used to show the distribution of teacher and school head respondents across profile variables such as age, sex, educational attainment, position, years of service, school level, number of trainings attended, and school location; percentage, to express proportions and determine the magnitude of specific characteristics; mean, to compute average values for continuous variables like age, years of service, and number of trainings; and standard deviation, to measure the variability of responses from the mean. A weighted mean was used to assess respondents' perceptions of school resiliency across key components, including accountability, transparency, and pedagogical support.

For inferential statistics, Pearson's Product-Moment Correlation Coefficient (Pearson's r) measured the strength and direction of relationships between resiliency levels and continuous profile variables such as age, years of service, and number of trainings attended. Point-Biserial correlation examined the relationship between the dichotomous variable of sex and perceived resiliency levels, while Eta correlation assessed associations between resiliency levels and nominal variables such as highest educational attainment, teaching position, school level, and school location. Guidelines for effect size interpretation and p-value significance testing were based on Schober, Boer, and Schwarte (2018), with the level of significance set at $\alpha = 0.05$. A p-value greater than 0.05 indicated no statistically significant relationship, while a value equal to or less than 0.05 indicated a statistically significant association.

Additionally, independent samples t-test and Analysis of Variance (ANOVA) were utilized to compare means across groups, depending on the number of categories in the independent variables. All computations were performed using computer-based statistical software to ensure accuracy, efficiency, and reliability of results.

3.0 Results and Discussion

3.1 Profile of the Teacher-Respondents

Table 1

Demographic and Professional Profile of the Teacher-Respondents

Profile		No. of Teachers	Percent
Age	54 - 60	16	4.7
	47 - 53	55	16.0
	40 - 46	82	23.9
	33 - 39	85	24.8
	25 - 32	105	30.6
	Total	343	100.0
	mean	38.5	-
	SD	8.4	-
Sex	Female	254	74.1
	Male	89	25.9
	Total	**343**	**100.0**
Highest Educational Attainment	Doctoral Degree	11	3.2
	with Doctoral Unit	20	5.8
	Master's Degree	97	28.3
	with Masteral Units	188	54.8
	College Graduate	25	7.3
	Others	2	.6
	Total	**343**	**100.0**
Teaching Position	Master Teacher II	10	2.9

	Master Teacher I	35	10.2
	Teacher III	114	33.2
	Teacher II	125	36.4
	Teacher 1	59	17.2
	Total	**343**	**100.0**
Years of Experience	28 - 35	10	2.9
	20 - 27	13	3.8
	12 - 19	48	14.0
	4 - 11	222	64.7
	< 3	50	14.6
	Total	**343**	**100.0**
	Mean	**8.5**	**-**
	SD	**6.2**	**-**
No. Of Trainings Attended	>11	11	3.2
	9 - 11	13	3.8
	5 - 8	74	21.6
	1 - 4	233	67.9
	No Training	12	3.5
	Total	**343**	**100.0**
	Mean	**4**	**-**
	SD	**5**	**-**
Geographic Location	Carline	239	69.7
	Coastal	66	19.2
	Upland but not Isolated	22	6.4
	Geographically Isolated and Disadvantaged Area	16	4.7
	Total	**343**	**100.0**

3.2 Profile of the School Head-Respondents

Table 2

Demographic and Professional Profile of the School Head-Respondents

Profile		**No. of School Heads**	**Percent**
Age	57 - 62	3	1.7
	51 - 56	11	1.7
	45 - 50	25	1.7
	39 - 44	7	1.7
	32 - 38	12	1.7
	Total	**58**	**5.2**
	Mean	**45.9**	**10.3**
	SD	**6.6**	**6.9**
Sex	Female	31	53.4
	Male	27	46.6
	Total	**58**	**100.0**
Highest Educational Attainment	Doctoral Degree	2	3.4
	with Doctoral Unit	11	19.0
	Masteral Degree	22	37.9
	with Master's Units	23	39.7
	Total	**58**	**100.0**
Years of experience as SH	16 - 19	1.0	1.7
	12 - 15	13	3.4
	8 - 11	19	3.4
	4 - 7	19	13.8
	≤ 3	6	1.7

	Total	**58.0**	**1.7**
	Mean	**8.1**	**8.6**
	SD	**4.1**	**17.2**
School Level	Both Junior High and Senior High School	8	13.8
	Integrated	1	1.7
	Elementary	49	84.5
	Total	**58**	**100.0**
No. of Training Attended	9 - 10	4.0	6.9
	7 - 8	6.0	3.4
	5 - 6	19	6.9
	3 - 4	12	5.2
	≤ 2	17	27.6
	Total	**58.0**	**10.3**
	Mean	**4**	**-**
	SD	**2**	**-**
Geographic Location	GIDA	8	13.8
	Upland but not Isolated	13	22.4
	Carline	24	41.4
	Coastal	13	22.4
	Total	**58**	**100.0**

3.3 Relationship Between the Teachers' Profile and Their Level of Systemic Resiliency and Level of Practice of the Learning Continuity Plan

Table 3

Relationship Between Teachers' Profiles and Their Level of Systemic Resiliency along Connections

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.028	.607	ns
Sex[2]	.116	.100	ns
Highest Educational Attainment[1]	-.400	.000	s
Teaching Position[2]	.302	.000	s
Years of Experience[1]	.158	.003	s
No. of Training[1]	.206	.000	s
Geographic Location[2]	.225	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.4 Relationship Between Teachers' Profile and Level of Systemic Resiliency in Terms of Challenges

Table 4

Relationship Between Teachers' Profiles and Their Level of Systemic Resiliency along Challenges

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	-.013	.815	ns
Sex[2]	.106	.148	ns
Highest Educational Attainment[1]	-.373	.000	s
Teaching Position[2]	0.335	.000	s
Years of Experience[1]	.093	.086	ns
No. of Training[1]	.169	.002	s
Geographic Location[2]	0.288	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.5 Relationship Between Teachers' Profile and Level of Systemic Resiliency in Terms of Character

Table 5

Relationship Between Teachers' Profiles and Their Level of Systemic Resiliency Along Character

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.025	.641	ns
Sex[2]	.133	.014	s
Highest Educational Attainment[1]	-.424**	.000	s
Teaching Position[2]	0.324	.000	s
Years of Experience[1]	.156**	.004	s
No. of Training[1]	.188**	.000	s
Geographic Location[2]	0.306	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.6 Relationship Between Teachers' Profile and Level of Systemic Resiliency in Terms of Competence

Table 6

Relationship Between Teachers' Profiles and Their Level of Systemic Resiliency Along Competence

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.014	.792	ns
Sex[2]	.136	.012	s
Highest Educational Attainment[1]	-.426**	.000	s
Teaching Position[2]	0.309	.000	s
Years of Experience[1]	.136*	.012	s
No. of Training[1]	.189**	.000	s
Geographic Location[2]	0.279	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.7 Relationship Between Teachers' Profile and Level of Practice of the Learning Continuity Plan in Terms of Risk Assessment and Management

Table 7

Relationship Between Teachers' Profile and Their Level of Practice of Learning Continuity Plan in Risk Assessment and Management

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.021	.697	ns
Sex[2]	.077	.359	ns
Highest Educational Attainment[1]	-.322**	.000	s
Teaching Position[2]	0.273	.001	s
Years of Experience[1]	.083	.125	ns
No. of Training[1]	.142**	.008	s
Geographic Location[2]	0.506	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.8 Relationship Between Teachers' Profile and Level of Practice of the Learning Continuity Plan in Terms of Learner Support and Access

Table 8

Relationship Between Teachers' Profile and Their Level of Practice of Learning Continuity Plan in Learner's Support and Access

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.044	.414	ns
Sex[2]	.138	.038	s
Highest Educational Attainment[1]	-.393**	.000	s
Teaching Position[2]	0.328	.000	s
Years of Experience[1]	.154**	.004	s

No. of Training[1]	.177**	.001	s
Geographic Location[2]	0.39	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.9 Relationship Between Teachers' Profile and Level of Practice of the Learning Continuity Plan in Terms of Resource Management

Table 9

Relationship Between Teachers' Profile and Their Level of Practice of Learning Continuity Plan in Resource Management

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.018	.745	ns
Sex[2]	.067	.672	ns
Highest Educational Attainment[1]	-.325**	.000	s
Teaching Position[2]	0.315	.001	s
Years of Experience[1]	.127*	.018	s
No. of Training[1]	.182**	.001	s
Geographic Location[2]	0.371	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.10 Relationship Between Teachers' Profile and Level of Practice of the Learning Continuity Plan in Terms of Personnel Mobilization

Table 10

Relationship Between Teachers' Profile and Their Level of Practice of Learning Continuity Plan in Personnel Mobilization

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	-.022	.688	ns
Sex[2]	.113	.221	ns
Highest Educational Attainment[1]	-.375**	.000	s
Teaching Position[2]	0.275	.001	s
Years of Experience[1]	.133*	.014	s
No. of Training[1]	.200**	.000	s
Geographic Location[2]	0.391	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.11 Relationship Between Teachers' Profile and Level of Practice of the Learning Continuity Plan in Terms of Monitoring and Evaluation

Table 11

Relationship Between Teachers' Profile and Their Level of Practice of Learning Continuity Plan in Monitoring and Evaluation

Teacher's Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.011	.833	ns
Sex[2]	.084	.300	ns
Highest Educational Attainment[1]	-.385**	.000	s
Teaching Position[2]	0.268	.011	s
Years of Experience[1]	.096	.075	ns
No. of Training[1]	.205**	.000	s
Geographic Location[2]	0.456	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.12 Relationship Between the School Heads' Profile and Their Level of Systemic Resiliency and Level of Practice of the Learning Continuity Plan

Table 12

Relationship Between the School Heads' Profile and Their Level of Systemic Resiliency Along Connections

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	-.039	.772	ns
Sex[2]	-.120	.371	ns
Highest Educational Attainment[1]	.158	.236	ns
Years of Experience[1]	.253	.053	s
School Level[2]	.166	.527	ns
No. of Training[1]	.221	.095	ns
Geographic Location[2]	.312	.080	ns

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.13 Relationship Between School Heads' Profile and Level of Systemic Resiliency in Terms of Challenges
Table 13
Relationship Between the School Heads' Profile and Their Level of Systemic Resiliency Along Challenges

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	-.042	.752	ns
Sex[2]	-.078	.563	ns
Highest Educational Attainment[1]	.083	.536	ns
Years of Experience[1]	.132	.324	ns
School Level[2]	.340	.035	s
No. of Training[1]	.166	.213	ns
Geographic Location[2]	.361	.054	s

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.14 Relationship Between School Heads' Profile and Level of Systemic Resiliency in Terms of Character
Table 14
Relationship Between the School Heads' Profile and Their Level of Systemic Resiliency Along Character

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.034	.799	ns
Sex[2]	-.078	.563	ns
Highest Educational Attainment[1]	.083	.536	ns
Years of Experience[1]	.152	.255	ns
School Level[2]	.340	.035	s
No. of Training[1]	.192	.148	ns
Geographic Location[2]	.251	.301	ns

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.15 Relationship Between School Heads' Profile and Level of Systemic Resiliency in Terms of Competence
Table 15
Relationship Between the School Heads' Profile and Their Level of Systemic Resiliency Along Competence

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.034	.799	ns
Sex[2]	-.078	.563	ns
Highest Educational Attainment[1]	.083	.536	ns
Years of Experience[1]	.152	.255	ns
School Level[2]	.340	.035	s
No. of Training[1]	.192	.148	ns
Geographic Location[2]	.251	.301	ns

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.16 Relationship Between School Heads' Profile and Level of Practice of the Learning Continuity Plan in Terms of Risk Assessment and Management

Table 16

Relationship Between the School Heads' Profile and Their Level of Practice of Learning Continuity Plan in Terms of Risk Assessment and Management

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.120	.370	ns
Sex[2]	-.120	.371	ns
Highest Educational Attainment[1]	.035	.796	ns
Years of Experience[1]	.274*	.037	s
School Level[2]	0.509	.005	s
No. of Training[1]	.228	.085	ns
Geographic Location[2]	.347	.030	s

Legend: Correlation is significant at the 0.01 level (2-tailed)

1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.17 Relationship Between School Heads' Profile and Level of Practice of the Learning Continuity Plan in Terms of Learner Support and Access

Table 17

Relationship Between the School Heads' Profile and Their Level of Practice of Learning Continuity Plan in Terms of Learner Support and Access

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	-.105	.431	ns
Sex[2]	-.032	.813	ns
Highest Educational Attainment[1]	.117	.383	ns
Years of Experience[1]	.061	.648	ns
School Level[2]	.227	.200	ns
No. of Training[1]	.144	.280	ns
Geographic Location[2]	.299	.111	ns

Legend: Correlation is significant at the 0.01 level (2-tailed)

1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.18 Relationship Between School Heads' Profile and Level of Practice of the Learning Continuity Plan in Terms of Resource Management

Table 18

Relationship Between the School Heads' Profile and Their Level of Practice of Learning Continuity Plan in Terms of Learner Resource Management

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	-.038	.774	ns
Sex[2]	-.078	.559	ns
Highest Educational Attainment[1]	.012	.930	ns
Years of Experience[1]	.154	.248	ns
School Level[2]	.267	.388	ns
No. of Training[1]	.133	.318	ns
Geographic Location[2]	.392	.179	ns

Legend: Correlation is significant at the 0.01 level (2-tailed)

1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.19 Relationship Between School Heads' Profile and Level of Practice of the Learning Continuity Plan in Terms of Personnel Mobilization

Table 19

Relationship Between the School Heads' Profile and Their Level of Practice of Learning Continuity Plan in Terms of Personnel Mobilization

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	.070	.600	ns
Sex[2]	-.073	.585	ns
Highest Educational Attainment[1]	.037	.781	ns
Years of Experience[1]	.154	.247	ns
School Level[2]	.189	.388	ns
No. of Training[1]	.165	.215	ns
Geographic Location[2]	.220	.465	ns

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.20 Relationship Between School Heads' Profile and Level of Practice of the Learning Continuity Plan in Terms of Monitoring and Evaluation

Table 20

Relationship Between the School Heads' Profile and Their Level of Practice of Learning Continuity Plan in Terms of Monitoring and Evaluation

SH Profile	Correlation Coefficient	p-value	Evaluation
Age[1]	-.045	.736	ns
Sex[2]	-.059	.662	ns
Highest Educational Attainment[1]	.043	.751	ns
Years of Experience[1]	.071	.595	ns
School Level[2]	.322	.017	s
No. of Training[1]	.125	.351	ns
Geographic Location[2]	.296	.117	ns

Legend: Correlation is significant at the 0.01 level (2-tailed)
1 – spearman rho; 2 – Cramer's V; s – significant; ns – not significant

3.21 Relationship Between Teachers' Level of Systemic Resiliency and Their Level of Learning Continuity Plan (LCP) Practice

Table 21

Relationship Between Teachers' Level of Practices on Learning Continuity Plans and Their Level of Systemic Resiliency

Learning Continuity Practices	Systemic Resiliency											
	Connections			Challenges			Character			Competence		
	r_s-value	p-value	Evaluation	r_s-value	p-value	Evaluation	r_s-value	p-value	Evaluation	r_s-value	p-value	Evaluation
RA&Mgt	.704	.000	s	.744	.000	s	.812	.000	s	.812	.000	s
LS	.828	.000	s	.954	.000	s	.870	.000	s	.870	.000	s
RM	.709	.000	s	.832	.000	s	.917	.000	s	.917	.000	s
PM	.762	.000	s	.908	.000	s	.908	.000	s	.908	.000	s
M&E	.762	.000	s	.885	.000	s	.885	.000	s	.885	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed); s-significant
RA & Mgt – Risk Assessment & Management
LS – Learner's Support
RM – Resource Management
PM – Personnel Mobilization
M&E – Monitoring & Evaluation

3.22 Relationship Between School Heads' Level of Systemic Resiliency and Their Level of Learning Continuity Plan (LCP) Practice

Table 22

Relationship Between School Heads' Level of Practices on Learning Continuity Plans and Their Level of Systemic Resiliency

	Systemic Resiliency

Learning Continuity Practices	Connections			Challenges			Character			Competence		
	r_s-value	p-value	Evaluation	r_s-value	p-value	Evaluation	r_s-value	p-value	Evaluation	r_s-value	p-value	Evaluation
RA&Mgt	.615	.000	s	.597	.000	s	.642	.000	s	.594	.000	s
LS	.757	.000	s	.774	.000	s	.822	.000	s	.802	.000	s
RM	.678	.000	s	.707	.000	s	.706	.000	s	.677	.000	s
PM	.704	.000	s	.724	.000	s	.742	.000	s	.725	.000	s
M&E	.710	.000	s	.717	.000	s	.770	.000	s	.731	.000	s

Legend: Correlation is significant at the 0.01 level (2-tailed); s-significant
RA&Mgt – Risk Assessment & Management
LS – Learner's Support
RM – Resource Management
PM – Personnel Mobilization
M&E – Monitoring & Evaluation

3.23 Challenges and Opportunities in the Learning Continuity Plan Practices of the Schools Leading to a Systemic Resiliency Model

From the school heads' perspective, systemic barriers included recurring environmental and infrastructure-induced disruptions, equity gaps in learner access, limited monitoring and supervision, geographic vulnerabilities, inadequate psychosocial preparedness, and weak stakeholder collaboration. These issues were often linked to natural disasters, poor connectivity, and structural inequities. In response, school heads implemented localized and inclusive strategies such as learning hubs, radio-based instruction, blended learning, stakeholder engagement, anticipatory planning, and culture-based resilience building. Leadership-driven monitoring, adaptive instructional delivery, and participatory governance were highlighted as crucial enablers of resiliency.

From the teachers' perspective, barriers reflected the immediate realities of classroom and community engagement. These included educational disruptions from crises such as typhoons and pandemics, inequitable access due to poverty and remoteness, limitations in modular and blended learning delivery, insufficient institutional readiness, and educational exclusion for marginalized groups. Despite these, teachers responded with strategies that activated and localized LCPs, provided inclusive and differentiated instruction, established proactive preparedness systems, adopted flexible delivery modalities, and built community-based shared responsibility for educational continuity.

The convergent-parallel integration analysis showed that for school heads, quantitative results (e.g., correlations with experience, school level, and training) were largely convergent with qualitative narratives, confirming the importance of inclusive leadership, proactive planning, and collaborative engagement. For teachers, the analysis found a recurring negative correlation between higher educational attainment and resiliency practices, explained by qualitative evidence showing that practical field experience, local adaptation, and teamwork were stronger drivers of effective crisis response than formal qualifications.

Across the four resiliency components, Connections, Challenges, Character, and Competence, both groups demonstrated that systemic resiliency is strengthened not solely by policy or credentials but by grounded leadership, adaptive practices, and community collaboration. The integration of findings reinforces the need for context-driven capacity building for both teachers and school heads to enhance preparedness, ensure equity, and sustain education during disruptions.

4.0 Conclusion and Recommendation

4.1 Conclusion

1. Quantitative and qualitative findings consistently demonstrated that years of experience and frequency of relevant trainings were significantly associated with stronger systemic resiliency and more effective implementation of the Learning Continuity Plan (LCP). While educational attainment showed some influence, practical experience and contextual exposure, especially among teachers in geographically challenged areas, emerged as stronger enablers of resiliency. These insights affirm the crucial role of sustained, differentiated, and context-responsive professional development in equipping school personnel to navigate disruptions and uphold educational continuity.
2. The "Connections" dimension was consistently identified as the most developed aspect of systemic resiliency. This underscores the centrality of stakeholder relationships and local support networks, such as barangay partnerships, the Teacher Kapit-Bahay program, and community learning hubs. These initiatives proved instrumental in bridging access gaps and sustaining learning, highlighting that resilient education systems are fundamentally rooted in community collaboration, shared accountability, and inclusive engagement.
3. In contrast, the "Challenges" domain emerged as the least developed, revealing deep-rooted systemic weaknesses in infrastructure, emergency preparedness, and logistical capacity. Statistical findings were supported by qualitative narratives

pointing to recurring issues such as delayed module delivery, inadequate transport, substandard school facilities, and a lack of risk-responsive planning. These structural gaps were most acute in geographically isolated and resource-constrained settings, undermining the ability of schools to deliver uninterrupted learning.

4. Monitoring and Evaluation (M&E) was identified as the least practiced domain of the LCP. Quantitative data from both teachers and school heads, along with narrative feedback, pointed to limited learner tracking, underdeveloped digital systems, and the absence of meaningful performance indicators. This deficiency weakened the schools' capacity to adapt plans based on evidence, thereby compromising accountability and iterative improvement.

5. Despite these systemic limitations, many educators exhibited frontline innovation and deep professional commitment. Teachers and school heads implemented context-driven strategies such as home visits, offline learning kits, peer mentoring, SMS coordination, and radio-based instruction. These grassroots efforts reflect the resilience, creativity, and moral dedication of educators working amid limited institutional support.

6. Significant geographic disparities in education access and delivery were revealed, with GIDA schools bearing the brunt of systemic vulnerabilities. However, these schools also demonstrated a stronger sense of community solidarity and resourcefulness, often compensating for institutional deficiencies through localized support networks and improvisational strategies.

7. These varied experiences and empirical findings culminated in the development of the 4C Systemic Resiliency Model—encompassing Connections, Challenges, Character, and Competence. This adaptive and multidimensional framework reflects the lived realities of education stakeholders and offers a practical guide to strengthening LCP implementation in both emergency and routine contexts.

8. The study highlighted Character as a defining and often intangible element of resiliency. School heads and teachers demonstrated resilient leadership, adaptability, and ethical commitment, which were especially evident in geographically marginalized communities. These traits, while not easily quantifiable, were critical to sustaining educational delivery amidst crises. Notably, school heads' leadership behaviors—including moral reasoning, collaborative decision-making, and emotional fortitude—served as catalysts for community engagement and institutional trust.

9. Finally, the integration of quantitative and qualitative data enriched the scope and applicability of the research. Quantitative trends established measurable associations, while qualitative narratives provided contextual depth and insight into behavioral patterns and adaptive responses. This convergent mixed-methods design not only validated the findings but also ensured that the proposed resiliency model is both data-driven and contextually grounded in the realities of education continuity planning.

4.2 Recommendation

1. Implement targeted, context-sensitive capacity-building programs for both teachers and school heads, with a particular focus on those in Geographically Isolated and Disadvantaged Areas (GIDA). Training should emphasize digital literacy, inclusive and low-tech delivery modalities, crisis-responsive leadership, learner monitoring strategies, and psychosocial support mechanisms. The design and frequency of such training must consider diverse access levels, teaching roles, and evolving field realities.

2. Institutionalize school-based localization of the LCP by providing school heads with greater autonomy in decision-making. This includes adaptive implementation of instructional strategies, resource allocation, and risk management based on specific school profiles, community assets, and learner needs, especially in areas where centralized support is constrained.

3. Formalize and strengthen partnerships with key stakeholders through clear coordination mechanisms. Establish Memoranda of Agreement (MOAs) with local government units (LGUs), barangays, and community-based organizations to facilitate joint emergency responses, resource-sharing, and shared accountability in sustaining education during crises.

4. Invest in resilient educational infrastructure and enabling technologies, prioritizing schools in GIDA contexts. This includes constructing disaster-resilient classrooms, upgrading sanitation and water facilities, and ensuring reliable access to electricity and communication networks to support blended and multimodal instruction.

5. Design inclusive and flexible learner support systems that ensure no learner is left behind. This involves providing alternative and low-tech learning options such as radio-based instruction, printed self-learning modules, SMS-based feedback, and community learning hubs. Special attention should be given to learners with disabilities, those in high-risk locations, and working or marginalized students.

6. Establish comprehensive well-being frameworks for school personnel, encompassing regular mental health support, manageable workloads, access to counseling services, and peer mentoring systems. These supports should be embedded in school improvement plans and overseen by designated focal persons to foster long-term staff resiliency.

7. Operationalize the 4C Systemic Resiliency Model by integrating its core pillars—Connections, Challenges, Character, and Competence—into school development planning, disaster risk reduction protocols, and capacity-building initiatives. The model should serve as a guiding framework not only for emergency responses but also for day-to-day instructional resilience.

8. Develop robust Monitoring and Evaluation (M&E) systems for LCP implementation. These systems should employ both quantitative measures (e.g., learner submission tracking, participation indicators) and qualitative tools (e.g., feedback sessions, learner journals) to enable schools to assess delivery effectiveness, identify areas for intervention, and strengthen adaptive planning processes.

9. Document, scale, and institutionalize successful grassroots innovations. Recognize educators and schools that demonstrate exemplary resiliency practices, and disseminate these models through Learning Action Cells (LACs), division-led bulletins,

and online professional learning communities. Such recognition can foster a culture of innovation and continuous improvement.

10. Promote the use of mixed-methods and data-informed decision-making in school and division-level planning. Encourage education leaders to integrate both quantitative trends and qualitative narratives when designing policies, evaluating interventions, and setting improvement priorities. This dual-lens approach ensures a more nuanced and context-appropriate strategy for sustaining learning continuity.

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